I-710 Corridor Project

LOS ANGELES COUNTY, CALIFORNIA
District 07-LA-710 (PM 5.4/24.5)
249900 / 0700000443

Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation

Prepared by:
State of California Department of Transportation
and the
Los Angeles County Metropolitan Transportation Authority

The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327.

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Improve Interstate 710 from Ocean Boulevard in the City of Long Beach to State Route 60 in East Los Angeles.

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Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C) and 49 USC 303

THE STATE OF CALIFORNIA
Department of Transportation

COOPERATING AGENCIES:
United States Army Corps of Engineers
United States Environmental Protection Agency

PARTICIPATING AGENCIES:
Los Angeles Department of Public Works, Los Angeles County Department of Regional Planning, Sanitation Districts of Los Angeles County, City of Lynwood, City of Vernon, Alameda Corridor Transportation Authority and United States Fish and Wildlife Services

RESPONSIBLE AGENCIES:
State Department of Fish and Game, State Public Utility Commission, Los Angeles Regional Water Quality Control Board, Los Angeles County Flood Control District
and
County of Los Angeles and affected cities within the I-710 Corridor Project Study Area (Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Long Beach, Lynwood, Maywood, Paramount, South Gate, and Vernon)

July 17, 2017
Date of Approval

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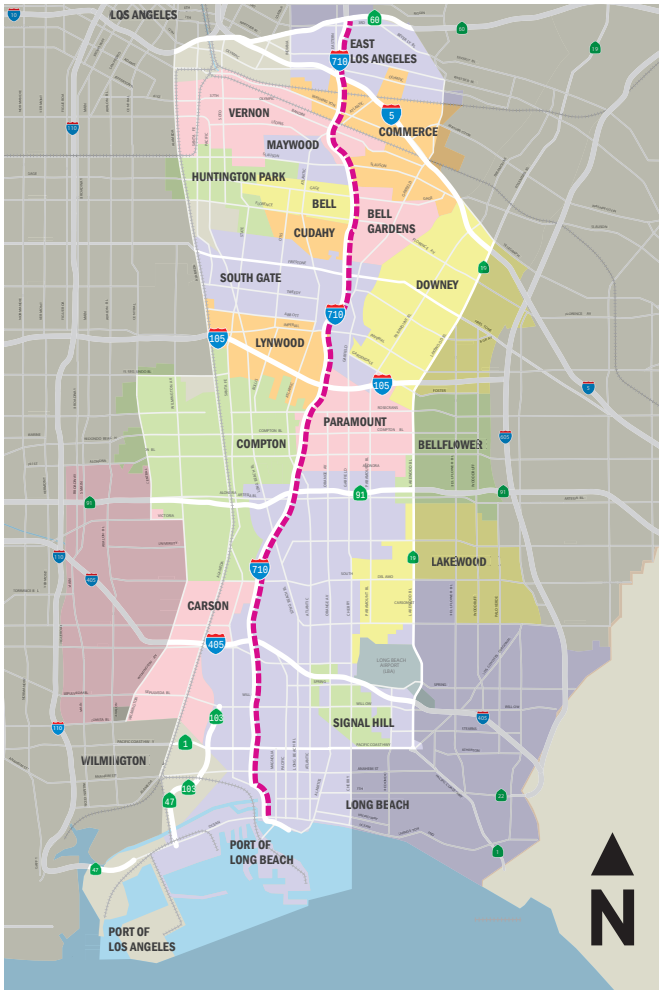
Abstract: Construct improvements to Interstate 710 from Ocean Boulevard in the City of Long Beach to State Route 60 in East Los Angeles. The proposed project includes two build alternatives and one no build alternative. The project proposes adding lane(s) to the freeway mainline under one build alternative and construction of a separate four-lane freight movement corridor under one build alternative. The project would improve air quality and public health, improve traffic safety, modernize the freeway design, accommodate projected traffic volumes, and accommodate project growth for population, employment, and economic activities related to goods movement. Key environmental issues of concern include air quality, health risk, residential relocations, business relocations, utility relocations, recreational resources, the Los Angeles River, traffic, noise, aesthetics, and construction impacts.

EXECUTIVE SUMMARY

S.1 - Overview of the Project Area

The California Department of Transportation (Caltrans), in cooperation with the Los Angeles County Metropolitan Transportation Authority (Metro), the Gateway Cities Council of Governments (Gateway Cities COG), the Southern California Association of Governments (SCAG), the Ports of Los Angeles (POLA) and Long Beach (POLB) (collectively known as the Ports), and the Interstate 5 Joint Powers Authority (I-5 JPA) (collectively referred to as the I-710 Funding Partners), proposes to improve Interstate 710 (I-710, also known as the Long Beach Freeway) in Los Angeles County between Ocean Blvd. and State Route 60 (SR-60). The proposed project is referred to as the I-710 Corridor Project. I-710 is a major north-south interstate freeway connecting the City of Long Beach to central Los Angeles. Within the I-710 Corridor Project Study Area (Study Area), the I-710 serves as the principal transportation connection for goods movement between POLA and POLB, located at the southern terminus of I-710 and the Burlington Northern Santa Fe (BNSF Railroad)/Union Pacific Railroad (UP Railroad) rail yards in the Cities of Commerce and Vernon.

The existing I-710 Corridor has elevated levels of health risks related to high levels of diesel particulate emissions, traffic congestion, high truck volumes, high accident rates, and many design features in need of modernization (the original freeway was built in the 1950s and 1960s). The I-710 Major Corridor Study (MCS; March 2005), undertaken to address the I-710 Corridor's mobility and safety needs and to explore possible solutions for transportation improvements, was completed in March 2005 and identified a community-based Locally Preferred Strategy consisting of ten general purpose lanes next to four separated freight- movement lanes. Subsequent to the MCS, a Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was circulated for public review in 2012 which analyzed several build alternatives. Based on the feedback received during the 2012 public circulation period, as well as changes in key traffic conditions and traffic modeling assumptions, revised alternatives have been developed and prepared in this current Recirculated Draft Environmental Impact Report/ Supplemental Draft Environmental Impact Statement (RDEIR/ SDEIS).



The Study Area for the I-710 Corridor

The Study Area includes the portion of the I-710 Corridor from Ocean Blvd. in Long Beach to SR-60, a distance of approximately 19 miles. At the freeway-to-freeway interchanges, the Study Area extends east and west of the I-710 mainline for the Interstate 405 (I-405), State Route 91 (SR-91), Interstate 105 (I-105), and I-5 interchanges. This is the general Study Area for the I-710 Corridor Project. Specific study areas have been established for individual environmental analyses (e.g., health risk assessment area of interest or water quality areas).

S.2 - Purpose and Need

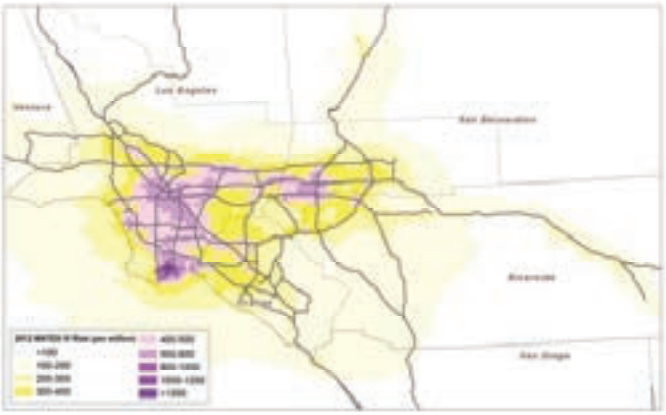
S.2.1 - Project Need

The I-710 Corridor is a vital transportation artery, linking the communities along it and the POLA and POLB to Southern California and beyond. An essential component of the regional, statewide, and national transportation system, it serves both passenger and goods movement vehicles. As a result of population growth, employment growth, increased demand for goods movement, increasing traffic volumes, and aging infrastructure, the I-710 Corridor experiences serious congestion and safety issues.

The I-710 is a major goods carrying corridor.

S.2.1.1 - Air Quality

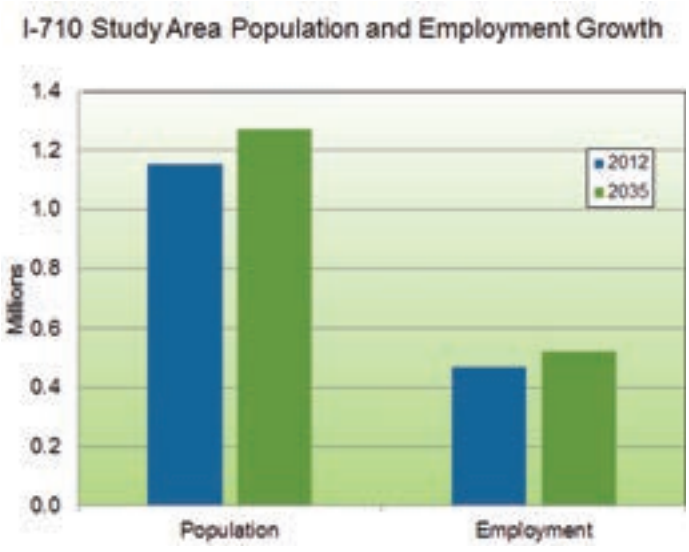
The U.S. Environmental Protection Agency (EPA) has designated the South Coast Air Basin (Basin), which includes the Study Area, as an extreme ozone non-attainment area and a non-attainment area for small airborne particulate matter less than 10 and 2.5 microns (PM10 and PM2.5). Exposure to ozone, PM10, and PM2.5 levels above the Federal health standards is associated with many adverse health effects—including decreased lung function, aggravated asthma, increased lung and heart disease symptoms, and chronic bronchitis. Studies such as the South Coast Air Quality Management District (SCAQMD) Multiple Air Toxic Exposure Studies (MATES), the latest being MATES IV, have shown that elevated levels of nitrogen dioxide (NO2) and ultrafine particulates (UFPs) occur very near roadways. Sampling for these MATES has occurred as recently as 2012 and 2013; the highest levels of calculated cancer risk (approximately 1,400 in one million) in 2012 (the study analysis year) occur in the Study Area, particularly near the Ports, the rail yards, and along the I-710 freeway. These studies show that diesel particulate matter (DPM) is the greatest contributor to air-quality-related cancer risk in the Basin and that approximately half of the DPM is emitted by diesel trucks using the freeway and roadway systems.



South Coast Air Quality Management District data shows high levels of air toxins along I-710 that can be harmful to human health.

S.2.1.2 - Capacity, Transportation Demand, and Safety

Capacity: Many segments of the I-710 mainline currently operate at level of service (LOS) E or F throughout the day, creating chokepoints and causing congestion on other segments of the mainline, as well as on parallel arterial highways. A unique factor affecting the capacity of the I-710 Corridor is the large numbers of heavy-duty trucks that use the I-710 Corridor to travel between POLB, POLA, and the rail freight intermodal yards located near I-5, and to warehousing and cargo distribution points scattered throughout the Southern California urban area. In the I-710 Corridor, capacity and congestion at local arterial intersections are also a concern.



SCAG's regional forecast data shows continued population and employment growth within Southern California over the next 25 years.

Transportation Demand: Combined port activity in the Study Area is expected to increase from the handling of 14.1 million annual twenty-foot equivalent units (TEUs) in 2012 to approximately 41.4 million annual TEUs in 2035. This forecast is consistent with SCAG's 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Future Baseline Scenario for 2035. For comparative purposes, SCAG's recent 2016 RTP/SCS Goods Movement Appendix indicates that total container volume for the Ports of Los Angeles and Long Beach is expected to grow to 36 million by 2035. The I-710 Corridor is, and is expected to remain, a primary route for trucks carrying containers to and from the Ports. This indicates that the existing transportation problems on the I-710 mainline and other Study Area roadways will get worse, and which in turn, will have the potential to adversely affect the competitive position of the Los Angeles region in the global economy.

The regional population is forecast to grow by 20 percent and the Study Area population is forecast to grow by 10 percent from 2012 to 2035. Employment will follow a similar pattern, with regional growth of 27 percent and Study Area employment growth of 11 percent. Growth will be lower in the Study Area because it is almost completely developed. Increases in population, employment, and goods movement between now and 2035 will lead to more traffic on the I-710 freeway and on the streets and roadways within the Study Area as a whole.

Safety: I-710 experiences elevated accident rates, exceeding the State average for similar facilities in many locations. High traffic volumes, existing freeway design, freeway congestion, and the interaction between cars and the high volume of trucks in the traffic stream on the I-710 mainline may be contributing factors to these existing accident rates. In the Study Area, according to the Caltrans Traffic Accident Surveillance and Analysis System (TASAS), truck-related accidents range from 29 to 36 percent of the total number of accidents within the I-710 mainline study segments, which is higher than the State average.

I-710 experiences high accident rates.

S.2.1.3 - Roadway Design

The I-710 freeway was designed in the 1950s and 1960s, before the dramatic increase in imports from Asia and the containerization of oceangoing freight increased the cargo traffic at POLA and POLB, and before the extensive population growth in Southern California since 1960. In general, the I-710 freeway has remained relatively unchanged from when it was originally constructed. Due to growth in overall traffic volumes and the high level of truck traffic that has occurred in recent years, many aspects of the freeway design do not operate efficiently due to the heavy truck traffic and the size and relative lack of maneuverability of these trucks.

When State Route 7 (I-710) was built in the 1950's, there was still a great deal of agriculture and open space in the surrounding area.

Design features that are most directly associated with the current operational problems in the I-710 Corridor include outdated local interchange designs, spacing between many of the I-710 mainline interchanges with local streets and nonstandard geometric features of freeway-to-freeway interchanges. On the I-710 freeway mainline, nonstandard weaving distances, narrow or nonexistent shoulders, narrow lane widths, varying number of through lanes, nonuniform ramp metering, and nonstandard pavement all contribute to current operational problems.

The "cloverleaf" interchanges built in the 1950's are not able to handle today's volume of traffic.

S.2.1.4 - Social Demands and Economic Development

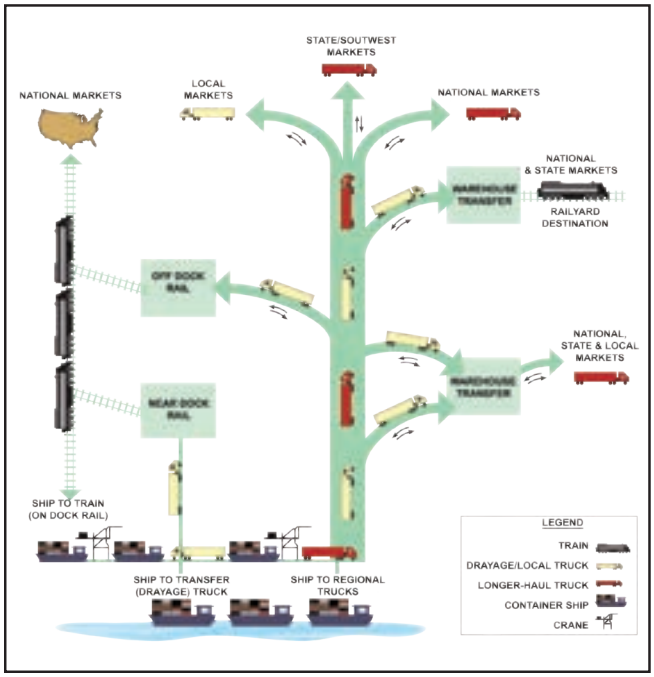
Current growth projections recently adopted by SCAG (SCAG 2016 RTP/SCS Growth Forecast, April 2016) indicate continuing growth in the Study Area. The population in Los Angeles County, as a whole, is expected to increase from 10.2 million in 2015 to 11.5 million in 2040, an increase of approximately 13 percent. This regional growth will continue to place demand on the I-710 Corridor.

With regard to economic development, the Gateway Cities Subregion experiences high levels of unemployment and poverty. In September 2016, unemployment rates in the Study Area ranged from 2.8 to 8.1 percent of the workforce within the affected communities, which in some cases is higher than Los Angeles County (5.2 percent) and State (5.5 percent) unemployment rates.

Highway congestion causes delays affecting personal mobility and goods movement and results in increased economic costs. Los Angeles County's goods movement system serves as a gateway for both international and domestic commerce, especially within the Study Area, where POLA, POLB, and the BNSF/UP Railroad intermodal rail yards are located.

S.2.1.5 - Modal Interrelationships and System Linkages

The I-710 Corridor serves regional, statewide, and national needs for both the general traveling public and the goods movement industry. The I-710 Corridor is the principal transportation connection between POLB/POLA and the BNSF/UP Railroad intermodal rail yards located in the Cities of Vernon and Commerce. BNSF and UP Railroads provide freight movement to destinations throughout the United States. Together, POLB/POLA is one of the largest container ports in the world, and port activity is projected to nearly triple in volume by 2035. The I-710 Corridor also provides key interstate commerce connections to east-west freeways (I-405, SR-91, I-105, I-5, SR-60, and Interstate 10 [I 10]). From a system linkage standpoint, no improvements are planned to these facilities except for possible improvements to I-5 (from Interstate 605 [I-605] through the I-710 interchange). Also, the Gerald Desmond Bridge Project would replace the existing bridge and connects directly to the southern terminus of the I-710 Corridor.



Goods are moved to and from the ports by both trains and trucks.

I-710 provides a critical linkage for interstate commerce between the San Pedro Bay Ports, the BNSF and the UP rail yards, and the rest of the nation.

With the existing on-dock rail and intermodal facilities approaching capacity, demand for transport of goods by truck on the I-710 Corridor is expected to increase.

S.2.2 - Project Purpose

The purpose of the I-710 Corridor Project is as follows:

- Improve air quality and public health
- Improve traffic safety
- Modernize the freeway design
- Accommodate projected traffic volumes
- Address increased traffic volumes resulting from projected growth in population; and employment, and economic activities related to goods movement

The I-710 Corridor Project termini are logical, extending from the southern terminus of the I-710 Corridor to its connection to SR-60. This 19-mile Study Area is of sufficient length to address environmental matters on a broad scope. The I-710 Corridor Project would result in improvements to the current traffic conditions within the I-710 Corridor even if no additional transportation improvements are made in the area. As such, the I-710 Corridor Project has independent utility, as it does not rely on other projects to address the identified need in the Study Area. Furthermore, the I-710 Corridor Project would not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

For the purposes of this document, reasonably foreseeable improvements include any future development for which a General Plan or Specific Plan has been adopted that designates future land uses; projects for which the applicable jurisdiction has received an application for site development; or infrastructure improvement projects planned by the local jurisdiction or another public agency.

1. Improve Air Quality & Public Health
2. Improve Traffic Safety
3. Modernize the Freeway Design
4. Address Projected Traffic Volumes
5. Address Projected Growth in Population, Employment and Activities related to Goods Movement (based on SCAG population projections and projected container volume increases at the two ports)

S.3 - Proposed Project

S.3.1 - Costs and Schedule

Estimated costs for right-of-way acquisition/utility relocation and for construction are included in Table S-1.

Table S-1: Estimated Cost (in Billions $'s)

Alternative	ROW/Utilities	Construction	Total
Alternative 5C	$1. 08	$3. 59	$4. 67
Alternative 5C, Option 1A	$1. 04	$3. 59	$4. 63
Alternative 5C, Option 2A	$1.09	$3. 62	$4.71
Alternative 5C, Option 3A	$1. 11	$3. 69	$4.80
Alternative 7	$1. 65	$6. 32	$7.97
Alternative 7, Option 1B	$1. 62	$6. 33	$7.96
Alternative 7, Option 3B	$1. 68	$6. 44	$8.12

Source: Draft Project Report (April 2017).
Note: Estimates are in current year dollars and do not include support costs or programmatic elements.

S.3.2 - Motion 22.1

During the 2012 public circulation period, comments received from the public and agencies indicated strong support for the creation and inclusion of another alternative that retained the ZE/NZE freight corridor but did not add general purpose lanes on I-710. The Coalition for Environmental Health and Justice (CEHAJ), a coalition of organizations, associations, and community groups working to achieve environmental justice, community health, and overall quality of life in the Study Area, put forth a detailed and comprehensive proposal of an alternative called "Community Alternative 7" (CA-7) as a formal comment on the 2012 Draft EIR/EIS (see Comment No. IP-22 in Appendix S of this RDEIR/SDEIS). In parallel with the ongoing coordination and communication between CEHAJ and the I-710 Project Team, community members worked with the office of Los Angeles County Supervisor Hilda Solis to continue the effort to include CA-7 in the RDEIR/SDEIS. As a result, the Metro Board of Directors passed Board Motion 22.1 in October 2015. Also included as part of Motion 22.1 was direction to Metro to examine, in coordination with Caltrans, Gateway Cities COG, and other partner and responsible agencies, the feasibility of several study area elements to occur outside of but in parallel to the I-710 Corridor Project, including, but not limited to, a zero emission truck procurement and operations program, addition of bus stops with access points to bicycle paths, and to work with community groups to develop a Local and Targeted Hiring Policy and Project Labor Agreement for construction jobs and a First Source Hiring Policy for permanent jobs created by the I-710 Corridor Project. Table S-2 lists the elements of Motion 22.1 that are addressed in this RDEIR/SDEIS and where the discussion can be found.

Table S-2: Motion 22.1 Elements Location of Discussion in RDEIR/SDEIS

Motion 22.1 Item	Location of Discussion in RDEIR/SDEIS
A – Geometric design avoidance	Section 3.3.2.3
B – Zero emission trucks	Section 2.3.2.1, Section 3.13
C – New high frequency bus transit	Section 2.3.2.1, Section 3.5
D – Increased existing transit service	Section 2.3.2.1, Section 3.5
E – Traffic control measures/ TSM/ITS	Section 2.3.2.1, Section 3.5
F – BACT construction equipment use	Section 3.24, Appendix F

Motion 22.1 Item	Location of Discussion in RDEIR/SDEIS
J – Upgrades to Los Angeles River Bike Path	On April 27, 2017, the Metro Board amended Motion 22.1 to advance the Los Angeles River Bike Path upgrades sooner and as a separate project; therefore, there is no discussion of this element in this RDEIR/SDEIS
K – Five new bike/pedestrian bridges	Section 2.3.2, Section 3.3, Section 3.5, Section 3.6
L – Complete streets that promote livable neighborhoods	Section 3.3
M – Maximize trees, shrubs, and foliage that are drought resistant and biosequestration/ biofiltration	Section 2.3.2, Section 3.6
N – Identify additional BMPs	Section 2.3.2, Section 3.9
O – Avoid/minimize impacts to Los Angeles River, parks, trails, open space, wetlands, and native landscaping	Section 2.2.2, Section 3.3.2.3

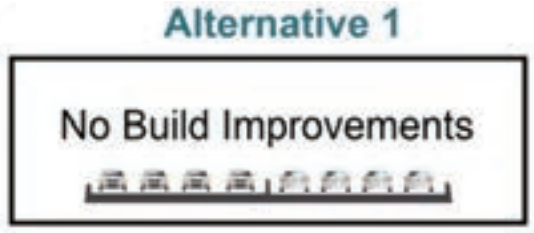
BMP = Best Management Practices
ITS = Intelligent Transportation Systems
Metro = Los Angeles County Metropolitan Transportation Authority
RDEIR/SDEIS = Recirculated Draft Environmental Impact Report/ Supplemental Draft Environmental Impact Statement
TSM = Transportation System Management
BACT = Best Available Control Technology

S.3.3 - Alternatives

This section describes the alternatives based on the MCS that were developed by a multidisciplinary technical team to achieve the I-710 Corridor Project purpose and subsequently were reviewed and concurred upon by the various committees involved in the I-710 Corridor Project community participation framework. Alternative 2 (Transportation Systems Management/Transportation Demand Management [TSM/TDM]), Transit, Intelligent Transportation Systems [ITS] and Enhanced Goods Movement), Alternative 3 (Maximum Goods Movement By Rail/Alternative Technology), and Alternative 4 (Arterial Highway and I-710 Congestion Relief Improvements) were considered but withdrawn from further environmental study as stand-alone alternatives during the process leading to the 2012 Draft EIR/EIS.

Additionally, Alternative 5A (Widening of I-710 to include ten general purpose lanes) and Alternatives 6A, 6B, and 6C (Widening of I-710 to include ten general purpose lanes and the addition of four separated freight movement lanes, with operational variations) were evaluated in detail in the 2012 Draft EIR/EIS. Because of the updates in traffic assumptions and data, resulting in a clearer understanding of the origin and destination of truck traffic within the project area, and the substantial comments received from agencies and the public concerned with potential right-of-way impacts, potential impacts to health and air quality associated with the addition of general purpose lanes, and other requests, Alternatives 5A, 6A, 6B, and 6C have been withdrawn from consideration.

The alternatives evaluated in the current RDEIR/SDEIS are Alternative 1 (No Build Alternative), Alternative 5C (I-710 Widening and Modernization), Alternative 7 (I-710 Modernization plus a Zero-/Near Zero-Emission Freight Corridor). Elements of several of the previously considered alternatives have been included in Alternatives 5C and 7.

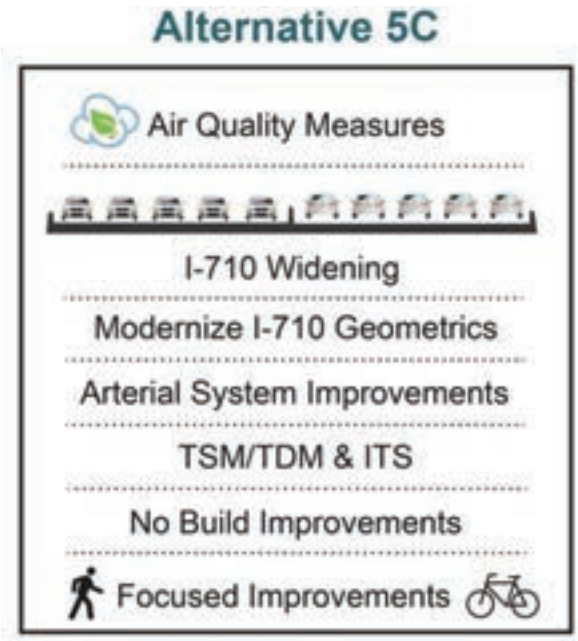


S.3.3.1 - Alternative 1: No Build Alternative

Alternative 1 would maintain the current configuration of the existing I-710 Corridor. There would be no capacity-increasing improvements to the I-710 mainline within the Study Area. Within the region, generally only approved and planned projects included in SCAG's 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Future Baseline Scenario and 2011 Federal Transportation Improvement Program (FTIP) are considered part of the Alternative 1. Alternative 1 provides the basis for comparison of 2035 no build conditions with the 2035 build alternatives.

S.3.3.2 - Alternative 5C: I-710 Widening and Modernization

Alternative 5C proposes to widen the I-710 mainline by adding mixed-flow lanes (one in each direction) between I-405 and I-105, and between I-105 and SR-60. Truck bypass lanes are also proposed on I-710 through the I-405 interchange. This alternative will modernize the design at the I-405, SR-91, and I-5 interchanges, modernize and



reconfigure most local arterial interchanges throughout the I-710 corridor, modify freeway access at various locations, and shift the I-710 centerline at various locations to reduce right-of-way impacts. In addition to improvements to the I-710 mainline and the interchanges, Alternative 5C also includes:

- Zero Emission/Near Zero Emission Truck Technology Deployment Program, which would provide "clean emissions" trucks for operation on I-710 as well as electric charging and hydrogen refueling stations.
- Community Health and Benefit Program, which would fund projects targeted towards improving air quality and public health within the Study Area.
- I-710 TSM/TDM Congestion Relief Program that would provide funding for traffic signal upgrades and coordination, safety improvements, traffic calming measures, and intersection improvements on the arterial street system in the Study Area.
- Provision of or future provision of ramp metering at all locations and improved arterial signage for access to I-710.

- Parking restrictions during peak periods (7:00 a.m.–9:00 a.m. and 4:00 p.m.–7:00 p.m.) on four arterial roadways: Atlantic Blvd. between Pacific Coast Hwy. and SR-60; Cherry Ave./Garfield Ave. between Pacific Coast Hwy. and SR-60; Eastern Ave. between Cherry Ave. and Atlantic Blvd.; and Long Beach Blvd. between San Antonio Dr. and Firestone Blvd.
- I-710 Transit Program consisting of transit improvements such as increased service on all Metro Rapid routes and local bus routes in the Study Area, Blue Line and Green Line light rail service increases, and added express bus routes within the I-710 Corridor area.

- ITS improvements including updated fiber-optic communications to interconnect traffic signals along major arterial streets to provide for continuous, real-time adjustment of signal timing to improve traffic flow as well as freeway smart corridor strategies from the Los Angeles Gateway Freight Technology program that would deploy dedicated short-range communication units alongside I-710 to manage and control traffic in real time.

Additional changeable message signs would be added to provide critical information to motorists.

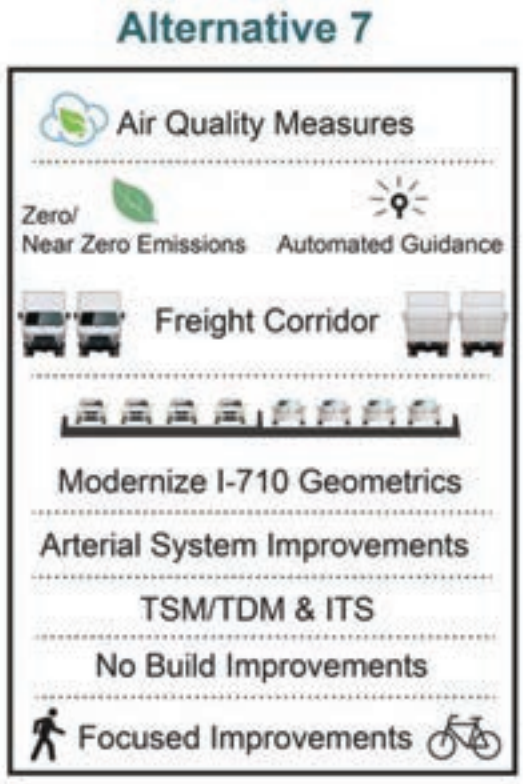
Some of the programmatic elements listed above would not be implemented by Caltrans as the Lead Agency under CEQA and NEPA and as the owner/operator of the I-710 freeway, but instead would be implemented by Metro or other public agencies with jurisdiction over a particular element.

In addition to the transportation system improvements described above, Alternative 5C also includes:

The I-710 Corridor Project includes a robust landscaping enhancement plan.

Visual/Aesthetic Features: Texture treatments (for structures, median barriers, etc.), planting, irrigation, opportunities for community identification, and concepts from the I-710 Corridor Aesthetics Master Plan (2014) will be incorporated into the project design to mitigate the visual and community impacts of the increased scale of the project improvements.

S.3.3.3 - Alternative 7: I-710 Modernization Plus Freight Corridor (Zero/Near Zero-Emission Vehicles)



Alternative 7 includes all the components of Alternative 5C described above, but rather than the addition of mixed-flow through lanes and truck bypass lanes, Alternative 7 includes the addition of two separate truck-only lanes in each direction (a total of four lanes, on a combination of viaduct and/or retaining wall structures and at-grade roadbeds adjacent to, or in the median of, the freeway) between Long Beach and Commerce, adjacent to the freeway, approximately 16 miles in length. This principal feature is referred to as a "Clean-Emission Freight Corridor." This alternative would restrict the use of the freight corridor to zero-emission/near zero-emission (ZE/NZE) trucks rather than conventionally powered diesel trucks. The ZE/NZE truck technologies consist of trucks powered by means other than diesel (e.g., natural gas, hydrogen, and/or electricity), thereby producing zero to near-zero tailpipe emissions while traveling on the freight corridor; however, no specific technology is assumed in the environmental analysis, and the ZE/NZE trucks will not be limited to one particular technology as long as the emissions criteria are met.

Alternative 7 also includes an advanced technology feature that all trucks using the freight corridor will have an automated control system that will steer, brake, and accelerate the trucks under computer control while traveling on the freight corridor. This will safely allow for trucks to travel in "platoons" (e.g., groups of six-to-eight trucks) and increase the capacity of the freight corridor.

As with Alternative 5C, Alternative 7 will include additional aesthetic enhancements, and drainage/water quality features as follows:

Visual/Aesthetic Features: In addition to the visual/aesthetic features described above for Alternative 5C, specific aesthetic treatments will be developed for the freight corridor, including use of screen walls and masonry treatments on the freight corridor structures (including soundwalls).

S.3.3.4 - Design Options

For both Alternatives 5C and 7, design options are proposed that are variations to the alternatives, specific to discrete segments of I-710. In addition, one option only applicable to Alternative 7 provides for an operational variation to the freight corridor. These options have been fully analyzed in this RDEIR/SDEIS and will be considered during identification

of the Preferred Alternative for the project. These options are as follows:

- **Design Options 1A and 1B** apply to both Alternative 5C (1A) and Alternative 7 (1B) and aims to reduce impacts to the BNSF operations at the Hobart intermodal rail yard in Commerce, and would shift highway, collector-distributor road, and ramp alignments to achieve this aim without encroaching beyond State rights-of-way. However, local street circulation, highway alignment, and right-of-way requirements would differ between the two alternatives.
- **Design Option 2A** applies to Alternative 5C and would restore circulation between Shoreline Dr. and Pacific Coast Hwy. via the I-710 freeway with the addition of two grade separated ramps to provide connections between the northbound Shoreline Dr. entrance ramp to I-710 and the northbound Pacific Coast Hwy. exit ramp from I-710, and between the southbound Pacific Coast Hwy. entrance ramp to I-710 and the southbound Shoreline Dr. exit ramp from I-710.
- **Design Options 3A and 3B** apply to both Alternative 5C (3A) and Alternative 7 (3B) and aim to further improve safety and operation of the freeway by reducing weaving conflicts. In order to achieve the objective, the variation would reconfigure the SR-60, I-5, and Olympic Blvd. interchanges, and alter the freeway and local traffic circulation; however, the design options would vary between Alternative 5C and Alternative 7 in that different right-of-way limits would be required.
- **Option 7ZE** is applicable only to Alternative 7 and restricts use of the freight corridor to exclusively ZE trucks, excluding NZE trucks. This option is operational in nature and would not represent a difference in the geometric design of Alternative 7.

S.4 - Joint California Environmental Quality Act/National Environmental Policy Act Document

The proposed I-710 Corridor Project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration (FHWA), and is subject to state and federal environmental review requirements. Therefore, environmental documentation has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (USC) 327. Caltrans is the lead agency under both NEPA and CEQA.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, quite often a "lower level" document is prepared for NEPA. One of the most commonly seen joint document types is an Environmental Impact Report/ Environmental Impact Statement (EIR/EIS).

In June 2012, a Draft EIR/EIS for the I-710 Corridor Project was released for public circulation.

During the public circulation period (June 27 to September 28, 2012), three public hearings were held, and nearly 3,000 individual comments were received from members of the public, interested groups, organizations, public agencies, and elected officials. Among other issues, included in those comments was support for the project team to consider and analyze different alternatives, including a recurring request for an alternative that would add a four-lane ZE/NZE freight corridor with no expansion of general purpose lanes on I-710. In response to concerns raised during public hearings, as well as changes in transportation modeling and the progress of several reasonably foreseeable local projects, new alternatives were developed for the draft RDEIR/SDEIS. Responses to comments received during the 2012 public circulation period are included in Appendix S to this RDEIR/SDEIS.

During the 60-day recirculation period for the RDEIR/SDEIS, there will be an opportunity for public review and comment. After comments are received from the public and reviewing agencies on this RDEIR/SDEIS, Caltrans may undertake additional environmental and/or engineering refinements. A Final EIR/EIS will be made available to the public. The Final EIR/ EIS will include responses to comments received on the RDEIR/SDEIS and will identify the Preferred Alternative. The Final EIR/EIS will also contain responses to comments received during the 2012 public circulation period, which are also included in Appendix S to this RDEIR/SDEIS. As required under CEQA, responses to public agency comments will be made available at least ten days prior to Caltrans' approval of the Final EIR. Under NEPA, the Final EIS will be made available for public review at least 30 days prior to approval of the Record of Decision. Following completion of the Final EIR/ EIS, if the decision is made to approve the I-710 Corridor Project, a Notice of Determination will be filed with the State Clearinghouse for compliance with CEQA and a Record of Decision will be published in the Federal Register for compliance with NEPA.

S.5 - Environmental Consequences

The following sections summarize the impacts documented in the environmental analysis provided in Chapter 3.0 of this RDEIR/SDEIS. The environmental commitments and measures to minimize harm are listed in each topical section of Chapter 3.0 and the Environmental Commitments Record in Appendix F.

The environmental impacts described below for the build alternatives would not occur under Alternative 1 (No Build Alternative). Specific project benefits such as improved air quality, mobility, and safety would also not occur to the same extent under Alternative 1; however, other projects assumed in the no build condition would provide mobility and air quality benefits over the long term.

S.5.1 - Land Use

S.5.1.1 - Existing and Future Land Use

Build Alternatives: The build alternatives would impact existing commercial and service, industrial, open space and recreation, residential, transportation and utilities, and vacant land uses. Alternative 5C would convert approximately 538 acres of existing land uses (Alternative 5C, Option 1A, would convert approximately 536 acres of existing land uses; Alternative 5C, Option 2A, would convert approximately 545 acres of existing land uses; and Alternative 5C, Option 3A, would convert approximately 541 acres of existing land uses) to transportation land uses. Alternative 7 would convert approximately 748 acres of existing land uses (Alternative 7, Option 1B, would convert approximately 752 acres of existing land uses; and Alternative 7, Option 3B, would convert approximately 751 acres of existing land uses) to transportation land uses. Therefore, Alternative 7, Option 1B, would result in the greatest impact to existing land uses.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect growth, please see Section 3.2 of the RDEIR/SDEIS.

S.5.1.2 - Consistency with State, Regional, and Local Plans

Build Alternatives: While adoption of either build alternative would require SCAG, the County of Los Angeles, and several other regional and local agencies to amend their plans to reflect modifications to the I-710 mainline, interchanges, and arterial highways, as well as the elimination of any land uses that may need to be acquired for the project, the proposed build alternatives are generally consistent with these plans. Caltrans would need to amend its existing freeway agreements with cities where the build alternatives would add or remove connections to I-710, SR-91, or I-405. FHWA approval is required for any new connections to an Interstate highway. Additionally, the build alternatives are consistent with the five primary goals of the California Coastal Act.

S.5.1.3 - Parks and Recreation Facilities

Build Alternatives: The build alternatives would result in permanent direct impacts to parks and recreation facilities, including directly impacting Parque Dos Rios (permanent use of 1.68 acres under Alternative 5C and permanent use of the entire 8.6 acres of park space that would render the park non-functional under Alternative 7, as well as temporary construction easements under both alternatives) and full acquisition of the Compton Hunting and Fishing Club recreational facilities. Additionally, the build alternatives would result in permanent indirect impacts to Maywood River Park and Coolidge Park (low visual impacts), and to Bandini Park (permanent aerial easement required). Both build alternatives would require the construction of a wider bridge and resulting aerial easement over the DeForest Market Street Basin of the Deforest Treatment and Dominguez Gap Wetlands; and Alternative 7 would also permanently incorporate 5.4 acres from the West Basin of the wetlands. Both build alternatives would impact Cesar E. Chavez Park in the City of Long Beach due to the realignment of Shoreline Dr., and approximately 2.90 acres would be permanently impacted; but with the integration of land previously used for Shoreline Dr., the park would experience a net increase of 2.99 acres. After construction, there would be a net benefit to the public due to improved accessibility of the park through the consolidation of existing park parcels and because the project would result in a net increase of park acreage, resulting in a more functional park with a total of 28.38 acres of park area.

Cesar E. Chavez Park.

The build alternatives would improve regional or local bikeways with the addition of three pedestrian/bicycle-only overcrossings under both build alternatives, and five total proposed overcrossings under Alternative 5C. Access to the Los Angeles River Trail would be enhanced as a result of modifications to trail entrances at the arterial highways that cross the trail.

S.5.2 - Growth

S.5.2.1 - Build Alternatives

The improved mobility expected to be achieved as a result of build alternatives could have a slight influence on demand for residential and nonresidential uses in the cities and communities in the Gateway Cities subregion; however, it would not be expected to be sufficient to result in the need to modify adopted General Plans to allow for greater levels of development (residential and nonresidential). The I-710 build alternatives are expected to accommodate existing, approved, and planned growth in the area, but are not expected to influence the amount, timing, or location of growth in the area. Further, due to lack of vacant or less developed land within the I-710 Corridor, neither build alternative would facilitate new development by opening up access to previously undeveloped or less developed areas.

One purpose of the I-710 Corridor Project is to accommodate growth related to goods movement. Projects such as the new Gerald Desmond Bridge are examples of other projects in the I-710 Study Area planned to accommodate growth related to goods movement.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect the community, please see Section 3.3 of the RDEIR/SDEIS.

A key element of the project purpose of the I-710 Corridor Project is to address projected growth in population, employment, and economic activities related to goods movement. The increase in capacity on I-710 under the build alternatives is not expected to influence demand for growth at the Ports nor would growth of port cargo handling capacity at the Ports substantially increase travel demand on I-710. This is because an analysis of the port cargo growth and container movements by truck scenarios showed that the low-growth scenario results in only 11 percent fewer daily port truck trips as compared to the high-growth scenarios, even though the low-growth scenario has 33 percent less containerized cargo throughput compared to the high-growth scenarios.

A worker at the Port of Long Beach

S.5.3 - Community Impacts

S.5.3.1 - Community Character and Cohesion

Build Alternatives: While temporary disruption of community character and cohesion would occur as a result of construction of either build alternative, the mobility improvements provided by the I-710 Corridor Project would also benefit most of the affected communities by providing an improved connection to other parts of the Study Area (for example, improved bicycle and pedestrian connections across I-710 and the Los Angeles River) and the Gateway Cities Subregion as a whole. However, community cohesion impacts do occur at a localized level within the Cities of Long Beach, Bell, and Commerce due to relocations of existing cohesive communities or vital community facilities under Alternative 7. Mitigation for relocations within these communities is provided through

implementation of Mitigation Measure C-1 described in Section 3.3.2.4. However, as a result of the relocations of the residents in the City of Commerce (specifically located in the Ayers and Sydney Neighborhoods at Washington Blvd. and I-710), businesses, and/or vital community facilities under Alternative 7, localized areas within the Cities of Long Beach, Bell, and Commerce would experience adverse impacts to community character and cohesion as a result of these relocations.

Community services within the Study Area, such as fire, police protection, and other emergency responders, would be more readily available under the build alternatives as mobility within the Study Area would improve over existing conditions. Therefore, with the exception of the Cities of Long Beach, Bell, and Commerce, the build alternatives would not result in adverse impacts to community character and cohesion.

The build alternatives have been developed through an extensive community outreach process that involves input from multiple public agencies and stakeholders in order to avoid impacts to human-made and natural environments, including existing and future communities. Community concerns and comments have been expressed throughout the design process and the build alternatives have been refined as much as possible to address the communities' concerns and maintain community character and cohesion. Therefore, with the exceptions noted above under Alternative 7, the character and cohesion of most communities would remain intact with implementation of the build alternatives.

S.5.3.2 - Relocations and Real Property Acquisition

Build Alternatives: The build alternatives would result in the relocation of residential and nonresidential properties. The build alternatives will not result in any relocations in the cities/communities of Boyle Heights, Cudahy, Downey, Lakewood, Maywood, Paramount, Signal Hill, Huntington Park, Wilmington, or San Pedro. According to the Relocation Impact Report (2017), within the I-710 Corridor Project Study Area, Alternative 5C would result in a total of 158 nonresidential relocations and 109 residential relocations. Based on an average of four persons per residential unit, Alternatives 5C (not including design options), 5C (Option 1A), and 5C (Option 2A) would each result in the relocation of approximately 436 residents. Alternative 5C, Option 1A, would result in a total of 157 nonresidential relocations and 109 residential relocations. Alternative 5C, Option 2A, would result in 161 nonresidential relocations and 109 residential relocations, and Alternative 5C, Option 3A, would result in 165 nonresidential relocations and 128 residential relocations, resulting in the relocation of approximately 512 residents. Overall, Alternative 5C, Option 3A, impacts a greater number of both residential and nonresidential parcels.

Alternative 7 (not including design options) would result in a total of 206 nonresidential relocations and 121 residential relocations, resulting in the relocation of approximately 484 residents. Alternative 7, Option 1B, would result in a total of 206 nonresidential relocations and 136 residential relocations, resulting in the relocation of approximately 544 residents. Alternative 7, Option 3B, would result in a total of 213 nonresidential relocations and 140 residential relocations, resulting in the relocation of approximately 560 residents.

For the majority of the Study Area, residential displacements, given the present market conditions, do not indicate a need for the construction of replacement housing. However, Housing of Last Resort may have to be considered for relocating the affected residential properties such as mobile homes. For example, five mobile homes at the El Rancho Mobile Home Park in the City of Compton would be proposed to be relocated under both build alternatives. However, adequate relocation resources for mobile homes do not currently exist within the Study Area. This would represent an adverse impact to those displaced residents in the City of Compton, (assuming they preferred to remain in a mobile home). For the majority of the residential property impacts, adequate resources appear to exist at the present time to relocate existing residential occupants to comparable replacement housing, with the exceptions noted in the previous sentence.

Fire Station No. 4 in the city of Vernon would require relocation under both I-710 build alternatives.

As a result of property acquisitions and relocations, the build alternatives could also result in a loss of sales tax and property tax revenue to the affected cities within the Study Area and also to Metro and the State. It is Caltrans' and Metro's goal that all relocations would occur within the affected communities, which would help retain potentially lost tax revenues within those communities. Table S-3 summarizes the residential and nonresidential relocations by the build alternatives on the following page.

Table S-3: Relocations by Build Alternative

Relocations by Build Alternative				
	Residential	Non Residential	Total Relocations	Total Residents Relocated
Alternative 5C	**109**	**158**	**267**	**436**
Design Option 1A	109	157	266	436
Design Option 2A	109	161	270	436
Design Option 3A	128	165	293	512
Alternative 7	**121**	**206**	**327**	**484**
Design Option 1B	136	206	342	544
Design Option 3B	140	213	353	560

Source: Epic Land Solutions, Inc. Relocation Impact Report March (2017)

S.5.3.3 - Environmental Justice

Build Alternatives: Overall, the I-710 Corridor Project would have many beneficial effects on the surrounding communities and I-710 corridor users when compared with current conditions, including reductions in emissions levels and associated health risk; abatement of freeway noise in most locations; and improved level of service and safety at local interchanges. In addition, programmatic elements of the project, such as the Community Health Benefit Program, would be of particular benefit to environmental justice communities although the effects cannot be quantified at this time due to the nature of the program (to provide funding for future improvements and/or health-related projects on a case-by-case basis). However, even with the application of these benefits, the environmental justice analysis for the I-710 Corridor Project has identified potential disproportionately high and adverse impacts on minority and low-income populations in the Study Area, after consideration of mitigation. These disproportionately high and adverse impacts have been identified for air quality (construction and operation), noise, traffic, community cohesion related to relocations, visual resources, and land use.

Due to the potential for disproportionately high and adverse impacts, further mitigation is proposed to help alleviate project-related impacts to environmental justice communities. This mitigation would fund projects that would improve air quality, public health, aesthetics, and other issues faced by environmental justice populations within the corridor.

S.5.4 - Utilities and Emergency Services

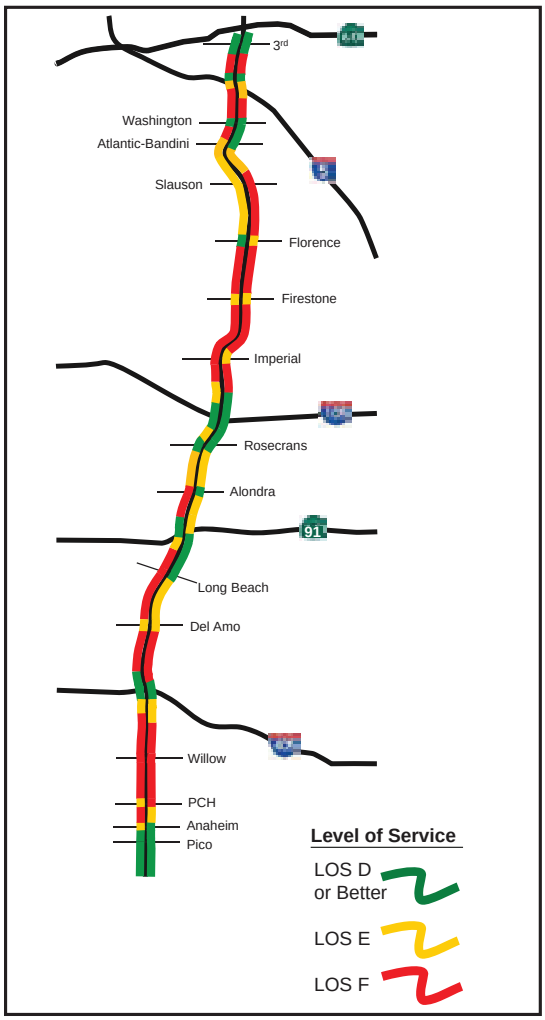
S.5.4.1 - Build Alternatives

The build alternatives would not result in increased population or demand for public services in the Study Area because they would not construct new housing or businesses. The build alternatives would have both beneficial and adverse effects on fire protection and law enforcement protection service providers within the Study Area. The build alternatives would result in the relocation of City of Vernon Fire Station No. 4. Beneficial effects include improved emergency response times, as the ability to move fire protection, law enforcement, and emergency service resources from one area to another would be enhanced by the improved transportation network.

Alternatives 5C and 7 would impact cable television, gas, oil, power, sewer, telephone, and water utility lines. These include both distribution and transmission lines that would require either relocation or protection in place. In addition, Alternatives 5C and 7 would result in the relocation of electric and gas transmission facilities owned and operated by Southern California Edison (SCE), the Southern California Gas Company (SCGC), the Los Angeles Department of Water and Power (DWP), and others. Several relocation strategies including undergrounding in areas and protection in place are being considered for utilities impacted as a result of the build alternatives. To address the utility relocations, Metro has conducted detailed relocation studies to help shorten the lead time necessary to implement these relocations.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect utilities, please see Section 3.4 of the RDEIR/SDEIS.

S.5.5 - Traffic Circulation, Pedestrians, and Bicyclists



2035 No Build Level of Service - Morning Peak Hour

S.5.5.1 - Build Alternatives

On the I-710 mainline, the traffic LOS is generally maintained or improved in the morning, midday, and evening peak periods in both directions of I-710 when comparing the 2035 build alternative conditions (Alternatives 5C and 7, all design options) to the 2035 No Build Alternative (Alternative 1) conditions. Although LOS improves under the build alternatives compared to the No Build Alternative, many segments of the I-710 mainline would experience poor LOS in 2035 under Alternative 1 in the morning, midday, and evening peak periods in both the northbound and southbound directions due to increased traffic volumes caused by regional growth in traffic.

There would be degradation in LOS with the project build alternatives at some locations. Several intersections that are projected to experience poor LOS and heavy intersection delay under Alternative 1 conditions are not identified as adversely impacted intersections because they do not have an increase in delay in the build alternative and, therefore, are not impacted by the I-710 Corridor Project. However, implementation of the I-710 Corridor Project is projected to result in adverse impacts to 32 intersections under Alternative 5C and to 30 intersections under Alternative 7, before mitigation. Mitigation in the form of traffic signal upgrades and intersection improvements are proposed for all but two of the impacted intersections under Alternative 5C and all but four of the impacted intersections under Alternative 7. Mitigation is not proposed at these locations due to right-of-way constraints.

The I-710 Corridor Project includes changes to arterial interchanges that may affect sidewalks and bicycle lanes. The I-710 Corridor Project will provide facilities for bicycles and pedestrians in locations where local streets are affected by the construction of the build alternatives. Because bicycle and pedestrian facilities will be maintained or improved, the impacts of the I-710 Corridor Project on pedestrian travel or cycling would not substantially change as a result of the implementation of the build alternatives.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect traffic circulation, please see Section 3.5 of the RDEIR/SDEIS.

S.5.6 - Visual/Aesthetics

S.5.6.1 - Build Alternatives

There would be long-term adverse impacts with the construction of all build alternatives. The freight corridor component of Alternative 7 would generally result in more visual impacts than those that would occur under Alternative 5C. Some moderately high impacts would require mitigation measures that would need more than five years to take effect, while other areas exhibit lesser levels of negative impacts ranging from moderate to neutral/low or experience a positive visual effect. Aesthetic enhancement of the I-710 Corridor is desired by the affected communities; this would be achieved through implementation of I-710 Corridor Aesthetic Master Plan (2015) that would define aesthetic and landscaping treatment measures that would be incorporated into the final design of the I-710 Corridor Project. The Corridor Master Plan has been developed in a context-sensitive design process in consultation with the affected local agencies and includes involvement of local community members as determined by the local agencies. Texture treatments (for structures, and median barriers, etc.), planting, irrigation, and opportunities for community identification will be incorporated into the project design to mitigate the visual and community impacts of the increased scale of the project improvements.

Soundwalls help reduce freeway noise, but they can create visual impacts when they obstruct views or become a target for graffiti. To mitigate these impacts, a master landscape plan will be prepared to provide for aesthetically pleasing landscape and hardscape treatments.

In addition to the structural or physical changes that the I-710 Corridor Project will create, viewers within the Study Area would experience increased night lighting from the addition of traffic lighting on the elevated freight corridor (under Alternative 7). Glare from all lanes is expected to be minimized by the construction of screen walls and soundwalls and by the distance of the viewer from traffic lighting and vehicular lights.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect the visual environment, please see Section 3.6 of the RDEIR/SDEIS.

S.5.7 - Cultural Resources

S.5.7.1 - Build Alternatives

The build alternatives would impact four historic resources; two UP Railroad segments, Dale's Donuts, the Boulder Dam-Los Angeles 287.5-kilovolt (kV) Transmission Line. The UP Railroad segments have already been altered and, therefore, do not contribute to the significance of the UP Railroad. The build alternatives would impact a small section of the parking area and sidewalk at Dale's Donuts. The impact to the Boulder Dam-Los Angeles 287.5 kV Transmission Line would not lessen the integrity of the line to render it ineligible for the National Register of Historic Places (National Register). Therefore, based on the above discussion, the build alternatives are expected to result in a finding of No Adverse Effect per 36 Code of Federal Regulations (CFR) 800.5 for these cultural resources. In addition to the evaluation of historic properties, an Archaeological Sensitivity Study was conducted to assess the potential for encountering buried archaeological resources during project construction. Refer to Section 3.24.4.7 for measures to reduce impacts to cultural resources and address human remains discovered during project construction.

A comprehensive survey of the Study Area was conducted to identify historic properties in the I-710 Corridor.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect cultural resources, please see Section 3.7 of the RDEIR/SDEIS.

S.5.8 - Hydrology and Floodplains

S.5.8.1 - Build Alternatives

All build alternatives would result in transverse (i.e., perpendicular to the direction of flow) encroachments at 24 Los Angeles River locations, eight Compton Creek locations, and one Rio Hondo Channel location under Alternative 5C, and would result in encroachments at 34 Los Angeles River locations, four Compton Creek locations, and one Rio Hondo location under Alternative 7. The build alternatives would not change the capacity of the Los Angeles River, Compton Creek, and/or Rio Hondo Channel to carry water and would not result in a measurable impact to the 100-year floodplain elevation. The proposed encroachments would not result in any adverse impacts on the natural and beneficial floodplain values, would not result in a substantial change in flood risk or damage, and do not have substantial potential to cause interruption or termination of emergency services or emergency routes. Therefore, the build alternatives do not constitute a significant floodplain encroachment as defined in 23 CFR 650.105(q).

All build alternatives include improvements to the freeway drainage system.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect the hydrology and floodplains of the area, please see Section 3.8 of the RDEIR/SDEIS.

S.5.9 - Water Quality and Stormwater Runoff

S.5.9.1 - Build Alternatives

Alternatives 5C and 7 would increase impervious surface areas, which would increase runoff volume and pollutant loads. Alternatives 5C and 7 would require replacement or extension of the existing drainage systems such as drainage inlets along the median and shoulders to accommodate the increased project flows. Impacts to water quality of receiving waters may be expected from the loading of various constituents typically associated with highway runoff. These potential operational impacts would be addressed through the incorporation of design development pollution prevention best management practices (BMPs), treatment BMPs, and adherence to the necessary operational maintenance protocols identified in the Caltrans SWMP. Potential BMPs include biofiltration swales, biofiltration strips, infiltration basins, media filters, detention basins, gross solids removal devices, and wet basins. Proposed operational maintenance BMPs include storm drain cleaning and normal roadway and bridge maintenance, in addition to maintaining all vegetated slopes. The BMPs would treat 74 percent (under Alternative 5C) and 78.3 percent (under Alternative 7) of on-site runoff from the total impervious surface areas within the project area, which would be an improvement over the existing condition. Therefore, permanent impacts to the water quality of groundwater in the vicinity of the I-710 Corridor Project would be minimal following the completion of construction because there would not be any increase in the transport of pollutants into the groundwater through infiltration during the operational life of the new structures.

Although all build alternatives will result in increased surface water runoff due to the increase in paved surface area, the project design includes features to capture and treat runoff before it enters the Los Angeles River.

S.5.10 - Geology, Soils, Seismic, and Topography

S.5.10.1 - Build Alternatives

The roadway, structures, and other features of the both build alternatives could be impacted by ground motion and liquefaction and possible ground rupture (deformation), to some degree. Design and construction of the I-710 Corridor Project to current highway and structure design standards, including applicable seismic standards, would minimize the potential impacts on the build alternatives.

A bioswale storm water runoff treatment feature.

S.5.11 - Paleontology

S.5.11.1 - Build Alternatives

Permanent impacts from the build alternatives on paleontological resources (fossils) would include destruction of paleontological resources, damage to paleontological resources during grading, destruction of rock units that may contain paleontological resources, loss of contextual data associated with paleontological resources, and loss of associations between paleontological resources. However, impacts to paleontological resources can be mitigated through monitoring and fossil recovery during construction.

Certain areas of the I-710 Corridor have a high sensitivity for the presence of fossils. During grading in these areas, monitoring will be conducted to collect any fossils unearthed during construction.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect the water quality, geology and paleontological resources of the area, please see Sections 3.9-11 of the RDEIR/SDEIS.

S.5.12 - Hazardous Waste/Materials

S.5.12.1 - Build Alternatives

Hazardous waste risks associated with the build alternatives are related to property acquisitions, project construction, and project operation. There is potential for hazardous materials, including petroleum products, to exist within the Study Area and be disturbed by full or partial acquisitions or temporary construction easements under the build alternatives. Any contamination encountered during construction and excavation activities for the build alternatives would be properly handled, removed, remediated, and/or disposed of according to all applicable regulations. If one of the build alternatives is selected for implementation, each property of environmental concern to be acquired would require testing in order to characterize specific soil and/or groundwater contaminants on the property, and a site-specific hazardous waste remediation plan would be developed for the appropriate removal and disposal of materials. In addition, a remediation plan and site closure plan, if required, would be implemented to clean up the site and provide for any subsequent monitoring to ensure the contamination has been remediated below regulatory thresholds. Operation and maintenance of the facilities proposed as part of the build alternatives would not introduce new sources of hazardous materials/waste. Routine maintenance activities would be required to follow applicable regulations with respect to handling and disposal of potentially hazardous materials. Vehicles traveling on the I-710 mainline would continue to transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources. However, the purpose of the I-710 Corridor Project is to improve traffic safety, which could reduce traffic accidents that could result in hazardous waste spills. Implementation of the build alternatives would not result in a substantial permanent adverse impact related to hazardous waste and materials.

The Study Area includes many properties such as oil fields, industrial areas, and gas stations where there is a potential to encounter hazardous waste. To mitigate this impact, any soil and groundwater contamination would be cleaned up prior to the start of construction in these areas.

If you are interested in reading more about hazardous waste/materials concerns in the area, please see Section 3.12 of the RDEIR/SDEIS.

S.5.13 - Air Quality

S.5.13.1 - Build Alternatives

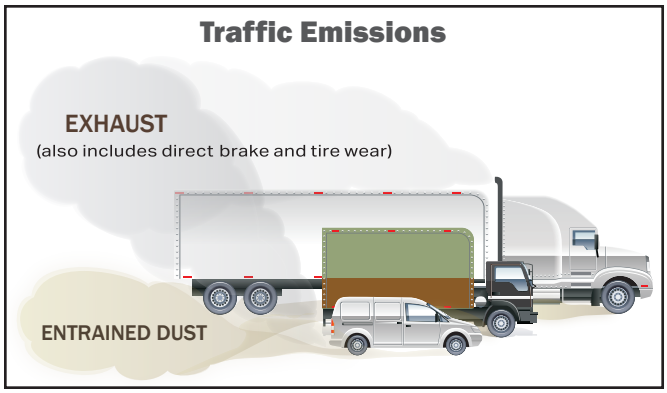
Table S-4 provides a listing of the air pollutants, their sources, and their adverse effects, which are evaluated in the I-710 air quality analysis.

Table S-4: Summary of Air Pollutants

Pollutants	Sources	Primary Effects
Ozone (O3)	• Atmospheric reaction of organic gases with nitrogen oxides in the presence of sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Nitrogen Dioxide (NO2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Carbon Monoxide (CO)	• By-products from incomplete combustion of fuels and other carbon containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Suspended Particulate Matter (PM2.5 and PM10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Ultrafine Particulates	• Both manufactured and naturally occurring. • Vehicle exhaust. • Combustion reactions. • Smoke.	• Ultrafine particles are deposited in the lungs where they have the ability to penetrate tissue, or to be absorbed directly into the bloodstream. Exposure to ultrafine particulates can induce lung disease and other systemic effects.
Sulfur Dioxide (SO2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.
Mobile Source Air Toxics (MSAT)	• Vehicle exhaust. • Includes acetaldehyde, acrolein, benzene, 1,3-butadiene, diesel particulate matter (DPM), and formaldehyde	• Increased risk of cancer, neurological and reproductive disorders, blood disease, birth defects, developmental damage, kidney and liver damage, and respiratory disease.
Greenhouse Gases (GHG)	• Fuel combustion. • Includes carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O).	• Global climate change (GCC). Alterations in weather features that occur across the Earth as a whole, including temperature, wind patterns, precipitation, and storms.

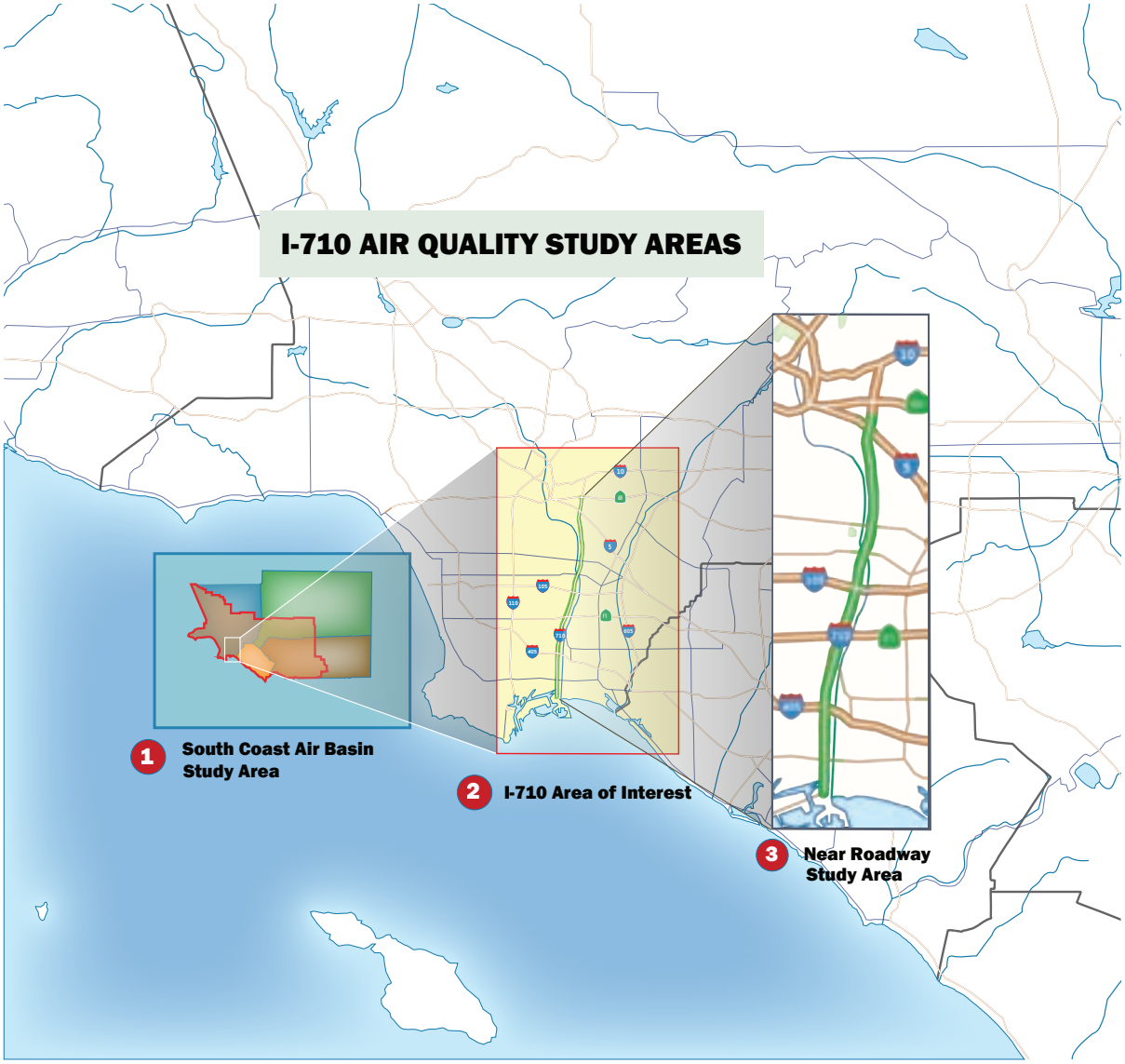
S.5.13.2 - Project Study Area

Given the size of the I-710 Corridor Project and its impact on the region, incremental mobile source (traffic-generated) emission impacts were assessed for the Basin, an Area of Interest (AOI) or sub-region of the Basin that includes cities and communities along the I-710 freeway and the I-710 freeway itself (see Figure S-1). For the Air Quality/Health Risk Assessment (AQ/HRA) dispersion modeling analyses, the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) dispersion model and a coarse receptor grid were used to determine a zone of impact of the emissions from the I-710 freeway itself. This modeling zone of impact was generally the size of the I-710 Study Area and smaller than the AOI.



A comprehensive Air Quality/Greenhouse Gas/Health Risk Assessment (AQ/GHG/HRA) was conducted to study the effects of the build alternatives.

Figure S-1: I-710 Air Quality Study Areas



S.5.13.3 - Air Quality/Health Risk Assessment Alternatives Comparison Summary

Multiple metrics were used to assess the air quality impacts and health risks of the project alternatives. A single metric cannot, and should not, be used to evaluate the full impacts of any build alterative. The results of the different analyses should be considered together to give a fuller and more comprehensive understanding of project alternative air quality and health risk impacts. It should be noted that the specific benefits of the I-710 Corridor Project build alternatives would not occur under Alternative 1, but that the other projects assumed in the no build condition would provide some mobility and air quality benefits. Incremental emissions of criteria pollutants were calculated for each of the criteria pollutants and for the three project study areas (the Basin, the I-710 Study AOI, and I-710, which includes the freight corridor under Alternative 7) and compared to 2012 existing conditions and Alternative 1 (2035 No Build). In summary, the analyses show that:

- **Regional Traffic Emission Impacts:** Except for PM10 criteria, air toxic exhaust emissions are generally lower (sometimes as much as 90 percent lower) in the 2035 alternatives compared to 2012 Baseline emissions. The greatest reductions are in the Basin and I-710 Study AOI. The smallest reductions are along the I-710 freeway.
  - Air toxics are dramatically lower (95 percent or more) for all 2035 build alternatives compared to 2012. Although much of the reduction is from the turnover to diesel trucks that meet the latest EPA standards, ZE/NZE trucks further reduce cancer risk for the build alternatives.
  - Each of the 2035 alternatives would result in lower nitrogen oxides (NOX), carbon monoxide (CO), PM2.5 and volatile organic compound (VOC) emissions for all study areas when compared to 2012 Baseline emissions; only PM10 and sulfur dioxide (under Alternative 7 only) increase for the 2035 build alternatives.
  - Each of the 2035 build alternatives would result in lower NOx emissions, compared to the 2035 No Build Alternative, for all study areas. PM10, PM2.5, CO, and SO2 would increase, with the greatest increases occurring under Alternative 7. All increases are less than 190 lbs per day for the entirety of the 19-mile long project under Alternative 5C, or less than 640 lbs per day under Alternative 7.
- **PM10 and PM2.5 Emissions:** Overall the decrease in exhaust PM2.5 emissions for all 2035 alternatives as compared to 2012 Baseline is greater than the sum of the increases in tire wear, brake wear, and entrained road dust emissions. As a result total PM2.5 emissions show decreases for the 2035 alternatives when compared to the 2012 Baseline for all I-710 Corridor Project study areas. In the case of PM10 emissions, the increases in entrained road dust, tire wear and break wear (which are a direct function of vehicle miles traveled) far outweigh the decrease in exhaust PM10. Therefore, there are increases in total PM10 emissions for all the 2035 alternatives when compared to 2012 Baseline.
- **I-710 Freeway Near-Roadway Impacts:** The 2035 build alternatives show increases in near-roadway 24-hour PM10 impacts for several receptors located along the I-710 freeway as compared to 2035 No Build. The number of impacted receptors is larger in Alternative 7 as compared to Alternative 5C due to increased traffic along the corridor. The 2035 build alternatives show no change to a slight decrease in near roadway short-term PM2.5 impacts when compared to 2035 No Build at all modeled receptors for 2035 Alternative 5C and most modeled receptors for 2035 Alternative 7.
- **Greenhouse Gas (GHG) Reductions:** All of the alternatives, when compared to the 2012 Baseline, including the No Build Alternative, would decrease the regional traffic GHG emissions by approximately 13,000,000 metric tons of CO2e per year (25 percent from 2012 levels). When compared to the No Build conditions, the regional GHG emissions would remain essentially the same for Alternatives 5C and 7.
  - When compared to the 2035 No Build Alternative, Alternative 5C would increase the regional GHG emissions by approximately 10,000 metric tons of CO_2e per year and Alternative 7 would increase the regional GHG emissions by 20,000 metric tons of CO_2e per year. This is less than a 0.1 percent increase compared to the No Build Alternative. The 7ZE Option would reduce regional GHG emissions by 3 percent compared to the No Build Alternative. For the 2012 Baseline, the 2035 No Build, the 2035 Alternative 5C, the 2035 Alternative 7 and 2035 Alternative 7ZE only, GHG emissions are 52.61, 39.68, 39.69, 39.70 and 38.38 million metric tons of CO_2e per year, respectively.
- **PM2.5 Mortality/Morbidity and Ultrafine Particulates:**
  - Special I-710 Corridor Project qualitative analyses were conducted for PM2.5 mortality/morbidity and UFPs, using total PM2.5 and exhaust PM2.5 impacts, respectively, as surrogates.
    - The exposure of people along I-710 to particulate matter (PM)-related morbidity and mortality health risks should decrease relative to the 2012 Baseline in all parts of the I-710 Study AOI with the exception of some locations near the roadways (particularly for Alternative 7), as shown in the Air Quality/Health Risk Assessment Maps (Figures 4-6 and 19-24 in Appendix Q), of the RDEIR/SDEIS.
  - The public's exposure to UFPs should decrease for all 2035 build alternatives relative to the 2012 Baseline and 2035 No Build Alternative, even near the I-710 freeway and freight corridor.

- **Regional and Project-Level Conformity with the Federal Clean Air Act:**
  - The full scope of the I-710 Corridor Project is not currently in the 2016 RTP/SCS and the 2017 FTIP, both of which have been determined to be a plan and program, respectively, which conform with the Federal Clean Air Act, as amended. Both the RTP and FTIP will be amended to be consistent with the preferred alternative prior to the approval of the Final EIR/EIS. Project-level conformity with the Federal Clean Air Act will ultimately be determined through a quantitative PM analysis that will be conducted once a preferred alternative has been identified following the public review of this RDEIR/SDEIS.

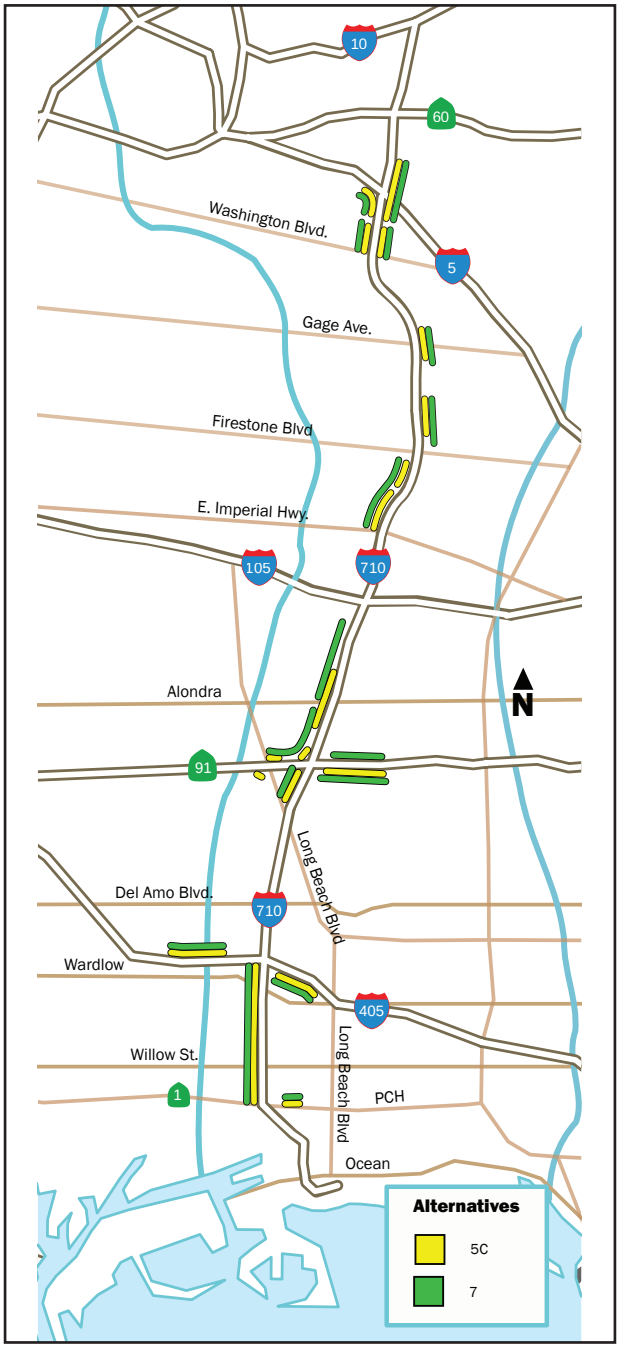
If you are interested in reading more about how the I-710 Corridor Project alternatives affect air quality, please see Section 3.13 of the RDEIR/SDEIS.

S.5.14 - Noise

S.5.14.1 - Build Alternatives

Traffic noise modeling results for the build alternatives compared predicted design-year traffic noise levels with the project to existing conditions and to design-year no build conditions. The comparison to existing conditions was included in the analysis to identify traffic noise impacts under 23 CFR 772. The comparison to the future no build condition indicates the traffic noise increase resulting from the project. Traffic noise impacts are predicted to occur throughout the I-710 Corridor, in addition to areas that already exceed Federal noise abatement criteria. Under Alternative 5C, 121 Category B sensitive land use receptors are subject to A/E (Approaches/Exceeds) and/or SNI (Substantial Noise Increase) impacts. Under Alternative 7, 139 Category B receptors are subject to A/E and/or SNI impacts. Soundwalls are proposed throughout the length of the project for all sensitive land use categories including residential areas, schools, and parks.

Ground-borne noise and vibration are mostly associated with passenger vehicles and trucks traveling on roads with poor conditions such as potholes, bumps, expansion joints, or other discontinuities in the road surface. Because the build alternatives would provide new asphalt pavement, there would be no discontinuities in the road surface that would generate ground-borne vibration or direct or indirect noise impacts from vehicular traffic on I-710.



Proposed soundwall locations along I-710

If you are interested in reading more about how the I-710 Corridor Project alternatives affect noise in the Study Area, please see Section 3.14 of the RDEIR/SDEIS.

S.5.15 - Energy

S.5.15.1 - Build Alternatives

Compared to 2012 existing conditions:

- 2035 No Build (Alternative 1) operational energy consumption decreases by 29 percent
- 2035 Alternative 5C operational energy consumption decreases by 35 percent
- 2035 Alternative 7 operational energy consumption decreases by 41 percent

Compared to 2035 no build conditions (Alternative 1):

- 2035 Alternative 5C operational energy consumption decreases by 8 percent
- 2035 Alternative 7 operational energy consumption decreases by 17 percent

Alternative 5C and 7 improvements would increase average travel speeds during peak hours, remove bottlenecks, and reduce delays. However, vehicle miles traveled (VMT) in the I-710 Corridor Project Study Area would also increase when comparing any of the build alternatives with the 2035 No Build condition (Alternative 1). Alternative 7 includes a Clean-Emission Freight Corridor that would only be utilized by zero emission/near-zero emission (ZE/NZE) heavy-duty trucks.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect energy use in the region, please see Section 3.15 of the RDEIR/SDEIS.

S.5.16 - Natural Communities

S.5.16.1 - Build Alternatives

Permanent direct and indirect impacts to natural communities would be greater under Alternative 7 than under Alternative 5C. A total of 11.23 acres of permanent direct impacts to estuarine habitat and riparian/riverine habitats would occur under Alternative 7, whereas Alternative 5C would permanently and directly impact 2.13 acres of these habitats. Additionally, Alternative 7 would permanently and indirectly impact 42.36 acres of estuarine habitat and riparian/riverine habitats, whereas Alternative 5C would permanently and indirectly impact 36.67 acres of these habitats. Potential hydraulic effects are associated with bridge modifications. However, as analyzed in Section 3.8 of this RDEIR/SDEIS, the proposed modifications would mimic the existing pier configurations upstream and downstream, and there would not be substantial effects to the water surface elevation, the velocity of flood flows, sedimentation, or scour in the vicinity of the new piers. Because there are no substantial effects at the location of the modifications, there are no substantial effects to downstream locations, including the estuarine habitat.

The I-710 Corridor Project will be designed to be compatible with the Los Angeles River Master Plan.

Because the I-710 Corridor has restricted wildlife movement and resulted in habitat fragmentation for many years, none of the build alternatives are expected to have an adverse effect on wildlife movement. Nonetheless, Alternative 7 would have a greater impact on wildlife corridors/habitat fragmentation than Alternative 5C, due to the larger footprint of the freight corridor associated with Alternative 7.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect natural communities, water, plant species, and animal species, please see Sections 3.16-19 of the RDEIR/SDEIS.

S.5.17 - Wetlands and other Waters of the U.S.

S.5.17.1 - Build Alternatives

In general, Alternative 7 would result in greater impacts to jurisdictional waters than Alternative 5C. Based on the information currently available, the worst-case impact scenario associated with Alternative 5C is expected to potentially result in direct permanent impacts to approximately 1.74 acres and, indirect permanent impacts to approximately 26.13 acres of United States Army Corps of Engineers (USACE) jurisdictional areas. In addition, Alternative 5C is expected to potentially result in direct permanent impacts to approximately 2.13 acres and indirect permanent impacts to approximately 36.51 acres of California Department of Fish and Wildlife (CDFW) jurisdictional areas. Furthermore, Alternative 5C is expected to potentially result in direct permanent impacts to approximately 1.74 acres and indirect permanent impacts to approximately 26.29 acres of Regional Water Quality Control Board (RWQCB) jurisdictional areas.

The worst-case impact scenario associated with Alternative 7 is expected to potentially result in direct permanent impacts to approximately 1.54 acres and indirect permanent impacts to approximately 28.56 acres of USACE jurisdictional areas. In addition, Alternative 7 is expected to potentially result in direct permanent impacts to approximately 1.96 acres and indirect permanent impacts to approximately 42.20 acres of CDFW jurisdiction. Furthermore, Alternative 7 is expected to potentially result in direct permanent impacts to approximately 10.80 acres and indirect permanent impacts to approximately 28.72 acres of RWQCB jurisdictional areas.

S.5.18 - Plant Species

S.5.18.1 - Build Alternatives

One of the sensitive plant species (southern tarplant) was identified in the Study Area. Alternative 5C would result in direct permanent impacts to two populations of southern tarplant, while Alternative 7 would result in direct permanent impacts to all three populations of southern tarplant, including the largest population near Rosecrans Ave. Also, both Alternatives 5C and 7 would result in indirect impacts to southern tarplant from shading.

Southern tarplant is one of the sensitive plant species within the Study Area.

S.5.19 - Animal Species

S.5.19.1 - Build Alternatives

Permanent impacts would be the same for all build alternatives at the location where burrowing owls were observed on two separate occasions in October and December 2009. An individual burrowing owl was also observed at this location on December 7, 2015. No other burrowing owls were found during the 2009 or 2015 surveys. Following refinement of the project alternatives since 2009, the location where burrowing owl individuals were observed is now outside the BSA; therefore, no direct impacts will occur in the area where burrowing owl presence was confirmed.

Permanent impacts would be similar for all build alternatives, since the majority of structures housing or potentially housing bats, including the multiple bridge and culvert structures where roosting bats (including special-status bat species) and/or sign of roosting bats were observed during the focused surveys performed in 2009 and 2015, will be subject to impacts in all alternatives. However, there are a few notable differences between the alternatives. Although the project footprint for Alternative 7 is larger than that of Alternative 5C, Alternative 5C will result in impacts to several structures potentially used by bats for roosting that are not part of the Alternative 7 project footprint, including SR-91 over Compton Creek, Artesia Blvd. over Compton Creek, Compton Channel culvert beneath Artesia Blvd., SR-91 Santa Fe Ave. Undercrossing, SR-91 Alameda St. Undercrossing, Slauson Ave. Bridge over the Los Angeles River, I-710 3rd St. Overcrossing, and structures associated with the SR-60/I-710 interchange. Alternative 7 will result in impacts to one structure that is not part of the Alternative 5C project footprint. This structure, a railroad bridge over the West Basin of the Dominguez Gap Wetlands, has a moderate to high probability of being used by bats for roosting.

The build alternatives are not expected to directly affect any of the other special-status animal species as a result of the avoidance and minimization measures described in Section 3.19.4; however, the project is expected to have permanent indirect and temporary impacts to these species through the loss of potential habitat. There is no critical habitat for any special-status species within the BSA; therefore, no critical habitat will be impacted by the proposed project. All of these species have a low to moderate regular occurrence probability, are widespread in distribution, and are not State or Federally listed as threatened or endangered. New bridge structures or significant changes to existing bridge structures could result in occasional bird strikes. The potential for bird-vehicle collisions cannot be quantified but is recognized as a potentially adverse effect. The avoidance and minimization measure described in Section 3.19.4 is expected to address this issue. Permanent impacts to other

nonlisted special-status species could occur in the form of direct mortality, habitat loss, and habitat fragmentation.

The build alternatives would include driving pilings in tidal waters across the Los Angeles River at the 7th St., Anaheim St., Pacific Coast Hwy, and Hill St. crossings. The percussive forces generated during pile-driving activities may result in hydroacoustic impacts to animal species in the vicinity, as discussed in Section 3.24.3.19.

S.5.20 - Threatened and Endangered Species

S.5.20.1 - Build Alternatives

Although no green sea turtles were observed in the BSA, any green sea turtles that might visit the area around the mouth of the Los Angeles River could be affected indirectly by changes in water quality originating upstream. However, by implementing the avoidance and minimization measures outlined in Section 3.16, Natural Communities, no noticeable changes in water conditions would occur. A "may affect but not likely to adversely affect" determination is anticipated regarding the green sea turtle. Concurrence with the USFWS will be requested after a preferred alternative is identified prior to completion of the Final EIR/EIS.

Similarly, the California least tern could be affected indirectly by project-generated changes in water quality. Additionally, new bridge designs could result in occasional bird strikes. However, by following the avoidance and minimization measures outlined in Sections 3.16, Natural Communities and 3.19, Animal Species, no noticeable changes in water conditions or bird strike frequency would occur. A "may affect but not likely to adversely affect" determination is anticipated regarding the California least tern. Concurrence with the USFWS will be requested after a preferred alternative is identified prior to completion of the Final EIR/EIS.

The coastal population of the western snowy plover could be affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the invertebrates on which they feed. New bridge designs could result in occasional bird strikes. However, by following the avoidance and minimization measures outlined in Sections 3.16, Natural Communities, and 3.19, Animal Species, no noticeable changes in water conditions or bird strike frequency would occur. A "may affect but not likely to adversely affect" determination is anticipated regarding the coastal population of the western snowy plover. Concurrence with the USFWS will be requested after a preferred alternative is identified prior to completion of the Final EIR/EIS.

All build alternatives would include the driving of piers/support structures on four bridges within the lower Los Angeles River that could affect California sea lions. Percussive forces generated during any pile-driving activities may result in injury to California sea lions within and adjacent to the BSA, where estuarine habitat exists. Once the pile driving and bridge construction are completed, bridges associated with the project would not impede the movement of California sea lions through the channel. Construction and expansion of the four bridges in the lower Los Angeles River would not alter movement of California sea lions through the channel.

The build alternatives include driving pilings in tidal waters across the Los Angeles River at the 7th St., Anaheim St., Pacific Coast Hwy., and Hill St. crossings. As discussed in Section 3.24.3.19, the percussive forces generated during pile-driving activities may result in injury and/or death to fish, sea turtles, or marine mammals (including species protected under the Federal Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, and the Marine Mammal Protection Act) within the impact area. However, through the use of proper equipment, potential adjustment of strikes per day, and attenuation methods (if needed), pile driving for the bridges can be completed within the acoustic limits established in the Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish (Caltrans 2015).

S.5.21 - Invasive Species

S.5.21.1 - Build Alternatives

Construction of the I-710 Corridor Project has the potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway. The potential spread of Caulerpa taxifolia (a nonnative seaweed) during construction and/or operation of the facilities is not expected because the invasive species was not observed in the BSA during the Estuarine Resources Environmental Assessment surveys. Nevertheless, preventative measures will be taken to prevent the spread of this species in accordance with the National Marine Fisheries Service Control Protocol. Impacts associated with Alternative 7 would be greater than impacts associated with Alternative 5C, given the larger area of disturbance associated with the freight corridor.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect threatened, endangered and invasive species, please see Sections 3.20 and 3.21 of the RDEIR/SDEIS.

S.5.22 - Cumulative Impacts

Cumulative impacts (both direct and indirect) were identified by considering the impacts of the I-710 Corridor Project and other current, or proposed actions in the area to establish whether, in the aggregate, they could result in cumulative environmental impacts. The analysis included review of adopted plans and related projects that may, in concert with the I-710 Corridor Project, have a cumulative adverse effect on sensitive resources in the Study Area and Los Angeles County. The reasonably foreseeable actions used in the cumulative impacts analysis were based on information provided by the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, which identified and approved pending developments proposed in the proximity of the Study Area. The individual Resource Study Areas (RSA) defined for each environmental topic were used to determine which proposed developments are considered close enough in proximity to the I-710 Corridor Project to be listed in Section 3.25, Cumulative Analysis.

The cumulative impact analysis evaluates the effects of the I-710 build alternatives in combination with other major projects in the Study Area, such as expansion of port terminals.

These files were cross-checked against files maintained by the State of California, Office of Planning and Research. Information on future transportation projects was provided by Caltrans, SCAG, Metro, and Gateway Cities COG. In addition, both POLA and POLB identified port improvement projects that should be considered in the cumulative impacts analysis.

The build alternatives, when combined with other cumulative projects, would contribute to cumulative land use, community character and cohesion, traffic (four intersections would remain impacted), visual, air quality (near corridor incremental concentration impacts only), noise, estuarine and riparian/ riverine habitats and species associated with this habitat, southern tarplant populations, green turtle and the California least tern (minor incremental), and relocation impacts. The build alternatives would not contribute to cumulative adverse impacts related to agricultural resources, growth, geology and soils, hazards and hazardous waste, hydrology and water quality, mineral resources, cultural resources, paleontological resources, energy, natural communities, wetlands, invasive species, population and housing, public services, recreation, or utilities and service systems.

If you are interested in reading more about the cumulative impacts of the I-710 Corridor Project, please see Section 3.25 of the RDEIR/SDEIS.

S.5.23 - Section 4(F) Properties

Potential impacts of the build alternatives to public parks and recreation facilities that qualify for protection under Section 4(f) of the 1966 U.S. Department of Transportation Act include:

- Parque Dos Rios
- Cesar E. Chavez Park and Drake/Chavez Greenbelt
- Bandini Park/Batres Community Center Los Angeles River and Rio Hondo Trails
- Dominguez Gap and DeForest Treatment Wetlands

At Cesar E. Chavez Park and Drake/Chavez Greenbelt, permanent use of land under both Alternatives would occur; however, consolidation and shift of the Shoreline Dr. corridor would result in a larger, more functional park at Cesar E. Chavez Park. Additionally, temporary closures to public access for portions of the Cesar E. Chavez Park would occur under both Alternatives. At Bandini Park, Alternative 5C and Alternative 7 would include an elevated structure that would pass over the northwestern corner of Bandini Park and an aerial easement would be required. Both

build alternatives would require temporary construction easements (TCEs) and result in temporary closures of Bandini Park during construction. Both Alternatives 5C and 7 would result in short-term, temporary closures of the Los Angeles River and Rio Hondo Trails during construction. Finally at the Dominguez Gap and De Forest Treatment Wetlands, Alternatives 5C and 7 would result in an expanded aerial easement. Alternative 7 would also require the permanent incorporation of some acreage of the West Basin of the DeForest Treatment Wetlands. Both build alternatives would require TCEs, and Alternative 7 would require the temporary removal of portions of the West Basin of the Dominguez Gap and DeForest Treatment Wetlands during construction.

Parks are provided special protection under Section 4(f) of the 1966 U.S. Department of Transportation Act.

For Parque Dos Rios, permanent use of land under Alternatives 5C and 7 as well as TCEs for both alternatives would be required. Alternative 5C would result in the permanent incorporation of 1.68 acres of land from Parque Dos Rios into the transportation facility. Alternative 7 would result in the permanent incorporation of 3.21 acres of land from Parque Dos Rios into the transportation facility. However, the remnant parcel outside the alternative footprint would have limited functionality/accessibility. Therefore, Alternative 7 would result in the permanent use of the entire 8.6-acre park, and Alternative 7 would adversely affect the activities, features, and attributes of the 4(f) resource.

The build alternatives would result in a de minimis use of four parks/recreational areas, Cesar E. Chavez Park and Drake/Chavez Greenbelt, Bandini Park/Batres Community Center, the Los Angeles River and Rio Hondo Trails, and the Dominguez Gap and DeForest Treatment Wetlands; and three historic sites, the Union Pacific Railroad Rail Lines, Boulder Dam-Los Angeles Transmission Lines, and Dale's Donuts.

If you are interested in reading more about how the I-710 Corridor Project alternatives affect Section 4(f) properties in the Study Area, please see Appendix B of the RDEIR/SDEIS.

S.5.24 - Construction Impacts

Key findings related to construction impacts of the build alternatives are as follows:

Land Use: Construction of the I-710 build alternatives would temporarily affect nearby land uses and would include disruption of local traffic patterns and access to residences and businesses; increased traffic congestion; and increased noise, vibration, and dust. In addition, construction of the build alternatives would result in temporary impacts to pedestrian and bicyclist access points to regional and local trails and bikeways (including the Los Angeles River Trail), and short-term closures of segments of bikeways in the vicinity of new and/or modified interchanges.

Construction of any of the build alternatives will be a major undertaking. This photo shows a similar freeway widening project on I-5 in Orange County.

Parks and Recreation: Alternative 5C would require 0.26 acre on the west side of Parque Dos Rios for a TCE during project construction; however no TCEs would be required under Alternative 7 to Parque Dos Rios. During construction of Alternative 5C and Alternative 7, approximately 21.9 acres of Cesar E. Chavez Park would be required for a TCE). The TCE area includes a detour road of 0.41 acre, which would be graded and paved to allow temporary access during construction of realigned Broadway. Portions of Cesar E. Chavez Park may be temporarily closed to public access to protect the safety of park users and project construction workers. During construction of Alternatives 5C and 7, approximately 0.11 acre of land along the western perimeter of Bandini Park/Batres Community Center would be required for a TCE, and temporary closures of portions of the park would occur during construction to protect the safety of park visitors and project construction workers. Alternative 5C and Alternative 7 would require short-term, temporary closures of segments of the Los Angeles River and the Rio Hondo Trails, and some temporary trail crossings at I-710 and local streets during construction would occur.

Community Character and Cohesion: Construction of the improvements for the build alternatives is anticipated to result in short-term access disruptions related to construction and, therefore, result in a short-term impact to community character and cohesion. A Transportation Management Plan (TMP) would be implemented during construction of the I-710 Corridor Project in a cost-efficient and timely manner with minimal interference to the traveling public. In addition, construction jobs would be created by the construction of the build alternatives.

Environmental Justice: Construction activities would temporarily affect environmental justice populations. However, construction activities would provide jobs, which would benefit local economies that include minority and low-income populations.

The build alternatives will result in many construction and construction related jobs.

Utilities and Emergency Services: Construction activities that require closures of travel lanes and ramps could result in traffic delays that could affect the ability of fire, law enforcement, and emergency service providers to meet response time goals within the Study Area. Under all build alternatives, utility relocations would occur prior to project construction. For utilities that will be protected in place, standard construction measures, such as contacting Underground Service Alert, will be used to avoid impacting utilities and to avoid utility service disruptions.

Traffic Circulation, Pedestrians, and Bicyclists: During construction, the I-710 Corridor Project would result in temporary impacts to traffic circulation due to traffic diversions resulting from temporary closures to local roadways, sidewalks and bikeways, and freeway lanes and ramps. A TMP will be implemented to address changes in traffic flows and pedestrian and bicycle circulation and provide measures to minimize the adverse effects of construction activities on traffic flows and pedestrian and bicycle travel within the Study Area. In addition, construction of the build alternatives would result in temporary impacts to pedestrian and bicyclist access points to regional and local trails and bikeways (including the Los Angeles River and Rio Hondo Trails), and short-term closures of segments of bikeways in the vicinity of new and/or modified interchanges.

Visual/Aesthetics: Short-term visual impacts under the build alternatives would occur to sensitive viewers during the construction period and include views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of the I-710 widening and structures, construction vehicles, and construction staging areas. Construction activities are temporary, and the adverse visual impacts related to construction activity would cease after completion of construction. The effects of vegetation clearing would gradually improve over time as landscaping for the I-710 Corridor Project matures.

Construction activity results in a variety of short-term impacts, especially air quality, noise, and visual. An extensive program of construction mitigation measures would be implemented for any of the build alternatives.

Cultural Resources: There is the potential for direct impacts to buried cultural resources to occur during construction. However, all impacts to buried cultural resources are considered to be permanent impacts. Therefore, temporary impacts are not applicable to cultural resources.

Hydrology/Floodplains: Construction equipment would be operated within the Los Angeles River and Compton Creek 100-year floodplains during construction of the bridge and levee improvements discussed above under Permanent Impacts. Following the completion of construction activities within the 100-year floodplain, the disturbed area would be returned to the existing condition.

Water Quality: Events such as the accidental discharge of waste products produced during construction are of primary concern. Other concerns, such as disturbed soil and erosion of channel banks; runoff from the construction site; disturbance of existing channel-bottom sediments due to construction over and adjacent to local water bodies; resuspension of fine-grained bottom sediments; and removal and disposal of groundwater are potential issues during construction of the build alternatives. However, standard construction measures require the capture and treatment of all runoff from the construction area. The potential for temporary water quality impacts would be greater under Alternative 7 because more improvements are proposed under these alternatives and there would be more disturbed soil area and more work within and adjacent to the water bodies within the project area.

Geology, Soils, Seismic, and Topography: Construction activities related to the build alternatives may temporarily disturb soil outside the facility footprint, yet within the project right-of-way, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased possibility of soil erosion.

Paleontology: There is the potential for direct impacts to paleontological resources to occur during construction. However, all impacts to paleontological resources are considered to be permanent impacts. Therefore, temporary impacts are not applicable to paleontological resources.

Hazardous Waste: Alternative 7 would have a greater potential temporary hazardous waste impact prior to and during construction than Alternative 5C due to the larger footprint of the freight corridor associated with Alternative 7. Based on the findings of the records search and the site surveys, elevated concentrations of aerially deposited lead (ADL); asbestos-containing materials (ACMs), polychlorinated biphenyls (PCBs), and/or lead-based paint (LBP); and elevated concentrations of metals such as lead may be encountered during excavation and construction activities for all build alternatives. Contamination may be encountered during construction and excavation activities at those properties that require additional remediation; residual contamination may be encountered during construction and excavation activities at those properties that have received regulatory agency closure; and waste materials may be encountered during construction and excavation activities at those properties that operated as waste disposal sites. Additionally, contaminated groundwater may be encountered during construction.

Construction activities can create hazardous waste which will be disposed of at an appropriate disposal facility.

Air Quality/Greenhouse Gases: During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment are also anticipated and would include CO, NOX, VOCs, SOX, PM10, PM2.5, toxic air contaminants such as DPM, and GHGs. Thirty-year amortized annual average construction GHGs are calculated to be approximately 4,700 or 7,500 metric tons per year of CO2e for Alternatives 5C and 7, respectively. Although Caltrans has not adopted the SCAQMD significance criteria, when the worst-case construction scenario is assumed (i.e., simultaneous construction across all freeway sections), peak daily criteria air pollutant emission estimates for Alternatives 5C and 7 exceed the SCAQMD thresholds for all pollutants except for oxides of sulfur (SOX). For a single freeway section, peak daily criteria air pollutant emission estimates for Alternatives 5C and 7 are below SCAQMD thresholds for all pollutants except PM10 and NOX. An analysis of Best Available Control Technology (BACT) construction equipment shows that NOx and VOC emissions can be appreciably reduced, although these emissions may still exceed SCAQMD significance criteria.

Noise: During construction of the project, noise from construction activities may occasionally dominate the noise environment in the immediate project area. Construction noise is regulated by Caltrans Standard Specifications, Section 14-8.02, "Noise Control." These requirements state that noise levels generated during construction would be controlled and monitored and not to exceed 86 dBA Lmax at 50 feet from the job site between the hours of 9:00 p.m. to 6:00 a.m.

Energy: Construction equipment and construction worker vehicles operating during construction of the I-710 Corridor Project would use fossil fuels. This increased fuel consumption would be temporary, would cease at the end of construction activities, and would not have a residual requirement for additional energy input. The marginal increases in fossil fuel use resulting from project construction are not expected to have appreciable impacts on energy resources.

Natural Communities: Temporary impacts to natural communities may occur during construction of all build alternatives where habitats are temporarily disturbed during grading or other activities. In general, Alternative 7 would result in greater temporary impacts than Alternative 5C due to the increased number of structural bridge columns/piers associated with Alternative 7.

Controlling stormwater runoff during construction is critical to maintaining water quality in the Study Area.

Wetlands/Other Waters: Temporary impacts to jurisdictional areas may occur during construction where wetlands or waters are temporarily disturbed during pile-driving activities, construction of abutments, grading, or other activities. Alternative 7 would result in greater temporary impacts than Alternative 5C due to the increased number of piles within jurisdictional areas associated with Alternative 7.

Plant Species: Temporary impacts to populations of southern tarplant could result from implementation of any of the build alternatives. In general, Alternative 7 would result in greater temporary impacts to the populations of southern tarplant than Alternative 5C.

Animal Species: Both build alternatives could result in temporary impacts to burrows that could be used by the burrowing owls and to roosting bats of various species. Construction and expansion of the four bridges in the lower Los Angeles River would not alter long-term movement of California sea lions or fish protected under the Magnuson-Stevens Fishery Conservation and Management Act through the channel. No permanent effects would occur to essential fish habitat (EFH) except for a minimal permanent loss of channel bottom where the piles would be placed.

Threatened & Endangered Species: Temporary impacts to California least tern, Western Snowy Plover (coastal population), and green turtle could occur during construction from temporary indirect disturbance (noise, vibration, dust, night lighting, and human encroachment). Construction could temporarily impede movement along the Los Angeles River. California least terns could be affected indirectly by project-generated changes in water quality. Any green turtles that might visit the area around the mouth of the Los Angeles River could be temporarily affected indirectly by project-related changes in water quality originating upstream.

Invasive Species: Construction of the I-710 Corridor Project has the potential to spread invasive species through the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway.

Cumulative Impacts: Temporary cumulative impacts as a result of the proposed project, in combination with other past, present and future projects, are not considered to be adverse. All temporary impacts described in the above sections, as well as impacts for other projects in the Study Area, would each be minimized or mitigated and would, therefore, not have a cumulative impact to humans or the physical environment. Temporary cumulative impacts to traffic and circulation can also result from the construction of more than one project in a general area. In this case, TMPs for each project would be prepared in the future and would be coordinated to ensure adequate circulation in the area, including always maintaining the existing number of mainline freeway lanes.

If you are interested in reading more about how construction of the I-710 Corridor Project would affect the Study Area, please see Section 3.24 of the RDEIR/SDEIS.

S.5.25 - Public Health Considerations

Key findings related to the effects of the build alternatives on public health are as follows:

Parks and Recreation: The build alternatives would not result in an adverse impact in access to parks as a result of barriers to walking or biking, changes in pedestrian or bike safety near parks, or in a reduction in park acreage and, therefore, would not have adverse effects on public health related to park access. The expansion and reconfiguration of Cesar E. Chavez Park would have beneficial effects by increasing opportunities for public use of the park following the completion of construction.

Because improving air quality and reducing public health risk are key goals of the project, public health was considered in all aspects of the project environmental studies.

Community Character and Cohesion: Based on the nature of the changes in access in the Study Area, the proximity of these changes to residential and nonresidential properties, and the relocation availability and the Relocation Assistance Program (RAP) provided by Caltrans for the affected properties and considerations toward Last Resort Housing, the build alternatives would not result in isolation and/or segregation of residents without resources to relocate within their existing communities and, therefore, would not result in adverse effects to public health related to community character and cohesion.

While the build alternatives would result in some changes in access, these changes would not result in adverse impacts in access to schools within the Study Area. Once in operation, the build alternatives would not result in adverse impacts to modes of travel for students and would enhance access to schools by reducing traffic congestion. Therefore, the build alternatives would not result in adverse effects to public health related to access to schools.

Environmental Justice: The findings described above for Community Character and Cohesion would also apply to minority and low-income (environmental justice) populations within the I-710 Corridor.

Utilities and Emergency Services: Recognizing both public concern and scientific uncertainty over possible health effects from electromagnetic field (EMF) exposure, the California Public Utilities Commission (CPUC) adopted a precautionary approach to reduce EMF exposures in 1993 (updated in 2006). While keeping electrical safety and good engineering practice as first priority, investor-owned electric utilities in California utilize design to reduce magnetic fields created by new and rebuilt electric facilities. As the relocation of electrical transmission and distribution lines for the I-710 Corridor Project will utilize designs to reduce EMFs consistent with the CPUC guidance described above, public health considerations regarding EMFs are not considered a concern.

Regarding emergency response time, other than the above-described effects, (adverse effects during construction and beneficial effects once the project is operational), public health was considered not to be a topic of concern for emergency services.

Traffic Circulation, Pedestrians, and Bicyclists: The project would improve pedestrian facilities (sidewalks) by replacing the old ones that will be removed as part of the project. Bike travel would also be improved by providing new pavement on the arterial bridges that will be replaced over I-710 and the Los Angeles River, as well as new bicycle/pedestrian crossings. In many cases, existing interchanges will be replaced with diverging diamond interchange configuration interchanges. Bicyclists and pedestrians are a consideration in the design of these types of interchanges and appropriate treatments are applied to balance vehicle, bicycle, and pedestrian use. Caltrans' Complete Intersections: A Guide to Reconstructing Intersections and Interchanges for Bicyclists and Pedestrians (Caltrans 2010) will be used during the design process. Because sidewalks will be improved, bikeways and trails will be maintained, and bicycle and pedestrian connectivity will be enhanced, the I-710 Corridor Project would improve conditions for pedestrian and bicycle travel, thereby resulting in a beneficial effect to public health considerations related to congestion and mobility.

Modernizing the design of I-710 is expected to reduce the number of total and fatal accidents, resulting in accident rates on I-710 that are more reflective of the statewide average for a similar facility. This expected reduction in accidents would reduce public health risks related to traffic safety.

Bicycle trails and bikeways will be maintained during and after construction.

Water Quality: Water quality BMPs would be implemented to treat stormwater runoff during construction and operation of the build alternatives. As a result, the build alternatives are not anticipated to degrade the water quality of the receiving waters. Treatment BMPs would be designed to drain and eliminate standing water; therefore, vectors (such as mosquitoes) would not be of concern. Therefore, the build alternatives would not pose risks to public health related to hydrology and water quality.

Geology, Soils, Seismic, and Topography: The primary public health consideration related to geology is seismic safety. All new and modified bridge structures included in the build alternatives would be designed and constructed in accordance with Caltrans' latest seismic design criteria, thus minimizing public health risk concerns associated with structure collapses during an earthquake.

Technicians testing for hazardous materials.

Hazardous Waste: The modern design of the I-710 Corridor Project under any of the build alternatives will result in reduced risk of traffic accidents, including those that could result in hazardous waste spills. Alternative 7 further reduces the public health risk of hazardous waste spills by separating truck traffic from automobile traffic as a result of the freight corridor component of the alternatives. For these reasons, implementation of the build alternatives would not increase public health risks related to hazardous waste and materials in the short term and would decrease these risks in the long term as a result of the cleanup and remediation of hazardous waste contamination on properties that would be acquired for the project.

Air Quality: Either project alternative would generally improve air quality and reduce public health risk in the Basin and the I-710 AOI. Along I-710, air quality would be improved and public health risk would be reduced at most locations, but there are a few nearby roadway locations where there would be an increase in certain emissions but no increase in cancer risk compared to 2012. There are no feasible mitigation measures to reduce these localized near-roadway impacts; therefore, these would be unavoidable adverse impacts.

Noise: The proposed noise barriers to be constructed under either of the build alternatives would reduce noise levels for people living and working in the I-710 Corridor.

If you are interested in reading more about public health considerations for the I-710 Corridor Project alternatives, please see each topical section in Chapter 3 of the RDEIR/SDEIS.

S.6 - Summary of Significant Impacts under CEQA after Mitigation

As discussed in detail in Chapter 4.0, CEQA Evaluation, the following impacts of the build alternatives were determined to be significant, adverse, and unavoidable after implementation of the identified avoidance, minimization, and mitigation measures, as well as the project design features:

Permanent Air Quality Impacts: Although most areas would experience improved air quality, some near-roadway sensitive receptors would be exposed to substantial pollutant concentrations that cannot be mitigated.

Permanent Land Use and Planning Impacts: Within the Cities of Commerce, Compton, Bell, and Long Beach

Alternative 7 would result in relocations resulting in a significant unavoidable impact to community character and cohesion. Impacts would also occur under Alternative 5C; however, community character and cohesion would remain intact under this alternative.

A neighborhood near I-710.

Permanent Population and Housing Impacts: Alternative 5C and the Design Options would result in between 109 and 128 residential displacements, and Alternative 7 would result in a total of between 121 and 140 residential relocations, depending on design options. Some of these displaced residences are in areas (mainly the Cities of Commerce and Compton) where there is insufficient replacement housing available. Therefore, it will not be possible to relocate all displaced residents within their community or an area within reasonable proximity to their community. For this reason, the construction of replacement housing in these areas may be necessary.

Permanent Traffic and Transportation Impacts: Mitigation measures have not been recommended for four impacted intersections as mitigation would be infeasible due to right-of-way constraints and potentially severe impacts to adjacent properties within the affected cities. These four intersections would be adversely impacted by the build alternatives and would result in increased delay relative to the future No Build Alternative conditions.

Mandatory Findings of Significance: Although the build alternatives provide benefits in terms of addressing the need and purpose of the project, incremental adverse effects of the proposed project are considerable when viewed in connection with the effects of past, current, and probable future projects. Additionally, the project would likely cause substantial adverse effects on human beings, as indicated by discussions of residential displacements associated with the proposed project.

The remaining impacts of the build alternatives were determined to be either not significant or able to be avoided or reduced to below a level of significance based on implementation of the project avoidance, minimization, and mitigation measures and project design features, as described in detail in Chapter 4.0. Table S-5 summarizes the significant impacts identified during the CEQA evaluation and the relevant mitigation measures applicable for each impact.

S.7 - Areas of Controversy and Unresolved Issues

Based on input during the MCS, public scoping, and public outreach efforts, the following areas of public concern have been identified. Some of the issues raised may be considered controversial.

Air Quality/Health Risk: Air quality and health risk continue to be controversial public issues because of the high emissions levels and resulting health risk to populations along the I-710 Corridor due to existing traffic congestion and truck traffic from the Ports.

USEPA Comments: The USEPA has raised concerns regarding the analytical methodologies used to evaluate potential impacts of the I-710 Corridor Project as well as concerns about potential impacts to low income and minority populations. Caltrans is continuing to work with the USEPA to address their concerns.

Noise: All of the build alternatives would result in noise impacts to sensitive receptors along the I-710 Corridor. Noise barriers have been proposed to reduce these impacts.

Utility Relocations: The project design is not advanced enough to determine the specific locations of some utility relocations.

Acquisition of Private Property/Displacements: Although the design of the build alternatives has been refined to minimize the need to acquire private property for the project, acquisition of property and displacement of existing residences and businesses may be controversial with individual property owners.

Caltrans, Metro, and the other I 710 Funding Partners are continuing to work with the community to resolve concerns within the ongoing community participation framework of the I-710 Corridor Project.

Table S-5: CEQA Significance Chart

Resource Area	CEQA Determination	Mitigation Measures	Alternatives
Aesthetics			
Substantially degrade the existing visual character or quality of the site and its surroundings?	Less Than Significant with Mitigation	Measures VIS-1 through VIS-12 provided in Section 3.6.4, Visual/ Aesthetics	Alternative 7 would result in greater aesthetic impacts than Alternative 5C.
Air Quality			
Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Significant and Unavoidable Impact	Measure AQ-1 in Section 3.13, Air Quality	Alternatives 5C and 7 would result in the same impacts.
Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	Significant and Unavoidable Impact	Measure AQ-1 in Section 3.13, Air Quality	Alternative 7 would result in incremental SO2 increases, while Alternative 5C would result in incremental SO2 decreases.
Expose sensitive receptors to substantial pollutant concentrations?	Significant and Unavoidable Impact	Measures AQ-1 through AQ-3 in Section 3.13, Air Quality	Alternatives 5C and 7 would result in the same impacts.
Biological Resources			
Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Less Than Significant with Mitigation	Measures NC-1 in Section 3.16, Natural Communities; CON-PS-1 in Section 3.24, Construction Impacts; AS-1 in Section 3.19.4, Animal Species; CON-AS-1 through CON-AS-14 in Section 3.24, Construction Impacts; CON-NC-2 through CON-NC-13 in Section 3.24; CON-INV-3 in Section 3.24; CON-TES-1 through CON-TES-4 in Section 3.24	Impacts vary between Alternatives 5C and 7 with regard to plant species, animal species, and natural communities; however, in general, Alternative 7 may result in greater impacts due to its larger footprint than that of Alternative 5C.
Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	Less Than Significant with Mitigation	Measure NC-1 in Section 3.16, Natural Communities	Generally, Alternative 7 may result in greater impacts due to its larger footprint than that of Alternative 5C.

Table S-5: CEQA Significance Chart

Resource Area	CEQA Determination	Mitigation Measures	Alternatives
Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Less Than Significant with Mitigation	Measure NC-1 in Section 3.16, Natural Communities	Generally, Alternative 7 may result in greater impacts due to its larger footprint than that of Alternative 5C.
Cultural and Paleontological Resources			
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less Than Significant with Mitigation	Measure PAL-1 in Section 3.11, Paleontology	Alternatives 5C and 7 would result in the same impacts.
Geology Soils			
a.iii) Seismic-related ground failure, including liquefaction?	Less Than Significant with Mitigation	Measures GEO-1 in Section 3.10, Geology and Seismology; CON-GEO-1 in Section 3.24, Construction Impacts	Alternatives 5C and 7 would result in the same impacts.
Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less Than Significant with Mitigation	Measures GEO-1 in Section 3.10, Geology and Seismology; CON-GEO-1 in Section 3.24, Construction Impacts	Alternatives 5C and 7 would result in the same impacts.
Hazards and Hazardous Materials			
Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Less Than Significant with Mitigation	Measures HW-1 through HW-11 listed in Section 3.12, Hazardous Materials, and Measures CON-HW-1 through CON-HW-3 listed in Section 3.24, Construction Impacts	Alternatives 5C and 7 would result in the same impacts.
Land Use and Planning			
Physically divide an established community?	Significant and Unavoidable Impact	None Identified	Alternative 5C and Alternative 7 would result in similar impacts to community cohesion; however, additional impacts to the community would result from the implementation of Alternative 7 due to the increased right of way required for the four-lane freight corridor.

Table S-5: CEQA Significance Chart

Resource Area	CEQA Determination	Mitigation Measures	Alternatives
Noise			
Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less Than Significant with Mitigation	Measure N-1 in Section 3.14, Noise	Receptors within the I-710 Study Area would experience substantial noise increases over existing noise levels for both alternatives; however, Alternative 7 would result in slightly higher impacts to receptors than Alternative 5C.
Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Less Than Significant with Mitigation	Measure CON-N-1 and CON-N-2 in Section 3.24, Construction Impacts	Alternatives 5C and 7 would result in the same impacts.
A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Less Than Significant with Mitigation	Measure N-1 in Section 3.14, Noise	Receptors within the I-710 Study Area would experience substantial noise increases over existing noise levels for both alternatives; however, Alternative 7 would result in slightly higher impacts to receptors than Alternative 5C.
Population and Housing			
Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	Significant and Unavoidable Impact	None Identified	Alternative 7 would generally result in greater displacement impacts than those associated with Alternative 5C.
Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	Significant and Unavoidable Impact	None Identified	Alternative 7 would generally result in greater displacement impacts than those associated with Alternative 5C.
Public Services			
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection? Police protection? Schools? Parks? Other public facilities?	Less Than Significant with Mitigation	Measures C-1 through C-4 in Section 3.4, Communities; CON-TR-1 in Section 3.24 Construction Impacts	Both alternatives would result in facility acquisitions; however, Alternative 7 would result in some additional facility acquisitions when compared to Alternative 5C.

Table S-5: CEQA Significance Chart

Resource Area	CEQA Determination	Mitigation Measures	Alternatives
Parks and Recreation			
Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Less Than Significant with Mitigation	Measures PR-1 through PR-23 in 3.1, Land Use	Alternatives 5C and 7 would result in the same impacts.
Transportation and Traffic			
Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Significant and Unavoidable Impact	None Identified	Alternatives 5C and 7 would result in the same impacts.
Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	Significant and Unavoidable Impact	None Identified	Alternatives 5C and 7 would result in the same impacts.
Utilities and Service Systems			
Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	Less Than Significant with Mitigation	Measure FP-2 in Section 3.8, Hydrology and Floodplains	Generally, Alternative 5C and Alternative 7 would result in similar impacts; however, the Dominguez Gap Spreading Grounds would be only be impacted by the freight corridor in Alternative 7.

Table S-5: CEQA Significance Chart

Resource Area	CEQA Determination	Mitigation Measures	Alternatives
Mandatory Findings of Significance			
Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	Less Than Significant with Mitigation	Refer to Section 4.4, Mitigation Measures for Significant Impacts under CEQA	Both of the alternatives have the potential to degrade the environment as a result of impacts to the following: natural communities, plant communities, and wetlands and other waters.
Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	Significant and Unavoidable Impact	None Identified	Both alternatives, when combined with other cumulative projects, would contribute to cumulative impacts related to air quality, land use and planning, noise, population and housing, and lastly, transportation and traffic.
Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Significant and Unavoidable Impact	None Identified	Both alternatives would have direct and indirect adverse impacts on human beings that cannot be mitigated to a level below significance.

S.8 - Coordination with Public and other Agencies

Early and continuing coordination between the general public and public agencies with the I-710 Corridor Funding Partners (Caltrans, Metro, Gateway Cities COG, POLB, POLA, SCAG, and the I-5 JPA) has been and will continue to be an essential part of the environmental process in order to determine the scope of environmental documentation, the level of analysis, any potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including an extensive multi-tiered community participation process with numerous public meetings and interagency coordination meetings. Chapter 5.0 summarizes the results of the efforts by Caltrans, Metro, and the I-710 Corridor Project partner agencies to fully identify, address, and resolve project-related issues through early and continuing coordination.

The continuing coordination efforts have resulted in the identification of Cooperating and Participating Agencies. A Cooperating Agency, as defined in NEPA, is any Federal agency, or State or local agency of similar qualification, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative (40 CFR 1508.5). In addition, a Cooperating Agency may adopt, without recirculation of, the environmental impact statement of a lead agency when, after an independent review of the statement, the Cooperating Agency concludes that its comments and suggestions have been satisfied, pursuant to 40 CFR 1506.3. Participating Agencies are those with an interest in the project; therefore, all Cooperating Agencies are also Participating Agencies. However, while the roles and responsibilities of Cooperating and Participating Agencies are similar, the Cooperating Agencies have a higher degree of authority, responsibility, and involvement in the environmental review process. It is at the lead agency's discretion to consider these distinctions in deciding whether to invite an agency to serve as a Cooperating or Participating Agency or only as a Participating Agency. Under CEQA, a Responsible Agency is any public agency, other than the lead agency, which has the responsibility for any discretionary approvals (e.g., a permit) necessary to implement the project.

S.9 - Summary Comparison of Alternatives

Table S-6 on the following pages provides a summary comparison of Alternative 1, Alternative 5C, and Alternative 7 for key environmental topics of concern.

Table S-6: Summary Comparison of Alternatives

Alternatives and Environmental Topics	Alternative 1 No Build	Alternative 5C	Alternative 7
Alternative Descriptions	No change to I-710	Widen I-710 in several sections and modernize I-710 geometrics • Includes a Corridor Aesthetic Master Plan Programmatic elements (ZE/NZE Truck Deployment, Community Health Benefit)	Modernize geometrics and add a separated freight corridor (two lanes each direction, four lanes total) • Includes a Corridor Aesthetic Master Plan Programmatic elements (ZE/NZE Truck Deployment, Community Health Benefit)
Air Quality/Health Risk Assessment	The I-710 Corridor Project would not be implemented and the specific benefits of the I-710 Corridor Project build alternatives would not occur under Alternative 1. However, the other projects assumed in the no build condition would provide mobility and air quality benefits.	• Project area particulate matter emissions increase compared to no project conditions • MSAT and criteria pollutant emissions would decrease compared to existing conditions • Reduced public health risk at most locations, but at some near-roadway locations emissions would increase	• Project area particulate matter emissions increase compared to no project conditions • MSAT emissions and criteria pollutant emissions would decrease compared to existing conditions • Public health risk would be similar to the health risks associated with Alternative 5C, with slightly higher particulate matter impacts
Community Impacts			
Displacements	No displacements	Between 109 and 128 residential and between 157 and 165 nonresidential displacements (depending on the design option).	Between 121 and 140 residential and between 206 and 213 nonresidential displacements (depending on the design option).
Access	No changes to access	• Improved pedestrian access • Alternative routes maintain existing access • Five new bicycle/pedestrian-only bridges	• Improved pedestrian access • Alternative routes maintain existing access • Addition of a new I-710/Slauson Ave. freight corridor partial interchange • Three new bicycle/pedestrian-only bridges

Table S-6: Summary Comparison of Alternatives

Alternatives and Environmental Topics	Alternative 1 No Build	Alternative 5C	Alternative 7
Parks & Recreation	No changes to parks and recreation facilities	Impacts to the following facilities: Parque Dos Rios, Compton Hunting and Fishing Club, Maywood River Park (indirect impacts), Coolidge Park (indirect impacts), Bandini Park (permanent aerial easement), Wrigley Greenbelt (temporary construction easement), Los Cerritos Park (temporary construction easement), Cressa Park (temporary construction easement), Cesar E. Chavez Park access/parking benefit, and Los Angeles River Trail and Rio Hondo Trail improved access	Impacts to the following facilities: Parque Dos Rios, Compton Hunting and Fishing Club, Maywood River Park (indirect impacts) Coolidge Park (indirect impacts), Bandini Park (permanent aerial easement), Los Cerritos Park (temporary construction easement), Cressa Park (temporary construction easement), Cesar E. Chavez Park access/parking benefit, and Los Angeles River Trail and Rio Hondo Trail improved access
Noise	The build alternatives would not be implemented and, therefore, there would be no noise impacts.	• 2.2 miles of proposed new noise barriers and 5.3 miles of noise barriers to replace existing.	• 2.7 miles of proposed new noise barriers and 6.8 miles of noise barriers to replace existing.
Visual	The build alternatives would not be implemented. Therefore, there would be no visual impacts from the I-710 Corridor Project.	Alternative 5C would have less visual impact than Alternative 7 because it would not include the elevated freight corridor.	Greater level of visual impact than Alternative 5C because it would include construction of the elevated freight corridor visible from nearby residential areas. The most substantial adverse visual impacts are in the Cities of Long Beach and South Gate, due to close proximity to freeway-to-freeway interchanges, sound barriers, and the elevated freight corridor.

Table S-6: Summary Comparison of Alternatives

Alternatives and Environmental Topics	Alternative 1 No Build	Alternative 5C	Alternative 7
Hazardous Waste	No changes to the existing physical environment and would not result in hazardous waste impacts	There is potential for hazardous materials, including petroleum products, to exist within the Study Area and be disturbed by full or partial acquisitions or temporary construction easements under Alternative 5C. Any contamination encountered during construction and excavation activities for Alternative 5C would be properly handled, removed, remediated, and/or disposed of according to all applicable regulations. If Alternative 5C is selected for implementation, each property of environmental concern to be acquired would require testing in order to characterize specific soil and/or groundwater contaminants on the property, and a site-specific hazardous waste remediation plan would be developed for the appropriate removal and disposal of materials. In addition, a remediation plan and site closure plan, if required, would be implemented to clean up the site and provide for any subsequent monitoring to ensure the contamination has been remediated below regulatory thresholds.	There is potential for hazardous materials, including petroleum products, to exist within the Study Area and be disturbed by full or partial acquisitions or temporary construction easements under Alternative 7. Any contamination encountered during construction and excavation activities for Alternative 7 would be properly handled, removed, remediated, and/or disposed of according to all applicable regulations. If Alternative 7 is selected for implementation, each property of environmental concern to be acquired would require testing in order to characterize specific soil and/or groundwater contaminants on the property, and a site-specific hazardous waste remediation plan would be developed for the appropriate removal and disposal of materials. In addition, a remediation plan and site closure plan, if required, would be implemented to clean up the site and provide for any subsequent monitoring to ensure the contamination has been remediated below regulatory thresholds. An elevated freight corridor would reduce public health risk from hazardous waste spills by separating truck traffic from automobile traffic.
Traffic	No improvements to I-710, other than those currently planned. Traffic conditions would continue to deteriorate over time due to increased traffic volumes caused by regional growth in traffic. Most segments are projected to operate at LOS F in the 2035 AM peak hour.	Alternative 5C has three segments of I-710 that operate at LOS F in the 2035 AM peak hour.	Alternative 7 has eight segments of I-710 that operate at LOS F in the 2035 AM peak hour.

Table S-6: Summary Comparison of Alternatives

Alternatives and Environmental Topics	Alternative 1 No Build	Alternative 5C	Alternative 7
Water Quality	Existing roadway runoff would be treated by the existing BMPs and is undergoing BMP development in accordance with the Stormwater permit. Therefore, the No Build Alternative would result in an improvement to water quality based on these BMPs.	Impervious surface would be increased by 156.4 acres. The BMPs would treat 74 percent of on-site runoff from the total impervious surface areas within the project area, which would be an improvement over the existing condition.	Impervious surface would be increased by 256.9 acres. The BMPs would treat 78.3 percent of on-site runoff from the total impervious surface areas within the project area, which would be an improvement over the existing condition.
Cultural Resources	The build alternatives would not be implemented. Therefore, there would be no impacts to historic resources from the I-710 Corridor Project.	Impacts to four historic resources: two segments of the UP Railroad, Dale's Donuts, and Boulder Dam-Los Angeles 287.5 kV Transmission Line. It was determined there would be no adverse effects on historic properties.	Impacts to four historic resources: two segments of the UP Railroad, Dale's Donuts, Boulder Dam-Los Angeles 287.5 kV Transmission Line. It was determined there would be no adverse effects on historic properties.
Biology/Natural Resources	Alternative 1 would not impact estuarine and riparian/riverine habits.	Permanent direct impacts to 2.13 acres of estuarine and riparian/riverine habitats and permanent indirect impacts to 36.67 acres of this habitat.	Permanent direct impacts to 11.23 acres of estuarine and riparian/riverine habitats and permanent indirect impacts to 42.36 acres of this habitat.

I-710 = Interstate 710
kV = kilovolt
LOS = level of service
MSAT = Mobile source air toxics
UP Railroad = Union Pacific Railroad
ZE/NZE = zero emission/near zero emission

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1.0 PROPOSED PROJECT

1.1 INTRODUCTION

The California Department of Transportation (Caltrans), in cooperation with the Los Angeles County Metropolitan Transportation Authority (Metro), the Gateway Cities Council of Governments (Gateway Cities COG), the Southern California Association of Governments (SCAG), the Ports of Los Angeles (POLA) and Long Beach (POLB) (collectively referred to as the Ports), and the Interstate 5 Joint Powers Authority (I-5 JPA) (collectively referred to as the I-710 Funding Partners), proposes to improve Interstate 710 (I-710, also referred to as the Long Beach Freeway) in Los Angeles County between Ocean Blvd. and State Route 60 (SR-60). The proposed project is referred to as the I-710 Corridor Project. I-710 is a major north-south interstate freeway connecting the City of Long Beach to central Los Angeles and beyond. Within the I-710 Corridor Project Study Area (Study Area), I-710 is a significant goods movement artery for the region and serves as the principal transportation connection for goods movement between POLA and POLB, located at the southern terminus of I-710, and the Burlington Northern Santa Fe Railroad (BNSF)/Union Pacific Railroad (UP Railroad) intermodal rail yards in the Cities of Commerce and Vernon, as well as intermodal warehouses along I-710. The I-710 Corridor is part of the Interstate Highway System and is used as a major local and regional truck route. I-710 is listed as a “high priority corridor” on the National Highway System (NHS), serving interregional vehicular traffic in the north-south direction from its terminus in the City of Long Beach to Interstate 10 (I-10). The existing I-710 freeway mainline generally consists of eight general purpose lanes north of Interstate 405 (I-405) and six general purpose lanes south of I-405. South of Pacific Coast Hwy. (State Route 1 [SR-1]), the facility is designated as State Route 710, whereas north of Pacific Coast Hwy., the facility is designated as I-710. Figure 1.1-1 shows the regional location.

The Study Area includes the portion of the I-710 Corridor from Ocean Blvd. in Long Beach to SR-60, a distance of approximately 19 miles and includes all or portions of the Ports, the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, as well as unincorporated areas of Los Angeles County, including the communities of East Los Angeles, Boyle Heights, Wilmington, and San Pedro. At the freeway-to-freeway interchanges, the Study Area extends east and west of the I-710 mainline for the I-405, State Route 91 (SR-91), Interstate 105 (I-105), and I-5 interchanges (see Figure 1.1-2). This is the general Study Area for the I-710 Corridor Project. Specific study areas have been established for individual environmental analyses (e.g., health risk assessment zone of influence and community impact assessment focus area).

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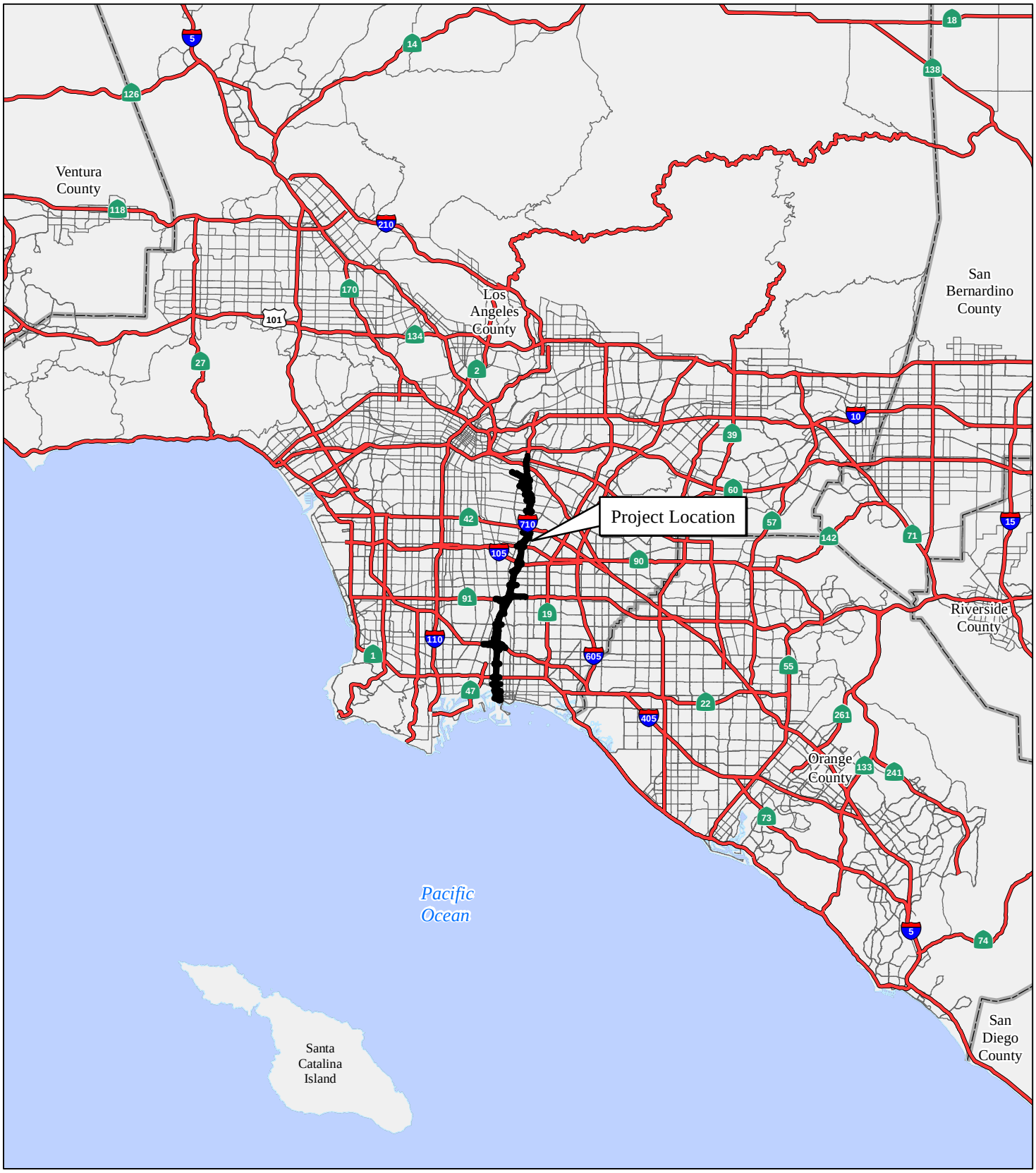

LEGEND

Project Location

FIGURE 1.1-1

I-710 Corridor Project
RDEIR/SDEIS

Regional Location

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

0 5 10
Miles

SOURCE: Esri (2015)

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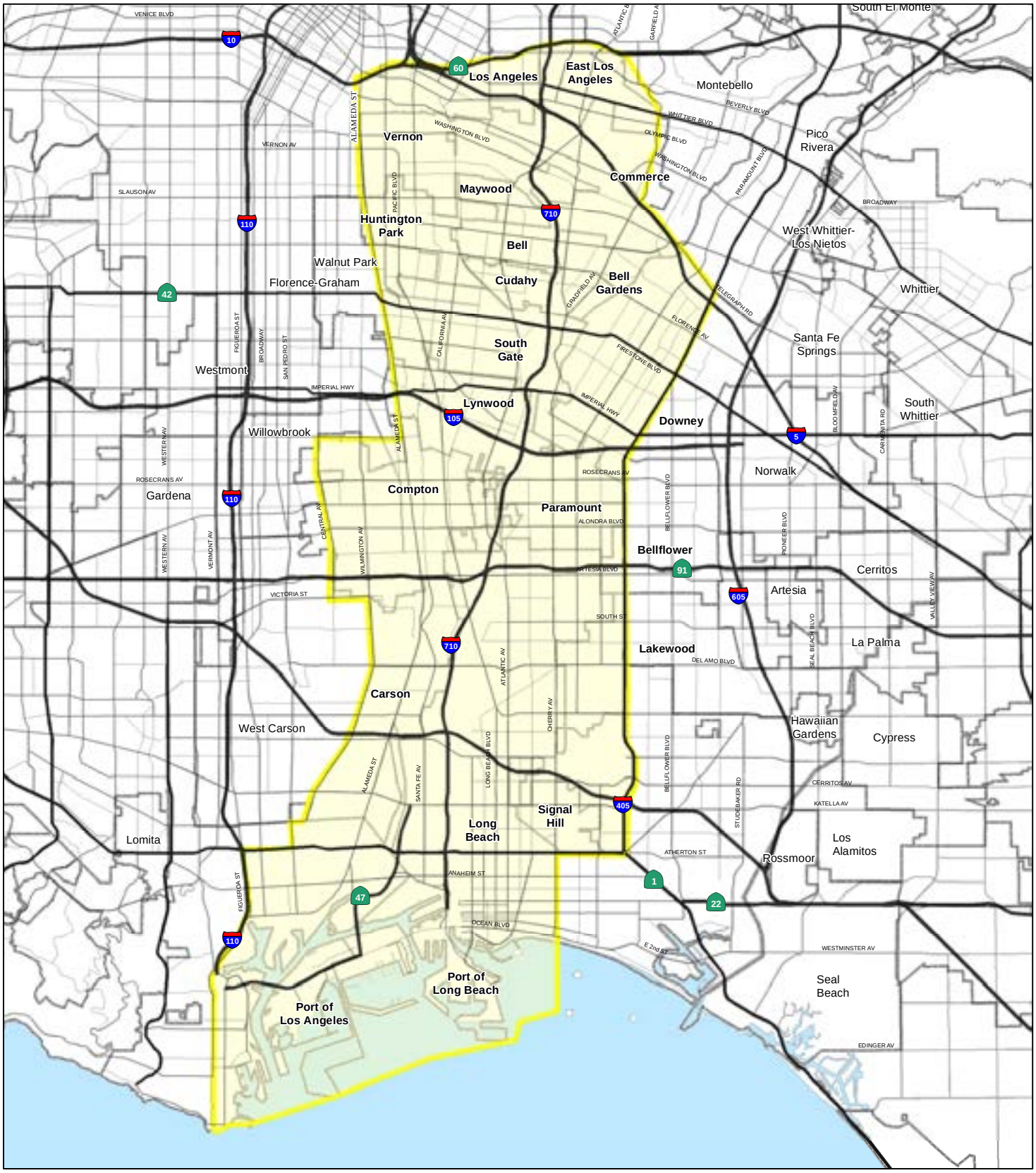

FIGURE 1.1-2

LEGEND

I-710 Study Area

N

0 1.5 3

Miles

SOURCE: Esri (2015)

I-710 Corridor Project
RDEIR/SDEIS

I-710 Project Study Area

07-LA-710- PM 5.4/24.5
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The existing I-710 Corridor has elevated levels of traffic congestion, elevated truck volumes, elevated accident rates, and many design features in need of modernization (the original freeway was built in the 1950s and 1960s). Because of this, the *I-710 Major Corridor Study* (MCS; March 2005) was undertaken to address the I-710 Corridor's mobility and safety needs and to explore possible solutions for transportation improvements. This study was completed in March 2005 and identified a community-based Locally Preferred Strategy (LPS) consisting of ten general purpose lanes next to four separated freight movement lanes. In total, three reports have previously been completed on the I-710 Corridor: (1) the *Tier 2 Community Advisory Committee Report* (August 2004); (2) the I-710 MCS (March 2005); and (3) the *I-5/I-710 Interchange Mini-Study* (April 2006). Subsequent to the MCS, the I-710 Funding Partners entered into cooperative agreements with Metro and are now collectively funding the preparation of preliminary engineering and environmental documentation for the I-710 Corridor Project. A Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the proposed project was circulated for public review in 2012. In it, several build alternatives were analyzed. Refer to Chapter 2.0, Alternatives, for more information on these alternatives. The feedback and new information received during the public review period prompted further evaluation of the suite of alternatives under analysis for the project. The latest traffic data indicated different traffic patterns than originally identified, and a clearer understanding of the origins and destinations of truck traffic within and beyond the project area. As a result of this new data and information, the Funding Partners made the decision to develop revised alternatives and prepare this Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS). Section 15088.5(c) of the California Environmental Quality Act (CEQA) Guidelines state that "a lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." The "significant new information" requiring recirculation can include changes to the environmental setting or the evaluation of a new and different feasible alternative. 23 Code of Federal Regulations (CFR) 771.130 discusses supplemental environmental impact statements and states that "a draft EIS, final EIS, or supplemental EIS may be supplemented at any time", including, but not limited to, when "new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS." The project development support, right-of-way, and construction costs for this project are anticipated to be funded through various local, State, and Federal agencies. Current project development activities are jointly funded by the I-710 Funding Partners using a combination of local, State, and Federal funds.

A project to reconstruct the I-710 interchanges at I-105, SR-91, I-405, and I-5 as part of the I-710 Corridor Project is included in the SCAG-adopted 2017 Federal Transportation Improvement Program (FTIP) (Project ID No. LA0B952). The project is also included in the list of financially constrained projects in the SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (Project ID No. LA0B952). The project is also included in the

Metro Final 2009 Long-Range Transportation Plan (LRTP) as a Funded Freeway Improvement. The list of financially constrained projects in the 2016 RTP/SCS also includes the full I-710 Corridor Project (Project ID No. 1C0401) and is described as "I-710 South."

Although the full scope of the project is not currently in the FTIP and the Project Description as noted in the RTP/SCS does not match either of the currently proposed build alternatives, both the RTP and RTIP will be amended to be consistent with the preferred alternative prior to the approval of the Final EIR/EIS. The 2017 FTIP and 2016 RTP/SCS project listings noted above are provided in Appendix I of this RDEIR/SDEIS.

Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and CEQA.

1.2 NEED AND PURPOSE

1.2.1 NEED FOR THE I-710 CORRIDOR PROJECT

The I-710 Corridor is a vital transportation artery not only for the communities along the corridor, but also because it links POLA and POLB to southern California and the rest of the nation via connections to other Interstate and State highways. An essential component of the regional, statewide, and national transportation system, it serves both passenger and goods movement vehicles. As a result of population growth, growth in international cargo being shipped through the Ports, increasing traffic volumes, and aging infrastructure, the I-710 Corridor experiences serious congestion and safety issues. According to the growth projections in the 2012 RTP/SCS, the population in the Study Area is expected to grow from 1,155,000 in 2012 to 1,272,000 in 2035, an increase of approximately 10 percent. These projections have been updated and according to growth projections adopted by SCAG in the 2016 RTP/SCS, the population of Los Angeles County is anticipated to increase from 10.2 million in 2015 to 11.5 million in 2040, an increase of approximately 13 percent. Employment in the Study Area is expected to grow from 470,000 in 2012 to 523,000 in 2035, an increase of approximately 11 percent.[1] There are no currently funded transportation improvements that will address the projected future transportation demand within the I-710 Corridor. The I-710 Corridor Project proposes to address the needs within the I-710 Corridor between the Ports and SR-60 described below in Sections 1.2.1.1 through 1.2.1.5. For purpose statements that correspond to each of the needs as listed below, please refer to Section 1.2.2, immediately following the discussion of project needs.

1.2.1.1 AIR QUALITY

The U.S. Environmental Protection Agency (EPA) has designated the South Coast Air Basin, which includes the Study Area, as an extreme ozone non-attainment area and a non-attainment

[1] Southern California Association of Governments (SCAG). 2012. *Regional Transportation Plan*.

area for small airborne particulate matter less than 2.5 microns ($PM_{2.5}$). Exposure to ozone and $PM_{2.5}$ levels above the Federal health standards is associated with many adverse health effects—including decreased lung function, aggravated asthma, increased lung and heart diseases symptoms, and chronic bronchitis—that can result in increased morbidity and premature mortality. Studies have shown that elevated levels of nitrogen dioxide (NO_2) and ultrafine particulates (UFPs) occur very near roadways; these elevated levels are also associated with adverse health effects. In addition, the South Coast Air Quality Management District (SCAQMD) has conducted Multiple Air Toxic Exposure Studies (MATES), the latest being MATES IV, sampling for which occurred from 2012 to 2013. The highest levels of calculated cancer risk (approximately 1,400 in one million) in 2012 (the study analysis year) occur in the Study Area, particularly near the Ports, rail yards, and along the I-710 freeway. These studies show that diesel particulate matter (DPM) is the greatest contributor to air-quality-related cancer risk in the South Coast Air Basin and that approximately half of the DPM is emitted by diesel trucks using the freeway and roadway systems.

1.2.1.2 CAPACITY, TRANSPORTATION DEMAND, AND SAFETY

FREEWAY CAPACITY. The need for the I-710 Corridor Project is based on an assessment of the existing and future transportation demand in the Study Area compared to the available capacity. Based on the examination of existing travel conditions and projected future traffic (2035), the I-710 Corridor currently experiences, and will continue to experience, capacity and operational problems due to a number of interrelated factors. With the exception of the I-710/I-105 interchange, no major improvements have been undertaken on I-710 since it was built in the 1950s and 1960s. Extensive population growth occurred after 1960 (see Table 1.2-3 and the associated discussion in the following subsection titled “Transportation Demand”) and before containerization of oceangoing freight and the significant growth in international trade. The increase in regional traffic and heavy-duty truck traffic carrying cargo containers to and from the Ports has contributed to traffic volumes that exceed the existing design capacity of the I-710 Corridor, particularly at the interchanges. Table 1.2-1 shows average daily weekday automobile and heavy-duty truck volumes on I-710.

Current and predicted future freeway operating conditions (traffic flow) within the I-710 Corridor are characterized by level of service (LOS). LOS is based on the comparison of traffic volume to the design capacity of the freeway, which is based on several factors including the number and width of travel lanes, steepness of the grades, and average speeds for which the freeway was designed. LOS is expressed as a range from LOS A (free traffic flow with low volumes and high speeds) to LOS F (traffic volumes that exceed capacity and result in forced-flow operations at low speeds). See Figure 1.2-1 for LOS criteria for freeway facilities. Increasing traffic on the I-710 Corridor has seriously degraded the freeway LOS, particularly during commuter peak hours.

Table 1.2-1: I-710 Average Daily (Two-Way) Traffic Volumes

Mainline Segment		Year 2013			Year 2035 (No Build)			% Truck of Total Volume		2013–2035 Percent Change in Volume		
		Auto	Truck	Total	Auto	Truck	Total	2013	2035	Auto	Truck	Total
I-10	SR-60	129,000	9,000	138,000	158,000	20,000	178,000	7%	11%	22%	122%	29%
SR-60	I-5	182,000	20,000	202,000	181,000	30,000	211,000	10%	14%	-0.5%	50%	4%
I-5	Washington Blvd.	195,000	22,000	217,000	201,000	33,000	234,000	10%	14%	3%	50%	8%
Washington Blvd.	Atlantic Blvd.	195,000	23,000	218,000	202,000	33,000	235,000	11%	14%	4%	43%	8%
Atlantic Blvd.	Florence Ave.	187,000	25,000	212,000	190,000	36,000	226,000	12%	16%	2%	44%	7%
Florence Ave.	Firestone Blvd.	198,000	26,000	224,000	197,000	37,000	234,000	12%	16%	-0.5%	42%	4%
Firestone Blvd.	Imperial Hwy.	204,000	26,000	230,000	203,000	38,000	241,000	11%	16%	-0.5%	46%	5%
Imperial Hwy.	I-105	214,000	27,000	241,000	214,000	38,000	252,000	11%	15%	0%	41%	5%
I-105	Rosecrans Ave.	167,000	28,000	195,000	165,000	42,000	207,000	14%	20%	-1%	50%	6%
Rosecrans Ave.	Alondra Blvd.	215,000	35,000	250,000	214,000	53,000	267,000	14%	20%	-0.5%	51%	7%
Alondra Blvd.	SR-91	210,000	35,000	245,000	208,000	53,000	261,000	14%	20%	-1%	51%	6%
SR-91	Long Beach Blvd.	162,000	36,000	198,000	161,000	55,000	216,000	18%	25%	-0.5%	53%	9%
Long Beach Blvd.	Del Amo Blvd.	156,000	36,000	192,000	153,000	54,000	207,000	19%	26%	-2%	50%	8%
Del Amo Blvd.	I-405	153,000	34,000	187,000	152,000	54,000	206,000	18%	26%	-0.5%	59%	10%
I-405	Willow St.	128,000	34,000	162,000	124,000	52,000	206,000	21%	30%	-3%	53%	27%
Willow St.	Pacific Coast Hwy.	116,000	34,000	150,000	111,000	51,000	162,000	23%	31%	-4%	50%	8%
Pacific Coast Hwy.	Anaheim St.	98,000	31,000	129,000	97,000	49,000	146,000	24%	34%	-1%	58%	13%
Anaheim St.	Pico Ave.	17,000	30,000	47,000	14,000	45,000	59,000	64%	76%	-17%	50%	25%
South of Pico Ave.		14,000	27,000	41,000	10,000	39,000	49,000	66%	80%	-28%	44%	19%

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (March 2017).
I-5 = Interstate 5
I-10 = Interstate 10
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
SR-60 = State Route 60
SR-91 = State Route 91

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		70	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability. **No delays**
B		70	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted. **No delays**
C		67	Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes. **Minimal delays**
D		62	Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited. **Minimal delays**
E		53	Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor. **Significant delays**
F		<53	Very congested traffic with traffic jams, especially in areas where vehicles have to merge. **Considerable delays**

FIGURE 1.2-1

I-710 Corridor Project RDEIR/SDEIS

Level of Service Criteria for Basic Freeway Segments

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

SOURCE: California Department of Transportation

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Figure 1.2-2 shows the existing LOS for the various segments of the I-710 mainline and ramps for the a.m., midday, and p.m. peak hours. As Figure 1.2-2 illustrates, many segments operate at LOS E or F during all three peak hours, creating traffic congestion chokepoints that cause congestion on adjacent segments of I-710. Please see the *I-710 Corridor Project Traffic Operations Analysis Report* (March 2017) for more detail regarding LOS throughout the Study Area.

A specific factor affecting the traffic operational performance of the I-710 Corridor is the large number of heavy-duty trucks that use the I-710 Corridor to travel between the Ports and the rail freight intermodal yards located near I-5, and to warehousing and cargo distribution points throughout the southern California region. Caltrans *2013 Annual Average Daily Truck Traffic on the California State Highway System* (September 2014) indicates that five-axle trucks comprise at least half of all trucks on all segments of I-710, with the greatest concentrations of five-axle trucks (nearly 75 percent of all trucks) occurring at the southern end, near the Ports.

The amount of congestion and traffic delay currently experienced on the I-710 Corridor is not only disruptive to local residents and commuters, but also to port operations that must accommodate "just-in-time" goods delivery and inventory processes, which affects trucking, manufacturing, and other commercial interests within the SCAG region as shipments are delayed while trucks are slowed by traffic congestion.

ARTERIAL-TO-FREEWAY CONNECTIONS. In the I-710 Corridor, congestion at local arterial intersections near the freeway ramps is also a concern. The existing intersection LOS analysis is shown in Table 1.2-2. Fourteen percent of the analyzed intersections are classified as LOS E or F during the AM peak hour, and 19 percent are classified as LOS E or F during the PM peak hour.

TRANSPORTATION DEMAND. Regional population is forecast to grow by 20 percent and Study Area population is forecast to grow by 10 percent from 2012 to 2035. Employment will follow a similar pattern, with regional growth of 27 percent and Study Area employment growth of 11 percent. Growth is projected to be lower in the Study Area than in the SCAG region because the Study Area is almost completely developed. New growth will be limited to smaller, infill-type developments. Table 1.2-3 summarizes forecasted population and employment growth from the 2012 RTP for the entire SCAG region and for the Study Area. For historical context, the region numbered approximately eight million in 1960.[2] The 2012 population of the region represents a 130 percent increase in population since 1960. The 2012 RTP growth forecast was the basis for the regional traffic modeling that was performed for the I-710 Corridor Project.

[2] SCAG. Website: https://www.scag.ca.gov/calendar/Documents/demo26/Panel1-SimonChoi.pdf (accessed December 29, 2016).

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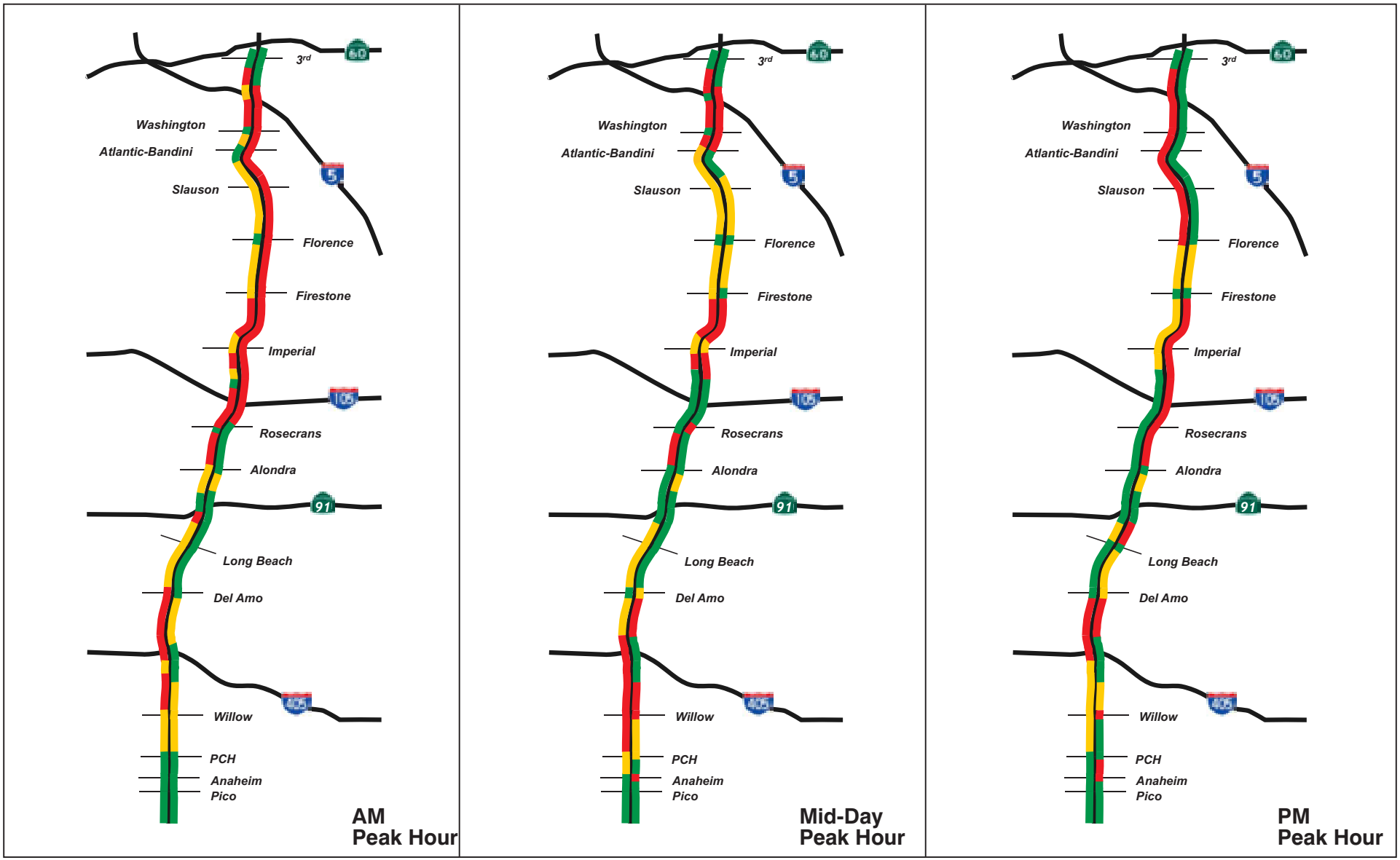

FIGURE 1.2-2

I-710 Corridor Project RDEIR/SDEIS

Existing (2013) Level of Service

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

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Table 1.2-2: I-710 Existing Intersection Level of Service

Main Street	Cross Street	Traffic Control Device	Level of Service		
			AM Peak Hour	Mid-day Peak Hour	PM Peak Hour
Pico Ave.	9th St.	Signalized	C	**E**	**E**
Alondra Blvd.	Atlantic Ave.	Signalized	D	D	D
Imperial Hwy.	Atlantic Ave.	Signalized	D	C	D
Firestone Blvd.	Garfield Ave.	Signalized	D	D	D
Florence Ave.	Eastern Ave.	Signalized	D	D	D
Bandini Blvd.	Atlantic Ave.	Signalized	D	C	D
Olympic Blvd	Eastern Ave.	Signalized	C	C	C
I-710 NB	Olympic Blvd. off-ramp	Signalized	B	B	C
Ford Blvd.	3rd St.	Signalized	D	D	**E**
I-710 SB	Del Amo Blvd. on- and off-ramps (at Susana Rd.)	Signalized	B	B	B
I-710 NB	Long Beach Blvd. on- and off-ramps	Signalized	C	A	B
I-710 SB	Long Beach Blvd. on- and off-ramps	Signalized	A	A	A
I-710 NB	Artesia Blvd. off-ramp	Signalized	B	B	**E**
I-710 SB	Artesia Blvd. on-ramp	Unsignalized	A	A	A
I-710 NB	Alondra Blvd. on- and off-ramps	Signalized	C	C	D
I-710 SB	Alondra Blvd. on-ramp	Unsignalized	**E**	C	C
I-710 NB	Rosecrans Ave. off-ramp	Signalized	A	A	B
I-710 SB	Rosecrans Ave. off-ramp	Signalized	B	A	B
I-710 SB	Imperial Hwy. off-ramp (at Wright Rd.)	Signalized	B	B	C
I-710 NB	Firestone Blvd. off-ramp	Signalized	A	B	D
I-710 SB	Firestone Blvd.	Signalized	B	B	B
I-710 SB	Bandini Blvd. off-ramp	Signalized	C	B	B
I-710 NB	Washington Blvd. on- and off-ramps	Signalized	B	B	B
I-710 SB	Washington Blvd.	Signalized	**E**	**F**	**F**
I-710 NB	Olympic Blvd. on-ramp	Signalized	B	B	B
I-710 SB	Olympic Blvd. on- and off-ramps (at Eastern Ave.)	Signalized	C	--[1]	B
I-710 NB	Ford Blvd. on- and off-ramps	Unsignalized	**F**	C	**F**
I-710 SB	Eagle St. & Humphreys Ave. off-ramp	Unsignalized	B	A	B
I-710 NB	Cesar Chavez Ave. off-ramp (at Ford St.)	Signalized	B	B	B
I-710 SB	Floral Dr. off-ramp	Signalized	B	B	B
Del Amo Blvd.	Susana Rd.	Signalized	**F**	D	**E**
Anaheim St.	Harbor Ave.	Signalized	B	B	B
Imperial Hwy.	Wright Rd.	Signalized	**E**	C	D
Bandini Blvd.	Pennington Way	Signalized	C	C	C

Table 1.2-2: I-710 Existing Intersection Level of Service

Main Street	Cross Street	Traffic Control Device	Level of Service		
			AM Peak Hour	Mid-day Peak Hour	PM Peak Hour
Long Beach Blvd.	Victoria St.	Signalized	C	D	**F**
Eastern Ave.	Whittier Blvd.	Signalized	C	C	C

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (March 2017).
Bolded cells indicate either LOS E or LOS F.
[1] Existing midday counts are not available at this location due to construction.
I-710 = Interstate 710 NB = northbound
LOS = level of service SB = southbound

Table 1.2-3: Forecasted Growth in Population and Employment

		2012	2035	Percent Change
Population	Regional	18,405,000	22,086,000	20%
	I-710 Corridor Project Study Area	1,155,000	1,272,000	10%
Employment	Regional	7,447,000	9,435,000	27%
	I-710 Corridor Project Study Area	470,000	523,000	11%

Source: Southern California Association of Governments. *2012 Regional Transportation Plan*.
I-710 = Interstate 710

For purposes of comparison to the population growth projections in the 2012 RTP/SCS, the 2016 RTP/SCS indicates that population in the SCAG region will grow at a rate of approximately 17.5 percent between 2015 and 2040. For purposes of analyzing future transportation demand, this growth rate is substantially similar to the 2012 RTP/SCS projections.

The Study Area contains several land uses and activity areas related to goods movement and the transport of cargo. The POLA and POLB Ports complex is one of the largest container ports in the world and is located at the southern terminus of the I-710 mainline. Forecasts anticipate growth in demand at the Ports that will increase from the handling of 14.1 million annual TEUs in 2012 reaching 41.4 million twenty-foot equivalent units (TEUs) by 2035 which is capped by planned capacity of the marine terminals.[3] The I-710 Corridor is, and is expected to remain, a primary route for trucks carrying containers to and from the Ports. Figure 1.2-3 shows the freeway LOS forecast for 2035 based on this future traffic demand without the I-710 Corridor Project.

[3] AECOM. 2017. *I-710 Corridor Project Travel Demand Modeling Report*.

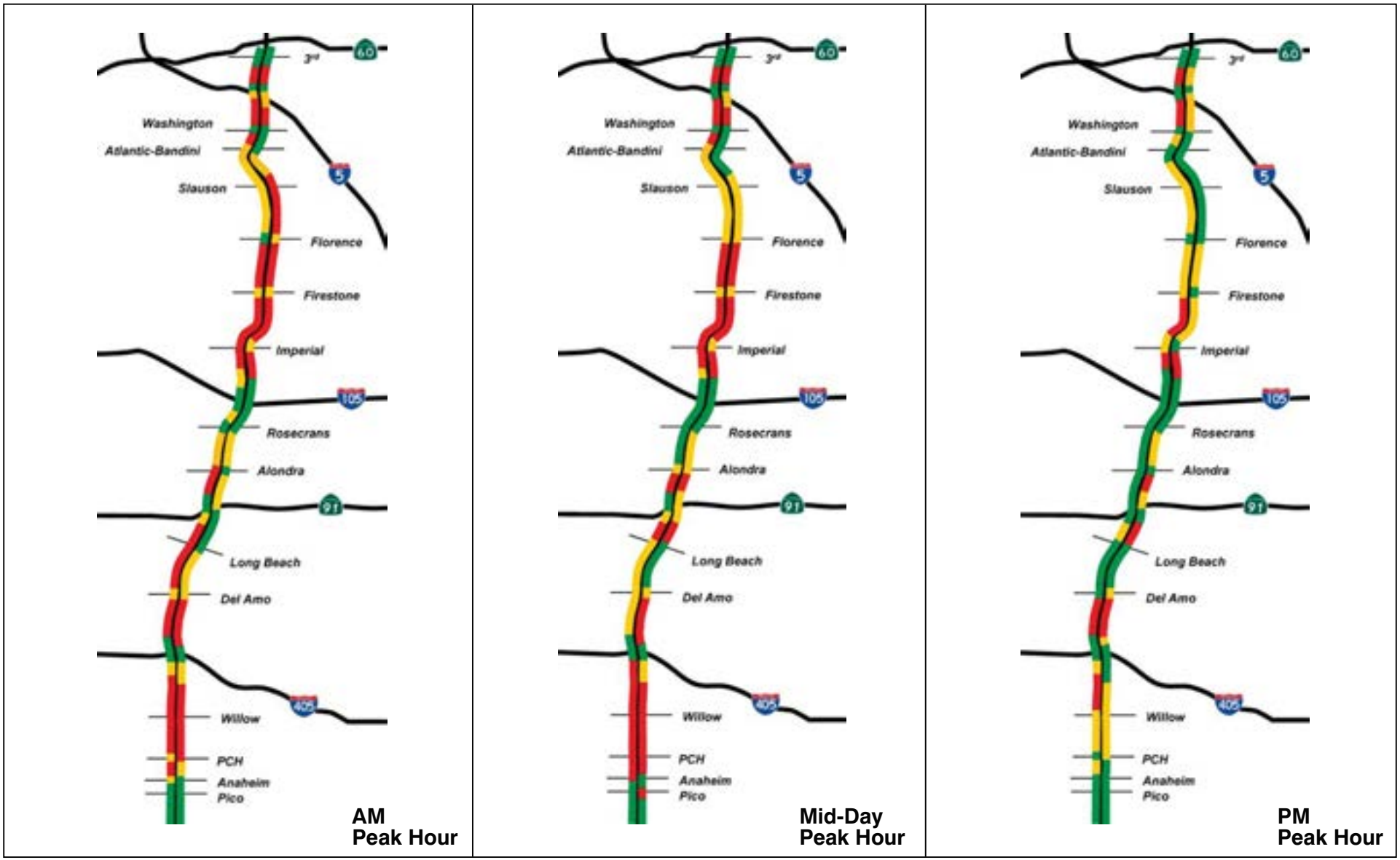

FIGURE 1.2-3

I-710 Corridor Project RDEIR/SDEIS

2035 No Build Level of Service

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With regard to future demand for cargo containers to be transported to and from the Ports by rail instead of truck, the *I-710 Railroad Goods Movement Study* (February 2009) found that while railroads have employed a variety of operational strategies to meet increased container demand from the Ports, including longer trains with higher utilization rates, the railroad system will not be able to handle all of the cargo demand even with the rail system operating at maximum capacity. Therefore, any additional containers would be transported via truck, which increases travel demand by truck on I-710.

TRAFFIC SAFETY. As discussed below, I-710 experiences high accident rates, exceeding the State average for similar highway facilities in many locations along I-710.

By State law, heavy-duty trucks are restricted to the two right lanes of freeways. Most of the automobile/truck interaction occurs as automobiles maneuver to get on and off the I-710 mainline at the interchanges, therefore, crossing and traveling in these right two lanes. Additionally, trucks are slower to accelerate and slower to stop, which uses up more freeway capacity and also causes merging conflicts among these different vehicle types as automobile drivers weave in and out of traffic to avoid the slower-moving heavy-duty trucks. The difference in mass (weight) between a car and a heavy-duty truck makes an incident between these two vehicle types more consequential for the automobile.

According to data collected and reported by Caltrans over a three-year period (January 1, 2009, to December 31, 2011), the I-710 mainline experiences a fatal accident rate that is above the statewide average for freeways of this type. A specific location that is especially problematic, as it causes increased truck/automobile conflicts, is the northbound segment of the I-710 mainline approaching the I-5 interchange. The connector ramps from northbound I-710 to northbound I-5 are located on the left-hand side of the I-710 mainline. Therefore, at this location, heavy-duty trucks are allowed to use the left lanes of I-710 to access the I-5 northbound ramps, affecting traffic on all lanes of the freeway in that segment.

An analysis of accident data in both the northbound and southbound direction is summarized in Table 1.2-4. The data presented were logically segmented at the locations of major crossing interchanges. Of the five I-710 mainline study segments, one northbound segment and one southbound segment have a higher total accident rate than the State average, and three in the northbound direction and one in the southbound direction have higher fatal accident rates than the State average (ranging 75 to 200 percent higher). The high truck volumes may account for the severity of accidents occurring along the I-710 Corridor. The Traffic Accident Surveillance and Analysis System (TASAS) ramp accident data also show that of the 37 of the 56 Study Area northbound ramp locations and 28 of the 58 southbound ramp locations have higher accident rates compared to the State average. Additionally, SCAG's 2016 RTP/SCS identifies I-710 north of I-5 and between I-105 and SR-91 as among the key locations with the highest rates of truck-involved crashes in the region.

Table 1.2-4: I-710 Mainline Accident Rates (January 1, 2009, to December 31, 2011)

Location (Post Mile)	Description	Statistical Data			Actual Accident Rates[1]			Average Accident Rates[2]		
		Total Accidents	Fatal	Injury	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
4.96–9.410	Southern terminus to I-405, Northbound	261	1	61	0.003	0.20	0.85	0.004	0.28	0.90
	Southern terminus to I-405, Southbound	222	1	64	0.003	0.21	0.72			
9.411–12.969	I-405 to SR-91, Northbound	257	4	78	0.011	0.23	0.72	0.004	0.28	0.90
	I-405 to SR-91, Southbound	297	1	76	0.003	0.22	0.84			
12.970–15.691	SR-91 to I-105, Northbound	248	4	63	0.012	0.20	0.76	0.004	0.29	0.96
	SR-91 to I-105, Southbound	248	1	82	0.003	0.25	0.76			
15.692–23.206	I-105 to I-5, Northbound	917	6	200	0.007	0.24	1.07	0.004	0.30	0.97
	I-105 to I-5, Southbound	768	1	188	0.001	0.22	0.89			
23.207–24.627	I-5 to SR-60, Northbound	70	0	17	0.000	0.12	0.48	0.005	0.30	0.95
	I-5 to SR-60, Southbound	233	2	47	0.014	0.34	1.61			

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (March 2017).
Bolded cells indicate a rate higher than the average.
[1] Accident rates are expressed as the number of accidents per million vehicle miles.
[2] Average accident rates for similar highway facilities throughout the State.
I-105 = Interstate 105
I-405 = Interstate 405
I-5 = Interstate 5
I-710 = Interstate 710
SR-60 = State Route 60
SR-91 = State Route 91

Accidents, particularly truck-related accidents, form bottlenecks as emergency response personnel temporarily close travel lanes to respond to the accident. As a result, these incidents lead to additional congestion, delay, and occasionally secondary accidents on the I-710 mainline and ramps as approaching vehicles unexpectedly run into the rear ends of other vehicles.

The relatively high incidence of accidents on the I-710 mainline and ramps appears to be the result of three main factors: (1) nonstandard geometrics and design features; (2) high traffic volumes; and (3) the mix of automobiles and heavy-duty trucks.

Nonstandard geometrics and design features exist at many of the I-710 mainline interchanges. In many cases, the curves are too tight on the ramps and the weave distances[4] between on- and off-ramps are too short. Standardization of these geometrics and features is needed to improve safety on I-710.

The second contributing factor is high traffic volumes. The occurrence of accidents is highest during the peak traffic periods. As traffic volumes increase, so does the propensity for accidents.

The third major factor related to safety concerns is the mix of vehicles using the I-710 mainline and ramps. Refer back to Table 1.2-1, which indicates average annual daily truck traffic on segments along I-710 ranges from 64 percent at the southern end to 7 percent at the northern end. As discussed previously, the truck percentage is expected to increase to over 30 percent of general traffic, depending on the segment of the I-710 mainline. Previous data collection efforts have indicated that during late 2004 to late 2007 a high level of accidents on I-710 (ranging from 29 to 36 percent, depending on the segment) involved trucks[5] (see Table 1.2-5). Separation of trucks and general traffic would reduce the conflicts between the two and improve safety and operations on I-710.

1.2.1.3 NEED FOR UPDATED ROADWAY DESIGN

The I-710 mainline was designed in the 1950s and 1960s, before the dramatic increase in U.S. imports from Asia and the containerization of oceangoing freight, which have resulted in increased cargo traffic at POLA and POLB, and before the residential, commercial and industrial development in the region occurred over the past several decades leading to an increase in auto trips. In general, the I-710 mainline has remained relatively unchanged from when it was

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[4] A "weaving" section is where vehicles are entering the freeway in an area where other vehicles are attempting to exit the freeway at the next off-ramp, requiring vehicles to "weave" across each other's paths.

[5] AECOM. 2011. *I-710 Corridor Project Traffic Operations Analysis Report.* December.

Table 1.2-5: I-710 Southbound Mainline Truck Accident Rates (January 1, 2009, to December 31, 2011)

Location (Post Mile)	Description	Statistical Data			Actual Accident Rates[1]			Average Accident Rates[1]		
		Total Accidents	Fatal	Injury	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
4.96–9.410	Southern terminus to I-405	222	1	64	0.003	0.21	0.72	0.004	0.28	0.90
9.411–12.969	I-405 to SR-91	297	1	76	0.003	0.22	0.84	0.004	0.28	0.90
12.970–15.691	SR-91 to I-105	248	1	82	0.003	0.25	0.76	0.004	0.29	0.96
15.692–23.206	I-105 to I-5	768	1	188	0.001	0.22	0.89	0.004	0.30	0.97
23.207-24.627	I-5 to SR-60	233	2	47	**0.014**	**0.34**	**1.61**	0.005	0.30	0.95

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (March 2017).
Bolded cells indicate a rate higher than the average.
[1] Accident rates are expressed as the number of accidents per million vehicle miles.
[2] Average accident rates for similar highway facilities throughout the State.
I-105 = Interstate 105
I-405 = Interstate 405
I-5 = Interstate 5
I-710 = Interstate 710
SR-60 = State Route 60
SR-91 = State Route 91

originally constructed. Due to growth in overall traffic volumes and the high level of truck traffic that has occurred in recent years, the I-710 mainline does not have the operational capacity to accommodate current or future demand. In addition, many aspects of the freeway design do not operate efficiently due to the heavy truck traffic and the length and relative lack of maneuverability of those trucks.

The design features that are most directly associated with the current operational problems on the I-710 mainline are discussed below.

I-710 FREEWAY MAINLINE. The speed, capacity, and safety of the I-710 mainline are negatively impacted by several existing design features that are discussed below.

NONSTANDARD WEAVING DISTANCES. Weaving distances on the I-710 mainline are substantially constrained by both the spacing of the interchanges and the ramp configurations. This negatively impacts the I-710 mainline's capacity and safety by introducing a substantial number of conflicts in the outer lanes between ramp merge and diverge points.

There is heavy truck traffic in the outer two lanes of the I-710 mainline during the peak traffic periods, as well as throughout the remainder of the day. This intensifies the vehicle conflicts in the weaving sections due to the size of the trucks and density of the truck traffic.

NARROW OR NONEXISTENT SHOULDERS. Along much of the existing I-710 mainline, the shoulders provided are narrow (nonstandard) in width, and in some segments, no shoulders are provided at all. As described in the MCS, because of the lack of shoulders, the current I-710 mainline does not provide sufficient traffic enforcement areas for the California Highway Patrol (CHP), nor does it provide adequate areas for motorists with vehicle breakdowns or minor accidents to safely stop out of the flow of traffic.

NARROW LANE WIDTHS. Several locations along the I-710 northbound contain nonstandard-width lanes (approximately 10.8 feet instead of 12 feet). An example of this is the I-710 bridges over the railroad yards south of I-5. These narrow lanes tend to reduce the motorist's comfort level and speed, thus reducing overall capacity, especially when heavy-duty trucks are present.

THROUGH LANES. The number of through lanes on the I-710 mainline varies throughout the full length of the I-710 mainline. The I-710 mainline is four lanes in each direction between I-405 and SR-60, except for the section between Atlantic Blvd./Bandini Blvd. and I-5, which is five lanes in each direction. South of I-405, the number of through lanes is reduced to three lanes in each direction. This condition leads to bottlenecks on the I-710 mainline, as high volumes of traffic are compressed into fewer lanes. This is particularly evident on the I-710 mainline south of I-405, where long queues of trucks and cars frequently form during the peak traffic periods.

NON-UNIFORM RAMP METERING. Ramp metering is the use of a traffic signal(s) located on an on-ramp to control the rate at which vehicles enter a freeway facility. By controlling the rate at which vehicles are allowed to enter a freeway, the flow of traffic onto the freeway facility becomes more consistent, smoothing the flow of traffic on the mainline and allowing more efficient use of existing freeway capacity. Approximately half of the existing interchanges along the I-710 mainline have ramp meters at the on-ramps. The benefit of these ramp meters is limited by the fact that they are only in place at some locations; therefore, there is not a coordinated ramp metering plan along the full length of the I-710 mainline. Some of the ramps have limited storage lengths, and if additional ramp meters are installed, the ramps would need to be widened to provide adequate storage capacity.

PAVEMENT. Since 2008, as part of the Long Beach Freeway (I-710) Long Life Pavement Rehabilitation Project, Caltrans has rehabilitated the pavement on I-710 from just north of Pacific Coast Hwy. to Firestone Blvd. The section from the Los Angeles River bridge to I-10 is scheduled to be completed in 2017.

MEDIAN BARRIERS. Since 2008, as part of the Long Beach Freeway (I-710) Long Life Pavement Rehabilitation Project, Caltrans has replaced the double metal beam barrier with a heightened concrete median barrier (K rail) from just north of Pacific Coast Hwy. to Firestone Blvd. The section from the Los Angeles River bridge to I-10 is scheduled to be completed in 2017.

INTERCHANGES WITH OTHER FREEWAYS. Within the Study Area, four of the five freeway-to-freeway interchanges have nonstandard geometric features. The major elements needing updated design are shown in Figure 1.2-4 and noted in Table 1.2-6. The one exception is the I-710/I-105 interchange, which was opened to traffic in the 1990s. This interchange meets current geometric standards and has no apparent elements associated with an outdated design.

Some of the freeway-to-freeway interchanges provide only low-capacity ramp connections for certain movements. These connector ramps are in a loop configuration, which limits the operating speeds and capacity versus higher-speed “flyover” ramps. For example, three of the connections at the I-710/I-405 interchange are cloverleaf-style loop ramps.

INTERCHANGES WITH LOCAL ROADWAYS. The spacing between many of the I-710 mainline interchanges with local roadways is less than current highway design standards, which typically require a minimum of one mile between interchanges. For example, Pico Ave., Anaheim St., and Pacific Coast Hwy. are very closely spaced, with less than 0.5 mile of separation between each interchange. Close spacing of interchanges limits the weaving distance between interchanges. Many of these existing interchanges are cloverleaf configurations (e.g., Anaheim St., Willow St., and Florence Ave.) requiring weaving of traffic over a short distance to accommodate the on- and off-ramp movements. Close spacing of interchanges and cloverleaf

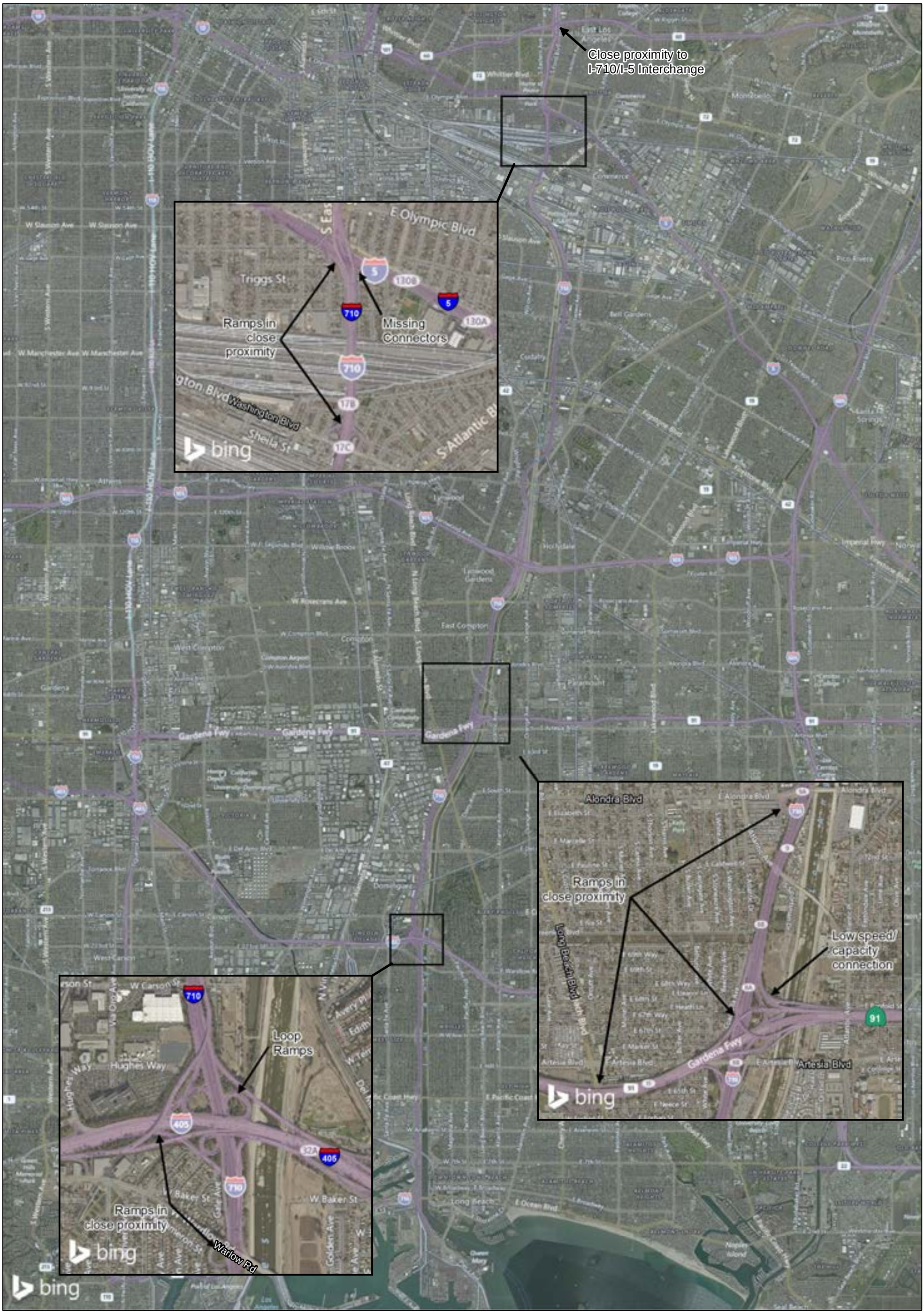

FIGURE 1.2-4

0 3750 7500
Feet

SOURCE: Bing (2009)

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I-710 Corridor Project
RDEIR/SDEIS

Freeway to Freeway Interchange:
Key Design Concerns

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Table 1.2-6: Freeway-to-Freeway Interchanges: Key Design Concerns

Cross Freeway	Existing Areas Needing Updated Design
I-405	On-/off-ramps for Wardlow Rd. are in close proximity to the interchange. Low speed/capacity connections (loop ramps) for the SB to EB, EB to SB, and NB to WB movements.
SR-91	On-/off-ramps for Atlantic Blvd., Alondra Blvd., and Long Beach Blvd. are located in close proximity to the interchange. Low speed/capacity connections (loop ramp) for the NB to WB movement.
I-105	No elements of outdated design identified.
I-5	Left side exit from NB I-710 to NB I-5. On-/off-ramps to Washington Blvd. are located in close proximity to I-5/I-710 interchange.
SR-60	Local interchange "hook" ramps to 3rd St. within interchange. May not be a substantial issue provided that volumes remain low. SR-60 ramps merge with I-710 south of SR-60 and are in close proximity to I-5/I-710 interchange.

Source: Los Angeles County Metropolitan Transportation Authority. *I-710 Major Corridor Study* (March 2005).

EB = eastbound
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

ramps both result in nonstandard weaving distances. The necessary weaving distance is based on the total number and type of vehicles weaving; heavy-duty trucks require substantially more weaving distance than automobiles due to their slower acceleration/deceleration rates and overall vehicle length compared to automobiles.

Many of the local street interchange ramps have designs that require modernization based on current Caltrans design standards. Changes to the I-710's interface with local roadway systems would be coordinated with the Federal Highway Administration (FHWA). These older designs greatly limit the operational efficiency of the ramps and interchanges as a whole. In some cases, narrow lane widths on the ramps and nonstandard turning radii for trucks at ramp entrances further diminish the operational effectiveness of the ramps. In many cases, the existing ramps have nonstandard acceleration distances and steep climbing grades (e.g., Washington Blvd.), which lead to a degradation of capacity on the ramps entering and exiting the freeway, particularly with truck traffic.

These nonstandard geometric features typically result in automobiles and trucks proceeding through the intersections and ramps at low speeds and trucks taking up more than one lane, which greatly limits the capacity of the interchange as a whole.

There is also a substantial lack of storage on many of the off-ramps throughout the Study Area (e.g., the interchange at Florence Ave.). Ramp storage refers to the amount of cars that can be queued on an on- or off-ramp waiting to enter or exit the freeway. The number of lanes and length of storage areas provided are not adequate in many cases to store the vehicles queuing at the ramp intersection. This often results in traffic on the I-710 off-ramps backing up into the

I-710 mainline, which can cause traffic congestion and increase the potential for rear-end collisions.

1.2.1.4 SOCIAL DEMANDS AND ECONOMIC DEVELOPMENT

A review of the growth projections adopted by SCAG (SCAG 2016 RTP/SCS Growth Forecast, April 2016) indicates continuing growth in the Study Area. The population in Los Angeles County, as a whole, is expected to increase from 10.2 million in 2015 to 11.5 million in 2040, an increase of approximately 13 percent. This regional growth will continue to increase travel demand on the I-710 Corridor. No current regional growth management and/or control ordinances have been identified in the area, although some local general plans do include policies intended to control and manage growth.

The Study Area is located within the Gateway Cities Subregion of Los Angeles County, as defined by SCAG and the Gateway Cities COG. The Subregion consists of 27 area cities, three County Supervisorial Districts, and the POLB. The Gateway Cities Subregion as a whole has experienced population, housing, and employment growth since the early 1900s and is anticipated to continue growth at a slower pace through 2035 (see Table 3.2-1 in Section 3.2). In the 20th century, the regional economy transitioned from an agricultural base to a manufacturing/industrial base, with a heavy emphasis on the aerospace and defense industries in the 1950s through the 1970s. As these industries declined in the 1980s, an expansion in global trade resulted in goods movement becoming an important element of the region's economy. The goods movement industry is a major source of employment in the Gateway Cities Subregion, providing thousands of direct and indirect jobs. By 2030, the goods movement industry is projected to generate 1.6 million jobs in the SCAG region (source: *Multi-County Goods Movement Action Plan,* Metro 2008). As discussed in more detail in Section 3.3, the Study Area experiences somewhat higher levels of unemployment and poverty than Los Angeles County as a whole. As of September 2016, available data show there are approximately 4.8 million persons employed in the civilian labor force in the County of Los Angeles and 268,000 persons (5 percent) are unemployed. The County has a slightly lower unemployment rate than the State (5.9 percent). In the Study Area cities, there are 2,756,800 persons employed in the civilian labor force, and 155,500 persons (approximately 5.6 percent) are unemployed. The Study Area cities have a slightly higher unemployment rate than either the State (5.3 percent) or the County (5 percent).[6]

Today, the POLB and POLA, the railroads, and the trucking industry provide goods movement not just within the Study Area, but also for the SCAG region and the nation as a whole. Growth at the Ports to accommodate increased cargo demand is constrained primarily by the physical

[6] State of California Employment Development Department. 2016. Labor Market Information Division, Monthly Labor Force Data for Cities and Census-Designated Places (CDPs), September 2016 – Preliminary.

capacity of the port facilities, as well as the efficiency with which containers can be unloaded from ships and reloaded onto trucks and/or the railroads in a timely manner for distribution. The POLB and POLA together handled 14 million annual TEUs in 2015 and are projected to grow to handle approximately 41.4 million TEUs by 2035.[7] The I-710 Corridor Project *Initial Feasibility Analysis* (IFA) was prepared in December 2008 to review factors and indicators forecast as a base assumption in the traffic modeling for the I-710 Corridor Project. The purpose of the IFA was to select a cargo forecast that could be accommodated within the alternatives under study while still meeting the project's mobility, safety, congestion relief, and other goals. In 2013, the assumptions related to goods movement within the SCAG region were further developed and updated to more closely align with the changed economic conditions, drawing on the Updated Cargo Forecast (2009), the 2012 RTP Travel Demand Forecast Model (2012), the San Pedro Bay Ports estimates of marine terminal capacity (2013), port cargo market shares (2013), and truck trip distribution (2013). The *Model Input Data and Key Assumptions Technical Memorandum for Goods Movement* (May 2013) was then reviewed and discussed by the I-710 Technical Advisory Committee and the Port growth assumptions were approved for use in traffic forecasting performed in support of this RDEIR/SDEIS. These assumptions include a 2035 total annual cargo container throughput at both ports of 41.4 million TEUs, and the construction and/or implementation of both the BNSF Railroad Southern California International Gateway (SCIG) near-dock intermodal yard and the expansion of the UP Railroad near-dock Intermodal Container Transfer Facility (ICTF). Informed assumptions were also made about the behavior of cargo, including the ratio of inbound to outbound containers, on-dock and off-dock cargo shares, cargo origin and destinations, and cargo transloading (wherein cargo in international containers is transferred to domestic truck trailers at transload centers or warehousing located within the region). For more detail regarding the key assumptions underlying the future forecast of traffic volumes, please refer to the following reports: *I-710 EIR/EIS Initial Feasibility Analysis* (December 2008), the *I-710 Railroad Goods Movement Study Technical Memorandum* (February 2009), the *Data and Key Assumptions Technical Memorandum for Goods Movement* (May 2013), and the *I-710 Corridor Project Travel Demand Modeling Methodology Report* (June 2017). Since the development of these assumptions, a comprehensive long-term unconstrained cargo forecast for the San Pedro Bay Ports was completed in February 2016 (Mercator 2016). This information was not available in time for incorporation into the technical analyses that informed this RDEIR/SDEIS (i.e., the travel demand forecasting was completed in 2014-15). The Mercator projection forecasts slower overall growth for the Ports than was forecast in previous studies, with the expected "base case" scenario reaching approximately 34.3 million TEUs by 2035, and 41.1 million TEUs by 2040. However, the difference of 0.3 million TEU between the unconstrained Mercator forecast and the throughput assumption utilized for the I-710 Corridor Project is not anticipated to substantially affect the traffic or other analyses performed for the project, as both scenarios project growth at the Ports beyond their current

[7] AECOM. 2017. *I-710 Corridor Project Travel Demand Modeling Report*.

marine terminal throughput capacity. The analyses contained in this RDEIR/SDEIS are conservative as they are based on higher marine terminal throughput levels than are now anticipated, and as a result, reflect a greater impact than would occur if the analysis used a different, lower throughput forecast.

Based on the port cargo demand forecasts and how much of that cargo can be handled through maximum utilization of the railroad system (including expanded on-dock rail facilities at the Ports), there is still a high demand for movement of cargo containers by truck on the highway system, specifically I-710.

1.2.1.5 MODAL INTERRELATIONSHIPS AND SYSTEM LINKAGES

Figure 1.2-5 shows how goods are moved within the region. The I-710 Corridor serves regional, statewide, and national needs for both the general traveling public and the goods movement industry. The I-710 Corridor is the principal transportation connection between the POLB and the POLA and the BNSF/UP Railroad intermodal rail yards located in the Cities of Vernon and Commerce and to other warehouse/distribution centers throughout Southern California. The BNSF and UP Railroads provide freight movement to destinations throughout the United States. Together, the POLB and the POLA make up one of the largest container ports in the world, and Port activity is projected to more than double in volume by 2035. Figure 1.2-6 shows the modal interrelationships and system linkages to the I-710 Corridor, and illustrates schematically the various linkages and access between port cargo, near- and off-dock rail facilities, warehousing, and local, State, and national markets. The proposed project would interface with the nearby highways, ports, and railroads in a similar manner to the existing conditions, as no major changes in access are proposed at the southern terminus. The proposed project would also interface with local airports in the same manner as the existing I-710.

HIGHWAYS. The I-710 Corridor also provides key interstate commerce connections to east-west freeways (I-405, SR-91, I-105, SR-60, and I-10) and I-5. From a system linkage standpoint, no improvements are planned to these facilities except for possible improvements to I-5 (from Interstate 605 [I-605] through the I-710 interchange).

The I-5 Corridor Improvement Project consists of widening I-5 to accommodate high-occupancy vehicle (HOV) lanes and/or general purpose lanes from the I-605 through the I-710/I-5 interchange. Depending on the alternative selected, the project may also include reconstruction of the I-605 and I-710 interchanges. The study is in progress by Caltrans, and construction of the initial phases is tentatively scheduled to begin by 2025.[8]

[8] California Department of Transportation (Caltrans). Website: http://www.dot.ca.gov/dist07/travel/projects/I-5/ (accessed November 4, 2016).

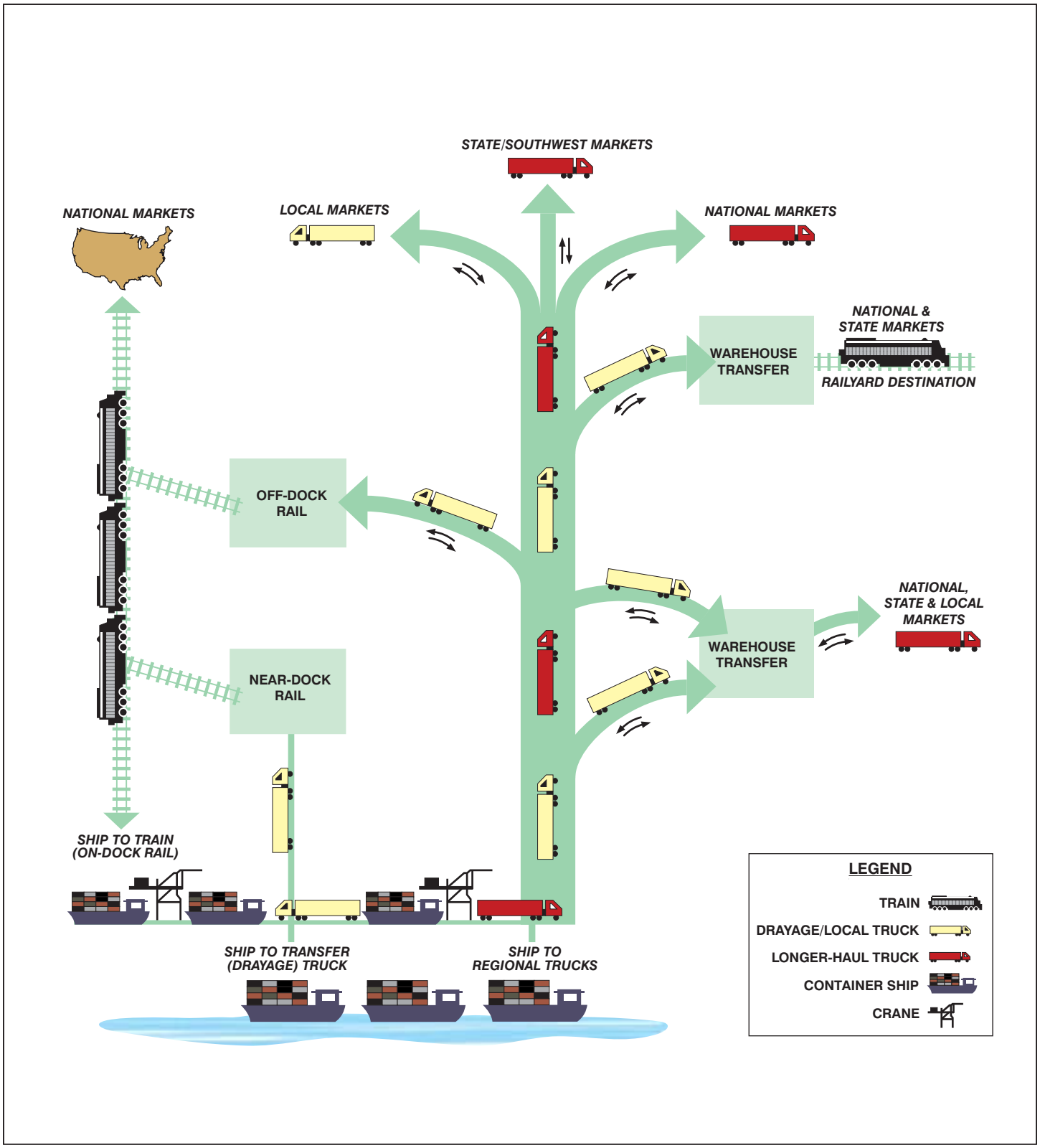

FIGURE 1.2-5

I-710 Corridor Project RDEIR/SDEIS

How Goods are Moved Regionally

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

SOURCE: Metro

I:\URS0801\G\EIR-EIS\2nd Admin Draft\RDEIR-SDEIS\Goods Movement.cdr (5/25/2017)

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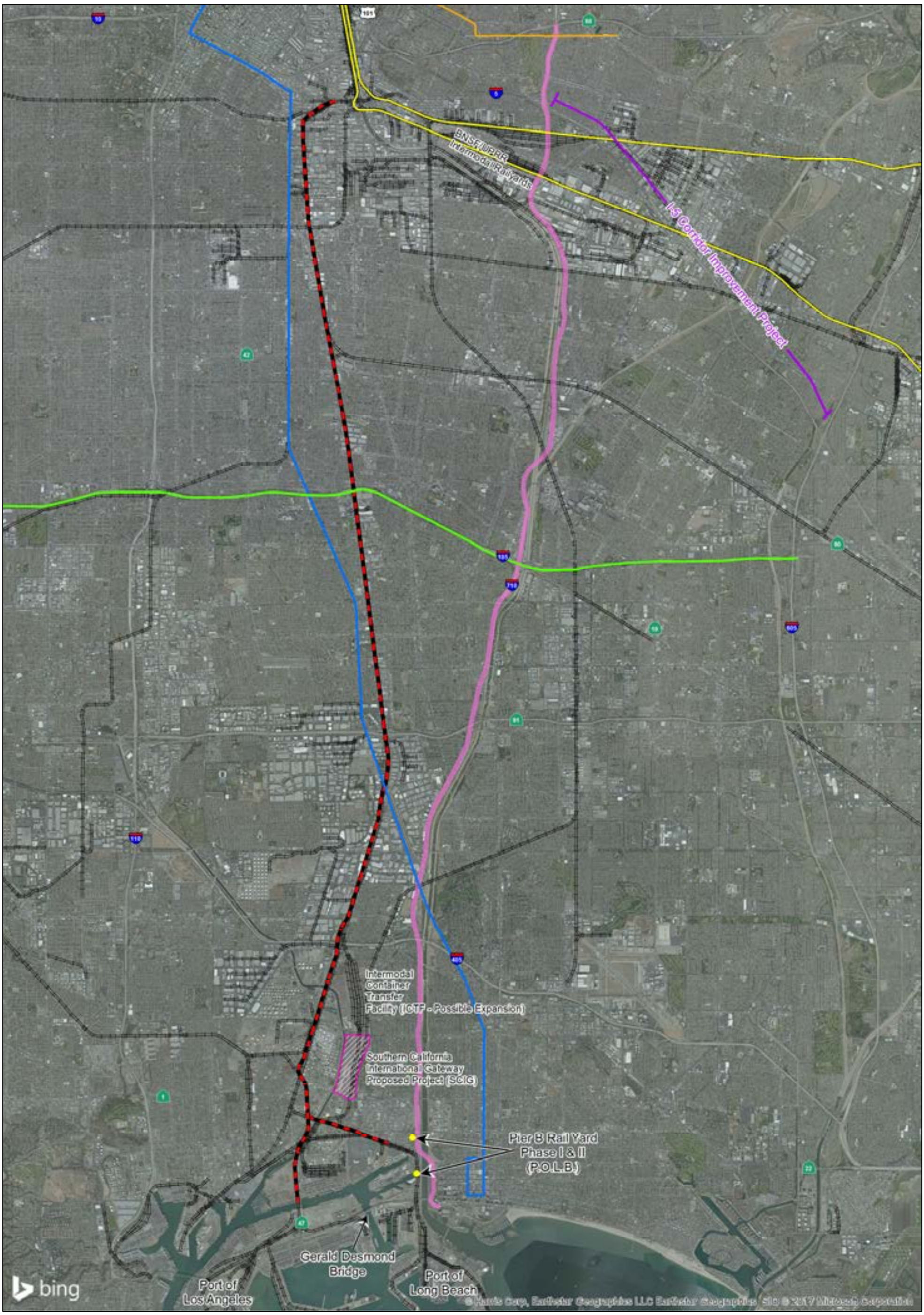

LEGEND

- I-710
- Alameda Corridor
- Metrolink Rail
- MTA Green Line
- MTA Blue Line
- Metro Gold Line
- Railroad

N

0 3750 7500
Feet

SOURCE: Bing (2015); Metro (2006)

I:\URS0801A\GIS\EIR_EIS\Modal_System_Linkage.mxd (6/13/12)

FIGURE 1.2-6

I-710 Corridor Project
RDEIR/SDEIS

Model Interrelationships and System Linkages

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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The Gerald Desmond Bridge Project will replace the existing five-lane Gerald Desmond Bridge, which connects Terminal Island (POLB) to SR-710 with a new six-lane bridge (three lanes in each direction). This project will also include construction of the Terminal Island East interchange and replacement of the I-710 southbound off-ramp and northbound on-ramp. A Final EIR/Environmental Assessment (EA) was approved in July 2010, and project construction is expected to be complete by 2018.[9] As noted above, construction of the approved Gerald Desmond Bridge project is expected to be completed in 2018, and construction of the programmed I-5 Corridor Improvement Project is expected to begin by 2025. When improvements in a planned project such as the I-710 Corridor Project would or could interface with improvements in approved and/or programmed projects, Caltrans policy is to conduct conceptual engineering and planning for the planned project that would be consistent with and accommodated by the approved/programmed projects. In this case, the conceptual design for the I-710 Corridor Project build alternatives reflects the likely improvements to the Gerald Desmond Bridge and I-5. This ensures that the I-710 improvements accommodate and are accommodated by those approved and programmed improvements and that minimal modifications to those approved and programmed improvements would be necessary to accommodate the proposed I-710 improvements.

During design of the I-710 Corridor Project, the project team has ensured that the proposed project will be implemented in a manner that is consistent with the programmed and planned improvements described above.

PORTS. As illustrated in Figure 1.2-5, cargo containers at the Ports are transported from ships in one of three ways: (1) to the terminals as property, (2) to on-dock rail facilities, or (3) to trucks that are used either for direct distribution to local and regional warehouses or for movement to near-dock and off-dock rail yards.

The POLB is proposing to expand the existing Pier B Rail Yard located in the North and Northeast Harbor Planning Districts. The On-Dock Rail Support Facility Project would enhance rail operations and the capacity and efficiency of rail facilities at the existing Pier B Rail Yard. This project would realign Pier B St., provide an increase in inbound and outbound freight handling capacity, provide up to 10,000-foot-long staging tracks, accommodate 8,000-foot-to-10,000-foot long container trains, provide storage tracks for empty rail cars, and remove the 9th St. grade crossing or realign 9th St. A Draft EIR for the project was released in December 2016.[10]

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[9] Port of Long Beach (POLB). Website: http://www.polb.com/environment/docs.asp (accessed September 9, 2016).

[10] POLB. Website: http://www.polb.com/about/projects.asp (accessed September 29, 2016).

RAILROADS. The present rail network in the SCAG region, including the Study Area, is composed of BNSF and UP Railroad rail lines, terminals/yards, and on-dock rail terminals at the Ports. Rail routes include the Alameda Corridor, BNSF Railroad's San Bernardino Subdivision, and UP Railroad's Los Angeles and Alhambra Subdivisions. The *I-710 Railroad Goods Movement Study* (2009) was prepared to assess the available capacity of the Southern California rail network to handle the projected demand in the movement of containerized freight to and from the Ports. One of the fundamental assumptions in developing the 2035 travel demand forecasts for the I-710 Corridor Project is that the calculated maximum utilization of the amount of containers moved by rail would be consistent with the rail network (*I-710 Railroad Goods Movement Study*). Taking into consideration the inland origins and destinations of the port cargo and operational characteristics of the railroads, it was assumed that approximately 34.4 percent of the cargo growth (approximately 14.1 million annual TEUs) in 2035 could be moved directly by rail from either on-dock or off-dock intermodal terminals.[11] Key information related to existing and future capacity of the rail system is summarized and cited below.

- As of 2015, the Alameda Corridor was operating 38 trains per day,[12] a decrease from previous years, due primarily to longer trains. By 2035, the Alameda Corridor is projected to be operating 108 trains daily. The Alameda Corridor has three tracks and sufficient capacity to handle the projected traffic.
- As of 2010, BNSF Railroad's San Bernardino Subdivision operated up to 99 trains per day (45 freight trains and 54 commuter trains) in its most heavily trafficked segments. By 2035, BNSF's San Bernardino Subdivision is projected to be operating up to 189 trains daily in its most heavily trafficked segments.[13] In most sections, the BNSF Railroad has constructed or has plans to construct three tracks on the San Bernardino Subdivision, sufficient capacity to handle the projected train volumes.
- The UP Railroad operates the Los Angeles and Alhambra Subdivisions as essentially parallel facilities that provide the railroad with routing flexibility. According to the *Regional Rail Simulation Update Summary Report* prepared for SCAG's November 2011 Comprehensive Regional Goods Movement Plan and Implementation Strategy, 51 through-freight trains operated collectively over the subdivisions in 2010, and this

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[11] Some port cargo is "transloaded", i.e., transferred from marine containers to larger domestic containers, and then moved by rail in these large containers. The transloaded cargo moved by rail is above and beyond the 34.4 percent that is moved directly by rail.

[12] Alameda Corridor Transportation Authority. Website: http://www.acta.org/pdf/CorridorTrainCounts.pdf (accessed December 28, 2016).

[13] SCAG. 2013. *On The Move: Southern California Delivers the Goods. Comprehensive Regional Goods Movement Plan and Implementation Strategy*, final report. February. Website: http://www.freightworks.org/ DocumentLibrary/ CRGMPIS%20-%20Final%20%20-%20Chapter%204.pdf (accessed December 28, 2016).

number is forecast to rise to 111 trains by 2035. The Los Angeles Subdivision operated 12 Metrolink passenger trains per day, and this number is also forecast to rise to 20 trains by 2035. The Alhambra subdivision conversely carries very little passenger train traffic (one train per day in 2010, with no forecast increase to 2035).[14] Through most of its length, the Los Angeles Subdivision will have two tracks but sections that will have only one track are not likely to carry more than 50 trains daily. Thus, this subdivision should have sufficient capacity to carry the projected traffic. East of Pomona (the more heavily trafficked segment), the Alhambra Subdivision is or will be two tracks. Thus, the Alhambra Subdivision, especially given the operating flexibility provided by the Los Angeles Subdivision, will have sufficient capacity to carry the projected traffic.

In addition to the capacity of the rail facilities themselves, there are three types of intermodal facilities that may impact growth for the railroads: on-dock, near-dock, and off-dock. On-dock refers to an intermodal facility that is situated at a port marine terminal. As of 2007, the on-dock rail volume per year was at 23.5 percent of its capacity; however, by 2035, these facilities are projected to reach capacity.

Near-dock refers to an intermodal facility situated within five miles of the POLA or the POLB. The container volume handled at the ICTF as of 2012 was approximately 800,000 containers, and the capacity is projected to rise to 1,500,000 containers by 2035, assuming plans to expand the facility are implemented. Plans to build a new facility (SCIG) are in progress (a Final EIR was certified in 2013, but that approval was vacated by the Contra Costa County Superior Court in 2016). Both of these facilities were assumed to be constructed and operational in the travel demand forecasting conducted for the I-710 Corridor Project.

Off-dock refers to an intermodal facility located more than five miles from POLA and POLB. There are two off-dock facilities in the Study Area: BNSF Railroad Hobart and UP Railroad East Los Angeles. As of 2012, these off-dock facilities were operating below capacity, but they are projected to reach capacity by 2035.[15] No specific expansion plans for the BNSF Railroad Hobart and UP Railroad East Los Angeles facilities have been proposed at the time this document was being prepared. There are also additional off-dock rail yards located further to the east (inland) that are also accessed by trucks from the I-710 Corridor. It is assumed in the *I-710 Corridor Project Travel Demand Modeling Report* (2017) that approximately 20 percent of primary truck trips have destinations that are further than 20 miles from the Ports, with approximately 13 percent destined to the Inland Empire/Orange County, and 7 percent to other

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[14] Freight Works. Website: http://www.freightworks.org/DocumentLibrary/Comprehensive%2 0Regional% 20Goods%20Movement% 20Plan%20and%20Implementation%20Strategy%20-%20Regional%20Rail% 20Simulation%20Update.pdf (accessed December 28, 2016).

[15] AECOM. 2017. *I-710 Corridor Project Travel Demand Modeling Report.*

locations in the SCAG region (i.e., the San Gabriel Valley, north Los Angeles County, Ventura County, and Imperial County).

TRANSIT. Public transportation service is provided by Metro and various City-operated municipal transit lines (e.g., Long Beach Transit) (see each city discussion in Sections 4.3–4.21 for additional details). Metro operates both local and rapid bus service and light rail service (called Metro Rail) in the Study Area. Metro currently operates five Metro Rapid routes that serve various parts of the Study Area. Metro also operates 13 Local Bus routes that provide predominantly east-to-west service and 10 Local Bus routes that provide predominantly north-to-south service that cover various parts of the Study Area. Metro Rail services are provided via the Blue Line, the Green Line, and the Gold Line, which run through some or most of the Study Area (see Figure 1.2-6). The *I-710 Corridor Project Initial Feasibility Analysis* evaluated expansion of transit services as part of the mobility solution within the I-710 Corridor, and transit enhancement opportunities have been refined and further developed throughout the community engagement process. Chapter 2.0, Project Alternatives, describes transit improvements included in the build alternatives.

1.2.1.6 LEGISLATION

The planning and design of the I-710 Corridor Project has been funded by Measures R and M, half-cent sales tax measures for Los Angeles County intended to finance new transportation projects and programs and accelerate those already in progress, passed by County voters and which took effect in July 2009 and January 2017, respectively. There are no other Federal, State, or local legislative mandates regarding the planning and/or implementation of the proposed I-710 Corridor Project improvements.

1.2.2 PURPOSE OF THE I-710 CORRIDOR PROJECT

1.2.2.1 PROJECT PURPOSE

The I-710 Corridor Project purposes are specific objectives that Caltrans, Metro, and the I-710 Funding Partners agencies would like to accomplish through implementation of the I-710 Corridor Project. The project purposes are used as the decision factors for comparing alternatives and identifying/selecting the preferred alternative. The purposes defined below respond to the needs within the I-710 Corridor identified in the above sections.

- Improve air quality and public health
- Improve traffic safety
- Modernize freeway design
- Accommodate projected traffic volumes
- Address increased traffic volumes resulting from projected growth in population; and employment, and economic activities related to goods movement

1.2.2.2 INDEPENDENT UTILITY AND LOGICAL TERMINI

Independent utility is generally defined as the ability of a proposed project to be a usable and a reasonable expenditure even if no additional transportation improvements in the area are made; simply put, the ability of the project to be whole, integrated, and to 'stand alone.' FHWA defines logical termini as "rational end points for a transportation improvement, and rational end points for a review of the environmental impacts."[16] Defining transportation improvements with these concepts in mind helps to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated. Within the Study Area, I-710 experiences congestion and traffic delays. The I-710 Corridor Project termini are from the southern terminus of the I-710 freeway to its connection to SR-60. Given the needs within the I-710 Corridor and the project's focus on goods movement as part of the project need, these are logical termini for considering proposed improvements because the southern terminus is an existing terminus already, and SR-60 is one of the major east-west freeways that connects to the I-710 and serves logistics centers in the Inland Empire. Under the No Build Alternative in 2035, approximately 31 percent of daily traffic transitions to SR-60 at the northern terminus of the I-710 Corridor. Because nearly one-third of the traffic exits I-710 at this location and transportation demand decreases north of SR-60, terminating the project at SR-60 provides a rational endpoint. This 19-mile Study Area is of sufficient length to address environmental matters on a broad scope. The I-710 Corridor Project would provide improvements to the current traffic conditions within the I-710 Corridor, even if no additional transportation improvements are made in the area. As such, the I-710 Corridor Project is considered to have independent utility as it does not rely on other projects to address the identified need in the Study Area. Furthermore, the I-710 Corridor Project would not restrict consideration of alternatives for other reasonably foreseeable transportation improvements because the project is being developed in coordination with other transportation improvements in the I-710 Corridor.

1.2.3 EARLY ACTION PROJECTS

Metro tasked the I-710 Technical Advisory Committee to identify and prioritize projects along the I-710 corridor that could be classified as Early Action Projects to be advanced for execution prior to approval of a preferred alternative for the I-710 Corridor Project. Early Action Projects associated with the I-710 Corridor Project are administered by Metro, in collaboration with Caltrans and the Gateway Cities COG, and funded via Measure R.

According to the I-710 Technical Advisory Committee, proposed improvements associated with the I-710 Corridor Project may qualify as Early Action Projects if they: (1) are consistent with the existing freeway and the proposed I-710 Corridor improvements including all possible project

[16] Federal Highway Administration (FHWA). Environmental Review Toolkit. Website: https://www.environment.fhwa.dot.gov/projdev/tdmtermini.asp, (accessed December 29, 2016).

alternatives under consideration in the environmental process; (2) demonstrate independent utility; and (3) require no additional permanent right-of-way to construct, therefore requiring minimal environmental clearance.[17] As such, improvements identified as Early Action Projects, although related to the I-710 Corridor Project, are considered independent projects and are individually subject to CEQA and NEPA and the project development process. Projects identified as Early Action Projects will likely be constructed by the time any phase of the I-710 Corridor Project proceeds to construction.

Potential Early Action Projects associated with the I-710 Corridor Project may include soundwalls, local freeway interchanges, and arterial improvements. For example, the Shoemaker Bridge Replacement Project, the Firestone Boulevard Bridge Widening Project over the Los Angeles River, and the I-710 Early Action Soundwall Program are all designated as Early Action Projects because they meet the criteria described above.

1.2.3.1 SHOEMAKER BRIDGE REPLACEMENT PROJECT

The Shoemaker Bridge Replacement Project is administered by the City of Long Beach, in cooperation with Caltrans, as an Early Action Project of the I-710 Corridor Project and entails the replacement of the Shoemaker Bridge along West Shoreline Dr. crossing the Los Angeles River. The Shoemaker Bridge along West Shoreline Dr. interconnects directly with I-710, indicating it is consistent with the existing freeway, and proposed improvements to the bridge and surrounding circulation network will be consistent with the proposed I-710 Corridor improvements.[18] Additionally, the Shoemaker Bridge Replacement Project will provide improvements to the current traffic conditions along West Shoreline Dr. crossing the Los Angeles River, even if no additional transportation improvements are made in the area, therefore demonstrating independent utility, as it does not rely on other projects to address the identified need within its project limits.[19] Finally, most of the proposed improvements and construction of the Shoemaker Bridge Replacement Project will occur within existing Caltrans or City of Long Beach right-of-way, but some acquisition of property and easements from the Los Angeles County Flood Control District along the Los Angeles River adjacent to I-710 will be required and will be addressed in the project-specific EIR for the proposed Shoemaker Bridge Replacement Project, which is being prepared concurrent with the I-710 Corridor Project

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[17] Los Angeles County Metropolitan Transportation Authority (Metro). 2016. I-710 Corridor Project: Early Action Project: Soundwalls Package 3: South of State Route 91. July. Website: http://media.metro.net/board/ Items/2014/10_ october/20141023 rbmitem47.pdf (accessed January 11, 2017).

[18] City of Long Beach Public Works Department. 2016. *Initial Study for Shoemaker Bridge Replacement Project.* April. Website: http://www.shoemakerprojectlb.com/uploads/docs/IS_Checklist.pdf (accessed January 11, 2017).

[19] Ibid. Figure 1-1.

RDEIR/SDEIS. The Notice of Preparation and Initial Study Checklist for the project were released in April 2016.

1.2.3.2 FIRESTONE BOULEVARD BRIDGE WIDENING OVER THE LOS ANGELES RIVER PROJECT

The Firestone Boulevard Bridge Widening over the Los Angeles River Project is administered by the City of South Gate, in cooperation with Caltrans, as an Early Action Project of the I-710 Corridor Project and entails the widening of the Firestone Boulevard Bridge over the Los Angeles River to allow for two new lanes to the southbound on-ramp to I-710. The approximately 60-foot widening will require the extension of the existing pier walls in the river. The existing bridge has three pier walls with debris noses. The Firestone Boulevard Bridge interconnects directly with I-710, indicating it is consistent with the existing freeway, and proposed improvements to the bridge and surrounding circulation network will be consistent with the proposed I-710 Corridor improvements.[20] Additionally, the Firestone Boulevard Bridge Widening over the Los Angeles River Project will provide improvements to the current traffic conditions along Firestone Boulevard crossing the Los Angeles River, even if no additional transportation improvements are made in the area, therefore demonstrating independent utility, as it does not rely on other projects to address the identified need within its project limits.[21] Finally, most of the proposed improvements and construction of the Firestone Boulevard Bridge Widening over the Los Angeles River Project occur within existing Caltrans or City of South Gate right-of-way, but a temporary construction easement on an adjacent property and partial acquisition of two additional adjacent properties, which include a portion of the Los Angeles County Flood Control District channel along the Los Angeles River and a portion of the Los Angeles Department of Water and Power property, are required adjacent to the I-710 and were addressed in the project-specific Negative Declaration/Finding of No Significant Impact for the proposed Firestone Boulevard Bridge Widening over the Los Angeles River Project that was initially approved in 1997 and revalidated in 2014. The original scope of the project included modification to the nearby Firestone Boulevard/I-710 ramps; those improvements have been since separated from the bridge widening project. Construction of the project commenced in March of 2016 and is expected to be completed in 2017.

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[20] City of South Gate. Capital Improvement Program. *Firestone Boulevard Bridge Widening over the Los Angeles River, CIP Project Update*. Website: http://www.cityofsouthgate.org/DocumentCenter/View/2131 (accessed January 13, 2017).

[21] Southern California Association of Governments. PM Conformity Hot Spot Analysis - Project Summary for Interagency Consultation. Website: http://www.scag.ca.gov/programs/TCWG%20Document%20Library /LA996347 %20 July%2010/4.1-5%20LA996347.pdf (accessed January 13, 2017).

1.2.3.3 I-710 EARLY ACTION SOUNDWALL PROGRAM

Five miles of new soundwalls were identified along I-710, plus an additional seven miles of existing soundwalls that can be aesthetically treated to match the new walls, that are being advanced for earlier delivery. The soundwall locations are consistent with the I-710 Corridor Project build alternatives. Metro awarded three plans, specifications and estimates (PS&E) contracts for the three soundwall packages in summer 2015, with a PS&E completion date of late 2017. Metro and several partner agencies are working to complete the Early Action Soundwall Program, including Caltrans, the Gateway Cities COG, and the various I-710 corridor cities.[22]

[22] Los Angeles Metropolitan Transportation Authority. Website: https://www.metro.net/projects/i-710-soundwall-project/ (accessed March 2, 2017).

2.0 PROJECT ALTERNATIVES

2.1 PROJECT DESCRIPTION

As described in Chapter 1.0, the Interstate 710 (I-710) Corridor is a vital transportation artery, linking the Ports of Los Angeles and Long Beach (POLA and POLB) to southern California and beyond. An essential component of the regional, statewide, and national transportation system, it serves both passenger and goods movement vehicles. As a result of population growth, cargo container growth, increasing traffic volumes, and aging infrastructure, the I-710 Corridor experiences serious congestion and safety issues. The need for the I-710 Corridor Project is evidenced by the following: high heavy-duty truck volumes resulting in high concentrations of diesel particulate emissions within the I-710 Corridor; high accident rates (particularly truck-related); insufficient weaving lengths and areas in which ramps do not meet current design standards; high volumes of trucks and cars leading to congestion that is projected to increase; and increases in population, employment, and goods movement between now and 2035 that will lead to increased traffic demand on and around I-710. The purpose of the I-710 Corridor Project is to achieve the following: improve air quality and public health; improve traffic safety; provide a modern design for the I-710; address projected traffic volumes; and address projected growth in population, employment, and activities related to goods movement.

This chapter describes the I-710 Corridor Project and the design alternatives that were developed to meet the defined purpose(s) while avoiding or minimizing environmental impacts and incorporating feedback from the community. The alternatives evaluated in this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) are Alternative 5C, I-710 Widening and Modernization; and Alternative 7, I-710 Modernization plus Freight Corridor (Zero-Emission Vehicles). Alternative 1 (No Build) is also discussed in this chapter. The estimated costs for these alternatives are summarized in Table 2.1-1.

Table 2.1-1: Estimated Costs (Billion $)

Alternative	R/W-Utilities	Construction	Total
Alternative 5C	1.08	3.59	4.67
Alternative 5C, Option 1A	1.04	3.59	4.63
Alternative 5C, Option 2A	1.09	3.62	4.71
Alternative 5C, Option 3A	1.11	3.69	4.80
Alternative 7	1.65	6.32	7.97
Alternative 7, Option 1B	1.62	6.33	7.96
Alternative 7, Option 3B	1.68	6.44	8.12

Source: AECOM. *Draft Project Report* (April 2017).
Note: Estimates are in dollars and do not include support costs or programmatic elements.

In addition to traditional sources of transportation funding such as Federal/State gas tax funds and local Measure R and Measure M sales tax funds, the Los Angeles County Metropolitan Transportation Authority (Metro) is also evaluating the potential applicability of a Public-Private Partnership (PPP) for the I-710 Corridor Project. A PPP is a mutually beneficial collaboration between a public agency and a private sector entity. Through this contractual arrangement, the skills and assets of each sector are shared in delivering a service or facility for the use of the general public. PPP's are increasingly being used as a means of funding and expediting completion of major public infrastructure projects in the United States.

2.2 I-710 Corridor Project RDEIR/SDEIS Alternatives Development Process

2.2.1 2012 Draft EIR/EIS Public Circulation and New Information

In June 2012, the first Draft Environmental Impact Report/Draft Environmental Impact Statement (Draft EIR/EIS) for the I-710 Corridor Project was released for public circulation. This marked a milestone in a four-year effort by the Project Team, stakeholder groups and agencies, and various advisory committees to define project alternatives and analyze the potential impacts of those alternatives. Project development began in 2008 with the issuance of the Notice of Preparation (NOP) and Notice of Initiation (NOI).

During the 2012 public circulation period (June 27 to September 28), three public hearings were held, and nearly 3,000 individual comments were received from members of the public, interested groups, organizations, public agencies, and elected officials. Among other issues, included in those comments was support for the Project Team to consider and analyze different alternatives, including a recurring request for an alternative that would add a four-lane zero emission/near zero emission (ZE/NZE) freight corridor with no expansion of general purpose lanes on I-710.

During or shortly after the close of the comment period, new information came to light as well. The Southern California Association of Governments (SCAG) completed and adopted its 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and released updated travel demand model forecasts for the SCAG region. Additionally, several transportation improvement projects in the vicinity moved forward in their respective planning stages. The following sections discuss these changes and new information in more detail.

2.2.2 Revised Alternatives Development and Refinements

SCAG's 2012 RTP was completed and adopted in April 2012. With the new RTP came updates to the regional traffic model and proposed project list. In order to be programmed for Federal funding, transportation projects must be included in the RTP project list and modeled in the financially constrained RTP. These updates to the regional traffic model provided a more comprehensive understanding of the traffic patterns and behavior within the study area and beyond, particularly related to goods movement. Several potential shifts in general traffic

patterns and demand were identified, resulting from RTP updates as well as changes in the existing condition and reasonably foreseeable projects, particularly in and around the Ports complex, that are detailed in the following discussion.

PORT PROJECTS. Two key port projects that had not been included in the original traffic modeling forecast scenario or in the No Build scenario are now considered reasonably foreseeable.[1] The POLA released a Draft EIR for the Southern California International Gateway (SCIG) Rail Yard expansion project in late 2011, and a recirculated Draft EIR in September 2012. The Los Angeles Board of Harbor Commissioners certified the Final EIR in March 2013;[2] however, that approval was vacated by the Contra Costa County Superior Court in 2016. As the SCIG project proposes to construct a near-dock intermodal rail facility approximately four miles north of the Ports complex, it would effectively eliminate approximately 95 percent (according to the SCIG Final EIR) of the truck trips that would otherwise use I-710 to access the Burlington Northern Santa Fe (BNSF) Hobart Yard facilities, 26 miles north.

The Intermodal Container Transfer Facility (ICTF) modernization and expansion project proposes to increase the throughput capacity of the existing near-dock ICTF intermodal rail yard, located approximately five miles from the Ports, just south of the Interstate 405 (I-405). An NOP was issued in 2009[3] and work on the Draft EIR is currently underway. By increasing the ability of cargo to off-load at near-dock yards rather than utilize I-710 north to access the BNSF Hobart and Union Pacific Railroad (UP Railroad) intermodal yards, the ICTF and SCIG projects represent a potential substantial change to the general cargo truck traffic patterns in and around the Ports and on I-710.

CHANGES IN REGIONAL TRUCK TRAVEL PATTERNS SINCE 2008. In addition to the potential effects of the SCIG and ICTF projects on truck travel patterns, more has been learned about port cargo behaviors and their origins and destinations, particularly with regards to cargo transloading.

A substantial portion of port cargo containers are headed to local markets. This includes the true local component, which does not return to off-dock rail yards or leave the region, and the transloading component. Transloading is when cargo in international containers is transferred to domestic containers at transload centers or warehousing located throughout the SCAG region. Once transloaded, cargo within domestic containers are carried by truck to other destinations within the region, or it is carried by truck to intermodal (off-dock) rail yards within the region for

[1] NEPA and CEQA require consideration of past, present, and reasonably foreseeable future actions in evaluating the impacts of a project.

[2] Port of Los Angeles (POLA). Final EIR - Southern California International Gateway (SCIG) Project. Website: https://www.portoflosangeles.org/EIR/SCIG/FEIR/feir_scig.asp.

[3] POLA. Website: https://www.portoflosangeles.org/nop/ictf/nop-is_011209.pdf.

transport by freight rail. These secondary trips are more dispersed throughout the region. Sixty-four percent of these transload secondary truck trips are destined to an area within twenty miles of the ports, over 17 percent are headed to the Inland Empire or Orange County, and the remaining 19 percent travel to North Los Angeles County/the San Gabriel Valley, Ventura County, and/or Imperial County. According to both SCAG's 2012 and 2016 RTP/SCS Goods Movement Appendices, truck patterns will only become more dispersed in the future.

GATEWAY CITIES COUNCIL OF GOVERNMENTS STRATEGIC TRANSPORTATION PLAN. Several other transportation projects and studies in the Gateway Cities subregion (and beyond) have also progressed in their respective planning processes. The Gateway Cities Council of Governments (Gateway Cities COG), in coordination with Metro, developed several studies on Goods Movement, Commuter Rail, and other modes of transportation in the area in order to inform their Strategic Transportation Plan (STP), an integrated transportation plan for the cities of the subregion. The STP is inclusive of freeways, arterial highways, transit, bikeways, pedestrian facilities, technology, and goods movement and provides an integrated, multimodal program of potential projects that move the member cities closer to achieving their goals of improving mobility, accessibility, sustainability, and the increased safety of the subregion's transportation system. The STP also includes a funding and financing plan for implementation purposes. Another important objective of the STP is to increase connectivity of the subregion's bicycle and pedestrian network by connecting gaps in the network and providing more connectivity to transit. Potential multi-jurisdictional bicycle and pedestrian projects are contained in the STP's Active Transportation Plan.[4]

OTHER FREEWAY PROJECTS. Freeway and highway projects in the vicinity have also advanced since the release of the 2012 Draft EIR/EIS. Proposed improvements to I-405 in Orange County would add one general purpose lane and two Express Lanes in each direction from I-605 to SR-73, and anywhere from one to two general purpose lanes, and other associated operational improvements, from I-5 to SR-55.[5] Potential "hot-spot" improvements to congested areas on I-605 within Los Angeles County are also being examined. Metro completed a feasibility study on congestion hot spots within the State Route 91 (SR-91), I-605, and I-405 corridors, and several proposed projects were identified along those routes that would include (but are not

[4] Gateway Cities Council of Governments (Gateway Cities COG). Website: http://www.gatewaycog.org/gateway/initiatives-and-projects/strategic-transportation-plan/?cat=Strategic+Transportation+Plan+Resources.

[5] Orange County Transportation Authority (OCTA). Website: http://www.octa.net/Projects-and-Programs/All-Projects/Freeway-Projects/Overview/ (accessed October 4, 2016).

limited to) capacity and operational enhancements, ramp and intersection reconfigurations, and safety features. Several of these projects began environmental review in late 2016.[6]

I-710 DESIGN REFINEMENTS. Some changes to the design plans for the I-710 Corridor were also proposed during project development and in consultation with local cities, along with general geometric refinements (particularly between I-105 and SR-60). The proposed Patata (freight corridor only) and Slauson Ave. Interchanges in the Cities of Cudahy and Bell have been removed and revised, respectively, in the proposed design. Also during the I-710 Corridor Project development process, as studies were developed and coordinated with interested and jurisdictional agencies, several potentially substantive issues or conflicts became evident to the Project Team. One of these conflicts was illustrated in more detail in the completed Utility Studies performed for the project and required a more robust avoidance strategy. Similarly, ongoing coordination with the United States Army Corps of Engineers (USACE) and the Los Angeles County Flood Control District (LACFCD) indicated that substantive changes to the Los Angeles River levee would be infeasible. Therefore, avoidance efforts for the Los Angeles River were undertaken as well.

2.2.2.1 COMMUNITY ALTERNATIVE 7

During the 2012 public circulation period, comments received from the public and agencies indicated strong support for the creation and inclusion of another alternative that retained the ZE/NZE freight corridor but did not add general purpose lanes on I-710. The Coalition for Environmental Health and Justice (CEHAJ), a coalition of organizations, associations, and community groups working to achieve environmental justice, community health, and overall quality of life in the study area, put forth a detailed and comprehensive proposal of an alternative called “Community Alternative 7” (CA-7) as a formal comment on the 2012 Draft EIR/EIS (see Comment No. IP-22 in Appendix S of this RDEIR/SDEIS). Signatories to the comment letter proposing CA-7 include East Yard Communities for Environmental Justice, Natural Resources Defense Council, Greater Long Beach Interfaith Community Organization, Communities for a Better Environment, Building Healthy Communities – Long Beach, Khmer Parent Association, Westside Christian Church, EndOil/Communities for Clean Ports, Coalition for a Safe Environment, Long Beach Alliance for Children with Asthma, Legal Aid Foundation of Los Angeles, Coalition for Clean Air, Friends of the Los Angeles River, and Physicians for Social Responsibility – Los Angeles.

CA-7 provided a comprehensive and holistic, broad-based solution to transportation issues affecting the I-710 Corridor communities, and placed special emphasis on health, air quality, and active transportation. The seven components of CA-7 included:

[6] Los Angeles County Metropolitan Transportation Authority (Metro). Website: https://www.metro.net/projects/i-605/ (accessed October 4, 2016).

- No I-710 widening of general purpose lanes
- Comprehensive public transit element
- Mandatory zero emission freight corridor
- Public-Private Partnership operator of the freight corridor
- Los Angeles River improvements
- Comprehensive pedestrian and bicycle element
- Community benefits

Many comment letters were received in support of CA-7. Similarly, the U.S. Environmental Protection Agency (EPA) indicated in their comment letter a desire to see a "modified Zero-emission Freight Corridor Alternative, with no I-710 widening."[7] During the comment period, there was broad support for the evaluation of this type of alternative, as well as providing increased benefits to the impacted communities of the corridor, particularly with regard to health and air quality issues.

Although the CA-7 proposal was comprehensive, some elements of the alternative are not appropriate for inclusion in a transportation project-level environmental document. The CA-7 alternative is essentially a programmatic effort aimed at implementing multi-jurisdictional projects well beyond the scope of the I-710 Corridor Project. As the approving agency for the I-710 Corridor Project, the California Department of Transportation's (Caltrans) jurisdiction is limited to the State highway system. Additionally, some elements of the CA-7 alternative are much smaller in scale than the overall I-710 Corridor Project, and implementation of these elements would be less impactful. Therefore, those elements (such as the construction of bicycle lanes or pedestrian facilities), while still subject to the California Environmental Quality Act (CEQA), would likely not require the preparation of a full EIR, and could be advanced more quickly individually by the agencies with jurisdiction than if they were included in the scope of the I-710 Corridor Project. For these reasons, CA-7 was not carried forward for detailed evaluation as a stand-alone alternative in this RDEIR/SDEIS. However, the proposal of CA-7, coupled with the general support from the EPA and others for the evaluation of an alternative that added a ZE/NZE freight corridor without expansion of general purpose lanes, was directly responsible for the development of Alternative 7 as a stand-alone project alternative under consideration in this RDEIR/SDEIS. Additionally, in direct response to the issues and requests included in the CA-7 proposal, the Gateway Cities COG developed the "I-710 Livability Initiative," a broader regional framework in which non-transportation elements of CA-7 not

[7] U.S. Environmental Protection Agency (EPA) comment letter on I-710 Corridor Project Draft EIR/EIS, September 28, 2012 (see Comment No. F-5 in Appendix S of this RDEIR/SDEIS).

carried forward into the I-710 Corridor Project RDEIR/SDEIS would be further explored. A more detailed response to the CEHAJ comment letter is included in Appendix S, Response to Comments.

After the close of the public circulation period in September 2012, the Project Team conducted several coordination meetings with agencies and organizations that submitted substantive comments on the project. These meetings were held in order to ensure that the Project Team fully understood the intent and meaning of the comments made and so that they could be properly responded to and, if applicable, responsive changes could be incorporated into the project. In addition to these stakeholder meetings, a series of three detailed workshops were held in December 2014 and January 2015 with representatives from CEHAJ to discuss the specific details of CA-7 and the possibilities for inclusion of some elements into the I-710 Corridor Project, as well as Caltrans' limitations in implementing other programmatic elements. Please see Section 2.6.2 for more information on CA-7. After the workshops, and in parallel with the ongoing coordination and communication between CEHAJ and the Project Team, community members worked with the office of Los Angeles County Supervisor Hilda Solis to continue the effort to include CA-7 in the RDEIR/SDEIS. As a result, the Metro Board of Directors passed Board Motion 22.1 in October 2015 that directed Metro and Caltrans to study the following as a part of the I-710 Corridor Project Description:[8]

- Develop a geometric design for Alternative 7 that avoids significant impacts and displacement of homes, businesses, and community resources, such as, but not limited to, the Bell Shelter or Senior Centers, and the implications of such a design on commuter and freight traffic demands; where significant impacts are unavoidable, provide documentation of the rationale and constraints.
- An option, under Alternative 7 only, to evaluate the feasibility should technology be available, to operate zero emissions trucks along the freight corridor as part of the project.
- Implementing high-frequency Express Bus Transit service along the main I-I-710 Corridor and the impact of such a line on commuter and freight traffic demands.
- Adding transit service on the bus and rail lines serving the I-710 project area, including operating Blue and Green Line trains with a minimum of 10-minute headways and a minimum of 25 percent increase in Local Bus, Express Bus, and community shuttles service frequencies.

[8] Metro. Board of Directors, file no. 2015–1656, Attachment D Board Motion 22.1. Website: https://metro.legistar.com/LegislationDetail.aspx?ID=2551940&GUID=0AE77607-5A13-4551-AFC4-AF2CEA0694B5&Options=&Search= (accessed November 28, 2016).

- Traffic control measures, traffic management, intelligent transportation systems, and operational efficiency improvements, such as highway ramp metering and transit system signal prioritization, to reduce congestion on local roadways and arterials before considering expanding lanes.
- The use of the best available control technology construction equipment as defined by the California Air Resources Board (ARB).
- Upgrades to the existing Los Angeles River Bike Path consisting of safety, landscaping, hardscape, lighting and access enhancements, and fix station including to locations [*sic*], between Ocean Blvd. (Long Beach) and its northern terminus at Slauson Ave. (Vernon).
- The replacement/enhancement of approximately 28 existing bridges/underpasses and the construction of at least five new pedestrian/bike bridges/underpasses to ensure safe and easily accessible freeway and river crossings to reduce gaps between crossings further than 0.5 mile where demand for increased access exists along the project corridor.
- Ensure implementation of Complete Streets treatments that promote sustainable and "livable neighborhoods" for all those arterials, ramp termini, and intersections as part of the proposed I-710 project. Designs shall be consistent with the principles outlined in Caltrans' *Main Streets, California: A Guide for Improving Community and Transportation Vitality.*
- Consistent with Caltrans' policy, maximize the number of new trees, shrubs and foliage within proposed State right of way that are drought resistant and have superior biosequestration and biofiltration capabilities, in an effort to surpass the minimum tree removal/replacement ratio.
- Consistent with the Regional Water Quality Control Boards and their Municipal Separate Storm Sewer System permits, identify suitable locations within the State's right of way to implement additional storm water Best Management Practices (BMPs) and enhance the water quality for the Los Angeles River and its tributaries.
- Incorporate into the project design, avoidance and minimization measures to reduce the level of impacts to the Los Angeles River's riverbanks, trails, pocket parks, open space, wetlands, and native landscaping within the project area.

Also included as part of Motion 22.1 was direction to Metro to examine, in coordination with Caltrans, Gateway Cities COG, and other partner and responsible agencies, the feasibility of several study area elements to occur outside of but in parallel to the I-710 Corridor Project, including, but not limited to, a zero emission truck procurement and operations program, addition of bus stops with access points to bicycle paths, and to work with community groups to develop a Local and Targeted Hiring Policy and Project Labor Agreement for construction jobs and a First Source Hiring Policy for permanent jobs created by the I-710 Corridor Project.

Table 2.2-1 lists the elements of Motion 22.1 that are addressed in this RDEIR/SDEIS and where the discussion can be found.

Table 2.2-1: Motion 22.1 Elements Location of Discussion in RDEIR/SDEIS

Motion 22.1 Item	Location of Discussion in RDEIR/SDEIS
A – Geometric design avoidance	Section 3.3.2.3
B – Zero emission trucks	Section 2.3.2.1, Section 3.13
C – New high frequency bus transit	Section 2.3.2.1, Section 3.5
D – Increased existing transit service	Section 2.3.2.1, Section 3.5
E – Traffic control measures/TSM/ITS	Section 2.3.2.1, Section 3.5
F – BACT construction equipment use	Section 3.24, Appendix F
J – Upgrades to Los Angeles River Bike Path	On April 27, 2017, the Metro Board amended Motion 22.1 to advance the Los Angeles River Bike Path upgrades sooner and as a separate project; therefore, there is no discussion of this element in this RDEIR/SDEIS.
K – Five new bike/pedestrian bridges	Section 2.3.2, Section 3.3, Section 3.5, Section 3.6
L – Complete streets that promote livable neighborhoods	Section 3.3
M – Maximized trees, shrubs, and foliage that are drought resistant and biosequestration/ biofiltration	Section 2.3.2, Section 3.6
N – Identify additional BMPs	Section 2.3.2, Section 3.9
O – Avoid/minimize impacts to Los Angeles River, parks, trails, open space, wetlands, and native landscaping	Section 2.2.2, Section 3.3.2.3

BMP = Best Management Practices
ITS = Intelligent Transportation Systems
Metro = Los Angeles County Metropolitan Transportation Authority
RDEIR/SDEIS = Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement
TSM = Transportation System Management

2.3 PROJECT ALTERNATIVES

Descriptions of the I-710 Corridor Project alternatives evaluated in this RDEIR/SDEIS are provided below and include the No Build Alternative (Alternative 1) and two build alternatives (Alternatives 5C and 7). Discussion of previous alternatives considered prior to and during the 2012 Draft EIR/EIS development process and public circulation period, but since withdrawn from consideration, are included in Section 2.4. A schematic depiction of each alternative is provided to assist the reader in visualizing the basic components of each alternative. Detailed mapping showing the design features of the revised build alternatives and the locations of those features is provided in Appendix O, Concept Plans.

As with any major transportation project, the project design and alternatives description presented in this RDEIR/SDEIS is preliminary and subject to refinement as a result of more detailed studies and public input. Should changes occur, the alternatives description and environmental analyses will be updated accordingly. Caltrans will conduct periodic

environmental re-evaluations as necessary and as design progresses, consistent with 23 CFR 771.129 under NEPA and Sections 15162–15164 of the CEQA Guidelines.

2.3.1 No Build Alternative (Alternative 1)

Alternative 1 would maintain the current configuration of the existing I-710 Corridor. There would be no capacity-increasing improvements to the I-710 mainline; only approved and planned projects included in SCAG's 2012-2035 Regional Transportation Plan Sustainable Communities Strategy (RTP/SCS) and Federal Transportation Improvement Program (FTIP) are considered part of the Alternative 1. This alternative also include current plans and projects related to goods movement to and from the Ports, such as maximum utilization of existing and planned railroad capacity, as well as application of advanced technologies and programs to manage transportation systems and travel demand within the I-710 Corridor. The freight rail elements assumed in Alternative 1 include the SCIG and ICTF capacity expansion plans in addition to the current plans and projects outlined above. See Appendix U for a list of projects assumed to be part of the No Build Alternative. Alternative 1 provides the basis for comparison of 2035 No Build conditions with the 2035 build alternatives.

2.3.2 Build Alternatives

2.3.2.1 Common Features of the Build Alternatives

Although the elements of the build alternatives evaluated in this RDEIR/SDEIS are not built upon each other as were the alternatives included in the 2012 Draft EIR/EIS, Alternatives 5C and 7 share several common elements between them, including the projects listed as part of the No Build Alternative. This section discusses the common elements of the build alternatives.

Modernization of I-710 Geometric Design. Both Alternatives 5C and 7 involve modernization of I-710 geometric design, particularly at freeway-to-freeway and local interchange locations, in order to address safety, operational, and capacity deficiencies. The locations and scope of modifications to the mainline and freeway-to-freeway interchanges are similar between the alternatives, but not identical, and are listed individually under each build alternative. The I-710 centerline would be shifted at several locations to avoid or minimize right-of-way impacts. Storm water conveyance and treatment systems and roadside equipment, maintenance, and access features would be replaced, modified, added, and/or removed, in order to accommodate modifications to the freeway. Figure 2.3-1 shows key features common to both build alternatives.

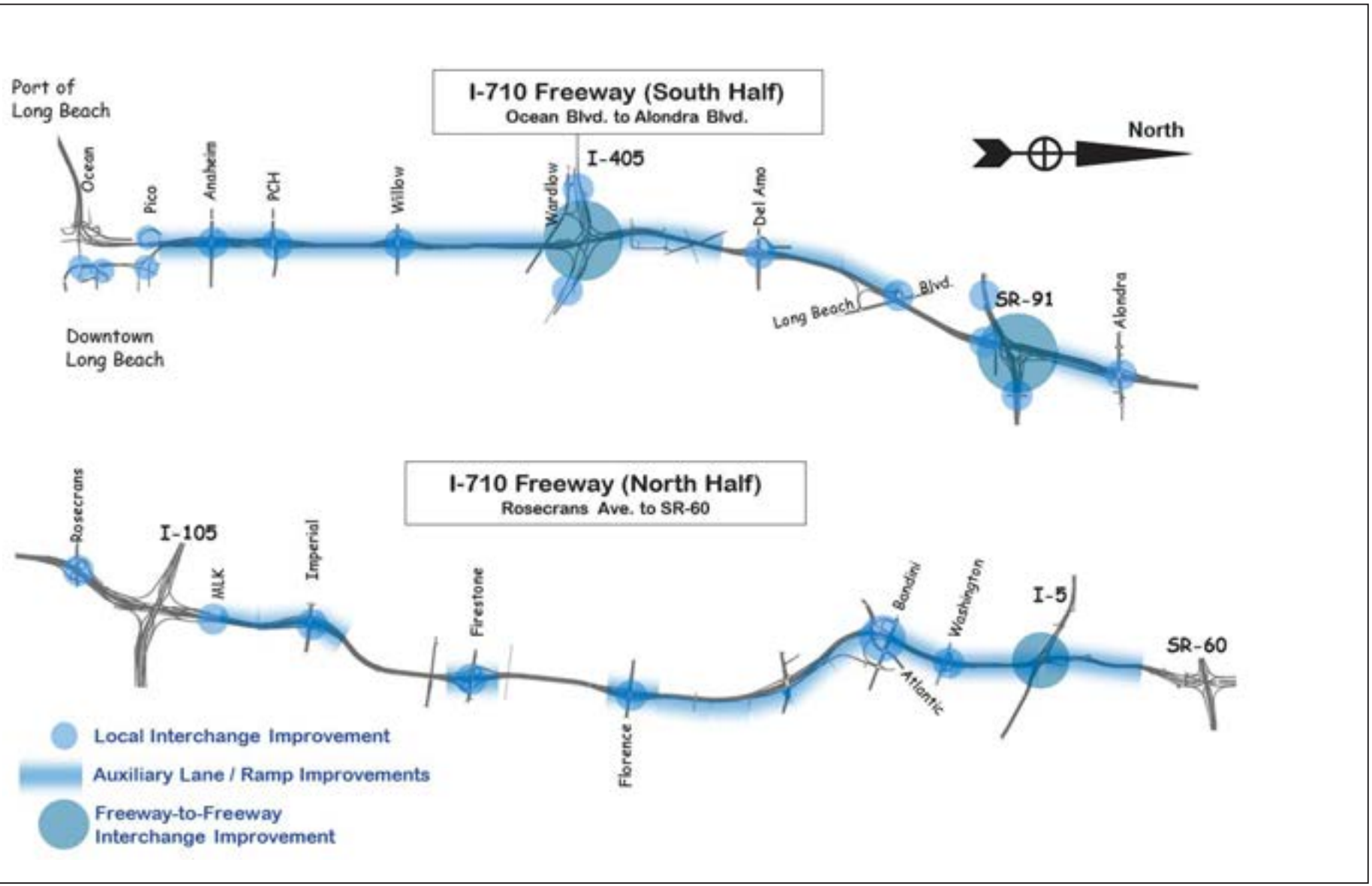

FIGURE 2.3-1

I-710 Corridor Project RDEIR/SDEIS

Common Key Features of the Build Alternatives

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

SOURCE: URS

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Critical infrastructure, including, but not limited to, flood control facilities and major utilities, that crosses proposed freeway modifications would be replaced, modified, and/or relocated. Prominent infrastructure crossings include the Los Angeles River, Compton Creek, Southern California Edison (SCE) transmission lines, and Los Angeles Department of Water and Power (LADWP) transmission lines.

Aesthetic enhancements that include thematic surface treatment of structures and paved surfaces, roadside planting, and irrigation systems consistent with a corridor-wide aesthetic master plan (*I-710 Corridor Aesthetics Master Plan* [Caltrans 2015]) will be incorporated.

LOCAL INTERCHANGE MODIFICATIONS. Both build alternatives involve similar modifications to local interchanges, streets, crossings, and frontage roads near I-710 to improve traffic safety, circulation, and access. The improvements common to both alternatives are listed in Table 2.3-1. With respect to "Complete Streets" improvements, inclusion of pedestrian paths (sidewalks, curb ramps, and crosswalks) and sufficient outside shoulder width to accommodate Class II bikeways on local street crossings will be provided as part of these modifications. In addition to the improvements listed in Table 2.3-1, the Leonis St. pedestrian undercrossing in Commerce is proposed to be replaced under both build alternatives.

Outside of the freeway features described, modifications to selected local arterial intersections adjacent to I-710 freeway ramp/arterial street intersections will be made, in order to reduce traffic delay and improve operations. These modifications consist of lane restriping, median modification, and/or spot widening to provide additional intersection turn lanes, and are the same between both build alternatives. Intersections are listed in Table 2.3-2.

MODIFICATIONS TO RAIL FACILITIES. Roadway or railway grade separation structures would be replaced, widened, added and/or removed in order to accommodate lane additions, modified freeway alignments, and reconfigured interchanges. Some intersecting roadways and railroad crossings entail realignment of local roadways and/or railroads. Railroad crossing locations where modifications are proposed are the same between build alternatives and include:

- Reconstruction of the UP Railroad San Pedro Subdivision at I-405 and at I-710, in Long Beach.
- Reconstruction of the Metro Blue Line underpass at I-710, in Long Beach.
- Widening of the UP Railroad San Pedro Subdivision at I-710, in South Gate.
- Reconstruction of UP Railroad Patata Industrial Lead at I-710, in South Gate, to accommodate the wider freeway.

Table 2.3-1: Local Interchange and Roadway Modifications Common to Both Build Alternatives

No.	Location	Improvements
B-1	Shoreline Dr. (City of Long Beach)	• Reconstruction of Shoreline Dr. to consolidate both directions of travel adjacent to the Los Angeles River. • Removal of Shoreline Dr. ramp connections to Broadway and from 3rd St.; replacement with signalized intersection. • Removal of Shoreline Dr. ramp connections to 6th and from 7th St; replacement with signalized intersection. • Removal of Shoreline Dr. ramp connections to and from 9th St. • Replacement of Shoemaker Bridge (Shoreline Dr.) over the Los Angeles River.
B-2	Ocean Blvd. (City of Long Beach)	• Reconfiguration of ramp connections.
B-3	Fashion Ave. (City of Long Beach)	• Convert to cul-de-sac north and south of Anaheim St. • Convert to cul-de-sac north and south of Willow St.
B-4	9th St. (City of Long Beach)	• Removal of 9th St. local street crossing.
B-5	17th St. (City of Long Beach)	• Convert to cul-de-sac east of Fashion Ave.
B-6	Pacific Coast Hwy. (City of Long Beach)	• Reconstruction of the Pacific Coast Hwy. interchange, including conversion from cloverleaf interchange to diverging diamond interchange configuration, and braided entrance and exit ramps with those of the Anaheim interchange. • Reconstruction and widening of Pacific Coast Hwy., including freeway overcrossing and bridge over the Los Angeles River, between Caspian Ave. and Golden Ave.
B-7	Hill St. (City of Long Beach)	• Addition of a pedestrian and Class I bikeway crossing over the Los Angeles River and I-710 at Hill St. in Long Beach.
B-8	Willow St. (City of Long Beach)	• Reconstruction of Willow St. interchange, including conversion from cloverleaf interchange to diverging diamond interchange configuration, and entrance and exit ramps. • Reconstruction and widening of Willow St., including the freeway overcrossing and bridge over the Los Angeles River, between Easy Ave. and Golden Ave.
B-9	Wardlow Rd. (City of Long Beach)	• Elimination of the Wardlow Rd. interchange on I-710. • Reconstruction of the Wardlow Rd. overcrossing.
B-10	Via Alcalde Ave. (City of Long Beach)	• Realignment of Via Alcalde Ave. between Carson St. and Via Plata St.
B-11	Carson St. (City of Long Beach)	• Reconstruction of the Carson St. undercrossing.
B-12	208th St. (City of Carson and City of Long Beach)	• Reconstruction of the 208th St. overcrossing.
B-13	Santa Fe Ave. (City of Long Beach)	• Reconstruction and reconfiguration of Santa Fe Ave. interchange on I-405.
B-14	Pacific Pl. (City of Long Beach)	• Elimination of the Pacific Pl. interchange on I-405.

Table 2.3-1: Local Interchange and Roadway Modifications Common to Both Build Alternatives

No.	Location	Improvements
B-15	Del Amo Blvd. (City of Long Beach)	• Reconstruction of the Del Amo Blvd. interchange, including conversion from partial cloverleaf interchange to diverging diamond interchange configuration, and entrance and exit ramps. • Reconstruction and widening of Del Amo Blvd., including the bridge over Compton Creek, freeway undercrossing, and the bridge over the Los Angeles River, between the Metro Blue Line and Orange Ave.
B-16	Susana Rd. (Community of Rancho Dominguez)	• Relocation of the Susana Rd./Del Amo Blvd. intersection approximately 500 feet west and realignment of Susana Rd., south of E Pacific Commerce Dr. to join new intersection.
B-17	Long Beach Blvd. (City of Long Beach)	• Reconstruction of Long Beach Blvd. interchange, including entrance and exit ramps. • Reconstruction of Long Beach Blvd., including the freeway overcrossing and bridge over the Los Angeles River, between Allington St. and 56th St. • Reconstruction of Long Beach Blvd. from Forhan St. to Artesia Blvd.
B-18	Artesia Blvd. (City of Long Beach)	• Reconstruction of Artesia Blvd. ramps. • Reconstruction of Artesia Blvd., including the freeway overcrossing, from Butler Ave. to the Los Angeles River.
B-19	Cherry Ave. (City of Long Beach)	• Reconstruction of Cherry Ave. from Artesia Blvd. to 68th St.
B-20	Alondra Blvd. (City of Compton)	• Reconstruction of the Alondra Blvd. interchange, including conversion from one-quadrant cloverleaf interchange to diverging diamond interchange configuration, and entrance and exit ramps. • Reconstruction of Alondra Blvd., including the freeway overcrossing and bridge over the Los Angeles River, between S White Ave. and Hunsaker Ave.
B-21	Frailey Ave. (City of Compton)	• Conversion to cul-de-sac north of Alondra Blvd.
B-22	Lime Ave. (City of Compton)	• Conversion to cul-de-sac north of Alondra Blvd.
B-23	Gibson Ave. (City of Compton)	• Realignment of Gibson Ave. between E Myrrh St. and Linsley Ave.
B-24	Linsley Ave. (City of Compton and Community of East Compton)	• Realignment of Linsley Ave. between S Williams Ave. and Gibson Ave.
B-25	Rosecrans Ave. (City of Paramount and Community of East Compton)	• Modification of Rosecrans Ave. entrance and exit ramps. • Widening of Rosecrans Ave., including the freeway overcrossing, between Gibson Ave. and the Los Angeles River.
B-26	Imperial Hwy. (City of South Gate and City of Lynwood)	• Reconstruction of the Imperial Hwy. interchange, including conversion from cloverleaf interchange to diverging diamond interchange configuration, and the entrance and exit ramps. • Reconstruction of Imperial Hwy., including the freeway overcrossing and bridge over the Los Angeles River, between Atlantic Ave. and Leeds St. • Construction of a parkway adjacent to the north side of Imperial Hwy. from Atlantic Ave. to east side of the Los Angeles River. • Addition of a pedestrian and Class I bikeway crossing over the Los Angeles River and I-710 at Imperial Hwy. in South Gate.

Table 2.3-1: Local Interchange and Roadway Modifications Common to Both Build Alternatives

No.	Location	Improvements
B-27	MLK Jr. Blvd. (City of Lynwood)	• Reconstruction of the MLK Jr. Blvd. exit ramp.
B-28	Wright Rd. (City of South Gate)	• Conversion to cul-de-sac north of Imperial Hwy.
B-29	Miller Way (City of South Gate)	• Replacement of undercrossing to accommodate wider freeway section between East Frontage Rd. and Garfield Ave.
B-30	Firestone Blvd. (City of South Gate)	• Reconstruction of Firestone Blvd. interchange, including entrance and exit ramps. • Reconstruction of Firestone Blvd., including the freeway overcrossing and the bridge over the Los Angeles River, between Rayo Ave. and National Ave.
B-31	Florence Ave. (City of Bell)	• Reconstruction of Florence Ave. interchange, including conversion from cloverleaf interchange to diverging diamond interchange configuration, and entrance and exit ramps. • Reconstruction of Florence Ave., including the freeway overcrossing and bridge over the Los Angeles River, between Walker Ave. and Eastern Ave.
B-32	Clara St. (City of Bell Gardens and City of Cudahy)	• Reconstruction of the Clara St. overcrossing to accommodate wider freeway section.
B-33	Gage Ave. (City of Bell and City of Bell Gardens)	• Reconstruction of the Gage Ave. overcrossing to accommodate wider freeway section.
B-34	Southern Ave. (City of South Gate)	• Construction of Southern Ave., including a freeway overcrossing and bridge over the Los Angeles River, between Salt Lake Ave. and Garfield Ave. • Construction of a one-way street couplet reestablishing access between East Frontage Rd. and Southern Ave.
B-35	W Frontage Rd. (City of South Gate)	• Extension of W Frontage Rd. from current northern terminus to Southern Ave. via a loop ramp.
B-36	Atlantic/Bandini Blvds. (City of Bell and City of Vernon)	• Reconstruction of the Atlantic/Bandini Blvds. interchange, including: o Removal of all southbound ramps and replacement with an exit ramp terminating at Bandini Blvd., a one-way street connection between Bandini Blvd. and Atlantic Blvd., and an entrance ramp from Atlantic Blvd. o Construction of two southbound ramp termini intersections located at Bandini Blvd. and Atlantic Blvd. o Removal of all northbound ramps and replacement with two exit ramps and two entrance ramps. o Construction of two northbound ramp termini, one located at Bandini/Pennington Wy, and one located on Atlantic Blvd. north of the Atlantic Blvd./Bandini Blvd. intersection. • Reconstruction and realignment of Atlantic Blvd. between the Los Angeles River and the 26th St. overcrossing. • Reconstruction of Bandini Blvd. between Ayers Ave. and Pennington Wy.
B-37	Triggs St. (City of Commerce)	• Widening of Triggs St. undercrossing.
B-38	Bedessen Ave. (City of Commerce)	• Conversion to cul-de-sac north of Washington Blvd.

Table 2.3-1: Local Interchange and Roadway Modifications Common to Both Build Alternatives

No.	Location	Improvements
B-39	Connor Ave. (City of Commerce)	• Conversion to cul-de-sac approximately 340 feet north of Washington Blvd.
B-40	Ransom Ave. (City of Commerce)	• Conversion to cul-de-sac north of Washington Blvd.
B-41	Olympic Blvd./Eastern Ave. (Community of East Los Angeles)	• Reconstruction of the entrance and exit ramps at the Olympic Blvd./Eastern Ave. interchange.
B-42	Ford St. (Community of East Los Angeles)	• Ramp intersection improvements.

Table 2.3-2: Arterial Intersection Improvements Common to Both Build Alternatives

No.	Location	Improvements
B-43	Anaheim St./Harbor Ave. (City of Long Beach)	• Anaheim St. will be widened to three lanes through the Anaheim St./Harbor Ave. intersections, and the ramp tie-in from I-710 will land further east to increase storage.
B-44	Willow St./Easy Ave. (City of Long Beach)	• Intersection realignment associated with widening of Willow St. to three lanes to Easy Ave.
B-45	Long Beach Blvd./ Victoria St. (City of Long Beach)	• Intersection modification and reconstruction to accommodate dual-left turn lanes between the Long Beach Blvd. northbound ramp intersection and Victoria St.
B-46	Alondra Blvd./ Atlantic Ave. (City of Compton)	• Intersection will be modified and reconstructed to accommodate the reconstructed Alondra Blvd. interchange improvements.
B-47	Imperial Hwy./ Atlantic Ave. (City of Lynwood)	• Intersection modification and reconstruction to accommodate the realigned Imperial Hwy., with the addition of a pedestrian and bike parkway to the north of the westbound Imperial Hwy. travel lanes.
B-48	Garfield Ave./Miller Way (City of South Gate)	• Intersection will be relocated approximately 200 feet south and reconstructed in a three-legged T-intersection configuration to accommodate the relocated Imperial Hwy. off-ramp location.
B-49	Florence Ave./ Eastern Ave. (City of Bell Gardens)	• Intersection will be modified to accommodate the reconstructed Florence Ave. interchange.
B-50	Washington Blvd./ Ayers Ave. (City of Commerce)	• Intersection will be modified to accommodate the Washington Blvd. improvements.
B-51	Washington Blvd./ Couts Ave. (City of Commerce)	• Intersection will be modified to accommodate the Washington Blvd. improvements and to handle diverted traffic due to the closure of Ransom St. north of Washington Blvd.

- Reconstruction of UP Railroad La Habra Subdivision at I-710, in Bell, to accommodate the wider freeway.
- Reconstruction of LAJ Railway Laguna Line underpass at I-710, in Bell and Vernon, to accommodate the wider freeway, and an approximately one-mile long section of adjacent rail displaced by freeway widening.
- Reconstruction of BNSF Hobart Yard overpass at I-710, in Commerce/Vernon.
- Reconstruction of UP Railroad East Yard overpass at I-710, in Commerce.

PEDESTRIAN AND BIKE-ONLY BRIDGES. In addition to the widening of existing bridges and overcrossings to accommodate bicycle and pedestrian traffic, three pedestrian and bicycle-only bridges are proposed that would be included under both build alternatives. The bridges would span I-710, and in some cases the Los Angeles River or Metro Rail lines, to provide for improved bicycle and pedestrian connectivity within the corridor. Bridges are proposed at the following locations:

- Humphreys Ave., located in East Los Angeles. This bridge would cross I-710.
- Clara St., located in Bell Gardens/Cudahy. This bridge would cross I-710 and the Los Angeles River.
- Pacific Place, located in Long Beach. This bridge would cross I-405 and the Metro Blue Line.

In order to locate the bicycle and pedestrian bridges at logical and feasible points and enhance connectivity most effectively, an analysis was performed that first identified where gaps in direct access points over the I-710 (and over the Los Angeles River in many cases) occurred, and then evaluated the feasibility of crossings located within those gap areas. In addition to existing crossings, planned crossings that are reasonably foreseeable were also considered. When evaluating the feasibility of proposed crossing locations, several elements were taken into account. Preferred locations were those that provided new connections between bicycle/ pedestrian facilities. A crossing was considered infeasible if its construction would impact existing parks or wetlands, or if physical obstructions (e.g., existing and proposed multi-level freeway connector/ramp structures, high-voltage electrical transmission corridors, or railroad facilities) were present that would result in adverse impacts.

RETAINING WALLS. Retaining walls are required to retain fill or cut slopes to minimize the need to acquire additional right of way throughout the I-710 Corridor. Retaining walls are also required along the outside shoulder of the I-710 freeway to reduce impacts and minimize additional right-of-way requirements. The wall locations for both build alternatives are shown in Appendix O, Concept Plans. The outside shoulder retaining walls heights will range from approximately four feet to 30 feet.

TSM/TDM, TRANSIT, AND ITS. In addition to improvements to the I-710 mainline and the interchanges, both build alternatives also include TSM/TDM, Transit, and ITS improvements. Although TSM/TDM measures alone could not satisfy the purpose and need of the I-710 Corridor Project, the following TSM/TDM measures have been incorporated into both alternatives for the I-710 Corridor Project.

New or updated adaptive ramp metering is proposed for all I-710 on-ramps between Pico Ave. and Third St. to better manage traffic flows up and down the freeway corridor. Ramp meter improvements are also proposed for the on-ramps at the local interchanges that access the key crossing freeways (I-405, SR-91, I-105, and I-5) within the project limits.

Improved signage on I-710 will be provided in the form of overhead signs, advanced notification, and changeable message signs.

ITS improvements, beyond what is already committed and programmed under Alternative 1, include the addition of updated fiber-optic communications to interconnect traffic signals along major arterial streets modified under Alternatives 5C and 7 to provide for continuous, real-time adjustment of signal timing to improve traffic flow, as well as other technology improvements, and Transportation Management Center (TMC) upgrades and inter-ties necessary to control and monitor the ITS system.

- **LANDSCAPING AND IRRIGATION SYSTEMS.** Landscaping and irrigation systems would be provided where necessary within the corridor to provide aesthetic treatment, replacement planting, or mitigation planting for the I-710 Corridor Project. Close coordination among Caltrans, Metro, various I- 710 Corridor committees, and the landscape design consultant on this project has occurred to identify areas available for planting in addition to coordination with Caltrans' Operations and Maintenance Branch to ensure consistency with their objectives and requirements. Features included as part of the project design will include drought-tolerant and native landscaping, plants that change colors with the seasons, and use of vines where space is limited. New irrigation systems would be designed to use reclaimed water (if available). In an effort to surpass the minimum tree removal-to-replacement ratio, the number of new trees, shrubs and foliage within State right of way will be maximized, and will be drought-resistant, and have superior biosequestration and biofiltration capabilities. An *Enhanced Water Quality Features Report* (2016) was prepared to identify potential stormwater management solutions in the corridor, along with proposed hardscape and landscape options. The development of final landscape plans for the project will occur during later phases of design, and will maximize the number of drought-tolerant trees, shrubs, and foliage and identify additional stormwater BMP locations. In addition, an *I-710 Corridor Aesthetics Master Plan* (2015) has been developed to guide the design of hardscape features

throughout the corridor, including highway design elements and themes, lighting, bridge structures, and other components.

MAJOR UTILITY RELOCATIONS. Implementation of either build alternative will necessitate substantial relocation of existing utilities, including the relocation of access to oil facilities operated adjacent to the Los Angeles River in the City of Long Beach. The relocation of existing utilities is a component of the Project Description, and the relocated utility infrastructure is included in the project footprint/disturbance limits. The effects of the utility relocation are evaluated in this RDEIR/SDEIS, including the short-term construction effects of demolition and construction, as well as the long-term effects of operation of the new utility infrastructure. Some of the project-related utility relocations will require authorization from the California Public Utilities Commission (CPUC). The CPUC has been identified as a Responsible Agency under CEQA. CPUC-approval actions would occur after the Final EIR/EIS has been certified for the I-710 Corridor Project and the CEQA clearance process is complete. It is anticipated that the CPUC will conduct an independent review of the I-710 Corridor Project EIR/EIS; based on the results of the review, make findings required by Section 15091 of the CEQA Guidelines for each significant effect of the project; and make the findings required by Section 15093 of the CEQA Guidelines, if necessary. The CPUC would also file a Notice of Determination (NOD) that states it considered the EIR/EIS as prepared by the Lead Agency, and it (CPUC) may then rely on the I-710 Corridor Project EIR/EIS for the issuance of needed permits and approvals. Some of the relocations will be subject to the requirements of GENERAL ORDER (GO) 131-D, SECTION III.A, CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY (CPCN) FOR TRANSMISSION LINE FACILITIES AND SUBSTATIONS THAT OPERATE AT 200 KV OR MORE, which will occur after certification of the I-710 Corridor Project EIR/EIS but prior to approval of utility relocation or grading plans. In particular, General Order 131-D provides guidelines and measures for the planning and construction of substations, electric generation, transmission, power, and distribution line facilities in California. In addition to meeting the licensing requirements of GO 131-D, Public Utilities Code Section 851 requires SCE, as a regulated utility, to secure CPUC approval prior to selling, leasing, assigning or otherwise disposing or encumbering property necessary or useful in the provision of utility service to the public.

Caltrans and Metro are working collaboratively with the utility providers to identify detailed utility relocation requirements for each affected utility. Utility relocations are grouped into the following categories:

- Protect existing utilities in place;
- Replace utilities with new facilities within existing alignments; and
- Replace utilities with new facilities on new alignments.

Discussion of impacts to utilities is provided in Section 3.4, Utilities and Emergency Services. As the relocation requirements continue to be refined, additional information may be addressed in the Final EIR/EIS for the I-710 Corridor Project. Refinements to the utility relocation plan after CEQA and National Environmental Policy Act (NEPA) approvals of the I-710 Corridor Project will be subject to subsequent consideration of the potential effects of the adjustments on the proposed relocations. At that time, a determination will be made as to the level of subsequent environmental documentation, if any, that will be required pursuant to Section 21166 of CEQA and Sections 15162 through 15164 of the State CEQA Guidelines, and 40 Code of Federal Regulations (CFR) 1502.9 of the Council on Environmental Quality (CEQ) NEPA Regulations.

All utility relocation planning will be made in concert with the utility provider, with due consideration of maintaining system reliability and necessary service to customers, maintaining safe system operations, providing for long-term reliability planning needs, providing for necessary property rights and just compensation, complying with required regulatory requirements, and the transportation improvements necessary to allow the safe and efficient movement of people and goods through the I-710 Corridor. The proposed utility relocation plans will not preclude the evaluation of a reasonable range of alternatives by utility providers in their own future utility corridor studies.

PROGRAMMATIC ELEMENTS. Programmatic elements are included in both build alternatives that help the corridor achieve improvements in congestion, air quality and overall community health. These include the I-710 Corridor Project Zero Emission/Near Zero Emission Truck Technology Deployment Program, the I-710 Corridor Community Health Benefit Program, and the I-710 Corridor Project ITS/TSM/Congestion Relief Program. If a build alternative is selected, these programmatic elements may be scaled consistent with a phased construction strategy (e.g., if the first phase of the project would construct 25 percent of the improvements, a commensurate 25 percent of the programmatic funding would be made available at that time). These programmatic elements would not be implemented by Caltrans as the Lead Agency under CEQA and NEPA and as the owner/operator of the I-710 freeway, but instead would be implemented by Metro or other public agencies with jurisdiction over a particular element.

ZERO EMISSION/NEAR ZERO EMISSION TRUCK TECHNOLOGY DEPLOYMENT PROGRAM. The I-710 Corridor Project Zero Emission/Near Zero Emission Truck Technology Deployment Program is a programmatic component of the build alternatives and would provide funding to individual owner-operators and privately owned truck fleets to subsidize the purchase of heavy-duty (Class 8) ZE/NZE trucks for use within the I-710 corridor. Funding would also be made available to construct up to 20 electric charging stations and up to ten hydrogen refueling stations within the Study Area, in the amounts of $2 million and $15 million, respectively. The recharging/refueling stations would be targeted to locations served by heavy-duty vehicles such as intermodal terminals at the Ports and rail yards, warehouses, and distribution centers. Funding preferences will be given to locations near or routes

leading directly to I-710. Funding would be provided at different levels for each build alternative. Implementation of Alternative 5C would provide funding for this program in the amount of $100 million. Implementation of Alternative 7 would provide funding for this program in the amount of $460 million. Under Design Option 7ZE, this program would be funded in the amount of $1.050 billion towards only fully zero-emission trucks.

In order to qualify for funding, trucks must meet minimum requirements for emissions standards as well as travel within the I-710 corridor. Heavy-duty trucks must meet minimum requirements for ZE/NZE standards by being certified by ARB at or below the optional low-oxides of nitrogen (NO_x) standard of 0.02 grams per brake horsepower-hour of oxides of nitrogen (g/bhp-hr NO_x) and/or meeting ARB and/or South Coast Air Quality Management District (SCAQMD) zero emissions technology definitions. The air quality analysis presumes that no ZE/NZE truck would be diesel-powered.

To be eligible for ZE/NZE truck funding from this program, there will be minimum requirements for travel on I-710 or the proposed freight corridor, if Alternative 7 is selected. For example, the recipient truck must travel at least 16 miles on the I-710 mainline and/or freight corridor for each of 250 working days per year, which would approximately equal 4,000 vehicle miles traveled (VMT) per year. As with other truck funding programs, compliance could be assessed annually through a global positioning system (GPS)-based Automatic Vehicle Locator (AVL) or similar system that would log mileage within the I-710 Corridor limits. For a period of ten years after the funding is provided, a recipient truck that did not meet the annual minimum VMT requirement would be required to reimburse one-fifth of the program funding, or potentially up to the full program funding. If the recipient truck failed to meet the annual VMT requirement for two years, all program funding would have to be reimbursed. If the truck is sold during the ten-year period after funding is provided, the requirements would remain the same for the purchaser.

The project funding partners will work in partnership with other agencies that may have special expertise and/or previous similar experience in order to identify funding sources and administration responsibilities.

The first annual funding contribution for the truck program would be provided within twelve months after programming/allocation of construction funding, and implementation of the program would occur no sooner than the start of construction. The program is included as a part of both build alternatives and will receive environmental clearance at the time of the Final EIR/EIS.

In 2013, the Gateway Cities COG and Metro developed an “I-710 Project Zero-Emission Truck Commercialization Study” in order to evaluate the ZE truck technologies which might meet the needs of the I-710 Corridor Project and drayage users, and develop a business and commercialization plan. The study concluded that “zero-emission capable drayage

trucks can be developed, demonstrated, validated, and moved into production by a 2025 target timeline,"[9] but there remain core issues to be addressed prior to the successful commercialization of said vehicles. This RDEIR/SDEIS does not intend to define or identify a preferred technology to be utilized in the corridor at this time. At the time of the first funding contribution for this program, if elements of the selected technology are beyond the scope of what is evaluated in this document, the appropriate re-evaluation and/or supplemental environmental documentation will be prepared. The further evaluation and development of any or all of these various technologies may be done via a Public-Private Partnership, as described in Section 2.1.

COMMUNITY HEALTH BENEFIT PROGRAM. The I-710 Corridor Community Health Benefit Program is a programmatic component of the build alternatives and would take the form of a grant program structured to provide corridor communities the opportunity to implement projects or outreach activities that would improve air quality and public health related to I-710 travel and goods movement. The project funding partners will work in partnership with other agencies that may have special expertise and/or previous similar experience in order to identify funding sources and administration responsibilities.

The grant program would provide funding directly to approved applicants, rather than reimburse approved projects after the original expenditure. This will allow for a broader range of organizations to participate without requiring an initial capital outlay by the recipient. The guidelines of the program would identify categories of eligible grant recipients, including (but not limited to) corridor cities, the County, school districts, day care centers, community health providers, senior centers, and non-profit organizations geared towards air quality or public health issues.

Proposed projects would be screened for eligibility and reviewed by an Advisory Committee consisting of area experts, members of the funding partner agencies, and community representatives. Recommendations of funding awards would be provided in accordance with detailed ranking criteria for each of the three categories of projects, as developed by Metro and the Gateway Cities COG and outlined in more detail below.

Projects falling into three broad categories would be eligible and considered for funding under the program: (1) air quality improvement and/or noise reduction measures at local schools and other sensitive receptors or related sites, (2) air quality improvements at hospitals, medical centers, and senior facilities, as well as health education, outreach, and screening, and (3) greenhouse gas (GHG) reduction through projects such as renewable

[9] Calstart. Website: http://www.calstart.org/Libraries/I-710_Project/I-710_Project_Zero-Emission_Truck_Commercialization_Study_Final_Report.sflb.ashx (accessed December 30, 2016).

power, energy efficiency, and tree-planting, etc. More specific criteria for eligible projects would be developed by the I-710 Funding Partner agencies. Eligible projects could include, but are not limited to, the following:

- Installation of high-efficiency particulate arrestance (HEPA) or other central or portable air filter and heating, ventilation, and air conditioning (HVAC) upgrades in schools, day care facilities, senior centers, clinics, hospitals, etc.
- School bus or senior transport vehicle retrofit or replacement
- Door and window replacement and/or seals
- Community health testing, education, and/or outreach, such as mobile clinics
- Upgrades for parks, added greenbelts, and/or vegetation barriers, buffer parks or open space, landscaping
- Energy efficiency updates and renewable energy projects

Funding criteria would also include defined geographic zones within the I-710 Corridor area that would help determine the most eligible grant recipients. This would likely be done by defining an wider eligibility zone, along with a more narrow priority zone, similar to that of the Port of Long Beach Community Mitigation Grant Program.[10] Projects falling within the area of eligibility would be considered, and projects within the priority zone would be given preference. Preference will also be given to projects benefitting environmental justice populations nearest to the I-710 freeway facility.

Cost-effectiveness would be emphasized, with funding priority given to those proposals that benefit the most people per dollar. The first funding contributions would be provided within twelve months after programming/allocation of construction funding, and implementation of the program would occur no sooner than the start of construction. The program would include yearly funding contributions adjusted for inflation over the ten-year period, commensurate with any phased construction strategy.

The program is included as a programmatic component of both build alternatives and will receive environmental clearance as part of the Final EIR/EIS, and specific projects funded through the program would likely be ministerial actions or statutorily exempt under CEQA. Grant applicants would, however, be responsible for obtaining project-level environmental clearance if needed.

[10] Port of Long Beach. Community Mitigation Grant Programs. Website: http://polb.com/environment/grants/default.asp.(accessed March 14, 2017)

ITS/TSM/CONGESTION RELIEF PROGRAM. The I-710 Corridor Project ITS/TSM/Congestion Relief Program intends to help address the I-710 Corridor Project goals of improving traffic safety, accommodating projected traffic volumes, and addressing increased traffic volumes resulting from projected growth in population, employment, and economic activities related to goods movement. It is a programmatic component of the build alternatives that would provide funding to local governments to implement projects within the I-710 Corridor Project Study Area that would improve operations at congested intersection locations on the local roadway network. Congested intersections are those intersections in the I-710 Study Area projected to operate at poor levels of service (LOS E or worse) in the future under the 2035 No Build Alternative (Alternative 1). Through the future No Build analysis conducted for the I-710 project, approximately 78 intersections in the Study Area meet this criteria.

The types of projects eligible for funding under the program include: traffic signal upgrade, timing, or synchronization; traffic surveillance; traffic signal coordination; safety improvements that reduce incident delay; restriping to add additional turning lanes or storage at the intersection; spot-widening at the intersection to add additional turning lanes or storage; channelization, shoulder work, addition of turn-outs, and installation of two-way turn lanes; curve correction; alignment improvements; and traffic calming measures including signing, striping, access management, or other traffic control measures. Any proposed improvements must account for the safe movement of bicycles and pedestrians and be consistent with “Complete Streets” principles.

The I-710 ITS/TSM/Congestion Relief Program will be administered by Metro in partnership with the I-710 Corridor Project partner agencies. Eligible recipients for funding provided through the program are the Cities and County of Los Angeles (unincorporated areas) that have local jurisdiction over the arterials and intersections within the I-710 Study Area. While any proposed travel systems management (TSM), intelligent transportation systems (ITS), travel demand management (TDM), and intersection improvements must meet criteria and eligibility requirements for funding as defined by Metro; project initiation, project development and project implementation will be subject to local planning and approval processes of the local jurisdictions. In this case, the local jurisdictions will be responsible for obtaining project-level environmental clearance for those projects undertaken under the I-710 ITS/TSM/Congestion Relief Program. These local, project-level environmental approvals would be achieved following their own processes separate from the I-710 Corridor Project EIR/EIS evaluation process.

The first funding contributions would be provided within twelve months after programming/ allocation of construction funding, and implementation of the program would occur no sooner than the start of construction.

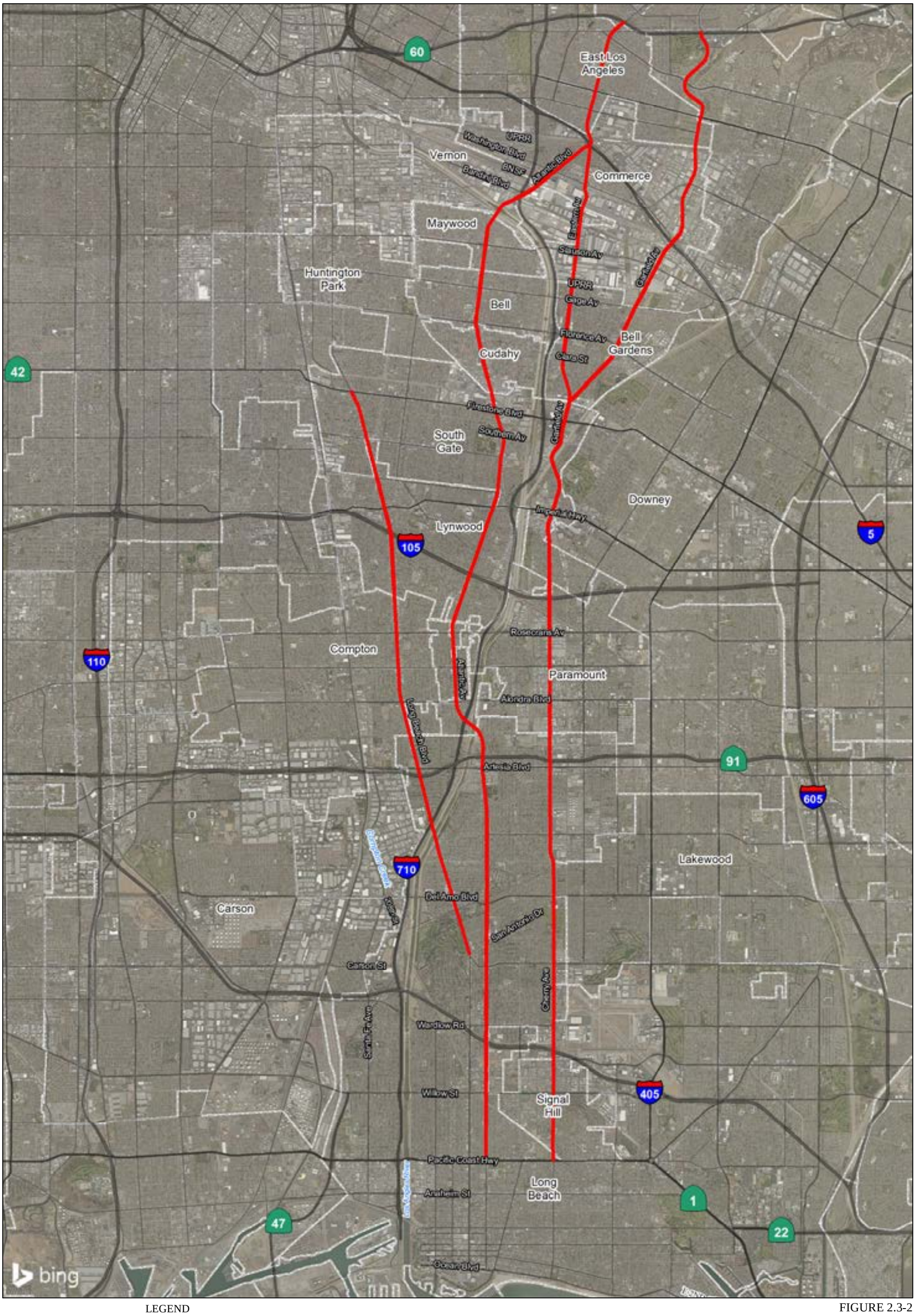
ARTERIAL PARKING RESTRICTION PROGRAM. Parking restrictions during peak periods will be implemented on four arterial roadways. These restrictions (e.g., no curb parking permitted) would occur during peak periods (e.g., 6:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.) to increase traffic capacity by one additional through-lane in each direction at the following locations, as seen in Figure 2.3-2:

- Atlantic Blvd. between Pacific Coast Hwy. and SR-60
- Cherry Ave./Garfield Ave. between Pacific Coast Hwy. and SR-60
- Eastern Ave. between Cherry Ave. and Atlantic Blvd.
- Long Beach Blvd. between San Antonio Dr. and Firestone Blvd.

The project funding partners will work collaboratively with the local jurisdictions to implement these parking restrictions as described.

TRANSIT PROGRAM. Transit improvements that will be provided as part of the I-710 Corridor Project include substantially increased service on all Metro Rail and Rapid routes and Local Bus routes in the Study Area. Specific transit improvements are listed in the following paragraphs. Please refer to Figure 2.3-3 for a map of the proposed new transit lines. It is important to note that the proposed transit operational improvements included in the build alternatives would be phased in incrementally based on available funding as well as transit demand.

- Creation of three new high-frequency Express Bus and Rapid transit routes serving the I-710 Corridor, with the following proposed frequencies and connections:
    - Express Line 51X
        - 20-minute peak headways, 30-minute daytime headways, and 40-minute evening headways.
        - Proposed connections at California State University, Long Beach; Long Beach City College; Del Amo Blue Line Station; Bicycle Casino; Maravilla Gold Line Station; and California State University, Los Angeles Silver Line Station.
    - Express Line 52X
        - 20-minute peak headways, 30-minute daytime headways, and 40-minute evening headways.
        - Proposed connections at Lakewood Center Mall; Paramount Civic Center; Bicycle Casino; Maravilla Gold Line Station; and California State University, Los Angeles Silver Line Station.



LEGEND

Parking Restrictions During Peak Periods

FIGURE 2.3-2

I-710 Corridor Project RDEIR/SDEIS

Arterial Peak Parking Period Restrictions

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0 3500 7000
FEET

SOURCE: Bing Maps (2015); AECOM (2016)

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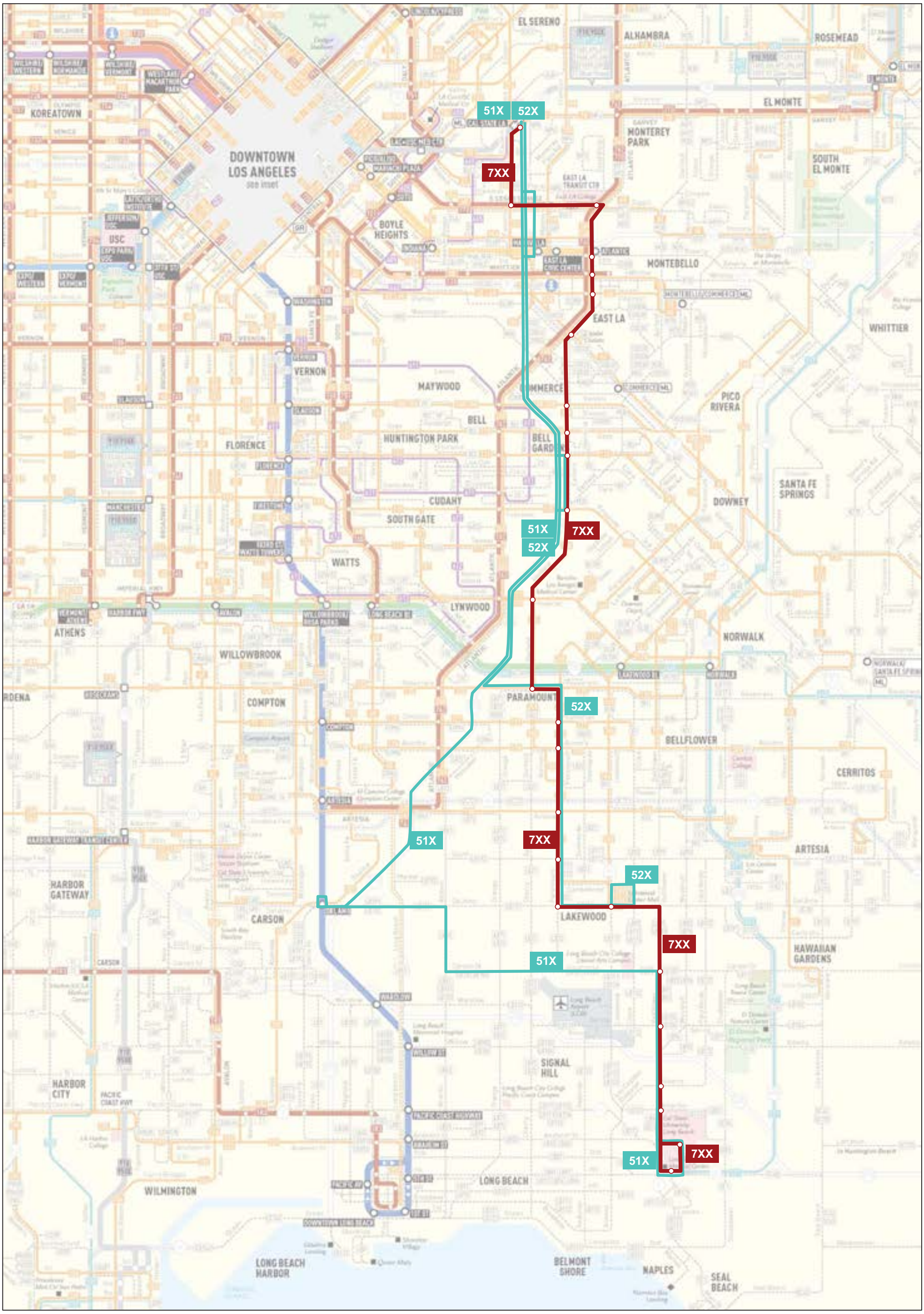

FIGURE 2.3-3

New Transit Routes

51X

52X

7XX

SOURCE: AECOM

I-710 Corridor Project RDEIR/SDEIS

New Transit Routes

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- Rapid Line 7XX
  - 10-minute peak headways, 20-minute daytime headways, and 30-minute evening headways.
  - Proposed connections at California State University, Long Beach; Lakewood Center Mall; Paramount Civic Center; Bicycle Casino; Citadel Outlets; Atlantic Gold Line Station; East Los Angeles College; and California State University, Los Angeles Silver Line Station.

- Increased service on all Metro Rapid route and Local Bus routes in the Study Area including:
  - Express Bus service
    - Increase in corridor Metro Rapid service frequency (annual revenue service hours) by about 33 percent, reducing headways by 50 percent (from ten minutes to five minutes) on all Metro Rapid routes in the Study Area.
  - Local Bus service
    - Increase corridor local bus service (service frequency) by about 68 percent: for bus routes in the Study Area (both Metro and Long Beach Transit), reducing headways greater than 20 minutes by 50 percent and headways less than 20 minutes to ten minutes. This represents an approximate 26 percent increase in annual revenue service hours compared with existing conditions, 20 percent greater than the estimated 5 percent increase under the No Build alternative.
    - Expansion of existing community bus service (e.g., local circulators Montebello Transit, Compton Renaissance Transit System, and East Los Angeles Shuttle).
  - Increased service on all Metro light rail service in the Study Area including:
    - Metro Blue Line
      - An increase in service frequency to decrease peak-period headways to five minutes and off-peak headways to ten minutes during the average weekday, for an estimated increase of 50 trains daily (12 each in the a.m. peak and midday periods, 16 in the p.m. peak period, and ten in the evening hours (7:00 p.m. to midnight)). Service increases beyond this are not feasible due to various system operational restrictions. By 2035, the Regional Connector in downtown Los Angeles will have been completed, along with the

extension of the Gold Line as far as Azusa. Under this condition, Blue Line trains will operate continuously between Long Beach and Azusa.

- Metro Green Line
    - An increase in service frequency to decrease peak-period headways to six minutes and off-peak headways to ten minutes during the average weekday, for an estimated increase of 48 trains daily (six in the a.m. peak period, 24 in the midday period, eight in the p.m. peak period, and ten in the evening period).

LOS ANGELES/GATEWAY FREIGHT TECHNOLOGY PROGRAM. Selected components from the Los Angeles/Gateway Freight Technology Program that are specific to the I-710 Corridor are proposed as programmatic elements. These include freeway smart corridor strategies that would deploy dedicated short-range communication roadside units alongside I-710 to manage and control traffic in real time as well as applying operational strategies such as queue warning systems, variable speed limits/speed harmonization, and dynamic corridor ramp metering on I-710. The purpose of these technology applications for the I-710 Corridor is to manage and control traffic in real time based on prevailing conditions and to make informed, performance-driven decisions regarding traffic management. These strategies are structured to address both recurrent congestion (i.e., morning and evening peak travel hours), as well as non-recurrent congestion due to vehicle breakdowns, lane closures, or traffic incidents in order to reduce delay and improve travel time reliability.

2.3.2.2 ALTERNATIVE 5C: I-710 WIDENING AND MODERNIZATION

Alternative 5C proposes to widen the I-710 mainline to eight general purpose lanes from Anaheim St. to I-405 and up to ten general purpose lanes north of I-405 (on I-710 northbound and on I-710 southbound) to Olympic Blvd. by adding up to one general purpose lane in each direction. The alternative also proposes to add two truck bypass lanes in each direction around the I-405 freeway to freeway interchange, and a lane buffer in each direction between Pacific Coast Hwy. and Shoreline Dr., to address safety and operational deficiencies. Figure 2.3-4 shows Alternative 5C and its key features.

This alternative would modernize the design at the freeway-to-freeway interchanges at I-405, SR-91, I-105, and I-5 as follows, and as seen on Figure 2.3-5:

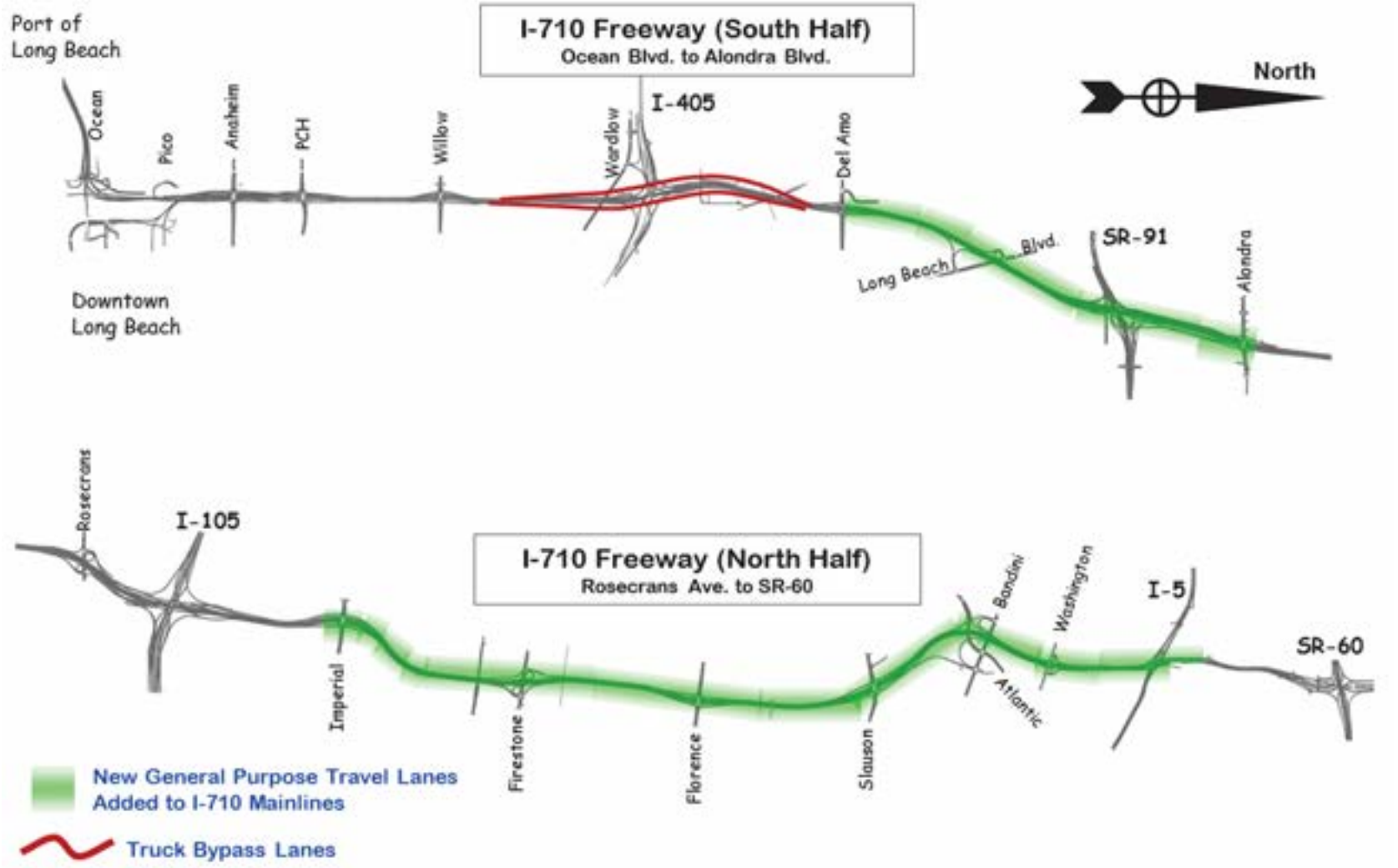

FIGURE 2.3-3

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C Key Features

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EA 249900; EFIS 0700000443

SOURCE: URS

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LEGEND

Alternative 5C Geometrics

- Freeway Feature/Structure, Pavement Edges, and Striping
- Columns/Concrete Barrier and Structures
- Bypass Feature/Structure, Express Lane, Local Feature/Structure, Ramps, and Other Improvements
- Retaining Walls, Sound Walls, and Walls
- Railroad

0 3750 7500

Feet

SOURCE: Bing Maps (2014); AECOM (2016)

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FIGURE 2.3-5

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C/1A/2A/3A Improvements to Freeway to Freeway Interchanges

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- At I-405, modification of the freeway-to-freeway interchange entails realignment and replacement of all eight of the existing freeway-to-freeway connectors. The local interchanges at Wardlow Rd. at I-710 and Pacific Pl. at I-405 would be removed, and the local interchange at Santa Fe Ave. and I-405 would be modified.
- The southbound and northbound connectors between SR-91 and I-710 would be reconstructed and extended. The connector ramps on I-710 north of the interchange would be braided with the Alondra Blvd. ramps. The connector ramps on SR-91 west of the interchange would be braided with the Long Beach Blvd., Santa Fe Ave., and Alameda St. ramps. An eastbound auxiliary lane would be constructed on SR-91 from the interchange to Cherry Ave.
- At I-105, the southbound and northbound connectors to I-710 would be reconstructed and extended, and the connector ramps on I-710 north of the interchange would be braided with the Imperial Hwy. ramps.
- At I-5, new collector-distributor roads that service local interchanges at Washington and Bandini Blvds. would be added, and ramp connection points to I-710 would be modified. The existing northbound left-hand side connector from I-710 to I-5 would be removed, as the northbound I-710 to northbound I-5 movement would be made via that collector-distributor, and the southbound connector from I-5 to I-710 would be replaced.
- At SR-60, auxiliary lanes up to and extending from the interchange would be added.

Local interchanges on I-710 would also be modified under Alternative 5C in order to address safety, operational, and capacity deficiencies. Interchange improvements specific to Alternative 5C, that would be implemented in addition to those listed in Section 2.3.2.1, are listed in Table 2.3-3. Local interchanges proposed to be modified under Alternative 5C can be seen in Figure 2.3-6.

PEDESTRIAN AND BIKE-ONLY BRIDGES. In addition to the widening of existing bridges and overcrossings to accommodate bicycle and pedestrian traffic, two additional pedestrian and bicycle-only bridges are proposed that would be included under Alternative 5C. The bridges would span I-710 and the Los Angeles River to provide for improved connectivity within the corridor. Bridges are proposed at the following locations:

- Spring St., located in Long Beach. This bridge would cross I-710 and the Los Angeles River.
- Hill St., located in Long Beach. This bridge would cross I-710 and the Los Angeles River.

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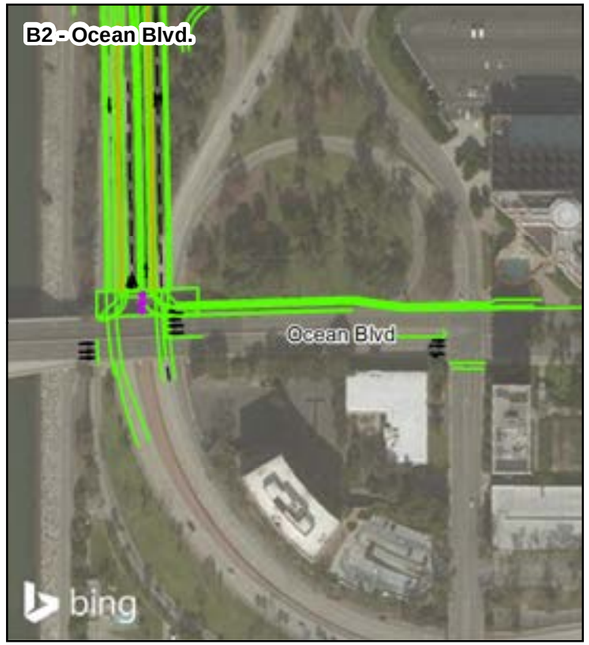

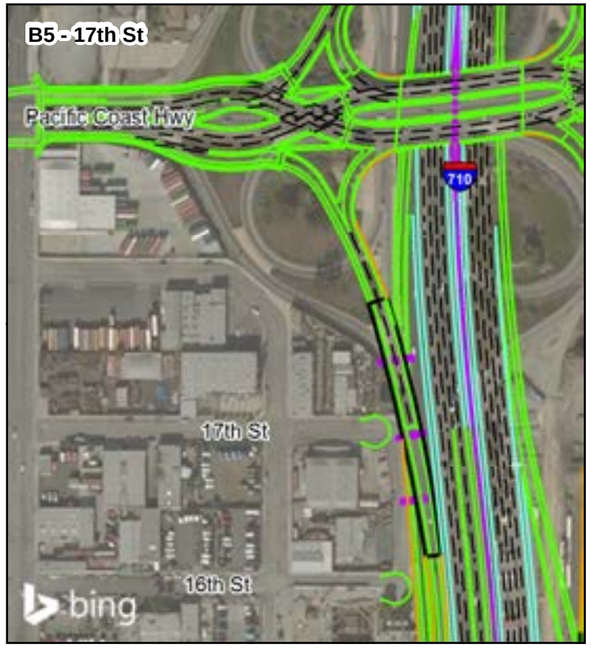

LEGEND

Alternative 5C Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Bypass Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls
- Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-6

Sheet 1 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

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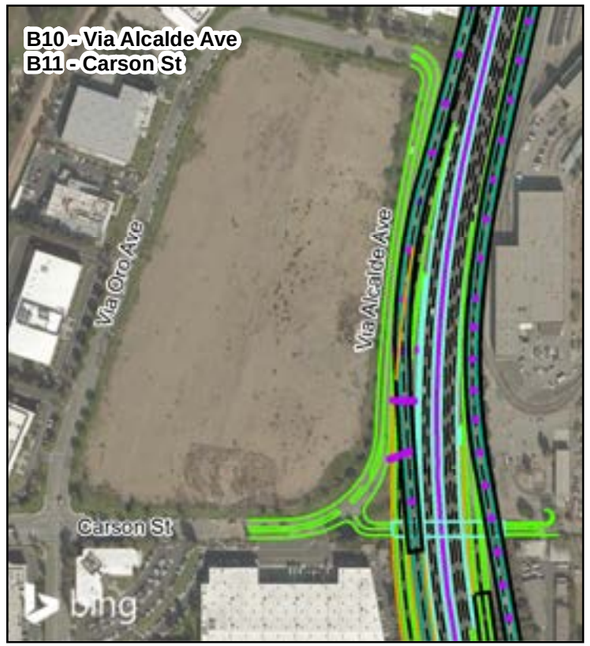

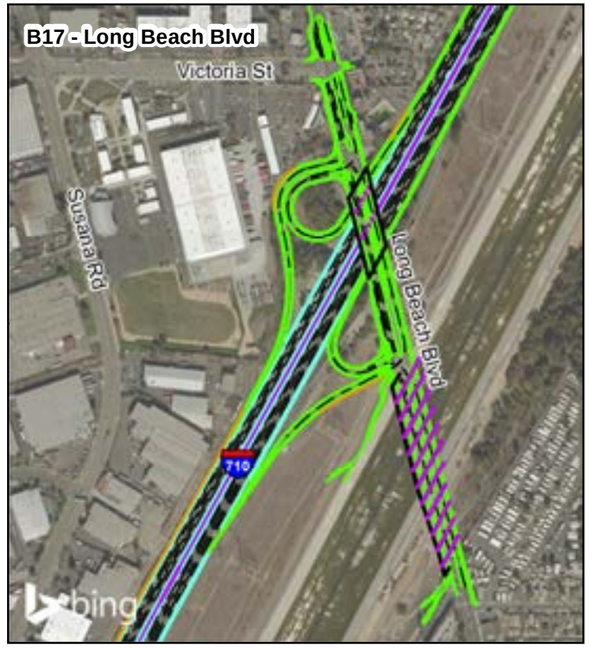

LEGEND

Alternative 5C Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Bypass Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls
- Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-6
Sheet 2 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5
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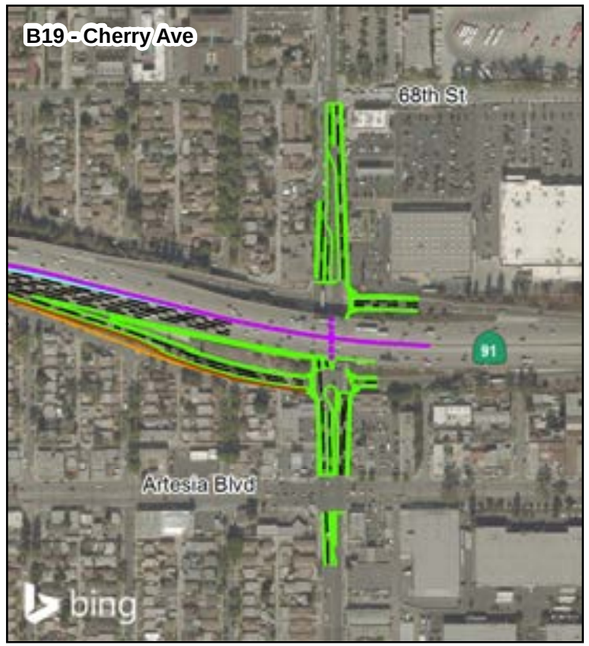

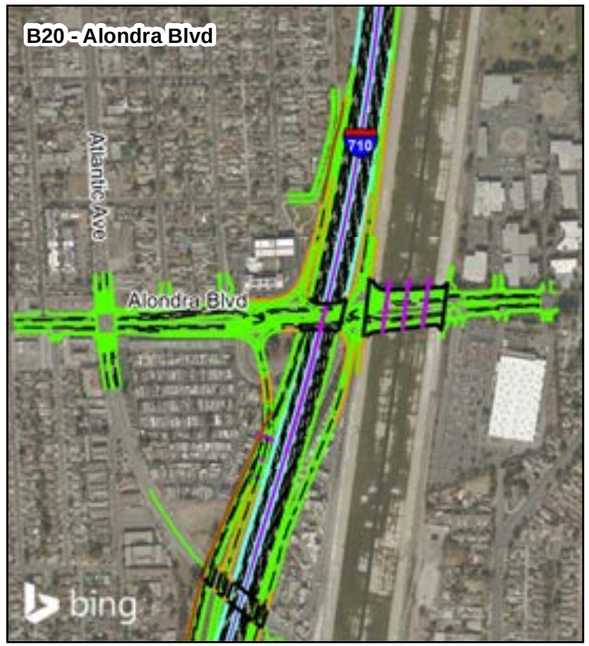

LEGEND

Alternative 5C Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Bypass Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls

Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-6

Sheet 3 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5

EA 249900; EFIS 0700000443

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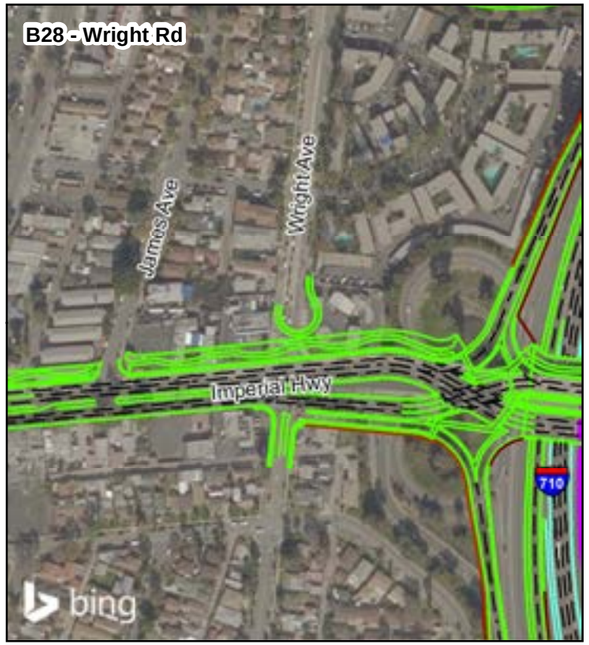

LEGEND

Alternative 5C Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Bypass Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls
- Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-6

Sheet 4 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5

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LEGEND

Alternative 5C Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Bypass Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls

Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-6
Sheet 5 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

Alternative 5C Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Bypass Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls

Other Improvements

N

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-6
Sheet 6 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5
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LEGEND

Alternative 5C Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Bypass Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls
- Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-6
Sheet 7 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

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Table 2.3-3: Local Interchange and Roadway Modifications Proposed Under Alternative 5C

No.	Location	Improvements
5C-1	Anaheim St.	• Reconstruction of Anaheim St. interchange, including braided entrance and exit ramps with that of Pacific Coast Hwy. interchange. • Reconstruction and widening of Anaheim St, including freeway overcrossing and bridge over the Los Angeles River, between Canal Ave. and DeForest Ave.
5C-2	Gaylord St.	• Convert to cul-de-sac west of Gale Ave.
5C-3	16th St.	• Convert to cul-de-sac west of Gale Ave.
5C-4	Atlantic Ave.	• Reconstruction of Atlantic Ave. from Artesia Blvd. to 68th St.
5C-5	Bell Gardens Ave.	• Modifications to Bell Gardens Ave., including a connection to eastbound Clara St.
5C-6	Slauson Ave.	• Reconstruction of Slauson Ave., including the freeway overcrossing from the Los Angeles River to approximately 700 feet east of the existing Los Angeles Junction Railway at-grade crossing.
5C-7	Washington Blvd.	• Reconstruction of Washington Blvd. interchange, including undercrossing and all entrance and exit ramps, and construction of one-way, access controlled streets between the ramp intersections and Sheila St. • Reconstruction of Washington Blvd. from west of Ayers Ave. to west of Atlantic Blvd., including access control on Washington Blvd. between ramp intersections.

BRIDGES. Bridges under Alternative 5C that will be widened, replaced, added or removed are shown on Figure 2.3-7.

MAJOR DRAINAGE FACILITIES. Under Alternative 5C, a total of 24 river channel structures (roadway bridges) would be modified, including 22 Los Angeles River locations, one Compton Creek location, and one Rio Hondo location. Construction of new columns or piers and extension of existing piers will occur at each of these locations, all oriented to the channel flow direction within the existing channels. Additionally, there will be modifications to existing pump stations and new pump stations added; and potential locations for detention basins and biofiltration swales/biofiltration strips.[11] Figure 2.3-8 shows these facilities.

[11] A bioswale is a landscape element designed to remove silt and pollution from surface runoff water.

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LEGEND

- New
- Replace
- Widen
- Remove

0 3500 7000
FEET

SOURCE: ESRI/Bing Maps (2015); AECOM (2016)

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FIGURE 2.3.-7

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C - Bridges

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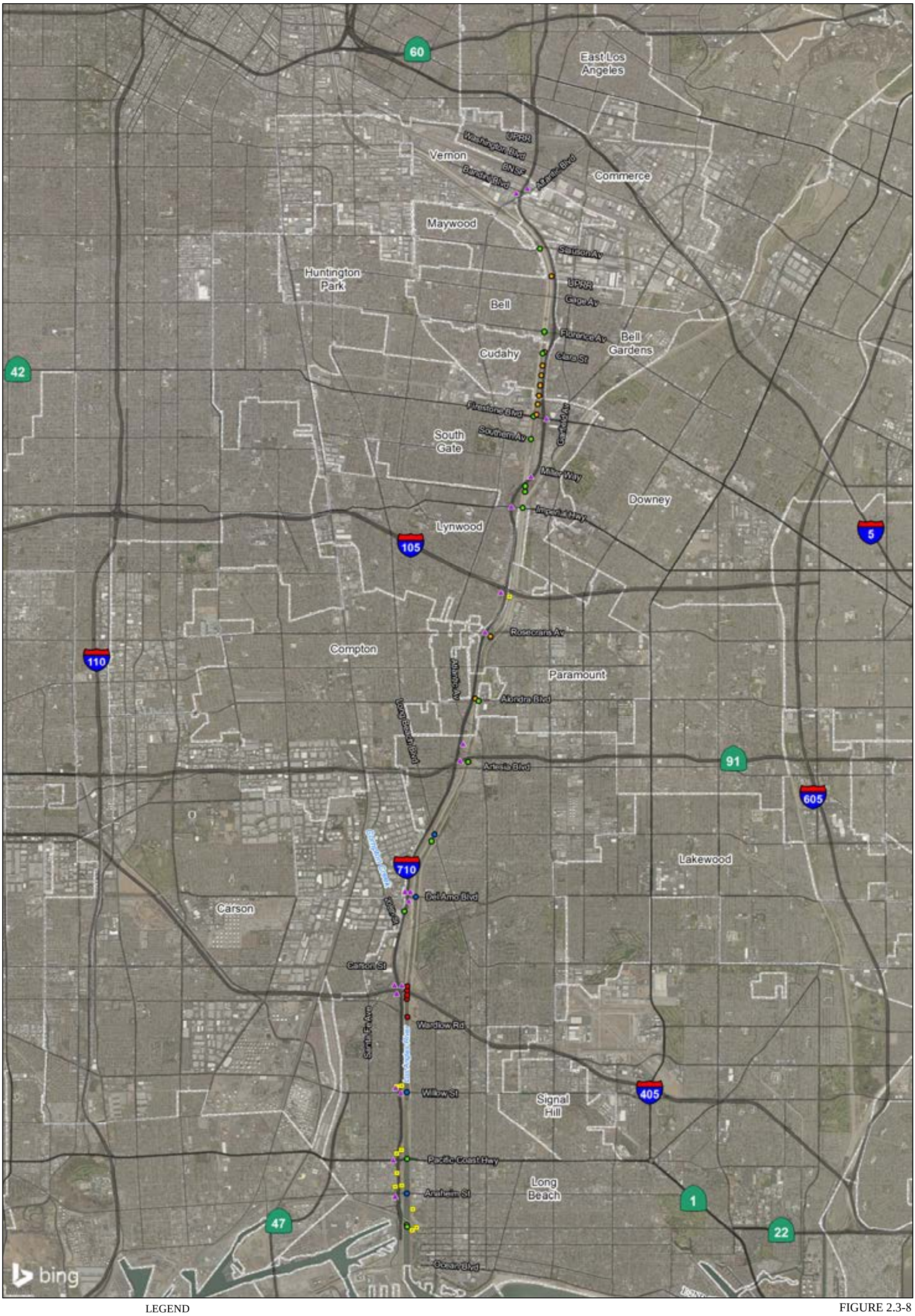

LEGEND

- Levee modification
- New bents/pier walls
- Extended bents/pier walls
- Replacement of bents/pier walls
- Pump Station
- Detention Basin/Bioswale

0 3500 7000
FEET

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-8

I-710 Corridor Project RDEIR/SDEIS

Major Drainage Facilities

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2.3.2.3 ALTERNATIVE 7: I-710 MODERNIZATION PLUS FREIGHT CORRIDOR (ZERO-EMISSION VEHICLES)

Alternative 7 (also briefly known as Alternative 6D upon its inception) includes all the components of Alternative 1 described above, as well as the elements described in Section 2.3.2.1, and also consists of the addition of two separate truck-only lanes in each direction (total of four lanes) between Long Beach and Commerce, adjacent to the freeway, approximately 16 miles in length. This principal feature is referred to as a "Clean-Emission Freight Corridor." This alternative would restrict the use of the freight corridor to ZE/NZE trucks rather than conventionally powered diesel trucks. Figure 2.3-9 shows Alternative 7 and its key features. This proposed ZE/NZE truck technology is assumed to consist of trucks powered by technologies other than diesel engines and producing zero to near-zero tailpipe emissions while traveling on the freight corridor.

Feasible options for ZE truck power include electric motors, fuel cell engines, or a combination of the two. These ZE trucks would have zero tailpipe emissions both on and off the freight corridor. Various types of electric motors including linear induction motors, linear synchronous motors, or more prevalent in-vehicle conventional brushless DC motors. The power systems for these electric propulsion trucks could include, but are not limited to, road-connected wayside power (e.g., overhead catenary electric power distribution system), long-range electric battery cells, as well as ZE hybrid power sources such as a fuel-cell/electric battery Range Extender Electric Vehicle (REEV). A pure fuel-cell truck (with auxiliary battery) would also qualify as a ZE truck. These types of ZE trucks are currently being demonstrated in California, including at the Ports of Los Angeles and Long Beach, particularly in drayage operations. The freight corridor in Alternative 7 is ZE "technology neutral" in that it could accommodate at least one type of ZE heavy-duty truck that is in commercial mass production before the project completes final design.

The feasible options for NZE power include low-NO_x (0.02g/bhp-hr NO_X, or 90 percent below current truck engine emission standards), which power an internal combustion engine designed to burn natural gas instead of diesel or gasoline. Compressed natural gas (CNG) and liquefied natural gas (LNG) are two different fueling/vehicle storage methods for the natural gas fuel.

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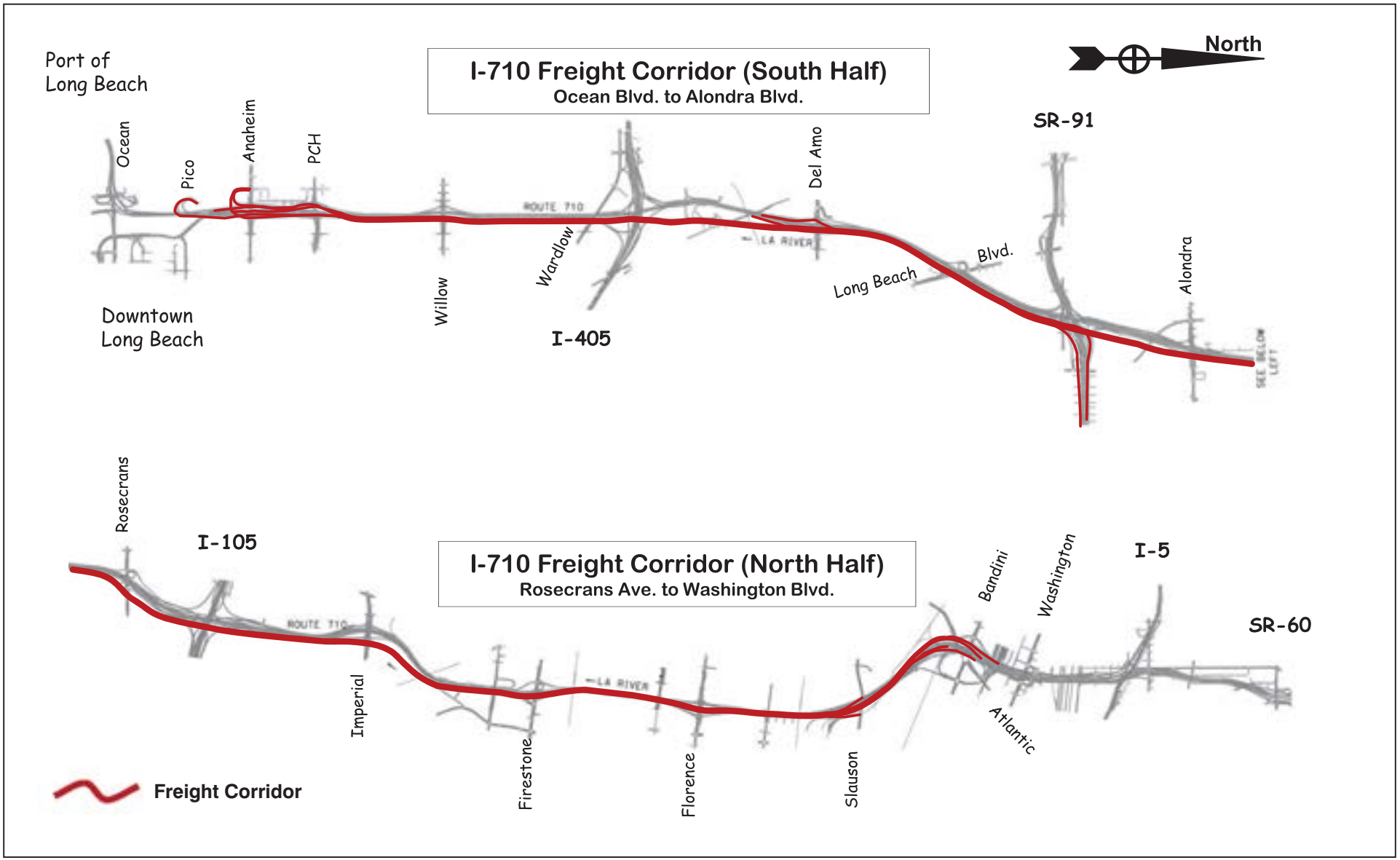

FIGURE 2.3-9

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 Key Features

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EA 249900; EFIS 0700000443

SOURCE: URS

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Low-NO_X LNG, and CNG heavy-duty trucks will meet ARB's optional low-NO_x standard of 0.02 g/bhp-hr; an 8.9 L engine already has been certified by the EPA and ARB, and it is anticipated that larger engines currently being tested will be certified in 2017. Heavy-duty trucks with these engines would be commercially available and not require further demonstration. In addition, a natural gas-assisted REEV would also qualify as an NZE. It would be ZE in the electric vehicle mode and low-NO_x in the natural gas mode (when the battery would be recharging). At this time, diesel trucks are being re-engineered to potentially meet lower NO_x standards (0.1 g/bhp-hr or 0.05 g/bhp-hr), but the analysis assumes that 0.02 g/bhp-hr diesel trucks would not be available before the project completes final design.

Alternative 7 also includes the assumption that all trucks using the freight corridor will have an automated vehicle control system that will steer, brake, and accelerate the trucks under computer control while traveling on the freight corridor. This will safely allow for trucks to travel in "platoons" (e.g., groups of 6–8 trucks with short spacing between trucks) and increase the capacity of the freight corridor from a nominal 2,350 passenger car equivalents per lane per hour (pces/ln/hr) (approximately 1,200 trucks per lane per hour) (as would be assumed if the freight corridor were utilized by trucks without automated vehicle technology) to 3,000 pces/ln/hr (1,500 trucks/ln/hr) in Alternative 7.

Alternative 7 proposes construction of two northbound and two southbound truck lanes on a combination of viaduct and/or retaining wall structures and at-grade roadbeds adjacent to or in the median of the freeway. Freight corridor connector ramps to/from the I-710 general purpose lanes would be provided at three locations on I-710: just south of Anaheim St., just south of Del Amo Blvd., and near Bandini Blvd. Local street access/egress ramps would be provided connecting to the freight corridor at four locations: Pico Ave., Anaheim St., Slauson Ave., and Washington Blvd.

Alternative 7 also proposes modifications to the I-710 alignment. It would maintain the same number of general purpose lanes on I-710, and reconfigure the access points to and from I-710 and its crossing freeways. It would also reconstruct, widen and realign I-710 to accommodate auxiliary lanes and truck lane viaduct structures.

In addition to the freight corridor, this alternative would modernize the design at the freeway-to-freeway interchanges at I-405, SR-91, I-105, and I-5 as follows, and as seen in Figure 2.3-10:

- At I-405, modification of the freeway-to-freeway interchange entails realignment and replacement of all eight of the existing freeway-to-freeway connectors. The local interchanges at Wardlow Rd. at I-710 and Pacific Pl. at I-405 would be removed, and the local interchange at Santa Fe Ave. and I-405 would be modified.

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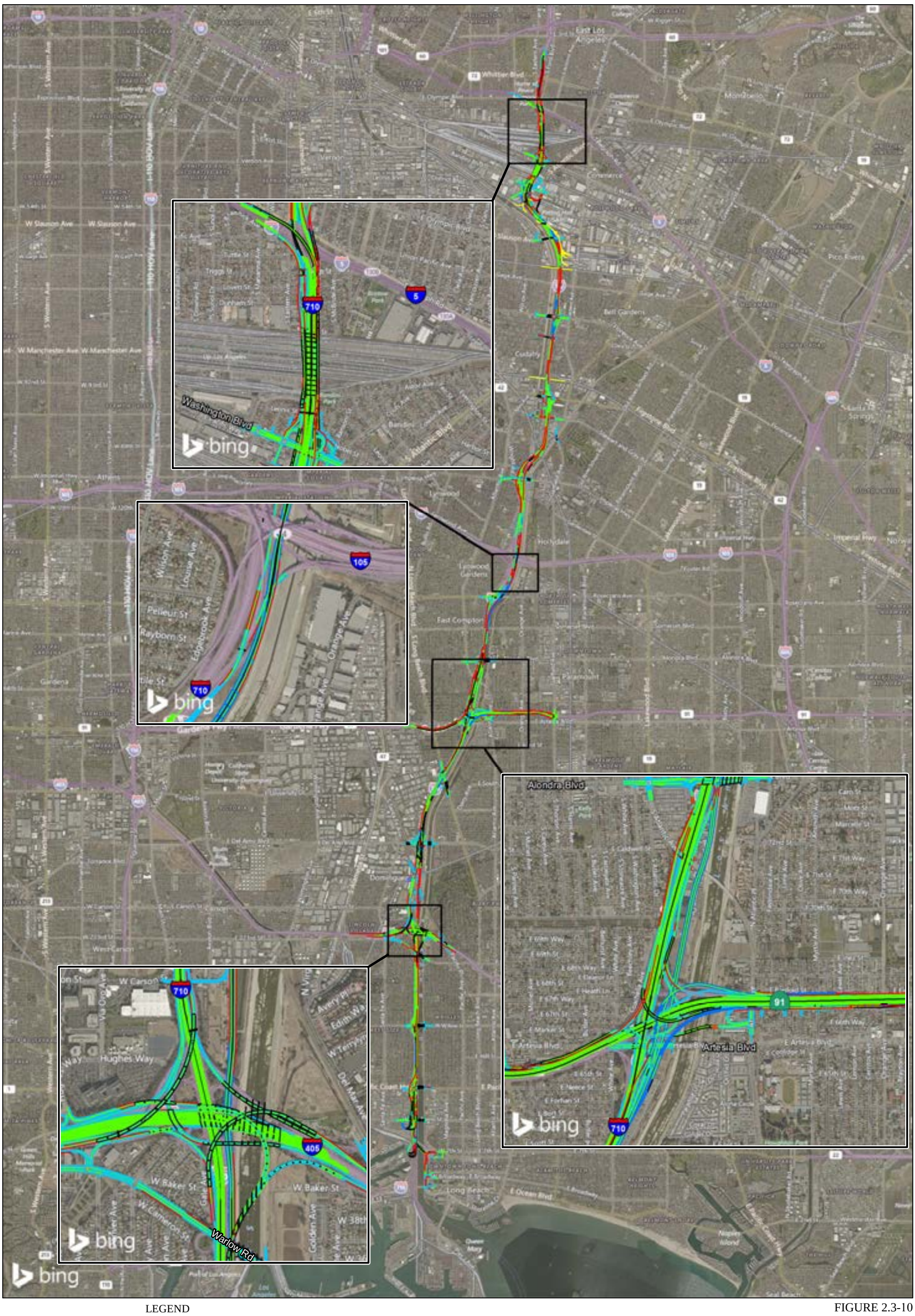

LEGEND

Alternative 7 Geometrics

- Freeway Feature/Structure, Pavement Edges, and Striping
- Columns/Concrete Barrier and Structure
- Bypass Feature/Structure, Express Lane, Local Feature/Structure, Ramps, and Other Improvements
- Freight Corridor Feature/Structure
- Retaining Walls, Sound Walls, and Walls
- Railroad

0 3750 7500
Feet

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-10

I-710 Corridor Project RDEIR/SDEIS

Alternatives 7/1B/3B Freeway to Freeway Interchange Improvements

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EA 249900; EFIS 0700000443

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- The southbound and northbound connectors between SR-91 and I-710 would be reconstructed and extended. The connector ramps on I-710 north of the interchange would be braided with the Alondra Blvd. ramps. The connector ramps on SR-91 west of the interchange would be braided with the Long Beach Blvd. ramps. Connectors from the truck lanes on viaduct structures to and from SR-91 east of I-710 would be constructed. An eastbound auxiliary lane would be constructed on SR-91 from the interchange to Cherry Ave.
- At I-105, the southbound connector to I-710 would be reconstructed and extended, and the southbound connector ramp on I-710 north of the interchange would be braided with the Imperial Hwy. entrance ramp.
- At I-5, new collector-distributor roads that provide connections from I-710, the freight corridor, and Bandini Blvd. to I-5 and Washington Blvd., including a viaduct over the local roadways , and ramp connection points to I-710 would be modified. The existing northbound left-hand side connector from I-710 to I-5 would be removed, and the southbound connector from I-5 to I-710 would be replaced.
- At SR-60, auxiliary lanes up to and extending from the interchange would be added.

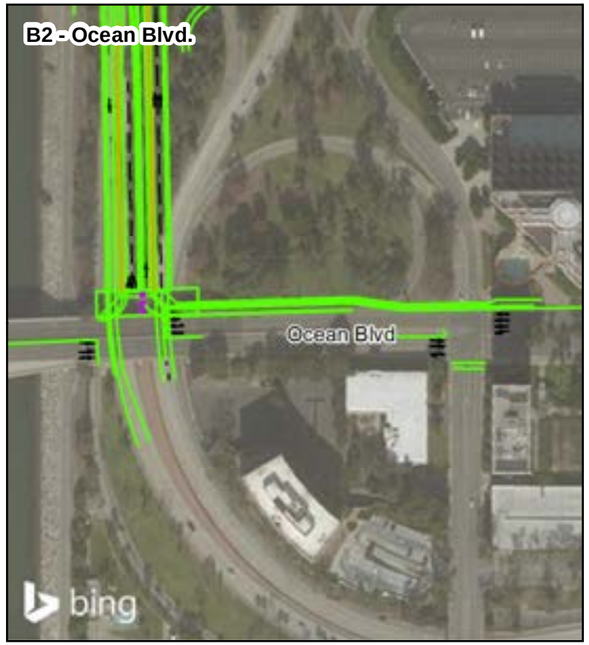
Local interchanges on I-710 would also be modified under Alternative 7 in order to address safety, operational, and capacity deficiencies. Interchange improvements specific to Alternative 7, that would be implemented in addition to those listed in Section 2.3.2.1, are listed in Table 2.3-4. Local interchanges proposed to be modified under Alternative 7 can be seen in Figure 2.3-11.

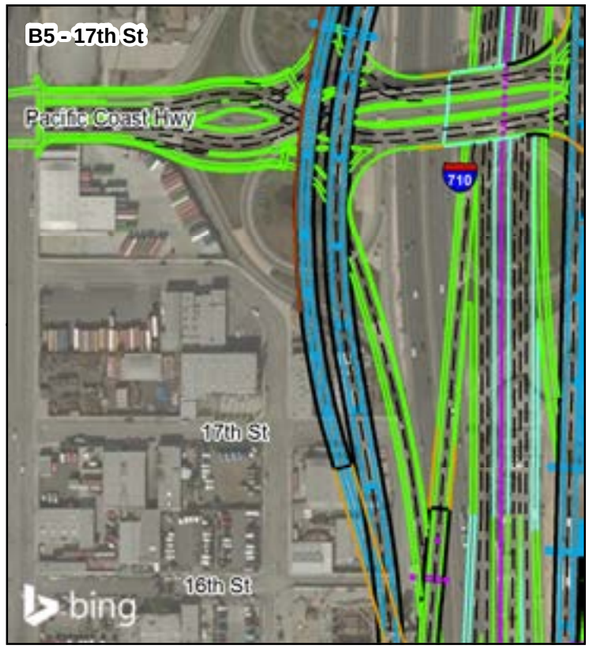
Bridges. Bridges under Alternative 7 that will be widened, replaced, added, or removed are shown on Figure 2.3-12.

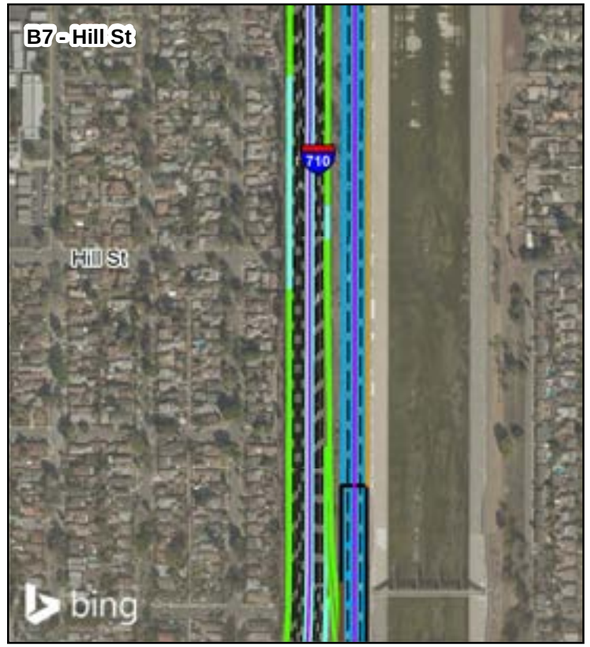
Major Drainage Facilities. For Alternative 7, a total of 33 channel structures (roadway bridges) are affected, including 28 Los Angeles River locations, four Compton Creek locations, and one Rio Hondo location. Construction of new columns or piers will occur at these locations, all oriented to the channel flow direction within the existing channels. There are approximately 24,600 square feet of new structures within the floodway. These transverse impacts require localized channel modifications to maintain the existing channel hydraulic capacity. The proposed bridge improvements require designs to minimize impacts to the affected water courses and facilities. Figure 2.3-8 shows these facilities.

Table 2.3-4: Local Interchange and Roadway Modifications Proposed Under Alternative 7

No.	Location	Improvements
7-1	Pico Ave.	• New partial local interchange between Pico Ave. and truck lanes which shares same terminus as Pico Ave./I-710 interchange
7-2	Anaheim St.	• Reconstruction of Anaheim St. interchange, including braided entrance and exit ramps with those of Pacific Coast Hwy. interchange • Reconstruction and widening of Anaheim St., including freeway overcrossing and bridge over Los Angeles River, between Canal Ave. and DeForest Ave. • New partial local interchange between Anaheim St. and the truck lanes with ramp termini located at Harbor Ave./Anaheim St.
7-3	Atlantic Ave.	• Reconstruction of Atlantic Ave. interchange and reconstruction of Atlantic Ave. from Artesia Blvd. to 68th St.
7-4	Millmark Ave.	• Conversion to cul-de-sac south of SR-91
7-5	Olive Ave.	• Conversion to cul-de-sac south of SR-91
7-6	Myrtle Ave.	• Conversion to cul-de-sac/partial closure south of SR-91
7-7	Walnut Ave.	• Conversion to cul-de-sac/partial closure at 67th St.
7-8	Gaviota Ave.	• Conversion to cul-de-sac/partial closure at 67th St.
7-9	Bell Gardens Ave.	• Modifications to Bell Gardens Ave. between Quinn St. and Gotham St.
7-10	Slauson Ave.	• Construction of a partial interchange at Slauson Ave., including a southbound entrance ramp and a northbound exit ramp for the truck lanes • Reconstruction of Slauson Ave., including the freeway overcrossing and the bridge over the Los Angeles River, from approximately 200 feet west of Alamo Ave. to approximately 700 feet east of the existing Los Angeles Junction Railway at-grade crossing
7-11	Alamo Ave./District Blvd.	• Construction of a new street from Alamo Ave. to District Blvd. and removal of existing street link/conflicting rail lines
7-12	Washington Blvd.	• Construction of northbound and southbound ramps between the truck lanes and I-710 and between the truck lanes and Washington Blvd. • Reconstruction of Washington Blvd. interchange, including all entrance and exit ramps • Construction and extension of the southbound entrance ramp from Washington Blvd. to I-710 and the freight corridor, including a separate railroad overhead • Construction of one-way, access controlled streets between the ramp intersections and Sheila St. • Reconstruction of Washington Blvd. from west of Ayers Ave. to west of Atlantic Blvd., including access control on Washington Blvd. between ramp intersections







LEGEND

Alternative 7 Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Freight Corridor Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls

Other Improvements

N

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-11
Sheet 1 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

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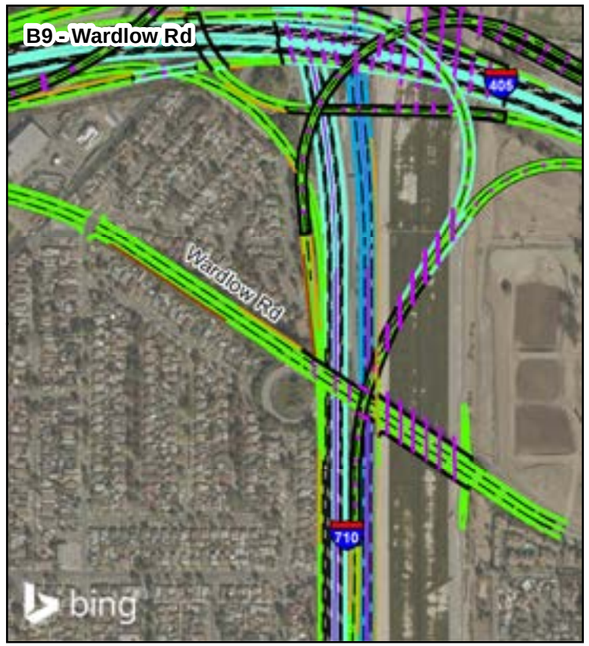

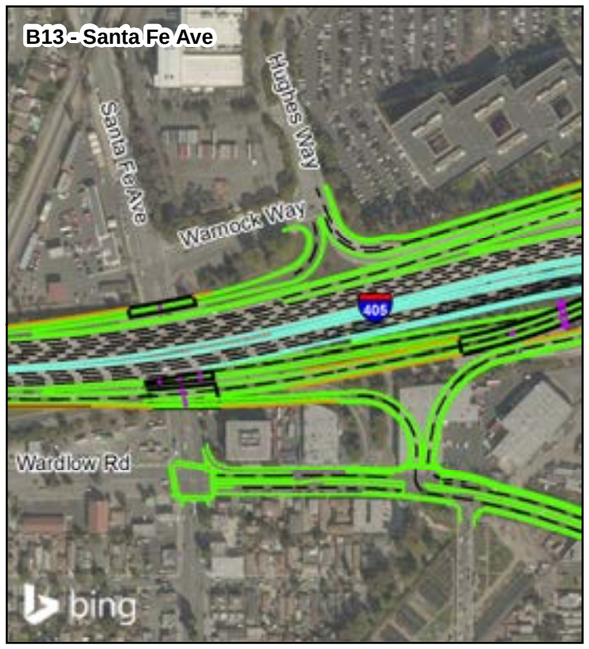

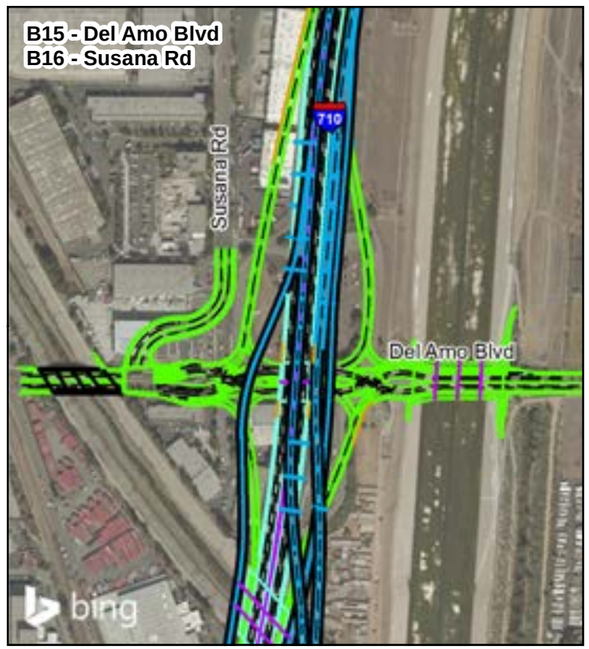

LEGEND

Alternative 7 Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Freight Corridor Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls

Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-11
Sheet 2 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

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LEGEND

Alternative 7 Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Freight Corridor Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls

Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-11

Sheet 3 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5

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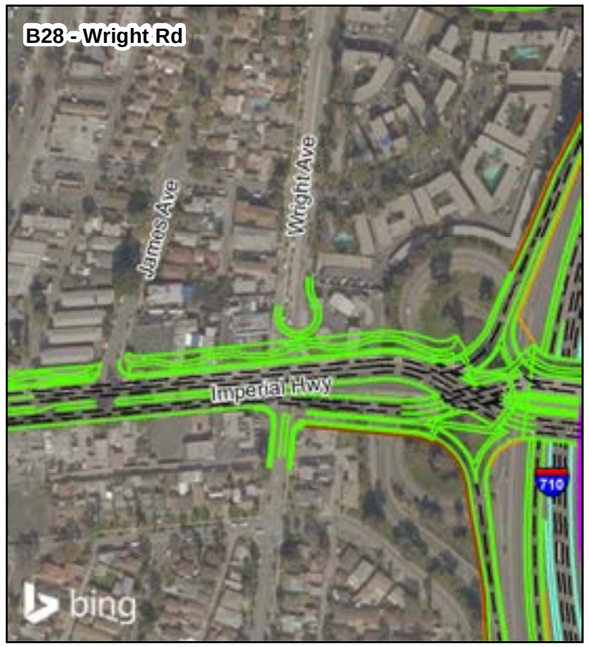

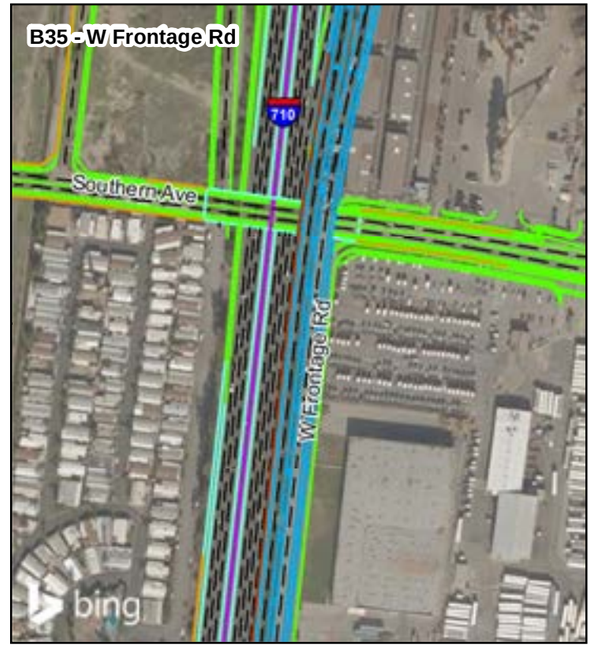

LEGEND

Alternative 7 Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Freight Corridor Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls

Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-11
Sheet 4 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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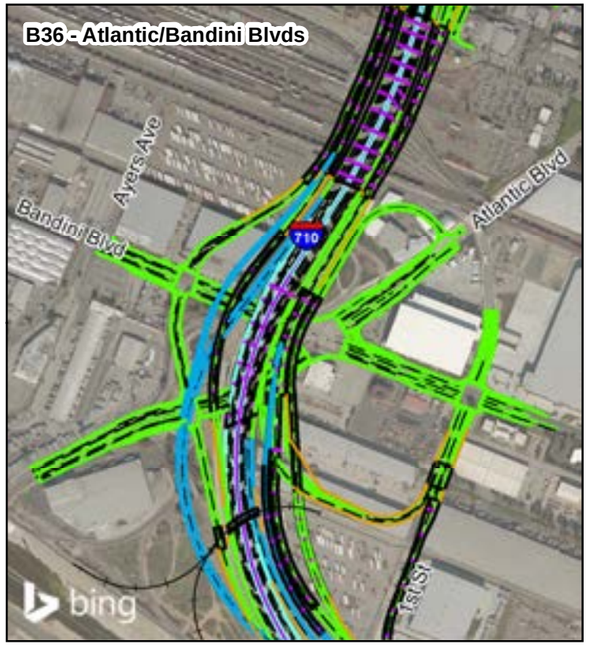

LEGEND

Alternative 7 Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Freight Corridor Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls
- Other Improvements

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-11
Sheet 5 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

Alternative 7 Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Freight Corridor Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls
- Other Improvements

N

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-11
Sheet 6 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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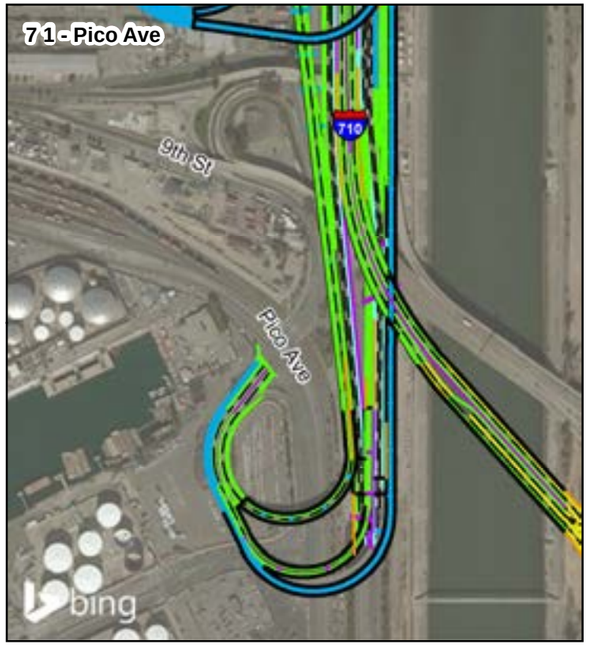

LEGEND

Alternative 7 Geometrics

- Pavement Edges
- Striping
- Ramp
- Temporary Construction Easement
- Freight Corridor Feature/Structure
- Columns/Concrete Barrier
- Express Lane
- Local Feature/Structure
- Freeway Feature/Structure
- Railroad
- Structure
- Walls
- Sound Walls
- Retaining Walls

Other Improvements

N

NO SCALE

SOURCE: Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-11
Sheet 7 of 7

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 Improvements to Local Arterial Interchanges, Crossings, and Frontage Roads

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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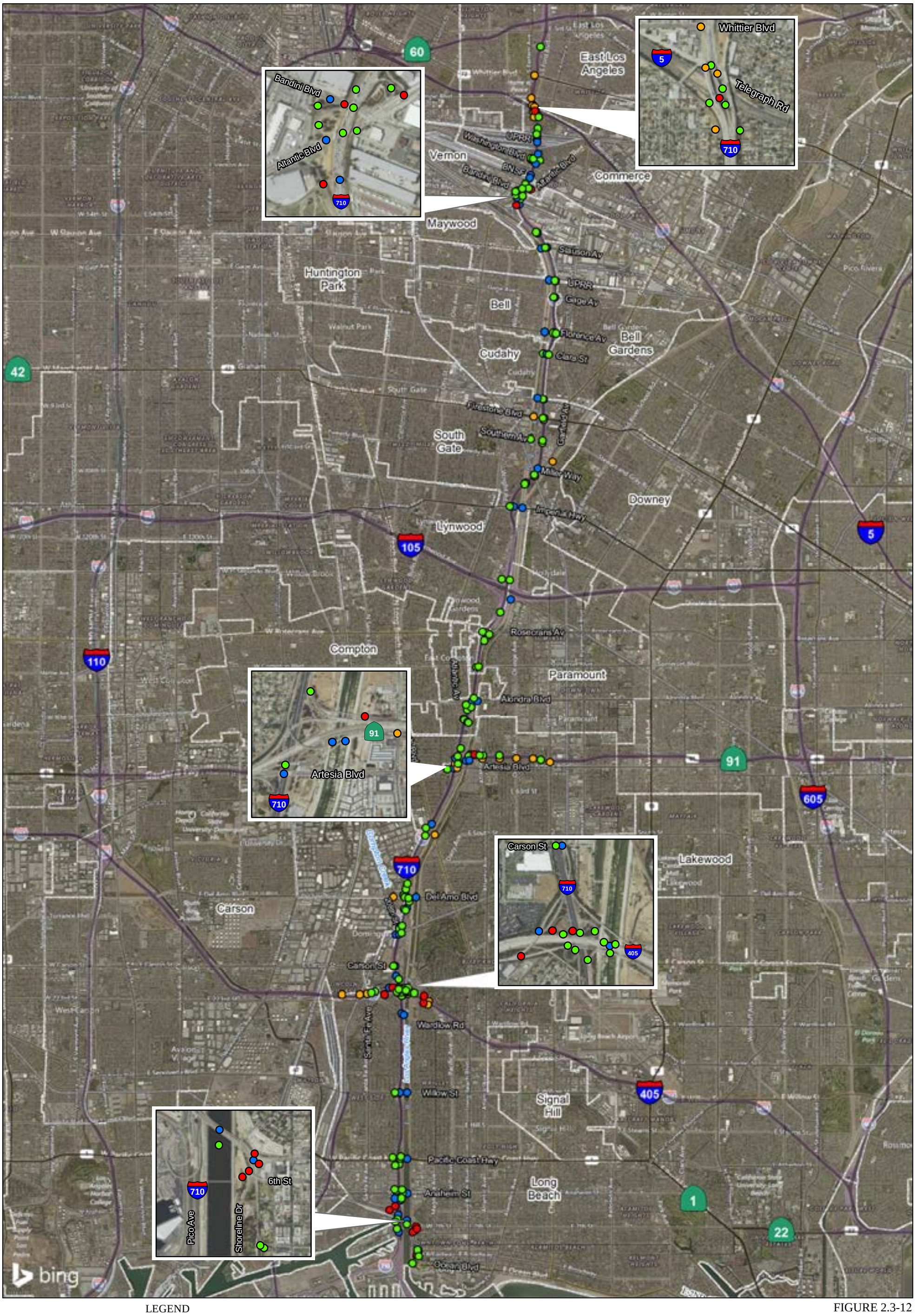

LEGEND

- New
- Replace
- Widen
- Remove

0 3500 7000
FEET

SOURCE: ESRI/Bing Maps (2015); AECOM (2016)

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FIGURE 2.3-12

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 - Bridges

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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Screen Walls. Screen walls are used to shield sensitive viewers such as residents, park users, etc. from elements of an environment that may seem aesthetically displeasing. These screen walls can use different features such as texture, translucency, and unique design to enhance the visual environment. In the case of Alternative 7, these screen walls are proposed to be added to any areas of the freight corridor adjacent to sensitive viewers when a noise barrier is not proposed to be provided.

2.3.3 DESIGN OPTIONS

For both Alternatives 5C and 7, design options are proposed that are variations to the alternatives, specific to discrete segments of I-710. In addition, one option only applicable to Alternative 7 provides for an operational variation to the freight corridor. These options have been fully analyzed in this RDEIR/SDEIS and will be considered during identification of the Preferred Alternative for the project. Their locations, purposes, and features are described as follows.

2.3.3.1 DESIGN OPTIONS 1A AND 1B

Design Option 1A applies to Alternative 5C, and Design Option 1B applies to Alternative 7. The objective of these variations is to reduce impacts to the BNSF operations at the Hobart intermodal rail yard in Commerce. The design option limits are from the Atlantic Blvd./Bandini Blvd. interchange north to the Washington Blvd. interchange, a distance of approximately one mile through the Cities of Bell, Commerce, and Vernon. In order to achieve the objective, highway alignments crossing over the Hobart Yard would shift to the east and would not encroach beyond the existing State right of way on the west side of the freeway over the rail yard. The shifts apply to the proposed freeway, collector-distributor road, and ramp alignments. The new southbound exit ramp to Bandini Blvd. is shifted to the east as well.

Design Option 1A would retain the proposed interchange configuration and local street circulation of Alternative 5A, but the general location of the highway alignment is different. Therefore, the right-of-way requirements of Design Option 1A would differ from those of Alternative 5C. See Appendix O-1, Alternative 5C Concept Plans, sheet 21, for the geometric design of this option.

Design Option 1B would retain the proposed interchange configuration of Alternative 7, but local street circulation, highway alignment, and right-of-way requirements would differ from those of Alternative 7. Alignments would shift generally easterly, the cul-de-sac at Ransom would be removed, the one-way street between the ramp intersection and Sheila St. would be shifted easterly, and portions of Noble St. would be realigned and reconstructed. See Appendix O-1, Alternative 7 Concept Plans, sheets 23 and 24, for the geometric design of this option.

2.3.3.2 DESIGN OPTION 2A

Design Option 2A applies to Alternative 5C. The objective of this variation is to restore circulation between Shoreline Dr. and Pacific Coast Hwy. via the I-710 freeway. The design option limits extend from the Shoreline Dr. interchange north to the Pacific Coast Hwy. interchange, a distance of approximately one mile through the City of Long Beach. In order to achieve the objective, two grade-separated ramps would be added to provide connections between the northbound Shoreline Dr. entrance ramp to I-710 and the northbound Pacific Coast Hwy. exit ramp from I-710, and between the southbound Pacific Coast Hwy. entrance ramp to I-710 and the southbound Shoreline Dr. exit ramp from I-710.

To accommodate the added ramps, the proposed highway alignment would shift to the west. The shifted alignments include the Shoreline Dr. entrance and exit ramps, the southbound freeway lanes, the southbound Pacific Coast Hwy. entrance ramp, and the southbound Anaheim St. exit ramp. Design Option 2A would retain the interchange configuration types, the Shoreline Dr. ramp alignments on the Shoemaker Bridge over the Los Angeles River, and the local street circulation of Alternative 5C, but the highway alignments, ramp termini locations at Anaheim St. and Pacific Coast Hwy., and associated right-of-way requirements would be different. Compared to Alternative 5C, the right-of-way required would increase between Anaheim St. and Pacific Coast Hwy. west of the freeway facility. See Appendix O-1, Alternative 5C Concept Plans, sheets 1 and 2, for the geometric design of this option.

2.3.3.3 DESIGN OPTIONS 3A AND 3B

Design Option 3A applies to Alternative 5C, and Design Option 3B applies to Alternative 7. The objective of this variation is to further improve safety and operation of the freeway by reducing weaving conflicts. The design option limits extend from the Washington Blvd. interchange north to the SR-60 interchange, a distance of approximately two miles through the City of Commerce and the unincorporated area of East Los Angeles. In order to achieve the objective, the variation would reconfigure the SR-60, I-5, and Olympic Blvd. interchanges, and alter the freeway and local traffic circulation. The specific elements of Design Options 3A and 3B are the same for each option and are described as follows:

- I-710 would be reconstructed and widened to accommodate auxiliary lanes and interchange reconfigurations.
- Southbound entrance and exit ramps terminating at Eastern Ave. would be removed, and replaced with ramps terminating at Whittier Blvd.
- The northbound SR-60 connector would be extended on a viaduct structure adjacent to I-710.
- The northbound entrance and exit ramps terminating at Olympic Blvd. would be reconstructed.

- The Humphreys Ave. overcrossing and southbound exit ramp to 3rd St., terminating at the intersection of Humphreys Ave. and Eagle St., would be replaced.
- Eagle St. would be widened and intersection improvements at Eagle St. and Eastern Ave. would be implemented.
- The intersection of Whittier Ave. and Sydney Dr. would be removed and a cul-de-sac would be implemented at Sydney Dr.

These variations would differ from Alternatives 5C and 7 in that additional right of way would be required. See Appendix O-1, Alternative 5C Concept Plans, sheets 22 and 23, and Alternative 7 Concept Plans, sheets 24 and 25, for the respective geometric designs of these options.

2.3.3.4 OPTION 7ZE

Option 7ZE is applicable only to Alternative 7 and provides for the use of the freight corridor exclusively by zero emission trucks, excluding near zero emission trucks. This option is operational in nature and would not represent a difference in the geometric design of Alternative 7.

2.3.4 TEMPORARY PROJECT COMPONENTS

2.3.4.1 TRANSPORTATION MANAGEMENT PLAN

The Transportation Management Plan (TMP), a standard measure implemented on all Caltrans construction projects, is designed to minimize construction activity-related motorist delays, queuing, and accidents by the effective application of traditional traffic-handling practices and innovative approaches. The purpose of the TMP is to relieve congestion and maintain traffic flow throughout the alternative routing and surrounding area within the Study Area. The proposed project TMP proposes to keep all lanes open during construction, with the exception of overnight lane closures. Ramp closures will be limited to potential weekend closures and would not exceed a period of one week. The TMP will be finalized during final design but not until funding and final staging/phasing is determined at a later date.

The TMP includes traffic mitigation strategies for the duration of construction, addresses lane closure requirements, and seeks to inform the public and motorists regarding the construction schedule, potential detours, and anticipated traffic delays during construction. A preliminary TMP has been developed and included in the *Draft Project Report* (2017).

2.3.4.2 CONSTRUCTION STAGING

Staging of the construction would be required for all ramp reconstruction, freeway widening, and profile adjustments. The number of through lanes would be maintained by restriping and shifting traffic on the existing lanes to maintain the existing capacity.

All construction activities would be closely coordinated with other construction projects that are occurring. Existing State facilities such as changeable message signs, traffic cameras, and traffic count stations would also be protected during construction. Close coordination would also be needed with the Cities within the Study Area, the County of Los Angeles, Caltrans, Metro, and the public to ensure that traffic along I-710 and on surrounding streets remains at an acceptable LOS during construction.

The following procedures have been identified to stage construction of either build alternative:

- Project divided into segments
- Segments divided into major components:
    - Interchanges: New ramps and crossing arterials
    - Freeway: Mainline widening
    - Freight Corridor (Alternative 7)
- The following assumptions have been made regarding construction staging:
    - Utilities relocated in advance
    - Periodic ramp and arterial closures
    - No simultaneous adjacent interchange arterial or ramp closures

Construction staging concepts were developed to identify how the build alternatives may be constructed and what requirements are needed to ensure safe and manageable implementation. It is recognized that there are many possible strategies for staging a project of this size and complexity. Funding, right-of-way certification, maintenance of traffic, and contractor innovation are all variables that drive the timing, priority, and scope of staged improvements. Recognizing that these variables will change over the course of project development, the concepts are used as an initial baseline to approximate construction duration and estimate costs. The concepts also serve to identify potential constructability issues, key maintenance of traffic assumptions, potential construction emissions, and temporary right-of-way impacts.

For each segment of the proposed project, a sequence of work was developed identifying major elements of the improvements to be constructed by stage. Maintenance of traffic assumptions, including number of lanes maintained, temporary detours, and roadway closures were identified. Stage durations were approximated to provide a range of time expected to construct improvements, within a particular segment; however, this does not mean that construction activities would occur for the entire duration listed at any individual site within a segment.

The approximate construction duration by segment is included in Table 2.3-5. The freight corridor under Alternative 7 may be constructed concurrently with freeway improvements. Where feasible to do so, some soundwalls will be constructed prior to other improvements so as to provide noise and light abatement from construction activities.

Table 2.3-5: Construction Duration

Segment	Alternative 5C Duration (months)	Alternative 7 Duration (months)
1 (Ocean Blvd. to Willow St.)	54	102
2 (Wardlow Rd. to Del Amo Blvd.)	114	114
3 (Long Beach Blvd. to Alondra Blvd.)	42	96
4 (Rosecrans Ave. to Firestone Blvd.)	48	72
5 (Florence Ave. to Slauson Ave.)	48	78
6 (Atlantic Ave. to Washington Blvd.)	54	84
7 (I-5 to SR-60)	66	108

I-5 = Interstate 5
SR-60 = State Route 60

Provided right-of-way certification is obtained, funding and contractor resources are available, and all segments proceed concurrently, the estimated minimum construction duration is approximately ten years.

2.3.4.3 Temporary Construction Easements

Temporary construction easements are used to facilitate construction during a set period for activities related to the construction of a project, including access or materials/equipment staging, etc. Please refer to Appendix O, Concept Plans, for the location of temporary construction easements.

2.3.5 Comparison of Alternatives

The alternatives described in this RDEIR/SDEIS and the impacts and benefits described herein are presented in order to assist decision-makers to understand how each build alternative addresses the objectives set forth in the project's purpose and need. The project purpose statements are used as the decision factors for comparing alternatives, including the No Build Alternative (which may include reasonably foreseeable operational improvements to I-710, including (but not limited to) maintenance activities, repavement or guardrail replacement, or minor ramp modifications). Please see Table S-4 in the Summary of this RDEIR/SDEIS for a comparison of Alternatives 1, 5C, and 7 for key environmental topics of concern.

After the public circulation period, all comments will be considered, and Caltrans will identify a preferred alternative and make the final determination of the project's effect on the environment. Under CEQA, Caltrans will certify that the project complies with CEQA, prepare findings for all

significant impacts identified, prepare a Statement of Overriding Considerations for impacts that will not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to project approval. Caltrans will then file a Notice of Determination with the State Clearinghouse that will identify whether the project will have significant impacts, if mitigation measures were included as conditions of project approval, that findings were made, and that a Statement of Overriding Considerations was adopted. With respect to the National Environmental Policy Act (NEPA), Caltrans, as assigned by the Federal Highway Administration (FHWA), will document and explain its decision regarding the selected alternative, project impacts, and mitigation measures in a Record of Decision.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION

During the preliminary studies for the I-710 Corridor Project, six alternatives were identified and studied in an *Alternatives Screening Report* (2009). The six alternatives were: Alternative 1 (No Build), Alternative 2 (TSM/TDM/Transit/ITS), Alternative 3 (Goods Movement Enhancement by Rail and/or Advanced Technology), Alternative 4 (Arterial Hwy. and I-710 Congestion Relief Improvements), Alternative 5A (Ten General Purpose Lanes), Alternative 5B (Eight General Purpose Lanes plus Two High-Occupancy Vehicle [HOV] Lanes), and Alternative 6 (Alternative 5 with Addition of Four Separated Freight Movement (Truck Only) Lanes). As discussed earlier in this chapter, Alternatives 1, 5A, and Alternatives 6A, 6B, and 6C were evaluated in detail in the 2012 Draft EIR/EIS. Alternatives 2, 3, and 4 were considered for evaluation in Section 2.2.2 of the 2012 Draft EIR/EIS but withdrawn from further environmental study as stand-alone alternatives. Other factors used in considering the alternatives for further evaluation included whether or not the alternatives (1) failed to meet the most basic project objectives, (2) were infeasible (per CEQA Guidelines Section 15126.6(f)(1), or (3) were unable to avoid significant environmental impacts.

As discussed in more detail in Section 2.2, after the public circulation period for the 2012 Draft EIR/EIS, based on substantive feedback received from agencies, organizations, and the general public, as well as the emergence of new relevant information, Caltrans and the I-710 Funding Partner agencies made the decision to propose a revised set of alternatives and analyze them in an RDEIR/SDEIS. The goal of the revised set of alternatives was to more address the requests and input of the impacted communities and involved agencies, while also being responsive to travel demand and meeting project purpose and need.

2.4.1 ORIGINAL ALTERNATIVES DEVELOPMENT

2.4.1.1 MAJOR CORRIDOR STUDY

The *I-710 Major Corridor Study* (MCS) was initiated in January 2001 to analyze the traffic congestion, safety, and mobility problems along the I-710 Corridor and to develop transportation solutions to address these problems, as well as some of the quality of life concerns experienced in communities along the I-710 Corridor.

During the first 24 months of the MCS, existing and future conditions on the I-710 Corridor were assessed, a Purpose and Need Statement was developed, and several transportation alternatives were analyzed. By April 2003, five alternatives had been evaluated in detail and information on their benefits, costs, and impacts was made available to the public (more detail is provided in the *I-710 Major Corridor Study*, November 2004). As a result of the MCS, a Draft Hybrid Design Concept was developed to provide improvements to I-710 focused on improving safety; addressing heavy-duty truck demand as well as general purpose traffic; improving reliability of travel times; and separating automobiles and trucks to the greatest extent possible while limiting right-of-way impacts.

2.4.1.2 ORIGINAL 2012 DRAFT EIR/EIS ALTERNATIVES SCREENING ANALYSIS

Subsequent to the MCS, the project partners for the I-710 Corridor Project were identified. Caltrans, Metro, Gateway Cities COG, POLA, POLB, SCAG and the Interstate 5 Joint Powers Authority (I-5 JPA) entered into a funding agreement for the preparation of preliminary engineering and environmental documentation for the I-710 Corridor Project. In August 2008, a formal public scoping process was initiated for the I-710 Corridor Project. As part of scoping, a set of preliminary alternatives were presented to the public for consideration with various levels of investment, ranging from Alternative 1 (No Build) to the Locally Preferred Strategy (LPS) adopted in the I-710 MCS. For more information on the scoping process, please see the *I-710 Corridor Scoping Summary Report* (December 2008), as well as Section 5.2 of the 2012 Draft EIR/EIS.

The initial set of seven proposed alternatives for the I-710 Corridor Project comprised an Alternative 1 and six build alternatives, one of which (Alternative 6) was based on the LPS identified in the I-710 MCS. A more detailed description of the Initial Set of Alternatives can be found in the *I-710 Corridor Project EIR/EIS Baseline Alternatives Analysis Report (April 2009)*.

Following the close of public comment for the 2008 scoping process, an alternatives screening analysis was conducted to determine whether any alternatives should be modified or withdrawn from further consideration. In this screening phase, a conceptual level of analysis was performed on the initial set of seven alternatives to provide comparative information on their relative benefits, costs, and impacts. The measures used to distinguish the differences among these alternatives addressed areas such as improvements to traffic mobility, traffic safety, air quality, and health effects; impacts to environmental resources; right-of-way impacts, and capital costs. This analysis applied screening criteria to distinguish among the relative benefits, impacts, and costs of the alternatives. These criteria measured the performance of the alternatives relative to the project goals designated in the *Alternatives Screening Report* (2009) and multiple measures were used to provide comparative information.

Based on the screening analysis and on guidance received from the I-710 advisory committees, including the I-710 Technical Advisory Committee (TAC) and the I-710 Community Advisory

Committee (CAC), a recommendation was developed that identified certain alternatives (and key features or components) to be carried forward in the technical studies for the 2012 Draft EIR/EIS. The screening evaluation favored those alternatives that best responded to multiple elements of the screening criteria over those initial alternatives that could only respond to a limited number of screening criteria. In most cases, alternatives that were included as a component of other larger alternatives were screened out as stand-alone alternatives, as they did not adequately address the I-710 Corridor Project's defined Purpose and Need. The various I-710 Corridor Project advisory and technical committees, their memberships, and responsibilities are discussed in detail in Section 5.6, Community Participation Process.

The following discussion summarizes the Initial Set of Alternatives carried forward into the 2012 Draft EIR/EIS, including their relative performance and key trade-offs, and the critical factors that led to the technical screening recommendation for each alternative. Refer to the *Final Technical Memorandum - Alternatives Screening Analysis* (2009) for additional details.

ALTERNATIVE 1: NO BUILD

Alternative 1 was carried forward into the 2012 Draft EIR/EIS. Alternative 1 is a requirement of the CEQA and NEPA process because it provides the existing and future environmental baselines against which other alternatives are compared. Please see the discussion in Section 2.3, Project Alternatives, for more detail regarding Alternative 1.

ALTERNATIVE 2: TSM/TDM/TRANSIT/ITS

Alternative 2 was not carried forward into the 2012 Draft EIR/EIS as a stand-alone alternative. While Alternative 2 included transit, policy, ITS application, and operational improvements that would have a beneficial effect on mobility in the Study Area, the screening analysis demonstrated that these transportation improvements did not go far enough in resolving the worst of the congestion problems, air quality issues, design elements that need updating, and safety concerns that affect motorists and residents within the overall I-710 Corridor. Alternative 2 also did not update design elements on I-710, nor did it provide the desired separation between trucks and automobile traffic. At best, Alternative 2 provided a 6 to 7 percent improvement in service levels on I-710 and an approximately a 5 percent improvement in nitrogen oxide (NO_X) emissions, with a negligible effect in diesel particulate matter (DPM) emissions compared to the No Build Alternative. However, the screening results did confirm that the TSM/TDM, transit, and ITS improvements included in Alternative 2 would provide value to the project. All of Alternative 2 was included in the reduced set of alternatives as a component of the other alternatives carried forward for more detailed environmental studies.

ALTERNATIVE 3: GOODS MOVEMENT ENHANCEMENT BY RAIL AND/OR ADVANCED TECHNOLOGY

Alternative 3 was not carried forward into the 2012 Draft EIR/EIS as a stand-alone alternative. This alternative was focused on maximum goods movement by rail and goods movement enhancement through an array of advanced "zero emission" technologies, including fixed

guideway technologies (e.g., magnetically levitated container transport system [MagLev]), electrified freight rail, and electric-powered trucks. While key features of Alternative 3 demonstrated needed emissions reduction benefits, as well as the ability to markedly reduce heavy-duty truck traffic on the I-710 general purpose lanes as a stand-alone alternative, Alternative 3 did not sufficiently relieve traffic congestion on the I-710 mainline according to several of the mobility measures, nor did it address the existing safety and design elements that need updating on the I-710 compared to other alternatives. Therefore, the electric-powered (zero emission) truck advanced technology component of Alternative 3 was selected for its positive air quality benefits and integrated into another alternative (see the following discussion of Alternative 6B). A technology screening step was performed in the *Alternatives Goods Movement Technology Study* (January 2009), to select this specific type of zero emission technology. Additionally, at the recommendation of the I-710 TAC, the Enhanced Goods Movement by Rail component was removed from Alternative 3 because these projects and other efforts to maximize the amount of goods movement by rail would not be completed as part of the I-710 Corridor Project.

Alternative 3 focused on maximum goods movement by rail and enhancing goods movement in and out of the Ports by implementing an advanced zero emission container movement technology within the I-710 Corridor. Two families of technology were originally defined: an automated fixed guideway family and a zero emission truck family. During a technical workshop held to evaluate these alternative goods movement technologies, a third technology family of electrified conventional freight rail was added for consideration. This assumption provided the full range of potential benefits and costs of different zero emission technologies and design options.

ALTERNATIVE 4: ARTERIAL HIGHWAY AND I-710 CONGESTION RELIEF IMPROVEMENTS

Alternative 4 was not carried forward into the 2012 environmental process as a stand-alone alternative. Like Alternative 2, Alternative 4 did not provide adequate improvements on its own to fully address the I-710 Corridor Project's Purpose and Need. This alternative would not accommodate the high future traffic volumes generated by population and employment growth and the forecasted cargo growth. However, the screening analysis found that the arterial highway improvements and the I-710 mainline congestion relief elements of Alternative 4 would be valuable components to include in the alternatives recommended to be carried forward for more detailed environmental analysis.

Alternative 4 focused on arterial highways and specific I-710 congestion relief projects that identify and improve existing freeway and updated design elements of arterial intersections causing the greatest congestion and safety impacts. Additionally, Alternative 4 included the maximum arterial highway improvements that could feasibly be implemented in advance of any I-710 improvements. This would incorporate the major north/south and east/west arterial highways within the Study Area, as well as the Study Area intersections identified for the I-710

Corridor Project. Alternative 4 also addressed congestion relief projects, including early-action projects on I-710, by identifying design elements of the existing freeway that need updating causing bottlenecks, congestion, and safety problems.

ALTERNATIVE 5A: TEN GENERAL PURPOSE LANES

Alternative 5 proposed improving the I-710 mainline by widening I-710 to include ten lanes throughout the length of the corridor (including through the freeway-to-freeway interchanges) and modernizing its design. Included in this alternative were redesigns of the freeway-to-freeway and arterial interchanges. Alternative 5A proposed ten general purpose lanes and Alternative 5B proposed eight general purpose lanes plus two HOV lanes. Alternatives 5A and 5B also included the components in Alternatives 1, 2, 4, and 5A.

Alternative 5A was carried forward in the 2012 environmental studies as a stand-alone alternative. Alternative 5A had the second-best performance on measures of congestion reduction (volume-to-capacity [v/c] ratio) and I-710 mainline travel time. It also ranked second among the screened alternatives in air emission reductions. Alternative 5A also performed well in the screening measures related to traffic safety and right-of-way impacts.

ALTERNATIVE 5B: EIGHT GENERAL PURPOSE LANES PLUS TWO HOV LANES

Alternative 5B was not carried forward into the 2012 environmental process. From a physical standpoint, Alternative 5B closely resembled Alternative 5A except that two of the proposed lanes would operate as HOV lanes rather than general purpose lanes. The screening analysis demonstrated that Alternative 5B had lower benefits compared to Alternative 5A because the HOV lanes under Alternative 5B would not be utilized as much as the proposed general purpose lanes under Alternative 5A, most likely due to the parallel HOV lanes on both I-110 and I-605. However, Alternative 5B contained the drawbacks with regard to potential right-of-way impacts as Alternative 5A, without the corresponding level of mobility benefits. Therefore, Alternative 5A was recommended over Alternative 5B.

ALTERNATIVE 6: ALTERNATIVE 5 WITH ADDITION OF FOUR SEPARATED FREIGHT MOVEMENT LANES

As the highest-performing alternative for mobility and traffic safety measures, Alternative 6 was the only alternative estimated to reduce the peak-period v/c ratio on the I-710 mainline below the level indicating congestion conditions. It also was estimated to generate the lowest percentage of heavy-duty trucks sharing the general purpose lanes with automobiles and to result in the greatest reduction in freeway design elements that need updating, both of which are key indicators of improved traffic safety. Alternative 6 was included in the Reduced Set of Alternatives because it was the only alternative determined to fully address the mobility problems on the I-710 Corridor and was considered to respond best to the need for improved traffic safety due to its separation of truck and automobile traffic. Alternative 6 had two variations: (1) Alternative 6A (previously labeled Alternative 6), which included ten general purpose lanes and four separated freight movement lanes (freight corridor) for use by all heavy-

duty trucks, whether powered by diesel engines or engines with lower or zero emissions; and (2) Alternative 6B, which included ten general purpose lanes and incorporated Alternative 3's advanced technology component by including four separated freight movement lanes. This advanced technology would include, but not be limited to, electric-powered trucks, which could receive electric power from on-board rechargeable batteries by an electric power distribution system employing overhead catenary wires to provide power to conventional electric motors in each vehicle, or embedded in the pavement of the freight movement lanes powering either linear-induction-motor or linear-synchronous-motor systems (or other concepts), or future zero emission technologies to be developed or designed as part of the freight movement corridor. The design of the freight corridor also assumed possible future conversion, or initial construction, as feasible (which may require additional environmental analysis and approval), of a fixed-guideway family of alternative container transport technologies (e.g., Maglev).

Subsequent to the completion of the alternatives screening analysis described above, the I-710 Funding Partners agreed that a tolling option should be added to the freight corridor component of Alternatives 6A and 6B to provide a possible revenue source to fund the improvements. This alternative was known as Alternative 6C. For more detailed information on this Reduced Set of Alternatives, please see Chapter 2.0 of the I-710 Corridor Project 2012 Draft EIR/EIS.

2.4.2 Alternatives Eliminated After 2012 Draft EIR/EIS Public Circulation

2.4.2.1 Alternative 5A and Alternatives 6A, 6B, and 6C

In addition to Alternative 1 (No Build Alternative), Alternatives 5A (Widening of I-710 to include ten general purpose lanes) and Alternatives 6A, 6B, and 6C (Widening of I-710 to include ten general purpose lanes and addition of four separated freight movement lanes, with operational variations) were evaluated in detail in the 2012 Draft EIR/EIS. Because of the updates in traffic assumptions and data, resulting in a clearer understanding of the origin and destination of truck traffic within the project area, and the substantial comments received from agencies and the public concerned with potential right-of-way impacts, potential impacts to health and air quality associated with the addition of general purpose lanes, and other requests (see Section 2.2.1 for more information), the funding partner agencies decided to continue to build on the available information and move forward with the development of revised alternatives that better responded to public input and updated traffic patterns, while still meeting the project's purpose and need. Therefore, Alternatives 5A and Alternatives 6A, 6B, and 6C have been withdrawn from consideration and are not discussed further in this RDEIR/SDEIS.

2.5 Anticipated Permits and Approvals Needed

Table 2.5-1 identifies the permits and/approvals that will or may be required prior to or during construction of the I-710 Corridor Project.

Table 2.5-1: Permits and/or Approvals Needed

Agency	Permit/Approval	Timeline
Federal Highway Administration (FHWA)	1. 23 United States Code (USC) 327 for satisfying Air Quality Conformity Requirements	1. Prior to approval of the Final Environmental Impact Statement (EIS).
	2. Cost Estimate Review	2. Prior to Approval of the Final EIS.
	3. Draft Project Management Plan	3. At least 60 days prior to approval of the Record of Decision (ROD).
	4. Final Project Management Plan	4. 90 days after approval of the ROD.
	5. Initial Financial Plan	5. After approval of the ROD.
	6. Financial Plan Annual Update	6. Approved annually after approval of the Initial Financial Plan.
	7. Modified Access Report	7. After approval of the ROD.
United States Fish and Wildlife Service (USFWS)/National Marine Fisheries Service (NMFS)	Section 7 consultation for Threatened and Endangered Species and consultation with NMFS regarding Essential Fish Habitat for Section 404 permits	A Letter of Concurrence and/or Biological Opinion will be issued prior to the approval of the Final EIS.
United States Army Corps of Engineers (USACE)	1. Section 404 Permit for filling or dredging waters of the United States 2. Section 408 Permit for modification to USACE facility (levees)	Applications for the Section 404 and 408 permits will be submitted after the ROD.[1]
Federal Emergency Management Agency (FEMA)	Approval of a Conditional Letter of Map Revision (CLOMR)	After completion of final design.
State Historic Preservation Officer (SHPO)	Concurrence with the California Department of Transportation's (Caltrans) findings of effect and Section 4(f) de minimis determinations for UP and BNSF Railroads and Dale's Donuts (Section 106 properties)	Prior to approval of the Final EIS.
California Department of Fish and Wildlife (CDFW)	1. Section 1602 Lake and Streambed Alteration Agreement	1. Section 1602 Notification is to be submitted and agreement obtained prior to the start of construction.
California Coastal Commission	Coastal Zone Management Act (CZMA) consistency determination	A CZMA consistency determination is needed 90 days prior to issuance of the ROD.
California Public Utilities Commission (CPUC)	1. General Order 131-D for relocation of electrical transmission lines between 50 to 200 kilowatts 2. Certificate of Public Convenience and Necessity for relocations to electrical transmission lines and gas lines	After certification of the Final Environmental Impact Report)EIR) and the filing of a Notice of Determination to complete the CEQA process.
Affected Utilities	Approvals to relocate, protect in place, or remove utility facilities	Prior to any construction that would affect utility facilities.
Burlington Northern Santa Fe (BNSF) Railroad Company and Union Pacific (UP) Railroad	Memorandum of Understanding and a Construction and Maintenance Agreement with the railroads	Prior to any construction within or above railroad right of way.

Table 2.5-1: Permits and/or Approvals Needed

Agency	Permit/Approval	Timeline
Los Angeles County Regional Water Quality Control Board (RWQCB)	1. Section 401 Permit	1. Application will be submitted after the ROD.
	2. Section 402 National Discharge Elimination System (NPDES) (Construction Activity)	2. Application will be submitted after the ROD.
	3. Section 402 NPDES (Groundwater Dewatering)	3. Application will be submitted after the ROD.
County of Los Angeles and affected cities within the Study Area	1. Approval of encroachment permits and street construction permits, street closures and rerouting, freeway agreements, and associated improvements in the public right of way	1. Actions/permits will be obtained prior to the start of construction.
Los Angeles County Flood Control District (LACFCD)	1. Encroachment permits for improvements affecting LACFCD facilities 2. Review a CLOMR and submit it to FEMA.	Coordination for permits and the CLOMR will occur after the ROD.
Port of Long Beach	Harbor Development Permit (Level II)	A consistency determination is needed 90 days prior to issuance of the ROD.
City of Long Beach	1. Coastal Development Permit application for consistency determination	1. An application will be submitted for a consistency determination after identification of a preferred alternative but prior to the ROD.
	2. Concurrence on Section 4(f) de minimis determination for Cesar E. Chavez Park	2. Prior to approval of Final EIS.
City of Commerce	Concurrence on Section 4(f) de minimis determination for Bandini Park/Batres Community Center.	Prior to approval of the Final EIS.
Los Angeles County Department of Public Works (LACDPW)	Concurrence on Section 4(f) de minimis determinations for the Los Angeles River Trail and the Rio Hondo Trail, and Dominguez Gap and DeForest Treatment Wetlands	Prior to approval of the Final EIS.
Los Angeles Department of Water and Power (LADWP) Environmental Programs Division	Permits for structures or buildings within 200 feet of an active, abandoned, or idle oil or gas well, or within 1,000 feet of a landfill.	Prior to construction in areas near landfills or oil or gas wells.
Watershed Conservation Authority	Concurrence on the Section 4(f) Evaluation and the measures to minimize harm (Alternative 7) and de minimis (Alternative 5C) determination to Parque Dos Rios, including the identification of appropriate land to replace land in the Park used by the I-710 Corridor Project.	Prior to approval of the Final EIS.

[1] After receipt of the Section 404 Permit application, the USACE will determine whether an Individual or Nationwide Permit is applicable.

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3.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Chapter 3.0 describes the existing affected environment for the Study Area. The affected environment is the base environmental condition on which environmental effects of the build alternatives are evaluated in this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS).

The sections in Chapter 3.0 include the regulatory setting applicable to the environmental topic, the methodology of impact analysis, a description of the affected environment, environmental effects resulting from the build and no build alternatives, a discussion of environmental effects relative to public health considerations, and measures to avoid, minimize, or mitigate adverse impacts of the build alternatives. Photographs, graphic exhibits, and data matrices are included throughout Chapter 3.0 where applicable to support the impact analyses.

The National Environmental Policy Act (NEPA) uses the terms impact, effect, and consequences synonymously. For an action to affect the environment it must have a causal relationship with the environment. NEPA distinguishes three types of causal impacts: direct, indirect, and cumulative. Cumulative impact is defined and the contribution of the build alternatives to cumulative effects is analyzed in Section 3.25 of this EIR/EIS. Direct and indirect effects are defined below and analyzed in Sections 3.1 through 3.24 of this EIR/EIS. Sections 3.1 through 3.23 analyze the permanent effects of the build alternatives, and Section 3.24 analyzes the temporary effects of the build alternatives during construction.

- Direct effects are caused by the action and occur at the same time and place (40 Code of Federal Regulations [CFR] 1508.8).
- Indirect effects are caused by the action and occur later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, as well as related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8).

As part of the scoping and environmental analysis conducted for the project, the following environmental resources were considered, but no potential for adverse impacts to these resources was identified. Consequently, there is no further discussion regarding these resources in this RDEIR/SDEIS:

- **Farmlands and Timberlands:** There are no timberlands or prime, unique, or soils of local significance for farmlands within the Study Area.
- **Wild and Scenic Rivers:** There are no rivers listed in the National Inventory of Wild and Scenic Rivers located in the Study Area.

3.1 LAND USE

The information in this section is based on the following documents:

- *Community Impact Assessment* (July 2017)
- *Draft Section 4(f) and 6(f) Evaluation* (July 2017).

3.1.1 EXISTING AND FUTURE LAND USES

Land use is addressed in terms of existing and planned land uses. Existing land uses are defined as those uses currently within the Study Area and planned land uses are those that would occur as a result of land use designations and policies contained in various applicable land planning documents.

3.1.1.1 AFFECTED ENVIRONMENT

The Study Area includes 17 cities and parts of unincorporated Los Angeles County, including the unincorporated communities of East Los Angeles, East Rancho Dominguez, and Rancho Dominguez, that are located either directly adjacent to the proposed project in which the direct impacts would occur or where indirect impacts of the project may occur. These cities and communities consist of a mixture of residential, commercial and service, industrial, mixed commercial and industrial, mixed urban, open space and recreation, agricultural, and transportation and utilities uses (refer to Figure 3.1-1).

Development trends among these affected cities and communities are generally similar; there is limited vacant land and new development has taken the form of redevelopment and recycling of uses.

The following describes existing land uses and commuting patterns based on the Southern California Association of Governments (SCAG) database (2012) by jurisdiction and geographic/ community area.

3.1.1.2 BOYLE HEIGHTS

The community of Boyle Heights is located in the City of Los Angeles where Interstate 5 (I-5) connects to State Route 60 (SR-60), United States Route 101 (US-101), and Interstate 10 (I-10). Existing land uses within Boyle Heights include residential, education, facilities, mixed urban, commercial and services, industrial, open space and recreation, transportation and utilities, and vacant. Boyle Heights consists largely of concentrated residential and industrial uses and the railroad corridor along the western and southern borders of the community.

Within the community of Boyle Heights, approximately 66 percent of workers work within the community and 34 percent work outside it. The mean commute time is 29.6 minutes.

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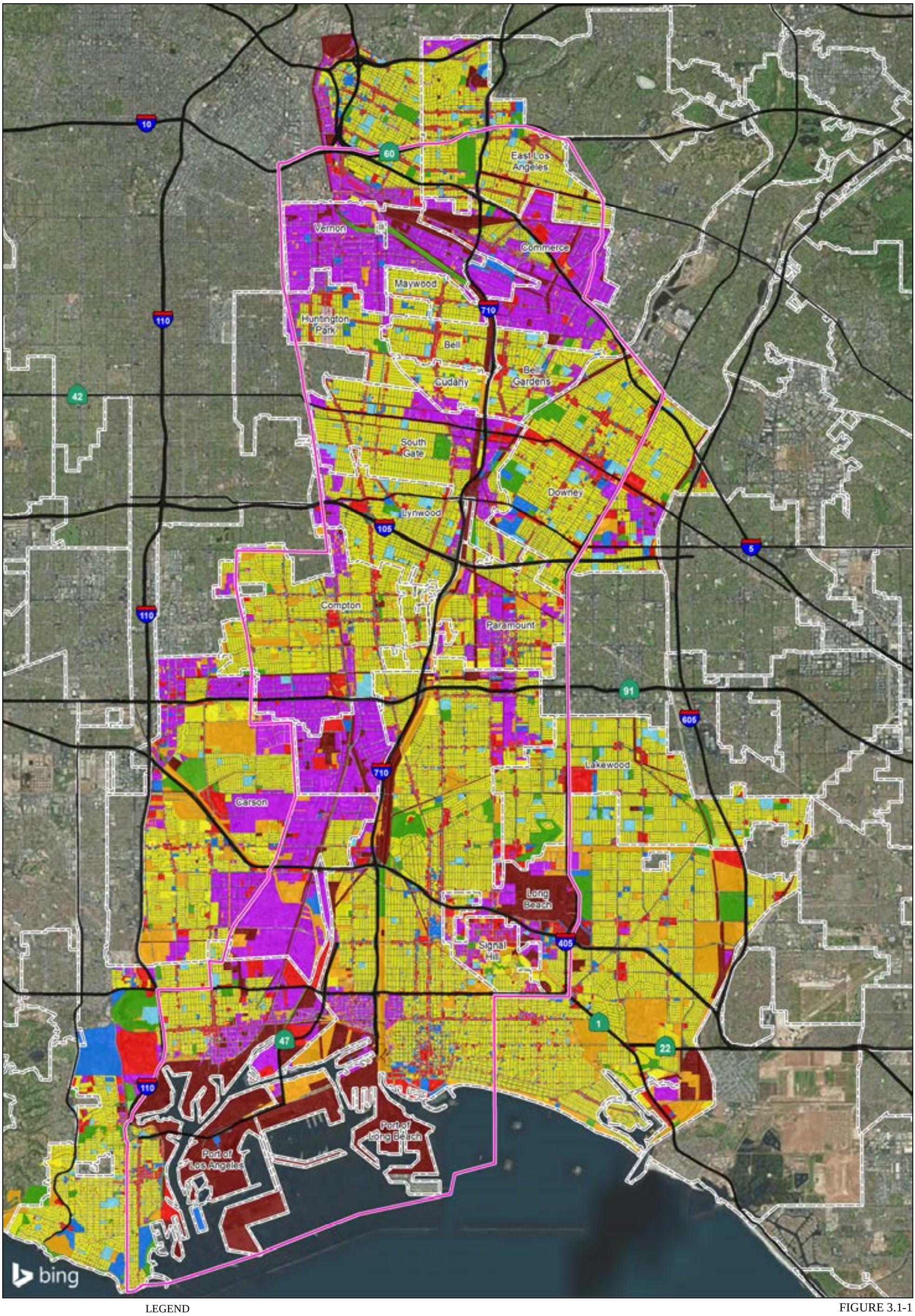

LEGEND

I-710 Study Area

Existing Land Use

- Residential
- Education
- Facilities
- Mixed Urban
- Commercial and Services
- Industrial
- Open Space and Recreation
- Agriculture
- Transportation and Utilities
- Vacant

0 4620 9240
FEET

SOURCE: Bing Maps (2014); AECOM (2016); SCAG (2012)

I:\URS0801\GIS _MOD\MXD\EIR_EIS\Chapter3\StudyArea_LU.mxd (12/7/2016)

FIGURE 3.1-1

I-710 Corridor Project RDEIR/SDEIS

Existing Land Use

07-LA-710- PM 5.4/24.5

EA 249900; EFIS 0700000443

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3.1.1.3 CITY OF BELL

The City of Bell is 2.2 square miles in area and is located in the south-central part of Los Angeles County where the Interstate 710 (I-710) mainline meets I-5. Existing land uses within the City of Bell include commercial and services, industrial, open space and recreation, residential, and transportation and utilities. According to the City of Bell 2010 General Plan, industrial land uses account for 24 percent of the total land area, residential uses account for 34 percent, commercial and services uses account for 8 percent, and I-710 accounts for 7 percent. Along I-710, existing land uses include residential, industrial, and commercial and services.

The City of Bell consists of two district areas connected by the Los Angeles River and the I-710. The southern part of the city is known as “Central City” and contains residential and supporting commercial uses. The northern part of the city is developed with industrial uses and is known as the “Cheli Industrial Area.” This area was previously owned by the Federal government but parts have since been sold to the Los Angeles Unified School District (LAUSD) and other agencies for redevelopment. Very limited vacant land exists in the city and new development is expected to take the form of recycled or redeveloped properties.

Within the City of Bell, approximately 10 percent of workers work within the city and 90 percent work outside the city. The mean commute time is 29.4 minutes.

3.1.1.4 CITY OF BELL GARDENS

The City of Bell Gardens is 2.4 square miles in area and is located in the south-central part of Los Angeles County. Existing land uses within the City of Bell Gardens include residential, commercial, industrial, open space and recreation, transportation, and agricultural land use designations. According to the City of Bell Garden General Plan (1995), residential land uses account for the majority of land use in Bell Gardens, and the majority of housing stock is over 50 years old. As a result, the City of Bell Gardens strives to preserve the existing residential neighborhoods while promoting new development in the industrial areas to provide employment opportunities. Existing land uses along the I-710 mainline include residential, commercial, and industrial uses.

Within the City of Bell Gardens, approximately 11 percent of workers work within the city and 89 percent work outside the city. The mean commute time is 28.3 minutes.

3.1.1.5 CITY OF CARSON

The City of Carson is approximately 19.2 square miles in area and is located in the southern part of Los Angeles County, just west of the I-710/Interstate 405 (I-405) interchange. Existing land uses within Carson include commercial and services, industrial, open space and recreation, residential, and transportation and utilities. Along the I-710 mainline, the existing land use is industrial. Nearly 50 percent of Carson’s land uses are industrial.

Within the City of Carson, approximately 15 percent of workers work within the city and 85 percent work outside the city. The mean commute time is 26.2 minutes.

3.1.1.6 CITY OF COMMERCE

The City of Commerce is 6.6 square miles in area and is located in the south-central part of Los Angeles County where I-710 meets the I-5. Existing land uses within the City of Commerce include commercial and services, industrial, open space and recreation, residential, and transportation and utilities. Along the I-710 mainline, existing land uses include industrial, open space and recreation, residential, and transportation and utilities. Industrial land uses account for more than 70 percent of the total land area in the city.

The City of Commerce 2020 General Plan (2008) identifies the following nine planning areas that comprise mostly industrial, commercial, and residential uses: Bandini-Rosini, Rosewood, Northwest, Southeast, Ferguson, West, Atlantic/Washington, Commerce Park, and Town Center.

Within the City of Commerce, approximately 14 percent of workers work within the city and 86 percent work outside the city. The mean commute time is 27.3 minutes.

3.1.1.7 CITY OF COMPTON

The City of Compton is approximately 10.5 square miles in area and is located in the south-central part of Los Angeles County where I-710 connects to SR-91. Existing land uses within the City of Compton include residential, commercial and services, industrial, agriculture, open space and recreation, and transportation and utilities. Along the I-710 mainline, existing land uses include residential, industrial, commercial and services, open space and recreation, and transportation and utilities. The City of Compton is primarily built out and has limited vacant land.

Within the City of Compton, approximately 12 percent of workers work within the city and 88 percent work outside the city. The mean commute time is 28.4 minutes.

3.1.1.8 CITY OF CUDAHY

The City of Cudahy is 1.1 square miles in area and is located in the south-central part of Los Angeles County. Existing land uses within the City of Cudahy include commercial and services, industrial, open space and recreation, residential, and transportation and utilities. Industrial uses are primarily located along the southwestern boundary of the city, adjacent to the railroad and the Cities of Huntington Park and South Gate. The majority of commercial uses are concentrated along Atlantic Ave. Additionally, along the I-710, existing land uses are primarily residential, with some commercial and services, and open space and recreation uses. The City of Cudahy is primarily built out and currently has no sizeable areas of undeveloped land.

Within the City of Cudahy, approximately 5 percent of workers work within the city and 95 percent work outside the city. The mean commute time is 31.7 minutes.

3.1.1.9 CITY OF DOWNEY

The City of Downey is approximately 12.5 square miles in area and is located in the south-central part of Los Angeles County. Existing land uses within the City of Downey include commercial and service, industrial, open space and recreation, residential, agriculture, and transportation and utilities. There are no existing land uses along the I-710 mainline because I-710 is not within or adjacent to the City of Downey.

Within the City of Downey, approximately 18 percent of workers work within the city and 82 percent work outside the city. The mean commute time is 28.3 minutes.

3.1.1.10 CITY OF HUNTINGTON PARK

The City of Huntington Park is approximately three square miles in area and is located in the south-central part of Los Angeles County. Existing land uses within the city include commercial and services, industrial, open space and recreation, residential, and transportation and utilities. The city is primarily developed with residential land uses and industrial land uses that are located along its western and northern boundaries. Commercial and service uses are located along major arterials, including Florence Ave., Gage Ave., Slauson Ave., Pacific Blvd., and Santa Fe Ave. The city has no sizeable areas of undeveloped land; therefore, recycling and redevelopment of property is an incremental process that is ongoing. This process includes existing developed areas, otherwise outdated and/or abandoned, being rehabilitated and reconstructed to new and improved uses. There are no existing land uses along the I-710 mainline because I-710 is not within or adjacent to the City of Huntington Park.

Within the City of Huntington Park, approximately 13 percent of workers work within the city and 87 percent work outside the city. The mean commute time is 30.2 minutes.

3.1.1.11 CITY OF LAKEWOOD

The City of Lakewood is 9.5 square miles in area and is located in the southeastern part of Los Angeles County. Existing land uses within the City of Lakewood include commercial and services, industrial, open space and recreation, residential, agriculture, and transportation and utilities. There are no existing land uses along the I-710 mainline because I-710 is not within or adjacent to the City of Lakewood.

The City of Lakewood is primarily a residential community. According to the City of Lakewood General Plan, the city consists of approximately 51 percent residential uses, 13 percent public and quasi-public uses, 24 percent street/highway uses, and 8 percent commercial/industrial/agricultural uses. The city is essentially built out, with only approximately 32 acres of vacant land (0.53 percent of the city's total area).

Within the City of Lakewood, approximately 11 percent of workers work within the city and 89 percent work outside the city. The mean commute time is 27.9 minutes.

3.1.1.12 CITY OF LONG BEACH

The City of Long Beach is approximately 50 square miles in area and is located in the southern part of Los Angeles County. Existing land uses within the City of Long Beach include commercial and services, industrial, open space and recreation, residential, and transportation and utilities. Along the I-710 mainline, existing land uses include commercial and services, industrial, open space and recreation, residential, and transportation and utilities.

Approximately 22 percent of the proposed I-710 Corridor Project Study Area is located in the City of Long Beach, and there are 29 neighborhoods in Long Beach located within 0.5 mile of the I-710 Corridor Project improvements.

Within the City of Long Beach, approximately 34 percent of workers work within the city and 66 percent work outside the city. The mean commute time is 29 minutes.

3.1.1.13 CITY OF LYNWOOD

The City of Lynwood is approximately 4.9 square miles in area and is located in the south-central part of the County where I-710 meets I-105. Existing land uses within Lynwood include commercial and services, industrial, open space and recreation, residential, and transportation and utilities. Along the I-710 mainline, existing land uses include industrial, commercial and services, and transportation and utilities.

According to the City of Lynwood General Plan (2003), 42 percent of the existing land uses within the city are residential and 33.2 percent are streets and highways.

Within the City of Lynwood, approximately 10 percent of workers work within the city and 90 percent work outside the city. The mean commute time is 29.4 minutes.

3.1.1.14 CITY OF MAYWOOD

The City of Maywood is approximately 1.14 square miles in area and is located in the south-central part of Los Angeles County. Existing land uses within the city include commercial and services, industrial, open space and recreation, residential, mixed commercial and industrial, and transportation and utilities. There are no existing land uses along the I-710 mainline because I-710 is not within or adjacent to the City of Maywood.

According to the City of Maywood General Plan (1993), residential uses account for nearly 60 percent of the land use in Maywood, and the majority of the housing stock is over 50 years old. As a result, the City of Maywood strives to preserve its existing residential neighborhoods while promoting new development in the industrial areas to provide employment opportunities.

Within the City of Maywood, approximately 8 percent of workers work within the city and 92 percent work outside the city. The mean commute time is 27.9 minutes.

3.1.1.15 CITY OF PARAMOUNT

The City of Paramount is approximately 4.7 square miles in area and is located in the south-central part of the County where I-710 meets the I-105. Existing land uses within the City of Paramount include residential, commercial and services, industrial, open space and recreation, mixed urban, mixed commercial and industrial, agriculture, and transportation and utilities. Along the I-710 mainline, existing land uses are primarily transportation and utilities.

The City of Paramount General Plan (2007) identifies seven Area Plans for planning purposes for key neighborhoods and districts within the city. These Area Plans include: the Central Business District Area Plan, the Central Industrial District Area Plan, the Clearwater East Area Plan, the Clearwater North and Howe/Orizaba Area Plans, the Clearwater West Area Plan, and the Somerset Area Plan (including the Paramount Place Area Plan and the Downey/Somerset Area Plan).

Within the City of Paramount, approximately 16 percent of workers work within the city and 84 percent work outside the city. The mean commute time is 27.1 minutes.

3.1.1.16 CITY OF SIGNAL HILL

The City of Signal Hill is approximately 2.2 square miles in area and is located in the southeastern part of Los Angeles County. Existing land uses within the city include commercial and services, industrial, open space and recreation, residential, and transportation and utilities. According to the City of Signal Hill General Plan (elements with various dates), industrial uses make up 39 percent of the city's land uses, followed by residential uses at 35 percent and commercial and services uses at 21 percent. There are no existing land uses along the I-710 mainline because I-710 is not within or adjacent to the City of Signal Hill.

There are seven neighborhoods in the City of Signal Hill: the Central Neighborhood, the North End Neighborhood, the West Side Neighborhood, the Civic Center Neighborhood, the Hilltop Neighborhood, the Southeast Neighborhood, and the Atlantic/Spring Neighborhood.

Within the City of Signal Hill, approximately 15 percent of workers work within the city and 85 percent work outside the city. The mean commute time is 26.8 minutes.

3.1.1.17 CITY OF SOUTH GATE

The City of South Gate is approximately 7.4 square miles in area and is located in the south-central part of Los Angeles County where I-710 connects to State Route 42 (SR-42), also known as Firestone Blvd. Existing land uses within the City of South Gate include commercial and services, industrial, open space and recreation, residential, mixed urban, and transportation

and utilities. The City of South Gate General Plan 2035 (2009) identifies 41 percent of the city's existing land uses as residential, 20 percent as transportation, and 16 percent as industrial. These existing land uses reflect two historical development trends in the city, as both a residential community and an industrial center. Along the I-710 mainline, existing land uses include industrial, residential, commercial and services, and transportation and utilities. Specifically, residential land uses along the I-710 mainline include the Thunderbird Villa Mobile Home Park, located just west of the I-710 mainline between Southern Ave. and Salt Lake Ave.

The City of South Gate General Plan identifies the following 12 districts in the city: Adrine Industrial, Civic Center, El Paseo/South Gate Towne Center, Firestone Industrial, Gateway, Hollydale Industrial, Imperial, Tweedy Educational, Rayo Industrial, South Gate College, South Gate Triangle, and Southwest Industrial.

Within the City of South Gate, approximately 12 percent of workers work within the city and 88 percent work outside the city. The mean commute time is 29.1 minutes.

3.1.1.18 CITY OF VERNON

The City of Vernon is approximately 5.2 square miles in area and is located in the south-central part of Los Angeles County. Existing land uses within the City of Vernon include commercial and services, industrial, residential, and transportation and utilities. Along the I-710 mainline, existing land uses include industrial, and transportation and utilities.

Within the City of Vernon, approximately 19 percent of workers work within the city and 81 percent work outside the city. The mean commute time is 20.2 minutes.

3.1.1.19 UNINCORPORATED EAST LOS ANGELES

The unincorporated community of East Los Angeles is approximately 7.4 square miles in area and is located in the south-central part of Los Angeles County. Existing land uses within East Los Angeles include commercial and services, residential, open space and recreation, industrial, agriculture, mixed commercial and industrial, mixed urban, and transportation and utilities. Along the I-710 mainline, existing land uses include mostly transportation and utilities, residential, commercial and services, and open space and recreation.

Within Los Angeles County, approximately 38 percent of workers work within their City of residence and 61 percent of workers work outside their City of residence (the remaining 1 percent of workers do not live within the County). The mean commute time is 29.6 minutes.

3.1.1.20 WILMINGTON/SAN PEDRO

Existing land uses in Wilmington and San Pedro include residential, commercial and services, industrial, agriculture, open space and recreation, and transportation and utilities. There are no

existing land uses in these communities along the I-710 mainline because I-710 is not within or adjacent to these communities.

Within the City of Los Angeles, in which Wilmington and San Pedro are located, approximately 66 percent of workers work within the city and 34 percent work outside the city. The mean commute time is 29.6 minutes.

3.1.1.21 ENVIRONMENTAL CONSEQUENCES

PERMANENT IMPACTS.

BUILD ALTERNATIVES. As shown in Table 3.1-1, the build alternatives would impact existing, facilities, general office, education, commercial and service, industrial, open space and recreation, residential, transportation and utilities, military installations, and vacant land uses. Alternative 5C would convert approximately 538 acres of existing land uses; Alternative 5C, Option 1A, would convert approximately 536 acres of existing land uses, Alternative 5C, Option 2A, would convert approximately 545 acres of existing land uses, and Alternative 5C, Option 3A, would convert approximately 541 acres of existing land uses to transportation land uses. Table 3.1-1 also shows the number of acres for each land use category that would be acquired by Alternative 5C and its Options, by jurisdiction (city or community).

Alternative 7 would convert approximately 748 acres of existing land uses; Alternative 7, Option 1B, would convert would convert approximately 752 acres of existing land uses, and Alternative 7, Option 3B, would convert approximately 751 acres of existing land uses to transportation land uses. Therefore, Alternative 7, Option 1B, would result in the greatest impact to existing land uses. Table 3.1-1 also shows the number of acres for each land use category that would be acquired by Alternative 7 and its Options, by jurisdiction (city or community).

Although the build alternatives would impact 536 to 752 acres of land currently in other uses, because I-710 has been considered in the local General Plans since its construction as a freeway in the 1950s, the build alternatives are generally compatible with adjacent land uses. Generally, approximately 68 percent of the existing rights of way required for Alternatives 5C and 7 consist of existing transportation, utilities, and vacant land uses. Approximately 3 percent and 20 percent of existing rights of way for the build alternatives consist of existing commercial and services, and industrial uses, respectively. Additionally, approximately 3 percent of existing rights of way for the build alternatives consists of existing residential uses. Therefore, permanent impacts to land use as a result of Alternative 5C and Alternative 7 are considered minimal in terms of land use conversion.

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Table 3.1-1: Existing Land Use Impacts by Jurisdiction (acres)

Jurisdiction	Land Use Categories											
	Facilities	General Office	Education	Commercial and Services	Industrial	Open Space and Recreation	Residential	Transportation and Utilities	Military Installations	Vacant	Total for each Alternative or Option by Jurisdiction	Grand Total for Alternative or Option[1]
Bell												
Alternative 5C	0.01	0.01	0.00	2.87	20.53	0.00	0.20	12.00	11.60	0.00	47.21	
Alternative 5C, Option 1A	0.01	0.01	0.00	2.87	20.53	0.00	0.20	12.00	11.60	0.00	47.21	
Alternative 7	0.01	0.01	0.00	2.91	37.72	0.00	0.30	13.69	11.85	0.00	66.49	
Alternative 7, Option 1B	0.01	0.01	0.00	2.91	37.83	0.00	0.30	13.69	11.85	0.00	66.60	
Bell Gardens												
Alternative 5C	0.00	0.02	0.04	0.27	2.17	0.00	1.47	0.01	0.00	0.16	4.15	
Alternative 7	0.00	0.02	0.02	0.28	1.94	0.00	1.02	0.72	0.00	0.16	4.16	
Carson												
Alternative 5C	0.00	0.00	0.00	0.00	7.94	0.00	0.05	0.22	0.00	4.00	12.21	
Alternative 7	0.00	0.00	0.00	0.00	7.28	0.00	0.05	0.52	0.00	4.47	12.32	
Commerce												
Alternative 5C	1.50	0.07	0.00	4.06	22.74	0.21	4.03	17.62	0.00	3.00	53.23	
Alternative 5C, Option 1A	1.50	0.07	0.00	3.36	22.99	0.21	3.89	17.83	0.00	3.01	52.86	
Alternative 7	1.50	0.07	0.00	4.58	41.21	0.21	4.03	19.62	0.00	4.06	75.28	
Alternative 7, Option 1B	1.50	0.24	0.00	4.49	42.72	0.24	5.78	20.50	0.00	4.26	79.72	
Compton												
Alternative 5C	4.43	1.69	0.00	2.95	4.30	0.00	2.41	0.66	0.00	10.42	26.85	
Alternative 7	4.67	0.92	0.00	2.95	5.15	0.00	3.49	1.88	0.00	13.85	32.89	
Cudahy												
Alternative 5C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	1.40	1.74	
Alternative 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	1.36	1.68	
Long Beach												
Alternative 5C	0.95	1.60	0.01	6.93	15.67	1.39	5.07	50.93	0.00	187.74	270.29	
Alternative 5C, Option 2A	0.95	1.83	0.01	6.93	21.11	1.39	5.07	50.95	0.00	188.85	287.07	
Alternative 7	1.37	2.22	0.01	11.85	26.75	1.38	6.31	114.16	0.00	209.31	373.35	
East Los Angeles												
Alternative 5C	0.00	0.00	0.00	0.00	0.04	0.00	0.09	0.00	0.00	0.00	0.13	
Alternative 5C, Option 3A	0.17	0.16	0.00	0.00	1.35	0.00	1.77	0.00	0.00	0.00	3.45	
Alternative 7	0.00	0.00	0.00	0.00	0.04	0.00	0.09	0.00	0.00	0.00	0.13	
Alternative 7, Option 3B	0.17	0.16	0.00	0.00	1.35	0.00	1.77	0.00	0.00	0.00	3.45	

Table 3.1-1: Existing Land Use Impacts by Jurisdiction (acres)

Jurisdiction	Land Use Categories											
	Facilities	General Office	Education	Commercial and Services	Industrial	Open Space and Recreation	Residential	Transportation and Utilities	Military Installations	Vacant	Total for each Alternative or Option by Jurisdiction	Grand Total for Alternative or Option[1]
Lynwood												
Alternative 5C	0.00	0.00	0.04	0.86	0.91	0.00	0.16	11.06	0.00	0.04	13.07	
Alternative 7	0.00	0.00	0.04	0.86	0.91	0.00	0.16	13.48	0.00	0.04	15.50	
Maywood												
Alternative 7	0.00	0.00	0.00	0.00	0.06	0.04	0.00	0.00	0.00	0.00	0.10	
Paramount												
Alternative 5C	0.00	0.00	0.00	0.00	0.90	0.00	0.57	2.41	0.00	2.19	6.08	
Alternative 7	0.00	0.00	0.00	0.00	1.28	0.00	0.57	4.01	0.00	12.44	18.29	
Rancho Dominguez												
Alternative 5C	1.42	0.01	0.00	0.00	8.02	0.00	0.00	4.81	0.00	0.00	14.26	
Alternative 7	0.00	0.01	0.00	0.00	6.88	0.00	0.00	12.53	0.00	0.00	19.42	
South Gate												
Alternative 5C	3.80	0.00	0.00	1.69	2.57	0.00	0.29	25.93	0.00	7.34	41.61	
Alternative 7	7.57	0.00	0.00	6.05	7.69	0.00	0.36	48.01	0.00	7.34	77.04	
Vernon												
Alternative 5C	0.28	0.00	0.00	0.00	10.93	0.00	0.00	8.31	0.03	0.02	19.57	
Alternative 5C, Option 1A	0.28	0.00	0.00	0.00	10.93	0.00	0.00	7.25	0.03	0.02	18.51	
Alternative 7	0.28	0.00	0.00	0.00	13.33	0.00	0.00	8.95	0.03	0.26	22.85	
Alternative 7, Option 1B	0.28	0.00	0.00	0.00	13.33	0.00	0.00	8.17	0.03	0.26	22.08	
Total by Land Use Category												
Alternative 5C	12.38	3.41	0.11	19.63	96.71	1.61	14.62	134.30	11.64	216.79		537.75
Alternative 5C, Option 1A	12.38	3.41	0.11	18.93	96.96	1.61	14.48	133.45	11.64	216.80		536.32
Alternative 5C, Option 2A	12.38	3.63	0.11	19.63	102.15	1.61	14.62	134.31	11.64	217.90		544.54
Alternative 5C, Option 3A	12.55	3.57	0.11	19.63	98.02	1.61	14.55	134.30	11.64	216.79		541.08
Alternative 7	15.39	3.26	0.07	29.49	150.20	1.64	14.42	237.88	11.88	253.78		747.72
Alternative 7, Option 1B	15.39	3.42	0.07	29.40	151.83	1.67	18.43	237.99	11.88	240.16		751.50
Alternative 7, Option 3B	15.56	3.42	0.08	29.49	146.36	1.64	18.35	233.87	11.88	253.78		7

Source: Los Angeles County Metropolitan Transportation Authority. *Community Impact Assessment* (July 2017).
[1] This total represents the total amount of existing land use acres that would be impacted by the specific Alternative or Design Option.
Note: Numbers may not add due to rounding.

Regarding commuting patterns, the I-710 Corridor Project Build Alternatives are intended to improve travel time and address projected traffic volumes (refer to Section 3.5, Traffic and Transportation, of this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) for additional detail regarding travel delay).

NO BUILD ALTERNATIVE. Under Alternative 1, the permanent impacts to existing and future land uses discussed above for the build alternatives would not occur.

PUBLIC HEALTH CONSIDERATIONS. Improvement of air quality and reduction of public health risks are key elements of the project purpose for the I-710 Corridor Project. The transportation/land use relationship is a critical one relative to public health. As discussed in subsequent sections of this RDEIR/SDEIS, existing sensitive land uses (residences, parks, schools, etc.) directly adjacent to the I-710 are exposed to higher levels of vehicle exhaust emissions and traffic noise than occur within the overall I-710 Corridor. Avoidance, minimization, and mitigation measures are proposed to reduce the impacts resulting from the build alternatives on existing land uses.

With regard to future land uses, the California Department of Transportation (Caltrans) has no land use approval authority and, therefore, relies on the agencies responsible for land use planning (i.e., the Cities and the County of Los Angeles) to consider the proximity of the I-710 when making future land use decisions within their jurisdictions.

Discussion of public health considerations relative to air quality is provided in Section 3.13, Air Quality, and public health considerations related to noise are discussed in Section 3.14, Noise. This section discusses public health considerations relative to access to parks and schools.

3.1.1.22 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

As previously discussed in this section, the build alternatives would result in permanent land use impacts. However, with the implementation of Measure LU-1, long-term adverse impacts as a result of the build alternatives would be reduced as a result of the Cities and County amending their General Plans to reflect the adopted I-710 Corridor Project Alternative. Please refer to Section 3.1.2.4, Avoidance, Minimization, and Avoidance Measures, for specific language in Measure LU-1.

3.1.2 CONSISTENCY WITH STATE, REGIONAL, AND LOCAL PLANS

3.1.2.1 REGULATORY SETTING

Part of this project is within the coastal zone. The Coastal Zone Management Act of 1972 (CZMA) is the primary Federal law enacted to preserve and protect coastal resources. The CZMA sets up a program under which coastal states are encouraged to develop coastal

management programs. States with an approved coastal management plan are able to review Federal permits and activities to determine if they are consistent with the state's management plan.

California has developed a coastal zone management plan and has enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those for the CZMA; they include the protection and expansion of public access and recreation, the protection, enhancement and restoration of environmentally sensitive areas, protection of agricultural lands, the protection of scenic beauty, and the protection of property and life from coastal hazards. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act.

Just as the Federal CZMA delegates power to coastal states to develop their own coastal management plans, the California Coastal Act delegates power to local governments (15 coastal counties and 58 cities) to enact their own local coastal programs (LCPs). LCPs determine the short- and long-term use of coastal resources in their jurisdiction consistent with the California Coastal Act goals. A Federal consistency determination may be needed, as well.

3.1.2.2 AFFECTED ENVIRONMENT

REGIONAL AND LOCAL PLANS/POLICIES. The SCAG Regional Comprehensive Plan (RCP) and the Regional Transportation Plan (RTP), the Greater Los Angeles County Integrated Regional Water Management Plan (IRWMP) and the Open Space for Habitat and Recreation Plan (OSHARP), along with the General Plans of the affected cities and communities, were reviewed in order to identify the regional planning goals, land use-related goals, and specific policies of the local jurisdictions that should be considered in evaluating the I-710 Corridor Project.

The following are applicable goals and policies for the I-710 Corridor Project:

SCAG RCP (2008). The RCP is an advisory plan that provides a vision of how southern California can balance resource conservation, economic vitality, and quality of life. The RCP provides an approach to growth and infrastructure challenges in an integrated and comprehensive way. This approach, called the Compass Blueprint and 2 Percent Strategy, would result in substantial land use changes to only 2 percent of the total land area in the region.

Below are principles and goals from the RCP that are applicable to the I-710 Corridor Project.

RCP GUIDING PRINCIPLES.

- Improve mobility for all residents. Improve the efficiency of the transportation system by strategically adding new travel choices to enhance system connectivity in concert with land use decisions and environmental objectives.
- Foster livability in all communities. Foster safe, healthy, walkable communities with diverse services, strong civic participation, affordable housing, and equal distribution of environmental benefits.
- Enable prosperity for all people. Promote economic vitality and new economies by providing housing, education, and job training opportunities for all people.
- Promote sustainability for future generations. Promote a region where quality of life and economic prosperity for future generations are supported by the sustainable use of natural resources.

AIR QUALITY GOALS.

- Reduce emissions of criteria pollutants to attain Federal air quality standards by prescribed dates and State ambient air quality standards as soon as practicable.
- Reverse current trends in greenhouse gas emissions to support sustainability goals for energy, water supply, agriculture, and other resource areas.
- Minimize land uses that increase the risk of adverse air pollution-related health impacts from exposure to toxic air contaminants, particulates (PM_{10}, $PM_{2.5}$, and ultrafine particulates), and carbon monoxide.
- Expand green building practices to reduce energy-related emissions from developments to increase economic benefits to businesses and residents.

TRANSPORTATION GOALS.

- A more efficient transportation system that reduces and better manages vehicle activity.
- A cleaner transportation system that minimizes air quality impacts and is energy efficient.

SCAG Regional Transportation Plan/Sustainable Communities Strategy (**RTP/SCS) (2012–2035 and 2016–2040).** The 2012–2035 and 2016–2040 RTP/SCS plans identify the transportation vision for the region through 2035 and 2040, and provide a long-term investment framework for addressing the region's transportation and related challenges. The plans have a balanced approach that focuses future investments on the best-performing

projects and strategies that seek to preserve, maintain, and optimize the performance of the existing system.

Listed below are goals and policies from both RTP/SCS plans that are applicable to the I-710 Corridor Project:

GOALS.

- Align the plan investments with improving regional economic development and competitiveness.
- Maximize mobility and accessibility for all people and goods in the region.
- Ensure travel safety and reliability for all people and goods in the region.
- Preserve and ensure a sustainable regional transportation system.
- Maximize the productivity of our transportation system.
- Protect the environment and health for our residents by improving air quality, and encouraging active transportation (non-motorized transportation, such as bicycling and walking).
- Actively encourage and create inventiveness for energy deficiencies, where possible.
- Encourage land use and growth patterns that facilitate transit and non-motorized transportation.
- Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.

POLICIES.

- Transportation investments shall be based on SCAG's adopted regional Performance Indicators.
- Ensuring safety, adequate maintenance, and efficiency of operations on the existing multimodal transportation system should be the highest RTP/SCS priorities, for any incremental funding in the region.
- RTP land-use and growth strategies in the RTP will respect local input and advance growth initiatives.
- Transportation demand management (TDM) and non-motorized transportation will be focus areas.

- The RTP/SCS will support investments and strategies to reduce non-recurrent congestion and demand for single occupancy vehicle use by leveraging advanced technologies.
- The RTP/SCS will encourage transportation investments that will result in cleaner air, a better environment, a more efficient transportation system, and sustainable outcomes in the long term.
- Monitoring progress on all aspects of the RTP/SCS, including the timely implementation of projects, programs, and strategies, will be an important and integral component of the plans.

The 2012 and 2016 RTPs also included a Sustainable Communities Strategy (SCS) as a result of Senate Bill (SB) 375. A key goal of the SCS is to identify a vision for future growth in the SCAG region that will decrease per-capita greenhouse gas emissions from automobiles and light trucks. Included in the SCS are TDM and Transportation System Management (TSM) Actions and Strategies, including those listed below applicable to the I-710 Corridor Project:

- Examine major project strategies that reduce congestion and emissions, and optimize the productivity and overall performance of the transportation system.
- Work with relevant State and local transportation authorities to increase the efficiency of the existing transportation system.

SCAG FEDERAL Transportation Improvement Program (FTIP) (ADOPTED ON SEPTEMBER 1, 2016). The FTIP is a listing of multi-modal transportation projects proposed over a six-year period (from October 1, 2016 [FFY16/17] to September 30, 2022 [FFY21/22]) for the SCAG region. The projects include highway improvements, transit, rail and bus facilities, high occupancy vehicle lanes, active transportation, signal synchronization, intersection improvements, and freeway ramps, etc. SCAG produces a biennial FTIP update for the region on an even-year cycle.

The FTIP is prepared to implement projects and programs listed in the above-mentioned RTP/SCS and is developed in compliance with State and Federal requirements. The six County Transportation Commissions (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) in the SCAG region have the responsibility under State law of proposing their county programs, using current RTP/SCS policies, programs, and projects as a guide, from among submittals by cities and local agencies. The locally prioritized lists of projects are forwarded to SCAG for review. From their lists, SCAG develops the FTIP based on consistency with the current RTP/SCS, inter-county connectivity, financial constraints, and conformity determination.

Below are FTIP policy guidelines:

POLICY GUIDELINES.

- The FTIP is the primary means of implementing the RTP/SCS.
- To ensure consistency with the RTP/SCS, SCAG staff will compare FTIP projects with the first 5 and 10-year implementation schedules of the RTP/SCS.
- Timely implementation of committed Transportation Control Measures (TCMs) projects is required for conformity findings in South Coast Air Basin (Basin) and the Ventura County/South Central Coast Air Basin (VC/SCCAB). TCM projects must be programmed prior to programming other capacity increasing projects.
- Each project in the County Transportation Improvement Program (TIP) submitted to SCAG must be consistent with and reflect investment priorities established in the most recently adopted metropolitan transportation plan, in accordance with MAP-21. Each FTIP project must show consistency with the project's design concept, and timely implementation as reflected in the adopted RTP/SCS.
- The FTIP shall also include projects and programs consistent with the Strategic Highway Safety Plan and other transit safety and security planning and review processes, plans, and programs, as appropriate.
- In accordance with MAP-21, projects, once implemented must be designed to make progress toward achieving performance targets established pursuant to forthcoming federal guidance.
- To ensure successful compliance with Senate Bill 375, SCAG in collaboration with the County Transportation Commissions (CTCs) shall work to achieve full compliance with the approved SCS. The CTCs will ensure that transportation infrastructure investments proposed in the counties' individual Long Range Transportation Plans (LRTP) shall complement strategies identified in SCAG's RTP/SCS.

GREATER LOS ANGELES COUNTY INTEGRATED REGIONAL WATER MANAGEMENT PLAN (IRWMP) (2014). The following is the objective in the Greater County of Los Angeles County IRWMP (2014) that is relevant to the I-710 Corridor Project:

OBJECTIVE

- Enhance open space and recreation through the increase of watershed friendly recreational space for all communities.
  - Plan Year 2035 Targets:

- Create 38,000 acres of open space.
- Create 25,000 acres of urban parks.

GREATER LOS ANGELES COUNTY OPEN SPACE FOR HABITAT AND RECREATION PLAN (OSHARP) (2012) AND DRAFT FINAL OPEN SPACE FOR HABITAT AND RECREATION TECHNICAL MEMORANDUM (OSHARTM) (OCTOBER 2013). The following are the objectives in the Greater Los Angeles County OSHARP (2012) and Draft Final Greater Los Angeles County OSHARTM (October 2013), which are included as an appendix to the above-discussed Greater Los Angeles County IRWMP and that are relevant to the I-710 Corridor Project:

OBJECTIVES

- Developed urban parks: Assist in providing developed urban park areas that are accessible to underserved populations (and District Advisory Commission [DAC] communities) based on an average of 4 acres per 1,000 population.
- Passive recreation: Create or assure the preservation of 6 acres of open space lands per 1,000 population that are available for passive recreation. These lands may incorporate: all or a portion of greenways; county, state, or national parks; US Forest Service lands; regional trails routes; and/or dedicated open space areas or any jurisdiction.
- Greenways: Enhance existing and planned greenways and regional trails within open space areas with outdoor recreation and environmental educational opportunities.

2035 COUNTY OF LOS ANGELES GENERAL PLAN (2015). The following are goals and policies in the County of Los Angeles General Plan (October 2015) that are relevant to the I-710 Corridor Project:

GUIDING PRINCIPLES

- Employ Smart Growth: Shape new communities to align housing with jobs and services; and protect and conserve the County's natural and cultural resources, including the character of rural communities.
- Ensure community services and infrastructure are sufficient to accommodate growth: Coordinate an equitable sharing of public and private costs associated with providing appropriate community services and infrastructure to meet growth needs.
- Provide the foundation for a strong and diverse economy: Protect areas that generate employment and promote programs that support a stable and well-

educated workforce. This will provide a foundation for a jobs-housing balance and a vital and competitive economy in the unincorporated areas.

- Promote excellence in environmental resource management: Carefully manage the County's natural resources, such as air, water, wildlife habitats, mineral resources, agricultural land, forests, and open space in an integrated way that is both feasible and sustainable.
- Provide healthy, livable and equitable communities: Design communities that incorporate their cultural and historic surroundings, are not overburdened by nuisance and negative environmental factors, and provide reasonable access to food systems. These factors have a measureable effect on public well-being.

LAND USE ELEMENT.

- **Goal LU 1:** A General Plan that serves as the constitution for development, and a Land Use Policy Map that implements the General Plan's Goals, Policies and Guiding Principles.
- **Goal LU-2:** Community-based planning efforts that implement the General Plan and incorporate public input, and regional and community level collaboration.
    - **Policy LU 2.5:** Support and actively participate in inter-jurisdictional and regional planning efforts to help inform community-based planning efforts.
    - **Policy LU 2.8:** Coordinate with the Los Angeles County Department of Public Works and other infrastructure providers to analyze and assess infrastructure improvements that are necessary for plan implementation.
- **Goal LU-9:** Land use patterns and community infrastructure that promote health and wellness.

MOBILITY ELEMENT.

- **Goal M-1:** Street designs that incorporate the needs of all users.
    - **Policy M 1.1:** Provide for the accommodation of all users, including pedestrians, motorists, bicyclists, equestrians, users of public transit, seniors, children, and persons with disabilities when requiring or planning for new, or retrofitting existing, transportation corridors/networks whenever appropriate and feasible.
- **Goal M2:** Interconnected and safe bicycle- and pedestrian-friendly streets, sidewalks, paths, and trails that promote active transportation and transit use.

- **Policy M 2.1:** Provide transportation corridors/networks that accommodate pedestrians, equestrians, and bicyclists, and reduce motor vehicle accidents through a context-sensitive process that addresses the unique characteristics of urban, suburban, and rural communities whenever appropriate and feasible.

- **Goal M6:** The safe and efficient movement of goods.
  - **Policy M 6.1:** Maximize aviation and port system efficiencies for the movement of people, goods, and services.
  - **Policy M 6.4:** Minimize noise and other impacts of goods movement, truck traffic, deliveries, and staging in residential and mixed-use neighborhoods.
  - **Policy M 6.5:** Support infrastructure improvements and the use of emerging technologies that facilitate the clearance, timely movement, and security of trade.

- **Goal M7:** Transportation networks that minimizes negative impacts to the environment and communities.

AIR QUALITY ELEMENT.

- **Goal AQ 1:** Protection from exposure to harmful air pollutants.
  - **Policy AQ 1.3:** Reduce particulate inorganic and biological emissions from construction, grading, excavation, and demolition to the maximum extent feasible.
  - **Policy AQ 1.4:** Work with local air quality management districts to publicize air quality warnings, and to track potential sources of airborne toxics from identified mobile and stationary sources.

- **Goal AQ 2:** The reduction of air pollution and mobile source emissions through coordinated land use, transportation, and air quality planning.
  - **Policy AQ 2.2:** Participate in, and effectively coordinate the development and implementation of community and regional air quality programs.

- **Goal AQ 3:** Implementation of plans and programs to address the impacts of climate change.
  - **Policy AQ 3.4:** Participate in local, regional, and State programs to reduce greenhouse gas emissions.

NOISE ELEMENT.

- **Goal N 1:** The reduction of excessive noise impacts.
    - **Policy N 1.4:** Enhance and promote noise abatement programs in an effort to maintain acceptable levels of noise as defined by the Los Angeles County Exterior Noise Standards and other applicable noise standards.
    - **Policy N 1.6:** Ensure cumulative impacts related to noise do not exceed health-based safety margins.
    - **Policy N 1.7:** Utilize traffic management and noise suppression techniques to minimize noise from traffic and transportation systems.
    - **Policy N 1.8:** Minimize noise impacts to pedestrians and transit-riders in the design of transportation facilities and mobility networks.

COUNTY OF LOS ANGELES BICYCLE MASTER PLAN (2012). This plan is a sub-element of the Transportation Element (also known as the Mobility Element) of the Los Angeles County's General Plan. This plan provides guidance to the County's Bikeway Unit in the implementation of adding 831 miles of new bikeways in the County over the next 20 years. The overarching goal of the Plan is to increase bicycling throughout the County of Los Angeles through the development and implementation of bicycle friendly policies, programs, and infrastructure. The Plan identified the following goals:

- **Goal 1 - Bikeway System:** Expanded, improved, and interconnected system of County bikeways and bikeway support facilities.
- **Goal 2 - Safety:** Increased safety of roadways for all users.
- **Goal 3 - Education**: Develop education programs that promote safe bicycling.
- **Goal 4 - Encouragement Programs**: Encourage County residents to walk or ride a bike for transportation and recreation.
- **Goal 5 - Community Support**: Community supported bicycle network.
- **Goal 6 - Funding**: Funded Bikeway Plan.

Goals that are specifically related to the I-710 Corridor Project include:

- **Goal IA 1.1.1 -** Propose and prioritize bikeways that connect to transit stations, commercial centers, schools, libraries, cultural centers, parks, and other important activity centers within each unincorporated area and promote bicycling to these destinations.

- **Goal IA1.1.2 -** Coordinate with adjacent jurisdictions and Metro to implement bicycle facilities that promote connectivity.

CITY OF BELL. The following are goals and policies in the City of Bell 2010 General Plan (1996) that are relevant to the I-710 Corridor Project. The General Plan did not provide any specific goals or policies related to air quality.

CIRCULATION ELEMENT.

- **Policy 1:** Continue to participate in regional transportation planning efforts.
- **Policy 2:** Continue to work with adjacent cities to improve area-wide circulation.
- **Policy 3:** Continue to pursue the construction of a Slauson Ave. interchange at I-710.
- **Policy 4:** Continue to initiate the design and engineering of roadway improvement projects.
- **Policy 5:** Continue to pursue and access State and Federal and County funding sources for improving the circulation system.
- **Policy 7:** Continue to require new development proposals to include design features which will mitigate any adverse impact upon the circulation system.

LAND USE ELEMENT.

- **Policy 1:** Ensure that development activities are consistent with the General Plan.
- **Policy 10:** Expand public facilities to meet community needs and demands.
- **Policy 15:** Evaluate traffic and circulation needs to plan for future capital improvements.
- **Policy 19:** Cooperate closely with agencies responsible for public services and facilities.
- **Policy 22:** Participate in regional planning efforts.

CITY OF BELL GARDENS. The following are issues and policies in the City of Bell Gardens 2010 General Plan that are relevant to the I-710 Corridor Project.

LAND USE ELEMENT. The City of Bell Gardens 2010 General Plan Land Use Element includes policies guided by five major issues to provide a framework for the City's vision for the future: "Pride in the Community/Orgullo en la Comunidad." The five key issues include: property rights, residential development, commercial development, industrial and manufacturing development, and promotion of local businesses and jobs. These issues are

addressed in five policies included in the Land Use Element; the policies applicable to the I-710 Corridor Project are provided below.

- **Policy 1:** The City of Bell Gardens decision-makers shall maintain open communication with the community at all times and shall tirelessly seek input from the residents and property owners regarding the future of the City.
- **Policy 3:** The City shall promote compatible commercial development to emphasize commercial identity and to enhance the appearance, potential economic vitality, and revitalization of the commercial areas in the City.

CIRCULATION AND TRANSPORTATION ELEMENT. The Circulation and Transportation Element focuses on key transportation-related issues and identifies roadways, highways, and public utilities that need to be expanded or improved within the city. As identified in the Element, several streets in the city are operating at over-capacity conditions (Florence Ave., west of Eastern Ave. and east of Jaboneria Rd., and Clara St. west of Eastern Ave.), and the City Public Works Department is holding discussions with Caltrans to improve the ramps and signals in the Central Business District area. The Circulation and Transportation Element identifies four policies to address these issues; the policies applicable to the I-710 Corridor Project are provided below.

- **Policy 1:** The City of Bell Gardens shall strive to maintain a well-balanced street system, with special emphasis on circulation problems in the downtown area, and seeking innovative and model solutions to local transportation needs.
- **Policy 2:** The City shall encourage the implementation of new and innovative modes of transportation, while striving to provide for the needs of those who require specialize types of service.
- **Policy 4:** The City shall assist traffic flow along its major streets through improved signalization and other modifications to the City's circulation system.

CITY OF CARSON. The following are goals and policies in the City of Carson's General Plan that are relevant to the I-710 Corridor Project.

TRANSPORTATION ELEMENT.

- **Goal TI-2:** Provide a sustainable, safe, convenient, and cost-effective circulation system to serve the present and future transportation needs of the Carson community.
    - **Policy TI-2.5:** Facilitate cooperation between the City and the transportation agencies serving the region in order to provide adequate

regional vehicular traffic volumes and movements on freeways, streets and through intersections.

- **Policy TI-2.7:** Provide all residential, commercial, and industrial areas with efficient and safe access to major regional transportation facilities.

- **Goal TI-3:** Minimize intrusion of commuter traffic on local streets through residential neighborhoods.
  - **Policy TI-3.3:** Prioritize circulation improvements that enhance through traffic flow on Major and Secondary Highways providing parallel routes to residential streets, in order to reduce through traffic during peak commute periods.

- **Goal TI-6:** Cooperate to the fullest extent possible with Federal, State, County and regional planning agencies responsible for maintaining and implementing circulation standards to ensure orderly and consistent development of the entire South Bay region.
  - **Policy TI-6.1:** Actively participate in various intergovernmental committees and related planning forums associated with County, Regional and State Congestion Management Programs.
  - **Policy TI-6.2:** Ensure that the City remains in compliance with County, Regional, and State Congestion Management Programs (CMP) through the development of appropriate City programs and traffic impact analyses of new projects impacting the CMP routes.

LAND USE ELEMENT.

- **Goal LU-6:** A sustainable balance of residential and non-residential development and a balance of traffic circulation throughout the City.
  - **Policy LU-6.2:** Achieve a sustainable land use balance through provision of incentives for desired uses; coordination of land use and circulation patterns; and promotion of a variety of housing types and affordability.

- **Goal LU-14:** Enhance freeway corridors and major arterials which act as gateways into the City of Carson.
  - **Policy LU-14.1:** Work with Caltrans to provide and maintain an attractive freeway environment in Carson, including access ramps.

ECONOMIC DEVELOPMENT ELEMENT.

- **Goal ED-1:** Strengthen existing City services and support systems.
    - **Policy ED-1.4:** Strengthen the physical image of Carson through visual enhancement along freeway corridors, major traffic routes, and areas adjoining residential neighborhoods. To this end:
        - Aggressively pursue code enforcement activities;
        - Develop good design standards; and
        - Establish a City identity.

AIR QUALITY ELEMENT.

- **Goal AQ-1:** Reduce particulate emissions from paved and unpaved surfaces and during building construction.
    - **Policy AQ-1.1:** Continue to enforce ordinances which address dust generation and mandate the use of dust control measures to minimize this nuisance.
    - **Policy AQ-1.2:** Promote the landscaping of undeveloped and abandoned properties to prevent soil erosion and reduce dust generation.
    - **Policy AQ-1.3:** Adopt incentives, regulations, and/or procedures to minimize particulate emissions.
- **Goal AQ-2:** Air Quality which meets State and Federal standards.
    - **Policy AQ-2.1:** Coordinate with other agencies in the region, particularly SCAQMD and SCAG, to implement provisions of the regions' Air Quality Management Plans (AQMP), as amended.
    - **Policy AQ-2.3:** Cooperate and participate in regional AQMP, programs and enforcement measures.

CITY OF COMMERCE. The following are goals and policies in the City of Commerce 2020 General Plan (2006) that are relevant to the I-710 Corridor Project.

TRANSPORTATION ELEMENT.

- **Transportation Policy 1.1:** The City of Commerce will continue to implement a comprehensive plan for a coordinated street, circulation system that will provide for the safe and efficient movement of people and goods.

- **Transportation Policy 4.5:** The City of Commerce will initiate discussions with the City of Vernon and Caltrans regarding future freeway improvements.
- **Transportation Policy 4.11:** The City of Commerce will consult with Caltrans in considering the feasibility of constructing a direct ramp connection from the Long Beach Freeway to the adjacent rail yards as a means to reduce truck traffic on local streets.
- **Transportation Policy 6.1:** The City of Commerce will ensure that all future transportation facilities that will provide a regional benefit do not have a significant adverse impact on the community and that any such impacts are mitigated to the fullest extent possible.
- **Transportation Policy 6.2:** The City of Commerce will oppose any regional public transportation improvement that does not first consider the potential impacts of such facilities on the local community in which the facility will be located.
- **Transportation Policy 6.3:** The City of Commerce will take a proactive role in meeting with regional planning agencies to ensure that the local community's voice is heard in the planning for future regional transportation facilities.

One of the key programs that the City will continue to implement or undertake as part of the implementation of the General Plan is the Caltrans Coordination Program.

- **Caltrans Coordination Program:** The City will coordinate efforts with Caltrans to upgrade area freeways. The purpose of this undertaking is to ensure that the City is fully apprised of the improvement efforts in the early stages of planning and design. The City will continue to work with Caltrans and the Metropolitan Transportation Authority (Metro), as appropriate, and will request to be on all notification lists for future projects that may impact the City.

CITY OF COMPTON. The following are goals and policies in the City of Compton General Plan Vision 2010 that are relevant to the I-710 Corridor Project.

Several of the following goals and policies are identified as short-term (S), medium-range (M), or long-range (L) goals. Short-term covers a five-year planning period, medium-range includes a five to ten-year planning period, and long-range indicates goals to be achieved over a 20-year time frame or policies that represent ongoing City policies and programs.

CIRCULATION ELEMENT.

- **Goal 1.0 (L):** Provide a street system that meets current and future City needs and that facilitates the safe and efficient movement of people and goods throughout Compton.
    - **Policy 1.8 (L):** Provide a street system that allows for the safe and efficient movement of traffic.
    - **Policy 1.14 (S):** Minimize the impact of Major and Secondary street "spill over" traffic on residential neighborhoods by installing traffic diverters, restrictive channelization, additional signals, and other features which will discourage through traffic.
- **Goal 4.0 (L):** Use Transportation Demand Management strategies to minimize the number of average daily vehicle trips along City Streets.
    - **Policy 4.7 (S):** Consider enacting an ordinance, which prohibits truck deliveries during peak traffic periods.
- **Goal 5.0 (L):** Balance the use of regional freight routes with the need to protect community welfare.
    - **Policy 5.4 (L):** Continue to enforce the ordinance establishing truck routes and limiting through truck traffic to those routes.

CITY OF CUDAHY. The following are goals and policies in the City of Cudahy General Plan that are relevant to the I-710 Corridor Project.

TRANSPORTATION ELEMENT.

- **Goal 1:** The City of Cudahy will maximize the efficiency, convenience, and safety of the existing transportation system.
- **Goal 3:** The City of Cudahy will encourage the expansion of existing public transportation routes and circulation.
    - **Policy 3.3:** The City of Cudahy will support the continued development of a regional transportation system that will serve area residents.
- **Interagency Coordination:** The City of Cudahy shall continue to work with adjacent cities and other agencies (the Los Angeles County Metropolitan Transportation Authority [Metro]) and the California Department of Transportation [Caltrans]) for the planning of transportation needs of the area. This includes the coordination of public transit programs, congestion management, traffic improvements and other transportation programs. The City will continue to be

involved in the development of State and regional transportation plans which may impact the City's circulation system. This includes the County Congestion Management Plan and plans for the Long Beach Freeway.

AIR QUALITY ELEMENT.

- **Goal 4:** The City of Cudahy will reduce Roadway Congestion.
  - **Policy 4.1:** The City of Cudahy will encourage truck operations to divert peak hour travel, whenever feasible, to off peak periods to reduce roadway congestion and associated emissions.
- **Goal 8:** Reduce fugitive dust emissions.
  - **Policy 8.1:** The City of Cudahy will require all feasible fugitive dust reduction techniques to be utilized during construction activities.
  - **Policy 8.3:** The City of Cudahy will require reseeding and maintenance of exposed soil that has been previously disturbed.
  - **Policy 8.4:** The City of Cudahy will encourage landscaping and tree planting which trap pollutants and protect sensitive receptors.
- **Goal 10:** The City of Cudahy will improve preconstruction environmental review to reduce emissions and exposure.
  - **Policy 10.2:** The City of Cudahy will facilitate project review and avoid project delays by adopting regional thresholds of significant air quality impact.
  - **Policy 10.3:** The City of Cudahy will provide, to the maximum extent feasible, for the protection of receptors from significant health risks caused by exposure to toxic and hazardous pollutants.
  - **Policy 10.4:** The City of Cudahy will reduce the exposure of sensitive receptors to dust and odors to the extent feasible.
- **Goal 11:** The City of Cudahy will maximize the effectiveness of air quality control programs through coordination with other governmental units.
  - **Policy 11.1:** The City of Cudahy will participate in the South Coast Air Quality Management District (SCAQMD) rule development process on regulations which impact the City of Cudahy to insure that city concerns are resolved early in the process.
  - **Policy 11.2:** The City of Cudahy will participate in air quality plan development at the Southern California Association of Governments to

insure that issues affecting Cudahy are considered in developing local government measures and that legislation that improves air regional quality and does not adversely impact Cudahy is supported.

- **Goal 13:** The City of Cudahy will reduce directly emitted vehicle emissions through city government actions.
  - **Policy 13.1:** The City of Cudahy will work with surrounding communities to reduce idling emissions by increasing traffic flow on major thoroughfares by synchronizing traffic signals.

NOISE ELEMENT.

- **Goal 1:** The City of Cudahy will prevent any increase in the established acceptable ambient levels of sound in residential areas of the community.
  - **Policy 1.1:** The City of Cudahy will consider the inclusion of noise-impacted areas in redevelopment or other programs, which would permit assistance for the residents with relocation, rehabilitation, or insulation of their structures and properties.
  - **Policy 1.2:** The City of Cudahy will consider steps to correct existing noise problem areas through the establishment of buffers and barriers or through abatement procedures.
  - **Policy 1.3:** The City of Cudahy will discourage the location of unbuffered noise sources near residential areas and schools.
- **Goal 2:** The City of Cudahy will prohibit unnecessary, excessive, and offensive noises, which are detrimental to the public health and welfare and contrary to the public interest.
  - **Policy 2.2:** The City of Cudahy will control at their sources, any sounds, which exceed accepted community noise levels.
  - **Policy 2.3:** The City of Cudahy will limit construction activities to daytime hours to reduce construction noise impacts.

CITY OF DOWNEY. The following are goals and policies in the City of Downey Vision 2025 General Plan (2005) that are relevant to the I-710 Corridor Project.

CIRCULATION ELEMENT.

- **Goal 2.1:** Increase the capacity of the existing street system.

- **Policy 2.1.1:** Maintain a street system that provides safe and efficient movement of people and goods.

- **Goal 2.4:** Reduce adverse impacts onto city streets from traffic traveling through the region.
  - **Policy 2.4.1:** Discourage the use of city streets as through routes for traffic traveling through the region.
    - **Program 2.4.1.1:** Coordinate with the California Department of Transportation (Caltrans), the Los Angeles County Metropolitan Transportation Authority (Metro), SCAG, Gateway Cities Council of Governments and other agencies to promote multi-modal improvement strategies to improve the regional transportation network.
    - **Program 2.4.1.3:** Support efforts to upgrade the I-710 freeway to address and restrict container truck traffic.

LAND USE ELEMENT.

- **Goal 1.4:** Protect and enhance the residential neighborhoods.

CONSERVATION ELEMENT.

- **Goal 4.5:** Encourage activities that improve air quality.
  - **Policy 4.5.1:** Pursue every available means and opportunities to reduce air particulate and pollutants within the city and region.
    - **Program 4.5.1.1:** Coordinate with other agencies, including school districts, transit agencies, and regional agencies, including South Coast Air Quality Management District and the SCAG, in their efforts to implement the regional Air Quality Management Plan and otherwise improve air quality.
    - **Program 4.5.1.2:** Support regional and subregional efforts in strategically managing goods movements in order to reduce emissions from truck traffic.
    - **Program 4.5.1.3:** Reduce air particulate and other pollutants created by, but not limited to the operation of diesel engine and increased truck traffic from marine and port operations in the Long Beach and Los Angeles ports and City operations, especially along the I-710 freeway corridor.

- **Program 4.5.1.6:** Promote community participation in developing strategies and projects addressing air quality, such as Tier 2 I-710 corridor citizen advisory committee.
- **Program 4.5.1.7:** Pursue means to prohibit unnecessary operation of engines.

NOISE ELEMENT.

- **Goal 6.1:** Protect persons from exposure to excessive noise.
  - **Policy 6.1.1:** Minimize noise impacts onto noise-sensitive uses.
    - **Program 6.1.1.1:** Enforce noise standards.
    - **Program 6.1.1.2:** Ensure that new developments within areas with exterior noise at unacceptable levels are designed to maintain interior noise levels at acceptable levels.
    - **Program 6.1.1.3:** Continue to enforce provisions prohibiting construction activities during noise-sensitive hours.
    - **Program 6.1.1.4:** Encourage the use of different construction methods, including insulation, for new developments to reduce noise impacts generated by other land uses and traffic.
    - **Program 6.1.1.5:** Discourage the establishment of noise-sensitive land uses within areas where noise cannot be mitigated.
    - **Program 6.1.1.6:** Consider the establishment of a program to retrofit to acceptable noise levels, noise-sensitive land uses within areas with exterior noise are at unacceptable levels.
- **Goal 6.2:** Protect persons from exposure to excessive noise generated by various modes of transportation.
  - **Policy 6.2.1:** Reduce noise generated by vehicular traffic.
    - **Program 6.2.1.1:** Coordinate with and encourage Caltrans to install and maintain freeway sound walls especially providing sound walls for the south side of the I-5 Freeway east of Lakewood Blvd. adjacent to Dennis the Menace Park.
    - **Program 6.1.1.3:** Continue to work with Metro and other transit agencies towards minimizing noise impacts by discouraging the use of local residential streets as transit routes.

CITY OF HUNTINGTON PARK. The following are goals and policies in the City of Huntington Park General Plan that are relevant to the I-710 Corridor Project.

CIRCULATION ELEMENT.

- **Goal 1:** Provide a system of streets that meets the needs of current and future residents and facilities the safe and efficient movement of people and goods throughout the City.
    - **Policy 1.4:** Coordinate street system improvements and signalization with regional transportation efforts.
- **Goal 2:** Support development of a network of regional roadway facilities which ensure the safe and efficient movement of people and goods from within the City areas outside its boundaries, and which accommodate regional travel demands.
- **Goal 3:** Maximize the efficiency of the circulation system through the use of transportation system management and demand management strategies.

OPEN SPACE AND CONSERVATION ELEMENT.

- **Goal 1.0:** Reduce the air pollution through land use, transportation, and energy use planning.
    - **Policy 1.1:** Endorse regional and local air quality and transportation management plans in order to reduce air pollution emissions and vehicular trips.

CITY OF LAKEWOOD. The following are goals and policies in the City of Lakewood General Plan that are relevant to the I-710 Corridor Project.

CIRCULATION ELEMENT.

- **Goal 1:** Maintain a fully developed network of arterial and collector streets which permit the safe and efficient movement of people and goods in harmony with the environment.
    - **Policy 1.4:** Coordinate with other jurisdictions to develop a system of highways and arterials, which meet the demand for regional transportation.

AIR QUALITY ELEMENT.

- **Goal 1:** Effective coordination of air quality improvement efforts in Lakewood and the region.

- **Policy 1.1:** Recognize that air pollutants are not constrained by political boundaries and that the policies of each community may adversely affect others. That is why strategies to improve air quality must be coordinated among governments.

CITY OF LONG BEACH. The following are goals and policies in the City of Long Beach General Plan (1997) that are relevant to the I-710 Corridor Project.

MOBILITY ELEMENT (2013).

- **Goal No. 1:** Create an efficient, balanced, multimodal mobility network.
  - **Strategy No. 3:** Strategically improve congested intersections and corridors.
    - **Mobility of People (MOP) Policy 3-1:** Make strategic improvements to intersections and corridors to improve the flow of vehicle traffic.
  - **Strategy No. 5:** Reduce the environmental impacts of the transportation system.
    - **Objective 1:** Maintain traffic and transportation service levels at Level of Service "D" or at the 1987 level of service (LOS) where that LOS was worse than "D."
    - **Objective 2:** Accommodate reasonable, balanced growth.
    - **Objective 3:** Maintain or enhance our quality of life.
- **Goal No. 2:** Maintain and enhance air, ground, and water transportation capacity.
- **Goal No. 3**: Lead the Region by Example with Innovative and Experimental Practices.
  - **Strategy No. 12:** Be a leading collaborator on transportation issues related to the regional mobility of goods.
    - **Mobility of Goods (MOG) Policy 12-1:** Maintain Long Beach as the hub for regional goods movement and as a gateway to national and international suppliers and markets while mitigating impacts of goods movement on the local community.
    - **MOG Policy 12-2:** Participate in the development and implementation of long-range regional plans. This includes plans

that address regional commercial air carrier capacity to accommodate forecasted air cargo demands. Plans also include the integration of freight trucking connections to the regional aviation system.

- **MOG Policy 12-3:** Coordinate with Caltrans to ensure that regional highway improvements aid in the movement of goods from the Ports of Long Beach and Los Angeles, while also mitigating impacts to Long Beach neighborhoods and the environment.

- **Strategy No. 13:** Develop freight-related improvements consistent with the regional transportation network.
  - **MOG Policy 13-7:** Minimize the effects of truck traffic during peak times of the day on local streets and on the I-710 Freeway.
  - **MOG Policy 13-8:** Support infrastructure improvements and use of emerging technologies that will facilitate the clearance, timely movement, and security of domestic and international trade. This includes facilities for the efficient intermodal transfer of goods between truck, rail, marine, and air transportation modes.
  - **MOG Policy 13-9:** Provide for the efficient circulation of truck and rail traffic within the Port and on the regional transportation network.

- **Strategy No. 14:** Reduce the air quality impacts of freight transportation and Port-related traffic.
  - **MOG Policy 14-1:** Provide for the efficient, clean, and safe movement of goods to support the commerce industry.
  - **MOG Policy 14-3:** Reduce congestion on freeways and designated truck routes.

- **Strategy No. 15:** Mitigate the impacts of increased freight transportation.
  - **MOG Policy 15-1:** Support programs and projects that reduce conflicts between trucks and autos on freeways such as dedicated freight corridors separating heavy trucks from autos.
  - **MOG Policy 15-2:** Minimize conflicts between trucks and other modes, especially bicycles and pedestrians.

- **MOG Policy 15-10:** Support programs that reduce truck traffic on I-710 during peak commute hours, such as the Port's PierPass Program.
- **MOG Policy 15-11:** Continue to work with Metro on the I-710 Corridor Project to assess the possible impacts and benefits to the City.
- **MOG Policy 15-12:** Vigorously support increased east-west pedestrian and bicycle connectivity related to the I-710 Corridor Project, including streetscape improvements and new pedestrian and bicycle facilities.

AIR QUALITY ELEMENT (1996).

- **Goal 1:** Effective coordination of air quality improvement efforts in the South Coast Air Basin, the Southeast Los Angeles County (SELAC) subregion of SCAG, and other agencies.
  - **Policy 1.2:** Encourage Community Participation.
- **Goal 2:** A diverse and efficient ground transportation system that minimizes air pollutant emissions.
  - **Policy 2.1.1:** Reduce Vehicle Trips.
  - **Policy 2.1.2:** Reduce Vehicle Miles Traveled.
  - **Policy 2.1.3:** Increase cost-effectiveness of transportation and parking systems.
  - **Policy 2.2.1:** Modify Work Schedules.
  - **Policy 2.3.1:** Expand Transit in the City and the Region.
- **Goal 4:** Minimize feasible emissions from the Ports of Long Beach and Los Angeles.
  - **Policy 4.1:** Minimize emissions from ships.
  - **Policy 4.2:** Reduce the impacts of rail-related emissions on Long Beach neighborhoods and the downtown.
  - **Policy 4.3:** Monitor particulate pollution at the Ports and locations downwind, and pursue methods of reducing emissions while accommodating needed growth.

- **Goal 6:** Minimize particulate emissions from the construction and operation of roads and buildings, from mobile sources, and from the transportation, handling, and storage of materials.
    - **Policy 6.1:** Dust Control.
- **Goal 7:** Reduce emissions through reduced energy consumption.
    - **Policy 7.1:** Energy Conservation.
    - **Policy 7.2:** Recycle Wastes.

NOISE ELEMENT (1975).

- **General Noise Goal**: The City desires to attain a healthier and quieter environment for all its citizens while maintaining a reasonable level of economic progress and development.
- **Noise Goal Related to Land Use Planning**: To protect and preserve both the property rights of owners and the right to quietness of the citizenry at large.
    - **Strategy No. 6:** Locate and mitigate noise impacts from highways and freeways on residential land uses and institutional, recreational and school facilities
- **Goal Related to Noise Environment**: To make the City a quieter, more pleasant place to live.
    - **Strategy No. 3:** To foster and promote cooperation of private organizations and public agencies to upgrade the level of community serenity.
    - **Strategy No. 4:** To apply zoning, noise ordinance and other legislation to prevent an increase of noise levels and occurrences.
    - **Strategy No. 5:** To enact a strong anti-noise ordinance, including limits on transportation, industrial, construction and population noise.
    - **Strategy No. 6:** To describe the noise problem areas which are within local control.
    - **Strategy No. 7:** To continue to take restorative measures to remedy and reduce high noise areas within the City.
- **Goal Related to Transportation Noise**: Diminish the transportation roar that impacts on the population.

- **Strategy No. 1:** Recommending a plan for compatible uses for those portions of Long Beach within transportation noise zones.
- **Strategy No. 2:** Discouraging within transportation noise zones the development of noise sensitive uses that cannot be sufficiently insulated against externally generated noise at reasonable cost.
- **Strategy No. 3:** Developing a long range re-allocation of noise sensitive land uses away from transportation noise impact areas.
- **Strategy No. 4:** Providing standards and criteria for noise emissions from transportation facilities.
- **Strategy No. 5:** Cooperating with State and the Long Beach Unified School District in the reduction of traffic noise around school grounds.
- **Strategy No. 8:** Reducing the level of noise exposure from surface transportation in problem areas not pre-empted by State or Federal law.

- **Noise Goal Related to Public Health and Safety**: Attainment of the lowest possible level of harmful effects of noise on the people by the implantation of information, monitoring and advisory programs.
  - **Strategy No. 3:** To continue to reduce excessive traffic noise in problem areas by the construction of sound barriers, further synchronization of traffic lights, and posting of "quiet zone" signs around hospitals and other highly noise sensitive land uses.

THE CITY OF LONG BEACH COMMUNITY LIVABILITY PLAN (2008). The City of Long Beach Public Works developed an initiative to address the quality of life issues for City neighborhoods that are affected by the I-710 freeway. The plan, the *Community Livability Plan: I-710 Corridor Neighborhoods* was approved by the City in February 2008. The City developed the following two primary goals for the Community Livability Plan:

- To work with the I-710 corridor neighborhoods to identify and develop plans to address the impacts they are experiencing from the operation of the I-710 freeway, and
- To develop a series of action strategies and design solutions to improve the physical environment for residents in those neighborhoods.

CITY OF LOS ANGELES. The following are goals and policies in the City of Los Angeles General Plan that are relevant to the I-710 Corridor Project.

TRANSPORTATION ELEMENT.

- **Goal A:** Adequate accessibility to work opportunities and essential services, and acceptable levels of mobility for all those who live, work, travel, or move goods in Los Angeles.
    - **Objective 1:** Expand neighborhood transportation services and programs to enhance neighborhood accessibility.
        - **Policy 1.1:** Establish highway and transit accessibility measures to be used in evaluating the transportation needs of the City's communities.
    - **Objective 2:** Mitigate the impacts of traffic growth, reduce congestion, and improve air quality by implementing a comprehensive program of multimodal strategies that encompass physical and operational improvements as well as demand management.
        - **Policy 2.1:** Evaluate the benefits of major transportation projects based on movement of persons and goods, rather than vehicle-movement, and look for opportunities on the arterial system to enhance ridesharing and transit.
        - **Policy 2.2:** Cooperate with regional agencies to establish regionwide TDM programs to achieve regional trip reductions and/or increased vehicle occupancy.
        - **Policy 2.28:** Establish priority corridors for arterial street capital improvements.
        - **Policy 2.29:** Consider highway infrastructure investments primarily along severely congested corridors.

LAND USE ELEMENT.

- **Goal 3A:** A physically balanced distribution of land uses that contributes towards and facilitates the:
    - City's long-term fiscal and economic viability;
    - Revitalization of economically depressed areas;
    - Conservation of existing residential neighborhoods;
    - Equitable distribution of public resources;
    - Conservation of natural resources;
    - Provision of adequate infrastructure and public services;

- Reduction of traffic congestion and improvement of air quality;
- Enhancement of recreation and open space opportunities;
- Assurance of environmental justice and a healthful living environment; and
- Achievement of the vision for a more livable city.

    - **Policy 3.1.2:** All for the provision of sufficient public infrastructure and services to support the projected needs of the City's population and businesses within the patterns of use established in the community plans as guided by the Framework City wide Long-Range Land Use Diagram.

AIR QUALITY ELEMENT.

- **Goal 1:** Good air quality and mobility in an environment of continued population growth and healthy economic structure.
    - **Objective 1.1:** It is the objective of the City of Los Angeles to reduce air pollutants consistent with the Regional Air Quality Management Plan (AQMP), increase traffic mobility, and sustain economic growth citywide.
        - **Policy 1.1.1:** Encourage demonstration projects which involve creative and innovative uses of market incentive mechanisms to achieve air quality objectives.
    - **Objective 1.2:** It is the objective of the City of Los Angeles to demonstrate the City's commitment to air quality improvement through development and revision of the City's General Plan Elements as appropriate, and to work cooperatively with Federal, state, regional, and other local jurisdictions in attaining clean air.
        - **Policy 1.2.2:** Pursue the City's air quality objectives in cooperation with regional and other local jurisdictions.
    - **Objective 1.3:** It is the objective of the City of Los Angeles to reduce particulate air pollutants emanating from unpaved areas, parking lots, and construction sites.
        - **Policy 1.3.1:** Minimize particulate emissions from construction sites.
- **Goal 4:** Minimize impact of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation, and air quality.

- **Objective 4.1:** It is the objective of the City of Los Angeles to include the regional attainment of ambient air quality standards as a primary consideration in land use planning.
    - **Policy 4.1.1:** Coordinate with all appropriate regional agencies the implementation of strategies for the integration of land use, transportation, and air quality policies.

CITY OF LYNWOOD. The following are goals and policies in the City of Lynwood General Plan that are relevant to the I-710 Corridor Project.

CIRCULATION ELEMENT.

- **Goal CIR-1:** Provide a circulation system to serve the internal circulation needs of the City, while also addressing the intercommunity or through travel needs.
- **Goal CIR-3:** Promote a regional transportation system that serves existing and future travel between Lynwood and other population and employment centers within the region.
    - **Policy CIR-3.1:** Regional Transportation Facilities: Interface with appropriate jurisdictions and agencies to encourage the timely improvement of roadway and transit facilities, which address area wide and regional travel needs.
- **Goal CIR-5:** Manage peak hour traffic flow and demand on the circulation system to reduce traffic congestion where necessary and feasible.
    - **Policy CIR-5.1:** Travel Demand Management Program: Provide for the development and monitoring of TDM programs at locations where trip making is concentrated.

AIR QUALITY ELEMENT.

- **Goal AQ-1:** Improve air quality in conformance with State and Federal standards.
    - **Policy AQ-1.1:** Air Quality Mitigation Measures: The City shall ensure that to the extent practical that air quality mitigation measures are incorporated into residential, commercial, and industrial projects.

CITY OF MAYWOOD. The following are goals and policies in the City of Maywood General Plan that are relevant to the I-710 Corridor Project.

CIRCULATION ELEMENT.

- **Goal 1:** Minimize freeway impacts on the local street system while ensuring convenient access to the Long Beach Freeway (I-710) from Maywood.
    - **Policy 1.1:** Support efforts of Caltrans to improve traffic flow on the freeway system and thereby reduce impacts on the City's arterial roadway network.
    - **Policy 1.2:** Work with Caltrans to provide a full or partial interchange of the Long Beach Freeway at Slauson Ave.
    - **Policy 1.3:** Support efforts of Metro and other transportation agencies to increase use of mass transit and other alternatives to the private automobile as a way to reduce potential traffic loads on the Long Beach Freeway.

CONSERVATION ELEMENT.

- **Goal 2:** Promote cooperation between the City and other agencies and local governments to improve the environment.
    - **Policy 2.1:** Continue cooperation and coordination between jurisdictions pertaining to regional environmental quality.
    - **Policy 2.2:** Support all actions and/or programs that will result in the development of a comprehensive regional mass transit system.
- **Goal 3:** Provide for the proper management of natural resources both in the City and region are so that they may be protected for the benefit of present and future residents.
    - **Policy 3.1:** Develop and enforce local criteria of air and water quality so that the City may reduce its share of these regional problems.

CITY OF PARAMOUNT. The following are goals and policies in the City of Paramount General Plan that are relevant to the I-710 Corridor Project.

TRANSPORTATION ELEMENT.

- **Transportation Element Policy 6:** The City of Paramount will continue to support the development and expansion of the region's public and mass transit system.

LAND USE ELEMENT.

- **Land Use Element Policy 9:** The City of Paramount will promote development that capitalizes on its location near the I-105 Freeway, the I-710 Freeway, and State Route 91 (SR-91).

CITY OF SIGNAL HILL. The following are goals and policies in the City of Signal Hill General Plan that are relevant to the I-710 Corridor Project.

CIRCULATION ELEMENT.

- **Goal 2:** Provide a safe and efficient roadway system for all users.
- **Goal 5:** Permit safe and efficient goods movement to support regional commerce and industry, while minimizing undesirable impacts on Signal Hill residents.
    - **Policy 5.a:** Evaluate proposed projects on the I-405 and I-710 freeways to determine if significant impacts from increased truck traffic will affect roadways in Signal Hill.

LAND USE ELEMENT.

- **Goal 2:** Ensure that new development is consistent with the City's circulation system, availability of public facilities, existing development constraints, and the City's unique characteristics and natural resources.
    - **Policy 2.1:** Coordinate and monitor the intensity and impact of land uses in Signal Hill and Long Beach on the City's existing transportation and circulation systems so that they are able to provide for the efficient movement of people and goods with the least interference.
- **Goal 3:** Assure a safe, health, and aesthetically pleasing community for residents and businesses.
    - **Policy 3.15:** Improve the image of major highways by use of landscaping, lighting, graphics, and/or other streetscape treatments.

ENVIRONMENTAL RESOURCES ELEMENT.

- **Goal 5:** Ensure minimal degradation to the physical environment from development or operational activities, and require restoration of the environment where degradation has occurred.
    - **Policy 5.1:** Cooperate and participate in regional AQMP, programs, and enforcement measures.

CITY OF SOUTH GATE. The following are goals and policies in the City of South Gate General Plan 2035 that are relevant to the I-710 Corridor Project.

MOBILITY ELEMENT.

- **Goal ME 1:** Provide and maintain an efficient roadway system serving all parts of the City and support multimodal transportation.
    - **Objective ME 1.1:** Balance the roadway system with the planned land uses in the City.
        - **Policy P.1:** The City should provide a safe and efficient street system, to support the City's mobility goals, all transportation modes, and the City's Land Use and Community Design Elements.
    - **Objective ME 1.2:** Fully develop the street system, and maximize its operational efficiency.
        - **Policy P.2:** The City should coordinate with the I-710 Corridor Project to explore I-710 interchange and ramp modifications that improve overall traffic circulation on City streets.
- **Goal ME 3:** Minimize the adverse effects of traffic.
    - **Objective ME 3.1:** Minimize and/or reduce adverse impacts on City streets from regional through traffic.
        - **Policy P.1:** The City should coordinate with regional authorities and adjacent jurisdictions for regional highway network improvements, regional multi-modal programs, and signage programs.
        - **Policy P.2:** The City should support an I-710 Corridor Project design that minimizes traffic impacts on City streets, and enhances access to the freeway with improved interchanges with City streets.
    - **Objective ME 3.2:** Reduce adverse impacts from truck traffic.
        - **Policy P.2:** The City should work closely with the Metro and Caltrans on the I-710 Corridor Improvements process to ensure new truck ramps in the City are suitably located to facilitate truck access to industrial areas of the City, and to ensure that new truck lanes and direct truck ramps do not adversely impact the City and its neighborhoods.

- **Policy P.4:** The City should coordinate with regional planning agencies, the Ports of Los Angeles and Long Beach, and railroad operators to maximize the use of rail for goods movement in the region and in the I-710 Corridor in particular.

- **Action ME 1:** Implement the following street improvements for general circulation (including transit and other modes).
- **Action ME 1.2:** Garfield Ave.: Work with the I-710 Improvement Project to add truck ramps to I-710 Truck Lanes within the City limits where feasible without adversely impacting key streets or residential neighborhoods.
- **Action ME 1.3:** I-710 Freeway Interchanges: Explore improved ramp connections to City streets as part of the I-710 Project, including the concept of a joint access and frontage road system that would provide freeway access/egress to the new Southern Ave. Extension, Firestone Blvd., and a new easterly extension of Independence Ave/Ardmore Ave.
- **Action ME 1.14:** Imperial Hwy.: Explore and implement improvements to the I-710 interchange as part of the I-710 Corridor Project, including the removal of the existing off ramp at Abbot Rd./Wright Rd. and addition of a substitute ramp directly at Imperial Hwy., as part of the I-710 Improvement Project.

COMMUNITY DESIGN ELEMENT.

- **Goal CD 4:** Preservation and enhancement of existing neighborhoods' quality and character.
  - **Objective CD 4.1:** Preserve the character of existing neighborhoods.
    - **Policy P.2:** Existing neighborhoods should be preserved and protected against potential impacts related to development, traffic, noise, air quality, and encroachment of incompatible commercial and industrial activities.

HEALTHY COMMUNITY ELEMENT.

- **Goal HC 7:** High levels of air quality and improved respiratory health throughout the City.
  - **Objective HC 7.2:** Encourage and enable transportation behavior that improves air quality and respiratory health.
    - **Policy P.3:** The City should support Federal, state, and regional agencies in their efforts to reduce exposure to emissions from railroad, truck, and industrial diesel emissions.

CITY OF VERNON. The following are goals and policies in the City of Vernon General Plan (2007) that are relevant to the I-710 Corridor Project.

CIRCULATION ELEMENT.

- **Goal CI-1:** Provide a balanced transportation system for the safe and efficient movement of people, goods and emergency services throughout the City.
    - **Policy CI-1.8:** Continue to work with Caltrans and neighboring jurisdictions to improve the Atlantic Blvd./Bandini Blvd./I-710 intersection and to make improvements to the I-710 Freeway, including direct truck ramps to the rail yards and exploring the potential for adding an interchange at Slauson Ave. to improve access to the City.

LAND USE ELEMENT.

- **Goal LU-1:** Promote and maintain manufacturing and other industrial uses as the primary land use within the City.
    - **Policy LU-1.1:** Designate all properties in Vernon for manufacturing and industrial use, and permit other uses only with a Conditional Use Permit, or other discretionary review process. Permit certain uses only in specified Overlay Districts with Conditional Use Permit or other discretionary review process.

RESOURCE ELEMENT.

- **Goal R-2:** Contribute to the continued (continual and) gradual improvement of air quality in the South Coast Air Basin.
    - **Policy R-2.1:** Coordinate and cooperate with the SCAQMD and SCAG in efforts to implement the regional AQMP.

BOYLE HEIGHTS. The following are goals and policies in the Boyle Heights Community Plan that are relevant to the I-710 Corridor Project.

CIRCULATION ELEMENT.

- **Objective 2:** To minimize the detrimental impact of all existing freeways in the Community.
    - **Policy 2:** That highways and local streets be developed in accordance with standards and criteria contained in the Highways and Freeways Element of the General Plan and the City's Standard Street Dimensions,

except where environmental issues and planning practices warrant alternate standards consistent with capacity requirements.

EAST LOS ANGELES. The following are goals and policies in the East Los Angeles Community Plan (1988) that are relevant to the I-710 Corridor Project.

PHYSICAL ENVIRONMENT GOALS.

- To retain the single-family residential life style of the community.
- To improve local transit and circulation.
- To protect the community health, safety and general welfare.

HUMAN RESOURCES GOALS.

- To increase residents' participation in meeting the community's public safety needs.
- To increase the community participation in environmental, human resource and economic development matters.

LOS ANGELES RIVER MASTER PLAN (JUNE 1996). The plan covers the entire 51-mile length of the river and the nine-mile-long Tujunga Wash, which together flow through 13 cities in Los Angeles County. The plan recommends specific regional and local projects and programs, and coordinates these projects on an ongoing basis. The primary managers of the river right of way are the Los Angeles County Department of Public Works and the United States Army Corps of Engineers.

The plan consists of seven major phases that include the following: Phase A, the Outreach Phase; Phase B, the Master Plan Analysis; Phase C, the Master Plan Formulation; Phase D, the Implementation Strategy; Phase E, Environmental Review; Phase F, the Master Plan Adoption; and Phase G, the Master Plan Implementation.

The Los Angeles River Master Plan goals are:

- Ensure flood control and public safety needs are met.
- Improve the appearance of the river and the pride of local communities in it.
- Promote the river as an economic asset to the surrounding communities.
- Preserve, enhance, and restore environmental resources in and along the river.
- Consider stormwater management alternatives.

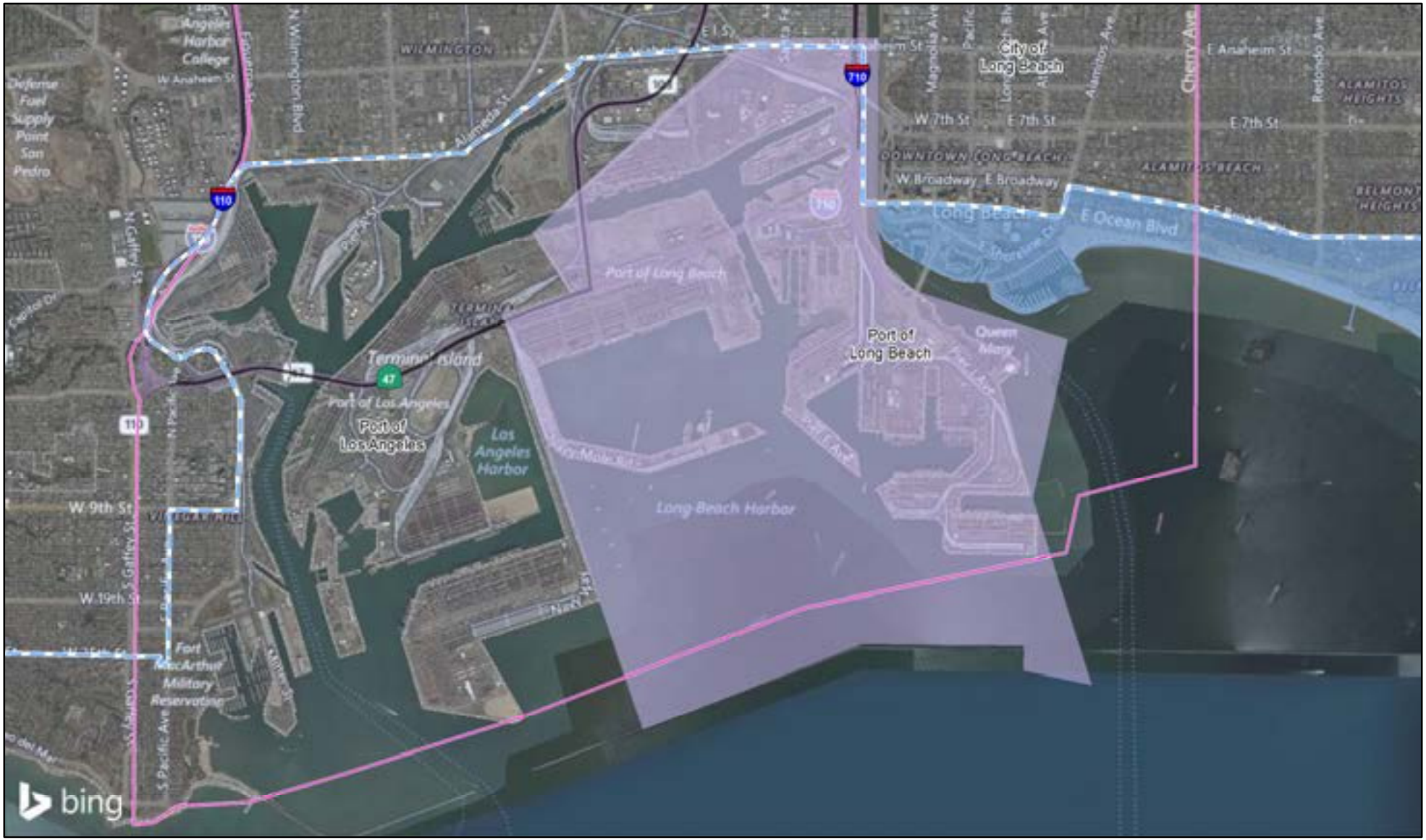
- Ensure public involvement and coordinate Master Plan development and implementation among jurisdictions.
- Provide a safe environment and a variety of recreational opportunities along the river.
- Ensure safe access to and compatibility between the river and other activity centers.

The Environmental Quality chapter of the plan also provides a goal and objectives for the Environmental Quality of the river; and they are:

- Preserve, enhance and restore environmental resources in and along the river.
- Improve and create natural plant and animal habitats.
- Increase water conservation efforts and provide for the most beneficial use of river water.
- Improve water quality and cleanliness of the river.
- Improve air quality.

COASTAL ZONE. A part of the Study Area is located within the boundary of the Coastal Zone. The Coastal Zone designation in the Study Area consists of the POLB and the POLA, parts of the City of Long Beach south of Anaheim St. and east of the Los Angeles River, and parts of the City of Long Beach south of Ocean Blvd. and E. Broadway and east of the Los Angeles River. Applicable LCPs in the Study Area include the POLB Master Plan, the POLA Master Plan, and the City of Long Beach LCP; however, the proposed I-710 Corridor Project improvements would only occur in the POLB Master Plan and the City of Long Beach LCP jurisdictions (refer to discussion below for details). Figure 3.1-2 shows the official Coastal Zone boundary in the vicinity of the I-710 Corridor Project.

Access to the Coastal Zone in the vicinity of the I-710 Corridor Project improvements is facilitated by the existing I-710 mainline, State Route 47 (SR-47), and Ocean Blvd. However, public accessibility to the coast is relatively limited because the area is fully developed and the areas west of I-710 are active goods movement areas within the POLB and the POLA. However, the public can gain access to the coast east of I-710 via the public parks and marinas/boat launches located in downtown Long Beach, and south of the proposed improvements by foot, vehicle, or bicycle using a network of roads and pathways.



LEGEND

- I-710 Study Area
- California Coastal Zone Boundary
- Port of Long Beach Master Plan Jurisdiction
- Long Beach Local Coastal Program Jurisdiction

0 2500 5000
FEET

SOURCE: Bing Maps (2014); California Coastal Commission (2012)

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FIGURE 3.1-2

I-710 Corridor Project RDEIR/SDEIS

Coastal Zone

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The Coastal Zone environment in the Study Area is built out. Currently, estuarine habitat in the Study Area occurs in earthen-bottom tidal parts of the Los Angeles River along the three miles of the river between Willow St. on the north and the POLB on the south (approximately 7.59 acres). Biological resources located in these habitats are considered high-quality wildlife habitats because they provide protective cover, reproduction, and nesting resources, water, and food for a variety of species. In addition, estuaries such as the lower Los Angeles River serve as nurseries for marine fish and provide sediment traps, erosion control, and natural flood control. Sections 3.16 and 3.17, provided later in this RDEIR/SDEIS, include additional information on native and nonnative biological resources that occur in the Coastal Zone and Study Area.

POLA MASTER PLAN. The POLA Master Plan was first certified in 1980 by the California Coastal Commission. Since 1980, the POLA Master Plan has been amended and certified an additional 19 times.

The objective of the POLA Master Plan is to establish policies and guidelines to direct the future development of the Port of Los Angeles. The Plan is designed to better promote and safely accommodate the foreign and domestic waterborne commerce, navigation, and fisheries in the national, State, and local public interest. The Plan also provides for additional public recreation facilities within the POLA that are consistent with sound and compatible port planning. The proposed I-710 Corridor Project improvements are located adjacent but not within the POLA Master Plan area.

POLB MASTER PLAN. The POLB Master Plan was first certified in 1978 by the California Coastal Commission. The document was updated and certified in 1983 and then again in 1990. Since 1990, the POLB Master Plan has been amended and certified an additional 19 times.

The purpose of the POLB Master Plan is to provide a planning tool to guide future Port development and to ensure that projects and developments in the Harbor District are consistent with the requirements of the California Coastal Act. The POLB Master Plan is divided into ten planning districts, which are geographical areas established to serve functional purposes by consolidating similar land and water uses, maximizing efficient use of facilities, and separating hazardous cargo from other areas of POLB. The proposed I-710 Corridor Project improvements would be located in District 1, the North Harbor Planning District. The North Harbor Planning District consists of numerous small, independently owned land parcels that are presently devoted to port-related and non-port-related uses.

Anaheim St., the northern boundary of this district, functions as a major route for vehicular traffic entering or leaving the POLB. Existing uses on private land within District 1 remain throughout the northern part of the district but do not need to meet the requirements of the

POLB Master Plan; therefore, as these private properties become available, POLB intends to obtain and redevelop them in accordance with the POLB Master Plan.

CITY OF LONG BEACH LCP. The City of Long Beach LCP was certified in 1980 by the California Coastal Commission and amended in 1994. The purpose of the City of Long Beach LCP is to protect and enhance the city's coastal resources. The City of Long Beach LCP is divided into seven planning areas, and a part of the proposed I-710 Corridor Project is located within the Downtown Shoreline planning area. The Coastal Zone of the Downtown Shoreline planning area lies south of Ocean Blvd. and encompasses office and residential buildings, a newly expanded Convention and Entertainment Center, several public uses, and vacant land. The proposed improvements are located in the vicinity of existing office uses in the West Beach planning area of the Downtown Shoreline Policy Plan. Within the West Beach area, permitted uses are the existing uses.

3.1.2.3 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to land use are located in Section 3.24.3.1.

PERMANENT IMPACTS.

BUILD ALTERNATIVES. While adoption of any one of the build alternatives would require SCAG, the County of Los Angeles, and several other regional and local agencies to amend their plans and/or land use maps to reflect modifications to the I-710 mainline, interchanges, arterial highways, and arterial intersections, as well as the elimination of any land uses that may need to be acquired for the project, the proposed build alternatives are generally consistent with these plans. Caltrans will need to amend its existing freeway agreements with cities where the build alternatives would add or remove connections to I-710 or I-405.

LOCAL AND REGIONAL PLANS. The discussions below provide a consistency analysis for the applicable regional and local plans discussed earlier in this section.

SCAG RCP. The 2008 RCP includes several guiding principles and goals that the build alternatives would be consistent with, including improved mobility for residents, improved air quality, and a cleaner transportation system. However, the build alternatives would not provide new housing or education as referenced in the RCP.

SCAG RTP/SCS. The 2016 RTP includes several guiding principles and goals with which the build alternatives would be consistent, including improved mobility for residents, improved air quality, and a cleaner transportation system. The RTP also includes several goals with which the build alternatives would be consistent, including the following: increased mobility and accessibility for all people and all goods in the region; improved safety and reliability for transportation of people and goods in the region; and protection of the environment, including improved air quality. The build alternatives do not provide high-occupancy vehicle (HOV) gap closures or a rideshare program; therefore, the build alternatives would not be consistent with these policies in the RTP. The Project Description as noted in the RTP/SCS does not match either of the currently proposed build alternatives. However, the RTP will be amended to be consistent with the preferred alternative prior to the approval of the Final EIR/EIS.

SCAG FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM (FTIP) (ADOPTED ON SEPTEMBER 1, 2016). Although the full scope of the project is not currently in the FTIP and the Project Description as noted in the RTP/SCS does not match either of the currently proposed build alternatives, both the RTP and RTIP will be amended to be consistent with the preferred alternative prior to the approval of the Final EIR/EIS.

GREATER LOS ANGELES COUNTY IRWMP. The 2014 Greater Los Angeles County IRWMP includes the objective to enhance open space and recreation through the increase of watershed friendly recreational space for all communities. As shown in Table 3.1-1, the build alternatives would result in impacts to open space and recreation land uses. Therefore, the project is not consistent with the objective of the Greater Los Angeles IRWMP.

GREATER LOS ANGELES COUNTY OSHARP AND DRAFT FINAL OSHARTM. The Greater Los Angeles County OSHARP (2012) and the Draft Final Greater Los Angeles County OSHARTM (October 2013) include objectives with which the build alternatives would be consistent, including enhancement of existing and planned regional trails as the build alternatives would not result in permanent adverse impacts to regional or local trails or bikeways, and will have beneficial impacts associated with the creation of bike overcrossings that would improve connectivity and access to local parks. However, the build alternatives for the project will result in conversion of recreation and open space land uses to transportation land use as reflected in Table 3.1-1. The loss of recreation and open space land use associated with the build alternatives is not consistent with the objectives of the Greater Los Angeles OSHARP and Draft Final OSHARTM.

2035 COUNTY OF LOS ANGELES GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the 2035 County of Los Angeles General Plan because the project would improve existing transportation facilities instead of building new freeways; would protect sensitive uses, including residential areas; would reduce noise levels; includes the public during the planning process; and would improve the image of major transportation corridors.

COUNTY OF LOS ANGELES BICYCLE MASTER PLAN. The I-710 Corridor Project would be consistent with the goals of the County of Los Angeles Bicycle Master Plan because the project would provide bicycle facilities, including bicycle crossings. The bicycle/pedestrian crossing at Humphreys Ave. in East Los Angeles (proposed under both build alternatives) would be consistent with providing connections to destinations in an unincorporated area of the County, and the project's proposed bicycle facilities would also provide connectivity to local parks.

CITY OF BELL GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Bell General Plan, because the project addresses existing and planned land uses, including a new I-710 freight corridor interchange at Slauson Ave. under Alternative 7, and would improve circulation within the region. The build alternatives would not expand public facilities in the city; however, Caltrans is working with agencies responsible for public facilities throughout the corridor to mitigate any direct impacts.

CITY OF BELL GARDENS GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Bell Gardens General Plan because the project includes improvements at the I-710/Florence Ave. interchange, including a redesign of the interchange to reduce traffic congestion along Florence Ave., between Eastern Ave. and Jaboneria Rd., which is referenced as a key transportation-related issue in the Circulation Element. The build alternatives would also improve access to the Central Commercial District and would not result in business displacements within the City of Bell Gardens. In addition, Alternative 7 includes a freight corridor for zero-emission and near-zero-emission trucks, which is consistent with the City's policy to encourage new and innovative modes of transportation.

CITY OF CARSON GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Carson General Plan because the project would provide improvements to the circulation system for existing and planned transportation needs; Alternative 7 would provide a dedicated freight corridor; the project would include an extensive outreach process involving local and regional

planning agencies; and the build alternatives would improve local interchanges and arterials, as well as air quality and aesthetics along I-710.

CITY OF COMMERCE GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Commerce 2020 General Plan since they address three main components found in many of the General Plan policies: community participation, improved air quality, and reduced traffic congestion. Alternative 7 also includes direct access from I-710 to the rail yards as identified in the General Plan.

CITY OF COMPTON GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Compton General Plan because they would improve access to and from businesses and residents within the city, as well as address traffic safety, spillover traffic, reduced congestion, and use of a designated freight route.

CITY OF CUDAHY GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Cudahy General Plan because they would improve vehicular circulation and safety, relieve congestion, improve air quality, address increases in noise along the I-710 Corridor near sensitive uses, and incorporate a multi-agency outreach program.

CITY OF DOWNEY GENERAL PLAN. While adoption of a build alternative would not directly impact the City of Downey, the build alternatives are consistent with the adopted goals and policies in the City of Downey General Plan because of the following: the proposed widening and dedicated truck route provided by Alternative 7 would decrease the number of trucks and automobiles accessing local arterials as alternative routes for through trips; the build alternatives would not result in adverse impacts to residential neighborhoods or businesses within the City of Downey; the build alternatives would result in improved air quality; and the build alternatives would not expose persons within the City of Downey to excessive noise.

CITY OF HUNTINGTON PARK GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Huntington Park General Plan because they would address existing and future circulation needs including improvements to intersections within the city, improving air quality, and reducing traffic congestion.

CITY OF LAKEWOOD GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Lakewood General Plan because the I-710 Corridor Project is a regional project that addresses the main components found in many of the General Plan policies: multi-agency coordination, improved air quality, reduced traffic congestion, and improved safety for drivers. Specifically, the goals

and policies of the Circulation Element and Air Quality Element are consistent with the I-710 Corridor Project Build Alternatives.

CITY OF LONG BEACH GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Long Beach General Plan. The I-710 Corridor Project Build Alternatives would improve people and goods movement, reduce congestion, improve air quality, and include community and local agency participation. The build alternatives would not expose persons within the City of Long Beach to excessive noise. The build alternatives would also result in relocation of businesses and residents in the city, which would be inconsistent with the General Plan.

CITY OF LOS ANGELES GENERAL PLAN. In reference to the communities of Wilmington and San Pedro, the I-710 Corridor Project Build Alternatives are consistent with the adopted goals and policies in the City of Los Angeles General Plan because they address some of the main components found in many of the General Plan policies: improved accessibility and enhanced transit; improved air quality; reduced traffic congestion; limited impacts to residential neighborhoods; and balanced planning among air quality, transportation, and land use.

CITY OF LYNWOOD GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Lynwood General Plan because they would address local and regional circulation for existing and future needs, reduce traffic congestion, consider the community's concerns, provide the necessary infrastructure to promote a balanced community, and improve air quality.

CITY OF MAYWOOD GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Maywood General Plan because Alternative 7 includes a partial construction of the I-710 freight corridor interchange at Slauson Ave. that is referenced in the Circulation Element, which would provide convenient access to the I-710 from Maywood for freight and cargo and result in minimal impacts to the local street system. The build alternatives would not directly impact residential or industrial uses within the city. In addition, while the proposed project would not directly result in new commercial districts or businesses within the city, the build alternatives would result in increased accessibility to the city along the I-710 Corridor (specifically increased accessibility to the commercial districts located along Slauson Ave. and Atlantic Blvd.) as a result of a new partial local interchange.

CITY OF PARAMOUNT GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Paramount General Plan since they would address the region's public and mass transit system and would not adversely impact residences or businesses within the City of Paramount.

CITY OF SIGNAL HILL GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of Signal Hill General Plan because the I-710 Corridor Project is a regional project that would provide safe, efficient, and balanced circulation to address existing and future land use needs. In addition, three of the proposed build alternatives would provide a dedicated freight corridor to reduce traffic on local roadways. The project would also improve air quality.

CITY OF SOUTH GATE GENERAL PLAN. The build alternatives are consistent with the adopted goals and policies in the City of South Gate General Plan. The build alternatives would reduce traffic congestion, including truck traffic; add a dedicated freight corridor in the city (Alternative 7); include coordination with other local and regional agencies; improve air quality; and preserve residential neighborhoods in the City of South Gate by avoiding residential displacements in the city.

CITY OF VERNON GENERAL PLAN. The I-710 Corridor Project is consistent with the adopted goals and policies in the City of Vernon General Plan since it addresses the need for a balanced transportation network, improvements to the Atlantic Blvd./Bandini Blvd. intersection, new dedicated truck routes and ramps to the rail yards under Alternative 7, improved air quality, and extensive agency coordination.

BOYLE HEIGHTS COMMUNITY PLAN. The I-710 Corridor Project is consistent with the adopted goals and policies in the Boyle Heights Community Plan since the build alternatives include features to reduce community impacts, improve air quality, balance land uses, and reduce traffic congestion.

EAST LOS ANGELES COMMUNITY PLAN. The I-710 Corridor Project is consistent with the adopted goals and policies in the East Los Angeles Community Plan because it addresses some of the Community Plan's main components: community participation, improved air quality, reduced traffic congestion, and retaining of residential areas in East Los Angeles.

LOS ANGELES RIVER MASTER PLAN. The I-710 Corridor Project would be consistent with the goals and policies of the Los Angeles River Master Plan, as the build alternatives would not impact the flood control capacity of the river, would develop stormwater management systems along the corridor, and would involve the public in decision making processes.

COASTAL ZONE. Table 3.1-2 provides a consistency analysis of the build alternatives relative to the five primary goals of the California Coastal Act.

Table 3.1-2: California Coastal Act Consistency

Goals	Consistency Analysis
Goal A: Protect, maintain and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources.	The build alternatives would improve an existing facility and reduce congestion, which would reduce air emissions in the Coastal Zone. Biological resource surveys conducted for the project indicate that areas potentially impacted by the build alternatives within the Coastal Zone would be limited to developed/ornamental/ruderal areas, and no jurisdictional waters were identified that would be under the jurisdiction of the California Coastal Commission (refer to Sections 3.16 through 3.21 for additional detail). Similarly, cultural resource surveys conducted indicate no known archaeological or historic resources in the Coastal Zone that would be impacted by the build alternatives (refer to Section 3.7 for additional detail). Water quality BMPs that would be implemented as a result of the I-710 Corridor Project Build Alternatives would improve existing water quality conditions (refer to Section 3.9 for additional detail). Therefore, the build alternatives are consistent with Goal A because they would maintain and improve the overall quality of the environment in the Coastal Zone.
Goal B: Assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state.	The build alternatives would improve an existing facility that is commonly used for goods movement for the local and regional economies, as well as to transport people to and from the Coastal Zone and adjacent cities along the I-710 Corridor. Therefore, the build alternatives are consistent with Goal B because they would improve conditions on an existing facility located in the Coastal Zone used to transport goods and people at a local and regional level and would not result in adverse impacts to Coastal Zone resources.
Goal C: Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners.	The build alternatives would reduce congestion on the existing I-710 mainline, thereby facilitating vehicular access to the coast, including coastal resources in downtown Long Beach. The I-710 Corridor Project would not adversely impact existing parks in the Coastal Zone and would not adversely affect public recreation opportunities or sound resource conservation principles in the Coastal Zone. While the build alternatives would require relocation of residences and businesses located in the Study Area, some of which are located in the Coastal Zone near the I-710/Anaheim St. interchange, all relocations would comply with the Uniform Act, which requires that relocation services and payments be made available to the eligible residents, businesses, and nonprofit organizations displaced by the project (refer to Section 3.3.2 for additional detail). Therefore, the build alternatives are consistent with Goal C because they would improve access to the Coastal Zone and would not result in adverse impacts to public recreational opportunities, sound resource conservation, or private property in the Coastal Zone.
Goal D: Assure priority for coastal-dependent and coastal-related development over other development on the coast.	The I-710 Corridor Project includes improvements to an existing transportation facility that serves local residents as well as local and regional goods movement and is not identified as a coastal-dependent or coastal-related development. However, improvements to the I-710 mainline and the proposed freight corridor under Alternative 7 would improve access and reduce congestion for goods movements for

Table 3.1-2: California Coastal Act Consistency

Goals	Consistency Analysis
	adjacent coastal-dependent developments, including the Port of Long Beach and Port of Los Angeles. Therefore, the I-710 Corridor Project is consistent with Goal D.
Goal E: Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.	The build alternatives would improve an existing transportation facility that was first constructed as a freeway in the Coastal Zone in the 1950s. The I-710 Corridor Project is intended to improve air quality and health, improve traffic safety, address design deficiencies of the I-710 mainline, address projected traffic volumes, and address projected growth in population, employment, and activities related to goods movement. The I-710 Corridor Project includes an extensive community outreach effort, including multiple local and regional agencies, members of the public, and representatives from local groups and organizations to coordinate planning and address the communities' concerns. Therefore, the I-710 Corridor Project is consistent with Goal E.

BMPs = Best Management Practices
I-710 = Interstate 710
Uniform Act = Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970

POLA MASTER PLAN. The I-710 Corridor Project is not located within the POLA Master Plan Area and will, therefore, not have a direct impact. Nonetheless, the project is consistent with the POLA Master Plan, as it would improve an existing transportation facility and better promote and safely accommodate goods movement.

POLB MASTER PLAN. The build alternatives are consistent with the POLB Master Plan because the project would improve an existing facility and would not introduce new non-port-related uses to the POLB Master Plan District 1 and would not prevent the POLB from redeveloping private properties that become available for port-related uses.

CITY OF LONG BEACH LCP. As discussed above, the proposed I-710 Corridor Project improvements are located in the vicinity of existing office uses in the West Beach area of the Downtown Shoreline Policy Plan. Within the West Beach area, permitted uses are the existing uses and the plan calls for these to remain. The I-710 Corridor Project would improve an existing local arterial within the West Beach area; therefore, the I-710 Corridor Project is a permitted use under the City of Long Beach LCP.

THE CITY OF LONG BEACH COMMUNITY LIVABILITY PLAN. The proposed I-710 Corridor Project is consistent with the primary goals identified in the City of Long Beach Community Livability Plan. As described in Section 1.2 of this RDEIR/SDEIS, the project purpose is to address current and future health and traffic related safety

impacts to I-710 corridor users and surrounding neighborhoods, as well as provide design solutions to improve the physical environment for residents in the surrounding neighborhoods.

NO BUILD ALTERNATIVE. Under Alternative 1, no improvements would be made within the I-710 Corridor other than the projects that are already planned and committed to be constructed by or before 2035. Not improving the I-710 Corridor would be inconsistent with regional plans such as the 2016 RTP and several affected city General Plans that specifically call for improvements to I-710.

PUBLIC HEALTH CONSIDERATIONS. Public health was determined not to be a topic of concern for the consistency analysis of State, regional, and local plans.

3.1.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

As discussed previously in this section, if approved, the build alternatives would require amendments to the affected cities' General Plans to reflect the final alignment of the I-710 mainline, to reflect modified and/or new interchange locations, and to change the land use designations on properties that would be acquired for the project to a transportation or public use designation. Measure LU-1 below would be applicable to all build alternatives to ensure consistency with future land use planning. With implementation of Measure LU-1, no residual impact would result relative to future land use impacts and plan consistency. Coordination with local and regional jurisdictions has and will continue to occur during project planning, and it is anticipated that these amendments could occur in the normal course of General Plan updates required in accordance with California law (e.g., a special amendment process specifically to address the I-710 Corridor Project would not be necessary).

LU-1 Following approval of the Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Interstate 710 (I-710) Corridor Project and filing of a Notice of Determination with the State Clearinghouse, the California Department of Transportation (Caltrans) shall request that the affected Cities and the County to amend their respective General Plans to reflect the final alignment, interchange locations, and modification of land use designations for properties that would be acquired for the project, during the next cycle of amendments to each local jurisdiction's General Plan Circulation and Land Use Elements. The timing of the preparation and processing of such General Plan amendments will be at the discretion of each local jurisdiction. Caltrans will also initiate amendments to existing freeway agreements with cities where the build alternatives would add or remove access to I-710 or Interstate 405 (I-405).

3.1.3 PARKS AND RECREATION FACILITIES

3.1.3.1 AFFECTED ENVIRONMENT

Parks and recreation facilities that meet the definition of Section 4(f) properties are described in detail in the *Draft Section 4(f) and 6(f) Evaluation* (2017) provided in Appendix B of this RDEIR/SDEIS. Recreation resources that are not Section 4(f) properties are also discussed in this section and described briefly in the *Draft Section 4(f) and 6(f) Evaluation*.

Table 3.1-3 includes a list of publicly and privately owned parks and recreation facilities in the Study Area within 0.5 mile of the I-710 Corridor Project improvements where direct and/or indirect impacts could result. The parks and recreation resources are listed by city/community and are shown on Figure 3.1-3. There are no parks or recreation facilities within 0.5 mile of the I-710 Corridor Project improvements in the Communities of Boyle Heights, Wilmington, San Pedro, and East Los Angeles, or within the Cities of Huntington Park, Lakewood, and Signal Hill.

LOCAL MULTI-USE TRAILS. The Los Angles River Trail is a multi-use trail that is approximately 9.9 miles in length. The trail begins where the Rio Hondo River intersects with the Los Angeles River, near Imperial Hwy. and runs along the east side of the Los Angeles River. The trail ends at West Willow Street, in the City of Long Beach. The trail generally runs parallel to the bicycle path along the dirt shoulder. Segments of the trail are seperated from the bicycle path by fencing, river bank stabliaztion devices or by open space. Mountain biking, hiking and equestrian activities are allowed on the multi-use trail.

REGIONAL BIKEWAYS. Regional bikeways within the Study Area include the Los Angeles River Trail, the Rio Hondo Trail, and the Compton Creek Bike Path. Within the Study Area, the Los Angeles River Trail runs parallel to the I-710 mainline from the City of Long Beach to the City of Vernon, and access points are provided along the Trail near local interchanges, parks, and other trail connections (refer to Figure 3.1-4). The Los Angeles River Trail is a Class 1 Bikeway, meaning the Trail is completely separated from truck and automobile traffic.

The Rio Hondo Trail, a Class 1 Bikeway, is also located within the Study Area (refer to Figure 3.1-4). The southern terminus of the trail is located in the City of South Gate and proceeds in a northeasterly direction toward the City of El Monte.

The Compton Creek Bike Path, Class 1 Bikeway, is located within the Study Area along the east bank of Compton Creek. The northern terminus of the trail is located in the City of Compton and proceeds southeasterly through the City of Compton and unincorporated Rancho Dominguez. The trail ends at Del Amo Blvd. near the confluence of Compton Creek and the Los Angeles River in the City of Long Beach, and a connection to the Los Angeles River Trail is provided to the east along Del Amo Blvd.

Table 3.1-3: Existing Parks and Recreation Facilities within 0.5 Mile of the I-710 Corridor Project Improvements

Resource	Address	Amenities
Veteran's Memorial Park	6526 Wilcox Ave., City of Bell	Veteran's Memorial Park is an approximately three-acre community park that offers a tot lot, game courts, a picnic area, softball fields, and meeting rooms.
Rancho San Antonio Sports Plaza	7100 Walker Ave., City of Bell	Rancho San Antonio Sports Park is a 2.7-acre neighborhood park that offers a softball field and snack bar.
Marlow Park	6640 Marlow Ave., City of Bell Gardens	Marlow Park is a 0.6-acre mini-park located at the northeast corner of Marlow Ave. and Lubec St. Amenities include two play structures in sand areas, a tetherball pole, concrete walkways, park lighting, benches, picnic tables, barbeque grills, mature shade trees, a multi-use building (Community Center) with restrooms, and a small grass area.
Julia Russ Asmus Park	8321 Jaboneria Rd., City of Bell Gardens	Amenities at this park include playground equipment, a swing set, a basketball court, a picnic shelter, picnic tables, restrooms, and benches.
Youth Center	5658 Ludell St., City of Bell Gardens	The Youth Center is open Monday through Thursday from 2:00 p.m. to 7:00 p.m. and on Friday from 2:00 p.m. to 8:00 p.m. Activities include a variety of programs for youth and adults.
Dominguez Park	21330 Santa Fe Ave., City of Carson	Dominguez Park is a nine-acre neighborhood park that has ball fields, basketball courts, a children's play area, meeting/craft rooms, picnic areas, a snack bar, tennis courts, and a swimming pool.
Dominguez Community Center	21156 Santa Fe Ave., City of Carson	Dominguez Community Center provides a meeting room, a kitchen, and restrooms.
Bandini Park	4725 Astor Ave., City of Commerce	Bandini Park is a 3.1-acre neighborhood park that offers basketball and volleyball courts; athletic fields; picnic shelters; a playground; and a children's wading pool. The Batres Community Center is located at Bandini Park and offers recreational programs and activities for all ages.
Bristow Park	1466 McDonnell Ave., City of Commerce	Bristow Park is an approximately 11-acre neighborhood park that offers outdoor activities such as organized youth sports; picnic shelters; playgrounds; and a children's wading pool. The park has a community center that offers a variety of recreational programs. In addition, a Scout Hut is located at Bristow Park and is used by the various scouting organizations in the City of Commerce and by the Department of Parks and Recreation for youth programs.
Kelly Park	2319 E. Caldwell St., City of Compton	Kelly Park is a 3.8-acre park that offers a community center equipped with a kitchen and stage, meeting rooms, a picnic area with barbeque pits, children's playground equipment, an outdoor basketball court and volleyball court, a junior baseball diamond, and outdoor restrooms.

Table 3.1-3: Existing Parks and Recreation Facilities within 0.5 Mile of the I-710 Corridor Project Improvements

Resource	Address	Amenities
East Rancho Dominguez County Park	15116 S. Atlantic Ave., City of Compton	East Rancho Dominguez County Park is a five-acre park that offers a gymnasium, a large community building, tennis courts, lighted basketball courts, a picnic area with barbeque grills, and restrooms.
Compton Par 3 Golf Course	6400 E. Compton Blvd., City of Compton	The Compton Par 3 Golf Course has a fully stocked pro shop, a snack bar, and off-street parking.
Compton Hunting and Fishing Club	1625 S. Sportsman Dr., City of Compton	This facility includes an underground firing range and offers meeting rooms for use by various organizations.
Compton Homing/Racing Pigeon Club	1620 S. Sportsman Dr., City of Compton	This facility consists of a meeting building and parking lot.
Cudahy Park	5220 Santa Ana St., City of Cudahy	Amenities at this park include two softball fields, one soccer field, a tennis court, a basketball court, playground equipment, a skate park, City Hall, and the Cudahy Library.
River Road Pocket Park	River Rd.	Amenities at this park include benches and a walkway for cyclists that use the Los Angeles River bikeway.
Clara Park	4835 Clara St., City of Cudahy	Amenities at this park include an auditorium and full kitchen, daily activities for seniors, a full-size indoor basketball gym, and meeting rooms available for reservation.
Los Amigos Country Club	7295 Quill Dr., City of Downey	Los Amigos Country Club is a public 18-hole golf course owned and operated by the County of Los Angeles that features 5,937 yards of golf from the longest tees for a par of 70. The facility includes a clubhouse.
Temple Park	7132 Cole St., City of Downey	Temple Park is a 0.05-acre park with a play area.
Crawford Park	7000 Dinwiddie, City of Downey	This park is a two-acre park with a play area and picnic shelter.
14th Street Park	14th St. and Chestnut Ave., City of Long Beach	This park includes playground equipment.
Admiral Kidd Park	2125 Santa Fe Ave., City of Long Beach	This park provides amenities such as a basketball court, a playground, a soccer field, a picnic area, and restrooms.
Baker Street Park	625 Baker Street and Golden Ave., City of Long Beach	This park is 1.35 acres in size and has picnic and playground areas, and a walking path.
Burton W. Chace Park	W. Market St. and Dairy Ave., City of Long Beach	This park is 0.5 acre in size and has a basketball court, playground equipment, and a water play spray feature.
Cesar E. Chavez Park	401 Golden Ave., City of Long Beach	Cesar E. Chavez Park is approximately 25.5 acres in size and features basketball courts, a community center, a playground, a weight room, restrooms, and picnic areas. The community center is known as The Zone Teen and Senior Center and is located in the east side of park area.

Table 3.1-3: Existing Parks and Recreation Facilities within 0.5 Mile of the I-710 Corridor Project Improvements

Resource	Address	Amenities
Coolidge Park	352 E. Neece St., City of Long Beach	Facilities at this park include a basketball court, a softball field, a playground, a picnic area, a community center, and restrooms.
Daisy Avenue Greenbelt	Daisy Ave. and Pacific Coast Hwy., City of Long Beach	The Daisy Ave. Greenbelt is a wide, undeveloped street median with grass and trees.
DeForest Nature Trail	6255 DeForest Ave., City of Long Beach	The DeForest Nature Trail is part of Deforest Park.
DeForest Park	6255 DeForest Ave., City of Long Beach	Facilities at this park include a basketball court, a community center, a nature trail, a playground, a racquetball court, a softball field, a tennis court, a sand volleyball court, recreation classes, and restrooms.
DeForest and Dominguez Gap Wetlands	City of Long Beach	The DeForest Wetlands is a publicly owned multipurpose wetland area. The wetland area includes basins that provide for wildlife habitat, water quality improvement, groundwater recharge, passive recreation, and education. This is also a planned Riverlink Park destination site.
Drake Park	951 Maine Ave., City of Long Beach	The facilities at this park include a basketball court, a community center, a handball/racquetball court, a picnic area, a playground, a soccer field, a softball field, a tennis court, a volleyball court, and restrooms.
Golden Shore Marine Biological Reserve Park	Golden Ave., City of Long Beach	This park is located near the Golden Shore RV Park. It is a bird and aquatic life sanctuary.
Golden Shore RV Park	101 Golden Ave., City of Long Beach	Golden Shore RV Park is approximately five acres in size. It features 77 spaces with full hookups, 30/50 amp services, large picnic areas with tables, a pool and spa, a recreation/club room with a small kitchen facility, videogames, a sand volleyball court, horseshoes, shuffleboard, a children's playground, hot showers, a laundry room, a convenience store, barbeque pits, a phone hookup, and restrooms.
The Fitting Studio Golf Facility	3701 Pacific Pl., City of Long Beach	This facility features a driving range. It is privately owned and operated.
Hudson Park	2335 Webster Ave., City of Long Beach	This park is 13.1 acres in size and provides two lighted baseball/softball fields, one lighted soccer field, a picnic area, and a playground.
Houghton Park	6301 Myrtle Ave., City of Long Beach	This park provides such amenities as a baseball field, a basketball court, a community center, a picnic area, a playground, a soccer field, softball fields, tennis courts, a volleyball court, and restrooms.

Table 3.1-3: Existing Parks and Recreation Facilities within 0.5 Mile of the I-710 Corridor Project Improvements

Resource	Address	Amenities
Lincoln Park	Pacific Ave. and Broadway St., City of Long Beach	Lincoln Park is a total of 5.6 acres in area. It features a picnic area and open space. Lincoln Park has the distinction of being the oldest park in Long Beach. Originally known as Pacific Park, the area was officially designated as a park on the original town site of Long Beach in 1888.
Loma Vista Park	72nd Pl. and Ocean Blvd., City of Long Beach	Loma Vista Park is 0.23 acre in size and overlooks the scenic Alamitos Bay. Amenities provided include park benches, picnic tables, and play equipment.
Los Cerritos Park	3750 Del Mar Ave., City of Long Beach	Facilities at this park include play equipment, lighted tennis courts, and picnic areas.
Long Beach Aquarium	100 Aquarium Wy., City of Long Beach	This privately owned aquarium features 19 major habitats and 32 focus exhibits and is home to more than 11,000 ocean animals.
Rainbow Harbor Esplanade	Pine Ave. and South Shoreline Dr., City of Long Beach	This park provides open green space for public use and special events.
Rancho Los Cerritos	4600 Virginia Rd., City of Long Beach	Rancho Los Cerritos is a historic site with an adobe house and landscaped grounds. The property is 4.8 acres in size.
Rancho Rio Verde Riding Club	1000 W. Carson St., City of Long Beach	Rancho Rio Verde Riding Club provides horse riding lessons; equestrian, jumping, hunting, and boarding facilities; and transportation. It is privately owned and operated.
Seaside Park	City of Long Beach	Seaside Park is a planned park.
Shoreline Aquatic Park	Aquarium Wy., City of Long Beach	Shoreline Aquatic Park is located between the Long Beach Aquarium and the Downtown Shoreline Marina. It is a wide, open green area that is used for picnics and special events.
Silverado Park	1545 W. 31st St., City of Long Beach	Silverado Park provides baseball fields, a basketball court, a Teen and Senior Center, a gym, picnic areas, a playground, a swimming pool, a softball field, tennis courts, volleyball courts, and restrooms.
Sleepy Hollow Greenbelt	47th Pl. Ave. to Rio Ave.	This greenbelt is 5.4 acres in size and provides an area of open space.
South Shore Launch Ramp	590 Queensway Dr., City of Long Beach	This small boat launch ramp is located near the Queen Mary on Queensway Dr. and is open 24 hours per day.
South Street Parkway	South St. and Jaymills Ave., City of Long Beach	South Street Parkway is a 1.4-acre lot of open space.
Tanaka Park	1400 W. Wardlow Rd., City of Long Beach	Tanaka Park provides such amenities as a playground, a picnic area, benches, a walking trail, and a half-court basketball court.
Victory Park	Ocean Blvd., City of Long Beach	Victory Park is a total of 4.4 acres in area. It features a grassy area with a scenic ocean view along the south side of Ocean Blvd. between Alamitos Ave. and Magnolia Ave.
Virginia Country Club	4602 N. Virginia Rd., City of Long Beach	Virginia Country Club features 18 holes and 6,505 yards of golf from the longest tees for a par of 71. It is privately owned and operated.

Table 3.1-3: Existing Parks and Recreation Facilities within 0.5 Mile of the I-710 Corridor Project Improvements

Resource	Address	Amenities
Wrigley Greenbelt	City of Long Beach	This area provides green open space and a walking trail for residents to enjoy. It is 9.8 acres in size.
Wrigley Heights Dog Park	3401 Golden Ave., City of Long Beach	The Wrigley Heights Dog Park is a 1.9-acre dog park.
Wrigley Heights No.1	City of Long Beach	This is a Riverlink Park destination site.
Wrigley Heights No. 2	City of Long Beach	This is a Riverlink Park destination site.
Salazar Park	County of Los Angeles (unincorporated East Los Angeles)	Salazar Park provides a baseball field, basketball courts, play area, community room, computer center, gymnasium, outdoor fitness station, picnic shelters, senior center, swimming pool, and a tennis court.
Obregon County Park	County of Los Angeles (unincorporated East Los Angeles)	Obregon Park provides basketball courts, ceramic rooms, community room, computer center, fitness zone, gymnasium, multi-purpose field, swimming pool and a walking path.
Burke-Ham Park	11832 Atlantic Ave., City of Lynwood	This ten-acre park includes a baseball and soccer overlay; a basketball court; a tree-covered promenade; a tot lot; a restroom building; picnic and open grass areas; and a walking/jogging path that encircles the park's perimeter, with exercise stations along the route.
Maywood Park	4801 E. 58th St., City of Maywood	This park is 5.5 acres in size and is located in the eastern part of the city. The facilities located in this park include the Maywood Community Center, a baseball diamond/softball field, picnic facilities, and playground facilities and equipment.
Maywood River Park	5000 Slauson Ave., City of Maywood	This park is located in the eastern part of the city, along the Los Angeles River. Facilities include grass fields, a basketball court, parking, playground facilities and equipment, picnic facilities, and a walkway.
Spane Park	14400 Gundry Ave., City of Paramount	This park consists of a preschool, a playground, a fishing pond, a learning center (Paramount Education Partnership), a lighted basketball court, a lighted baseball diamond, a picnic area, an outdoor amphitheater, and restrooms.
Ralph C. Dills Park	6500 San Juan St., City of Paramount	This park consists of playgrounds, exercise stations, a nature trail, picnic areas, a walking/jogging path, and restrooms.
Orange Ave. Pool	14618 Orange Ave., City of Paramount	The Orange Ave. Pool is a public pool open to residents of the City of Paramount only during the summer.
Circle Park	10129 Garfield Ave., City of South Gate	Circle Park is a four-acre neighborhood park built in 1956 and renovated in 1976 and 2003. The park is semi developed with a full basketball court, one ball field with a backstop, open turf for soccer, a small parking lot, and a playground.
Gardendale Tot Lot	5480 Gardendale St.	Gardendale Tot Lot is a 0.45-acre mini park that was renovated in 2001. The tot lot is developed with a playground, benches, trash receptacles, street parking, and a path.

Table 3.1-3: Existing Parks and Recreation Facilities within 0.5 Mile of the I-710 Corridor Project Improvements

Resource	Address	Amenities
Hollydale Park	5400 Monroe Ave., City of South Gate	Hollydale Park is a 56-acre community park built in 1976. The park is partially developed with a playground, lighted tennis courts, handball courts, softball fields with a backstop, an equestrian center, a volleyball court, open turf areas for soccer, one large picnic shelter, a parking lot, stair access to the bike path, and an equestrian trail along Los Angeles River.
South Gate Park	4900 Southern Ave., City of South Gate	South Gate Park is a 96.8-acre community park that was acquired by the City of South Gate in 1936. The park is developed with an auditorium, a sports center with a gym and pool, nine softball fields, one baseball field, soccer fields, tennis courts, a golf course, a junior hockey rink, a skate park, a senior center, an Azalea Memorial Garden, the War Memorial, two playground areas, picnic areas with barbeque grills, basketball courts, handball courts, a sand volleyball court, Boy Scout huts, horseshoe courts, drinking fountains, restrooms, benches, trash containers, and three parking lots. South Gate Park includes the South Gate Girls Clubhouse, the South Gate Sports Complex and Swim Stadium, and South Gate Senior Center.
South Gate Municipal Golf Course	9615 Pinehurst Ave., City of South Gate	South Gate Golf Course is a nine-hole, par-three golf course that includes a snack bar, a driving range, and a pro shop.
Triangle Park	Atlantic Ave. and Rayo Ave., City of South Gate	Triangle Park is a 0.3-acre park with a special use area, a trail stop, a pergola, seating, bike racks, a drinking fountain, and parking.
Imperial Equestrian Center	5543 Leeds St., City of South Gate	This privately owned, full-service boarding and training facility features seven round pens and turnouts, a large riding arena with lights, four bathing stalls with lights, and 13 cross-tie stalls.
Parque Dos Rios	Imperial Hwy., I-710, City of South Gate	Parque Dos Rios is an 8.6-acre parcel located in the triangle generally formed by the Los Angeles River to the east, Imperial Hwy. to the south, and the I-710 to the west. The Los Angeles River Trail is aligned along the east boundary of the Parque Dos Rios, between the Park and the Los Angeles River. The following recreation facilities and amenities are planned to be provided at Parque Dos Rios when the project is open to the public: overlook decks, seating areas, coastal sage scrub habitat area for birds and animals, shaded area with a picnic table, drinking fountain, bike rack, raptor perches, decorative fencing, and bilingual interpretive signs on the history of the City of South Gate and the Los Angeles and Rio Hondo Rivers.

Sources: Los Angeles County Metropolitan Transportation Authority. *Community Impact Assessment* (July 2017) and *Draft Section 4(f) and 6(f) Evaluation* (2017).
I-710 = Interstate 710
RV = recreational vehicle

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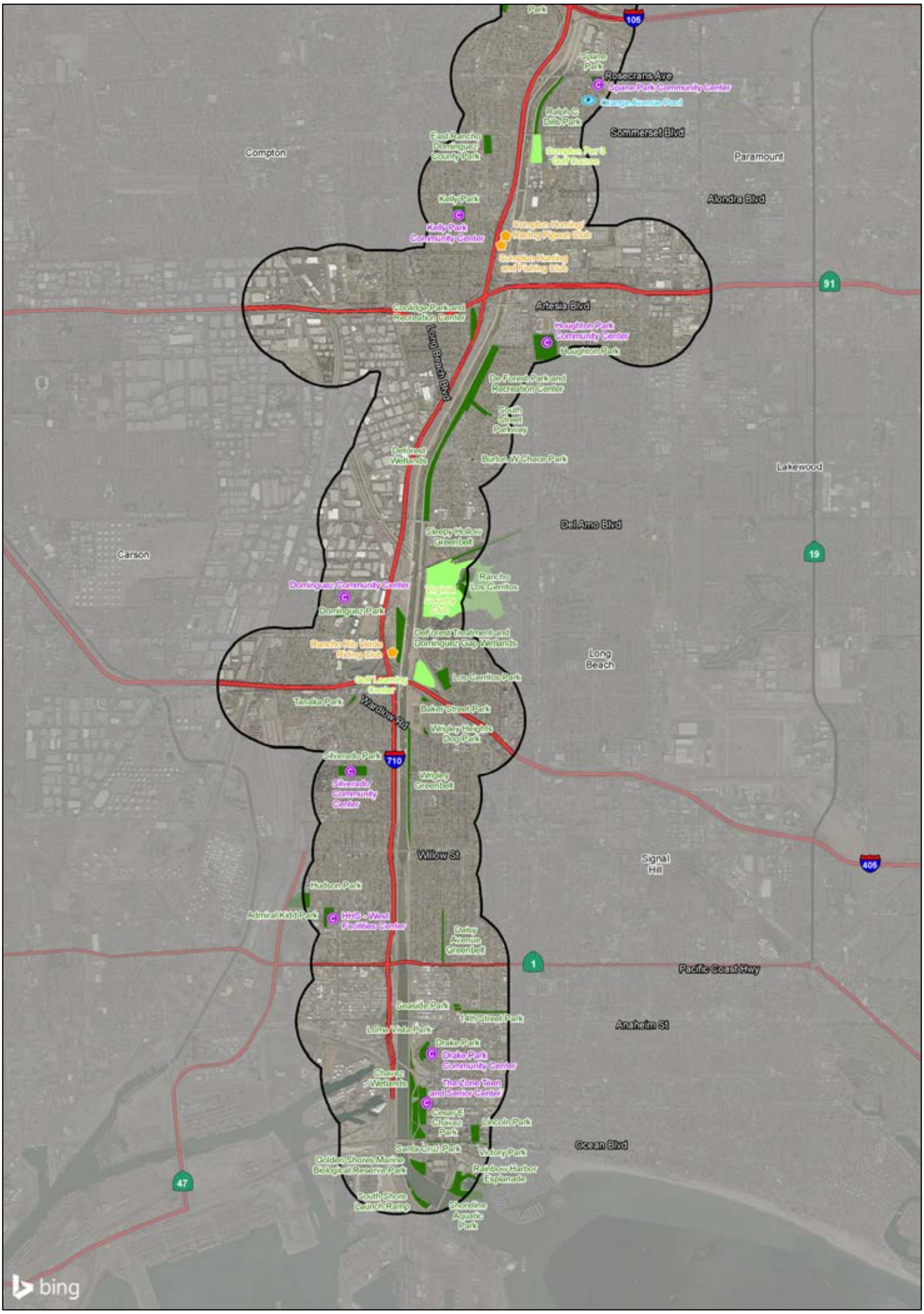

LEGEND

- I-710 Focus Area
- Park
- Golf Course
- Community Pool
- Community Center
- Other Facility

0 2100 4200
FEET

SOURCE: Bing Maps (2014); LA County LMS (1/2016)

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FIGURE 3.1-3

I-710 Corridor Project RDEIR/SDEIS

Park and Recreation Facilities

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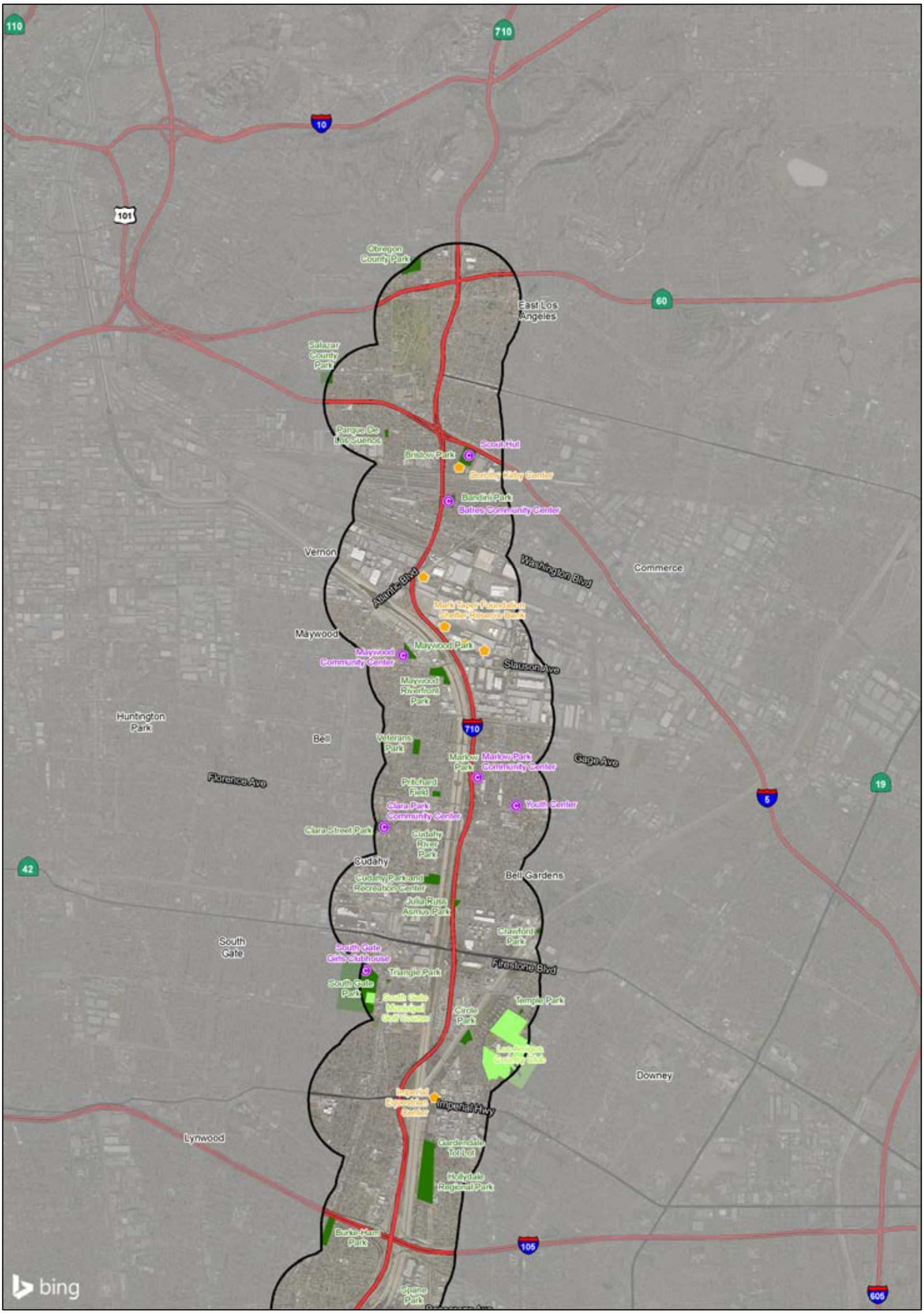

LEGEND

- I-710 Focus Area
- Park
- Golf Course
- Community Pool
- Community Center
- Other Facility

0 2100 4200
FEET

SOURCE: Bing Maps (2014); LA County LMS (1/2016)

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FIGURE 3.1-3
Page 2 of 2

I-710 Corridor Project RDEIR/SDEIS

Park and Recreation Facilities

07-LA-710- PM 5.4/24.5
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LEGEND

I-710 Study Area

Class 1 Bikeway

Class 2 Bikeway

Class 3 Bikeway

Bikeway Access Point

0 4500 9000

FEET

SOURCE: BING (2014); METRO (2012)

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FIGURE 3.1-4

I-710 Corridor Project
RDEIR/SDEIS

Regional and Local Bikeways

07-LA-710- PM 5.4/24.5
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LOCAL BIKEWAYS. Within the Study Area, there are several Class 1, 2, and 3 Bikeways that provide local bicycle access (refer to Figure 3.1-4). These local bikeways are discussed in Table 3.1-4.

Table 3.1-4: Local Bikeways within the Study Area

Bikeway Class	Location of Bikeways
Class 1	▪ Along Central Ave. from approximately the intersection of Del Amo Blvd. and the I-710 interchange to the south, and just south of East El Segundo Blvd. to the north, near the City of South Gate ▪ Just west of the Port of Los Angeles along Crescent Ave. (adjacent to the 22nd St. Park) and just south of Cabrillo Beach Park ▪ Immediately north-northeast of the Port of Long Beach along South Harbor Scenic Dr., Shoreline Dr., Ocean Blvd., Queens Wy., 3rd St., and Broadway, north-northeast of the Port of Long Beach, and Magnolia St., between Ocean Blvd. and West Shoreline Dr. ▪ Along Compton Creek, north and south of SR-91 ▪ Along Carson St., east of Paramount Ave. and west of Lakewood Blvd. in the City of Long Beach
Class 2	▪ Along Pacific Ave., between West 22nd St. and Shepard St., just west of the Port of Los Angeles ▪ Along North Harbor Blvd./North Front St. from North Pacific Ave. to 6th St., just west of the Port of Los Angeles ▪ Along segments of 1st and 2nd Sts. and 6th and 7th Sts., immediately north- northeast of the Port of Long Beach ▪ Along Cherry Ave. with a northern terminus near Alondra Blvd. in the City of Paramount and a southern terminus at approximately the I-405 and the SR-91 interchange in the City of Long Beach ▪ Along Central Ave., Alondra Blvd., Santa Fe Ave., and Greenleaf Blvd., south of I-105 and north of SR-91 within and adjacent to the City of Compton ▪ Segments of Spring St., Candlewood Ave., Hardwick St., South St., Downey Ave., Del Amo Blvd., Paramount Blvd., Atlantic Ave., E. 70th St., and Orange Ave. in the City of Long Beach
Class 3	▪ Segments along East 8th St. and South Lorena St. in the City of Los Angeles. ▪ Segments along Orange Ave., 45th St., Market St., and South St., in the City of Long Beach ▪ A segment along Pacific Coast Hwy. east of Alameda St. and west of North Lakewood Blvd., located immediately north-northeast of the Port of Long Beach ▪ Pacific Ave. and Alamitos Ave., from Pacific Coast Hwy. to Ocean Blvd., and a small segment of Magnolia Ave., south of 7th St. and north of Broadway, located immediately north-northeast of the Port of Long Beach

Sources: Various City and County General Plans.

Class 1 Bikeways provide a completely separated right of way for the exclusive use of bicycles and pedestrians, with cross-flow by motorists minimized. Class 2 Bikeways provide a striped lane for one-way bike travel on a street or highway. Class 3 Bikeways provide for shared use by pedestrian or motor vehicle traffic.[1]

[1] California Department of Transportation. 2006. *Highway Design Manual*, Chapter 1000 Bikeway Planning and Design.

3.1.3.2 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to land use are located in Section 3.24.3.1. However, for consistency with the Section 4(f) evaluation, measures regarding temporary impacts to parks and recreational resources are provided below in Section 3.1.3.3.

PERMANENT IMPACTS.

BUILD ALTERNATIVES. Table 3.1-5 lists the permanent direct and indirect impacts to parks and recreation facilities by the build alternatives. Use impacts were evaluated based on overlaying the alternative footprints/right-of-way limits on the geographic information system (GIS) mapping of the boundaries of the Section 4(f) properties, including recreational facilities. Locations where the footprints/right-of-way limits for the build alternatives would result in the acquisition of land from these Section 4(f) properties were identified.

Table 3.1-5: Permanent Direct and Indirect Impacts to Parks and Recreation Facilities

Park	Address	Owner/Operator	Direct or Indirect Impact
Julia Russ Asmus Park	8321 Jaboneria Rd., Bell Gardens	City of Bell Gardens	Improvements to the I-710 mainline and local arterials would not result in direct impacts to the park. As indicated in the *Traffic Noise Study Report* (Caltrans 2016) prepared for the proposed project, sound barriers were found to be feasible under the I-710 Corridor Project Build Alternatives along the east side of I-710 that could provide noise reduction to this park and surrounding land uses.
Bandini Park	1466 McDonnell Ave., Commerce	City of Commerce	The park is located adjacent to the I-710 mainline; however, the build alternatives have been designed to avoid direct impacts to this park. However, Alternatives 5C and 7 would require a permanent 0.10-acre aerial easement over the northwest corner of this park for an overhead I-710 structure. Alternatives 5C and 7 would require a 0.11-acre TCE and temporary closures of the park during construction to protect the safety of park visitors and project construction workers. Additionally, temporary closures of portions of the park due to both build alternatives would occur during construction to protect the safety of park visitors and project construction workers.

Table 3.1-5: Permanent Direct and Indirect Impacts to Parks and Recreation Facilities

Park	Address	Owner/Operator	Direct or Indirect Impact
			Because of these park uses, this park is addressed further in the *Draft Section 4(f) and 6(f) Evaluation* (refer to Appendix B of this RDEIR/SDEIS). As indicated in the *Traffic Noise Study Report* (Caltrans 2016) prepared for the proposed project, two sound barriers were found to be feasible under Alternative 7 along the east side of I-710 that could provide noise reduction to the park and surrounding land uses. These sound barriers would also have a beneficial visual effect to park users by screening out views of vehicles on the I-710 freeway.
Compton Par 3 Golf Course	6400 E. Compton Blvd., Compton	City of Compton	The golf course is not located adjacent to the I-710 mainline or along arterials impacted as a result of the I-710 Corridor Project Build Alternatives (the Los Angeles River separates the I-710 mainline and the golf course); therefore, the build alternatives would not result in direct impacts to this golf course. As indicated in the *Traffic Noise Study Report* (Caltrans 2016) prepared for the proposed project, for Alternative 7, noise abatement (in the form of a sound barrier) was determined to be acoustically not feasible as it would provide only two dBA in noise reduction.
Compton Hunting and Fishing Club	1625 S. Sportsman Dr., Compton	Private	Alternative 5C would result in a full acquisition of this recreational facility as a result of widening the freeway mainline. Alternative 7 would result in a full acquisition of this recreational facility as a result of the freight corridor.
Compton Homing/Racing Pigeon Club	1620 S. Sportsman Dr., Compton	Private	Alternative 7 would result in direct impacts to this facility. The alternative requires a full acquisition of the parcel of land occupied by this facility.
River Park	River Rd., Cudahy	City of Cudahy	During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access to the park from Clara St.; however, a TMP would be prepared to minimize impacts and provide alternative access points, if necessary (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.1-5: Permanent Direct and Indirect Impacts to Parks and Recreation Facilities

Park	Address	Owner/Operator	Direct or Indirect Impact
Clara Park	4835 Clara St., Cudahy	City of Cudahy	During construction, the I-710 Corridor Project Build Alternatives also have the potential to result in temporary impacts to access to the park from Clara St.; however, a TMP would be prepared to minimize impacts and provide alternative access points, if necessary (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Golden Shore RV Park	101 Golden Ave., Long Beach	City of Long Beach	As indicated in the *Traffic Noise Study Report* (Caltrans 2016) prepared for the proposed project, a sound barrier is proposed under the Early Action Sound Wall project along the south side of Shoreline Dr. that could provide noise reduction to this RV park.
DeForest Treatment and Dominguez Gap Wetlands	North Long Beach Ave., Long Beach	City of Long Beach	Alternative 5C and Alternative 7 would require the construction of a wider bridge over the DeForest Market Street Basin at North Long Beach Blvd., requiring an expanded bridge and aerial easement that is 0.95 acre wider than the existing bridge and easement. Also, Alternative 7 would remove the West Basin. However, approximately 9.54 acres of the basin would be restored in the same location as the existing basin following construction, and only 5.4 acres from the West Basin would be permanently incorporated into the transportation facility. Therefore, Alternative 7 would result in an overall net loss of 3.76 acres from the existing basin area. While the basin would be reduced in size from 13.3 acres to 9.54 acres, the new basin would serve a similar function as the existing basin, and recreational activities would still be available on the property. Because of these uses of this recreation area, this recreation area is addressed further in the *Draft Section 4(f) and 6(f) Evaluation* (refer to Appendix B of this RDEIR/SDEIS).

Table 3.1-5: Permanent Direct and Indirect Impacts to Parks and Recreation Facilities

Park	Address	Owner/Operator	Direct or Indirect Impact
Cesar E. Chavez Park	401 Golden Ave., Long Beach	City of Long Beach	Shoreline Dr. consists of separated northbound/ southbound lanes (one in each direction) routed through Cesar E. Chavez Park. Under the build alternatives, Shoreline Dr. would be combined and reconstructed to two through lanes in each direction along the western edge of the park between Ocean Blvd. and Shoemaker Bridge. The existing lanes would be removed and the available land restored and landscaped to become an accessible part of Cesar E. Chavez Park, therefore resulting in a beneficial impact for the community. This change would improve access to the park, as well as provide for a larger contiguous recreation area (based on the proposed design, it is estimated that 2.90 acres will be permanently impacted by the build alternatives but that with the integration of land previously used for Shoreline Dr., the park will experience a net increase of 2.99 acres. Implementation of the build alternatives would result in a larger, more functional park with a total of 28.38 acres of park area. The Teen and Senior Centers would be maintained. A reduction in the amount of land available in the part of the park bounded by North Golden Ave., 3rd St., Shoreline Dr., and Broadway Ave., which is jointly used with Cesar E. Chavez Elementary School and governed by a Joint Use Agreement would occur (2.69 acres under existing conditions to 2.1 acres with the project). Because of these uses of the park, this park is addressed in the *Draft Section 4(f) and 6(f) Evaluation* (refer to Appendix B of this RDEIR/ SDEIS). During construction of Alternative 5C and Alternative 7, approximately 21.9 acres of Cesar E. Chavez Park would be required for a TCE (only 19 acres would be exclusively required for the TCE because 2.90 acres of the TCE area would be permanently incorporated), which would include 0.41 acre of land for a detour road within the park during construction and the realignment of Broadway. Also, during construction of either build alternative, parts of Cesar E. Chavez Park may be temporarily closed to public access, to protect the safety of park

Table 3.1-5: Permanent Direct and Indirect Impacts to Parks and Recreation Facilities

Park	Address	Owner/Operator	Direct or Indirect Impact
			users and the project construction workers. The closed areas would not be used for any construction activities and would be returned to public use in the same or better condition as when the areas were closed off to public access. Under Alternative 5C and Alternative 7, the removal of the basketball courts west of Cesar E. Chavez Elementary School would be required. However, the basketball courts would be replaced following construction to ensure that the activities, functions, and features of the park would not be adversely affected.
Drake Park and the Drake/ Chavez Greenbelt (planned)	951 Maine Ave., Long Beach	City of Long Beach	The City of Long Beach is conducting the planning process for the Drake/Chavez Greenbelt Project, and the Draft Master Plan for the approximately 50-acre proposed greenbelt shows extensive proposed connections among existing Cesar E. Chavez Park, the Los Angeles River Trail, and Loma Vista Park, in addition to a wide range of recreational and other public amenities within the greenbelt. Alternatives 5C and 7 would require permanent incorporation of a portion of the planned linkage between Drake Park and Cesar E. Chavez Park. However, the majority of land identified in the Draft Master Plan for the Drake/Chavez Greenbelt is outside the limits of this project and would not be impacted. A TCE on the Drake/Chavez Greenbelt would be required during construction of either of the build alternatives, but this would be temporary in nature and the land used for the TCE would be returned in equal or better condition.
Wrigley Heights No. 2	Planned in Long Beach	City of Long Beach	During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access along Wardlow Rd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.1-5: Permanent Direct and Indirect Impacts to Parks and Recreation Facilities

Park	Address	Owner/Operator	Direct or Indirect Impact
Tanaka Park	1400 W. Wardlow Rd., Long Beach	City of Long Beach	During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access along Wardlow Rd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
The Fitting Studio Golf Facility	3701 Pacific Pl., Long Beach	Private	Improvements to the I-405 and I-710 connectors would result in impacts to parking; however, the facility would not be relocated. Improvements are also planned to the I-710/Pacific Pl. interchange; therefore, construction of the I-710 Corridor Project Build Alternatives has the potential to result in temporary impacts to access along N. Pacific Pl. However, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Rancho Rio Verde Riding Club	1000 W. Carson St., Long Beach	Private	The build alternative improvements at the I-710/I-405 interchange would not impact this facility; therefore, the I-710 Corridor Project Build Alternatives would not result in direct impacts to this club. Construction of the I-710 Corridor Project Build Alternatives has the potential to result in temporary impacts to access on W. Carson St. However, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Coolidge Park	352 E. Neece St., Long Beach	City of Long Beach	Improvements to the I-710 mainline and Artesia Blvd. would not result in direct to this park; improvements would be made within the existing right of way. However, during construction the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access along Artesia Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.1-5: Permanent Direct and Indirect Impacts to Parks and Recreation Facilities

Park	Address	Owner/Operator	Direct or Indirect Impact
			As indicated in the *Revised Visual Impact Assessment* (2017) prepared for the proposed project, Key View 8 is located at this park. Both build alternatives would result in incremental changes in visual quality ratings, resulting in a low visual impact under Alternative 5C and a moderately low visual impact under Alternative 7.
Maywood River Park	5000 Slauson Ave., Maywood	City of Maywood	The Los Angeles River separates the park and the I-710 mainline. Interchange improvements at Slauson Ave. would not directly impact the park. However, as indicated in the *Revised Visual Impact Assessment* (2017) prepared for the proposed project, Key View 18 is located at this park, facing east toward I-710. The visible changes for Alternatives 5C and 7 would be minimal, and in the distance, there would be very little change in the visual quality. The resulting visual impact for both alternatives would be low (1.6 and 1.9, respectively). During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access to the park from Slauson Ave.; however, a TMP would be prepared to minimize impacts and provide alternative access points, if necessary (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Spane Park	14400 Gundry Ave., Paramount	City of Paramount	The park is not located adjacent to the I-710 mainline. Interchange improvements at Rosecrans Ave. would not directly impact the park; therefore, the I-710 Corridor Project Build Alternatives would not result in direct impacts to this park. During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access along Rosecrans Ave; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.1-5: Permanent Direct and Indirect Impacts to Parks and Recreation Facilities

Park	Address	Owner/Operator	Direct or Indirect Impact
Ralph C. Dills Park	6500 San Juan St., Paramount	City of Paramount	The Los Angeles River separates the park and the I-710 mainline. Interchange improvements at Rosecrans Ave. would not directly impact the park. During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access along Rosecrans Ave; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete. As indicated in the *Traffic Noise Study Report* (Caltrans 2016) prepared for the proposed project, under Alternative 7, there would be a substantial noise increase resulting in noise impacts. Noise abatement was considered in the form of a sound wall along the proposed truck lanes; however, it has been determined to be acoustically not feasible.
Meadows Park	15753 Gundry Ave., Paramount	City of Paramount	The park is not located adjacent to the I-710 mainline. Improvements to Alondra Blvd. would not result in direct impacts to the park. During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Imperial Equestrian Center	5543 Leeds St., South Gate	Private	The equestrian center is not located adjacent to the I-710 mainline and improvements to Imperial Hwy. would not result in direct impacts to the recreational facility. During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access along Imperial Hwy. west of the equestrian center; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.1-5: Permanent Direct and Indirect Impacts to Parks and Recreation Facilities

Park	Address	Owner/Operator	Direct or Indirect Impact
			As indicated in the *Revised Visual Impact Assessment* (2017) prepared for the proposed project, Key View 12 shows the Lario Trail, next to the Los Angeles County Flood Channel. This Key View is located just southeast of the Equestrian Center. The visual impacts for both Alternative 5C and Alternative 7 would be moderately low.
Parque Dos Rios	Imperial Hwy., I-710, South Gate	Watershed Conservation Authority	The build alternatives would result in direct impacts to the planned park. Alternative 5C would result in the permanent use of 1.68 acres of land on the west side of this park. Alternative 7 would result in the permanent incorporation of 3.21 acres of land from Parque Dos Rios into the transportation facility. However, the remnant parcel outside the alternative footprint would have limited functionality and accessibility. Therefore, Alternative 7 would result in the permanent use of the entire 8.6-acre park. Additionally, Alternative 5C would require the use of 0.26 acre for a TCE, while Alternative 7 would require no TCE use from this park. Because of these park uses, this park is addressed further in the *Draft Section 4(f) and 6(f) Evaluation* (refer to Appendix B of this RDEIR/SDEIS). During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access along Imperial Hwy.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete. Under Alternative 5C, once construction is completed, the park would be reduced in size but would remain a functional park. Under Alternative 7, the use of the parkland would limit the functionality of the remaining parkland and, therefore, would require the acquisition of the entirety of the park.

Source: Los Angeles County Metropolitan Transportation Authority. *Community Impact Assessment* (July 2017).
Caltrans = California Department of Transportation
CIA = Community Impact Assessment
dBA = A-weighted decibels
I-405 = Interstate 405
I-710 = Interstate 710
TMP = Transportation Management Plan

Table 3.1-5 also identifies those parks and recreation facilities where the impacts would constitute use of a Section 4(f) property. The Draft Section 4(f) and 6(f) Evaluation (2017), provided in Appendix B, evaluated the identified Section 4(f) and 6(f) properties to assess whether the build alternatives would result in a use of property from those resources.

The build alternatives would not result in permanent adverse impacts to regional or local trails or bikeways. Beneficial impacts associated with the creation of bike overcrossings would be expected due to the creation of connectivity and access to local parks.

NO BUILD ALTERNATIVE. Alternative 1 proposes no improvements to the I-710 Corridor; therefore, it would not result in the direct and indirect permanent impacts to parks and recreation facilities described above.

PUBLIC HEALTH CONSIDERATIONS.

PUBLIC HEALTH STATEMENT: Increased access to parks is associated with increases in physical activity, reductions in chronic disease, stress, and obesity; increased opportunities for relaxation, reducing stress; and increased interaction with neighbors, improving social cohesion (P. Simon et al. 2009).

VISUAL IMPACTS. As shown in Table 3.1-4, a low visual impact to Coolidge Park, would result with implementation of the I-710 Corridor Project Build Alternatives. Similar impacts are anticipated for other parks and recreation facilities located adjacent to or in proximity of the I-710 mainline and proposed freight corridor. The visual impact of the build alternatives would be low at Maywood River Park, and the visual impact at Bandini Park would be moderately low. Because these parks are within an existing urban environment, these visual impacts are not expected to reduce the public's use of parks adjacent to I-710.

AIR QUALITY. According to the *Air Quality, Greenhouse Gas, and Health Risk Assessment* (AQ/GHG/HRA) (2017), compared to the 2012 existing Baseline conditions, cancer risk decreases at sensitive receptors, such as parks, under all 2035 project alternatives. Additionally, compared to the 2012 Baseline, vehicle exhaust emissions, including air toxics and inhalable particulate matter, and related impacts, decrease for all 2035 project alternatives. Overall, the greatest reductions generally occur under Alternative 7 due to its zero emissions freight corridor element. Refer to Section 3.13, Air Quality, for a detailed discussion of the AQ/HRA results.

NOISE. The need for noise abatement is also determined according to which areas may experience noise that approaches or exceeds the Federal Noise Abatement Criteria (NAC). The *Traffic Noise Study Report* found that there are areas of the Study Area that will approach or exceed the NAC. As a result, sound walls are proposed at locations throughout the I-710 Corridor. The noise reduction provided by these sound walls will provide beneficial

effects to visitors of these parks and recreational facilities along the Corridor. Refer to Section 3.14, Noise, for a detailed discussion of the Noise Study Report results.

PARK ACCESS. The build alternatives would improve local roadways by constructing new curbs, gutters, and striping as well as new sidewalks and outside shoulders to allow pedestrian and bikeway connections. The build alternatives would also directly impact Cesar E. Chavez Park, Parque Dos Rios, Bandini Park, the Compton Hunting and Fishing Club and the Compton Homing/Racing Pigeon Club (directly impacted by Alternative 7 only). The expansion and reconfiguration of Cesar E. Chavez Park would have indirect beneficial public health effects by increasing opportunities for public use of the park following the completion of construction, and by shifting the travel lanes further away from active use area of the park. Additionally, some parks and surrounding land uses will benefit from sound barriers constructed as part of the build alternatives.

The build alternatives would also add five bicycle/pedestrian-only overcrossings under Alternative 5C and three bicycle/pedestrian-only overcrossings under Alternative 7, three of which are common to both 5C and 7. These are located at Humphreys Ave. in East Los Angeles, Clara St. in Bell Gardens and Cudahy, Pacific Place (over I-405 and the Metro Blue Line) in Long Beach, Spring St. in Long Beach (applicable to Alternative 5C only), and Hill St. in Long Beach (also applicable to Alternative 5C only). Parks close to these crossings include Los Cerritos Park, Cudahy Park, Silverado State Park, and Admiral Kidd Park. These pedestrian and bicycle bridges would provide crossings for residents to access local parks and schools which would be a beneficial impact of the build alternatives.

Therefore, the I-710 Corridor Project would not result in an adverse impact to access to parks as a result of barriers to walking or biking, changes in pedestrian or bike safety near parks, or a reduction in park acreage and, therefore, would not have adverse effects on public health related to park access.

3.1.3.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

As described above, while the build alternatives include enhancements to Cesar E. Chavez Park in the City of Long Beach as part of the project, the build alternatives also have the potential to result in direct and indirect impacts to several parks and recreation facilities, including Parque Dos Rios, Bandini Park, the Los Angeles River Trail, and the Rio Hondo Trail.

The build alternatives would result in direct impacts to the Compton Hunting and Fishing Club and the Compton Homing/Racing Pigeon Club. The *Relocation Impact Report* (2017) has identified that the Compton Hunting and Fishing Club would need to be relocated for both build alternatives; the Compton Homing/Racing Pigeon Club would need to be relocated for Alternative 7 only.

Measures to reduce impacts as a result of relocation are provided in Section 3.3, Community Impacts, in this RDEIR/SDEIS.

Permanent indirect impacts may occur to several parks, some of which would be visual impacts that may occur as a result of widening and/or construction of the freight corridor component of Alternative 7 in an existing viewshed. Measures are provided in Section 3.6, Visual/Aesthetics, of this RDEIR/SDEIS to further reduce potential indirect visual impacts to parks.

As described above, permanent indirect impacts related to air quality would not occur as a result of Alternative 5C and Alternative 7 to the parks and recreational facilities, and therefore, no avoidance, minimization, and/or mitigation measures are required. Noise abatement in the form of sound walls would occur as a result of the build alternatives for some parks and recreational facilities. Refer to Section 3.14, Noise, for a detailed discussion of the proposed preliminary sound walls that would occur under the build alternatives.

Measures to address impacts to Cesar E. Chavez Park, Parque Dos Rios, Bandini Park are provided below. Measures for temporary impacts to the Los Angeles River Trail and the Rio Hondo Trail are provided in Section 3.24, Construction Impacts. To maintain consistency with the Section 4(f) and 6(f) Evaluation (Appendix B), this section includes measures for permanent effects as well as temporary effects during construction.

PR-1 **Design Refinements for Alternative 5C at Parque Dos Rios.** If Alternative 5C is selected for implementation, the California Department of Transportation (Caltrans) will require the project design team to identify and incorporate design refinements to minimize the permanent and temporary uses of land from Parque Dos Rios during the final design of Alternative 5C.

PR-2 **Site Plan for the Remaining Area in Parque Dos Rios under Alternative 5C**. If Alternative 5C is selected for implementation, Caltrans will require the project design team to coordinate with the Watershed Conservation Authority (WCA) during final design to develop a plan for recreation facilities and landscaping/native plants on the remaining portion of Parque Dos Rios site, specifically addressing the provision of access to/from the park via the Los Angeles River Trail, the provision of amenities for park users similar to those in the current site plan, and revegetation of the remaining portion of the park with native plant materials similar to those shown in the current site plan.

PR-3 **Identification of Potential Replacement Property/Properties for Parque Dos Rios under Alternative 5C**. Caltrans will require the project design team to identify potential replacement property for the land used from Parque Dos Rios by Alternative 5C, based on continued coordination and consultation with the WCA throughout the environmental process for the project. Specifically, Caltrans

will coordinate with the WCA to locate property/properties to replace the land permanently used at Parque Dos Rios (1.68 acres under Alternative 5C). The replacement property/properties must provide land and facilities equal to or greater than the land and facilities used by the selected alternative. Key considerations in identifying replacement property/properties are (1) the acreage of the replacement property/properties compared to the acres used at Parque Dos Rios, (2) whether equivalent or better recreational functionality can be provided on the replacement property/properties, and (3) whether and what connections can be provided to other recreation resources from the replacement property/properties, notably the Los Angeles River Trail and the remaining portion of Parque Dos Rios.

PR-4 **Identification of Potential Replacement Property/Properties for Parque Dos Rios under Alternative 7.** Caltrans will require the project design team to identify potential replacement property for the land used from Parque Dos Rios by Alternative 7, based on continued coordination and consultation with the WCA throughout the environmental process for the project. Specifically, Caltrans will require the project design team to coordinate with the WCA to locate property/ properties to replace the land permanently used at Parque Dos Rios (the entire 8.6-acre park under Alternative 7 because of the limited functionality and accessibility of the remnant parcel outside the alternative footprint). The replacement property/properties must provide land and facilities equal to or greater than the land and facilities used by the selected alternative. Key considerations in identifying replacement property/properties are (1) the acreage of the replacement property/properties compared to the acres used at Parque Dos Rios, (2) whether equivalent or better recreational functionality can be provided on the replacement property/properties, and (3) whether and what connections can be provided to other recreational resources from the replacement property/properties, notably the Los Angeles River Trail.

PR-5 **Conceptual Site Plans for Potential Replacement Property/Properties for Parque Dos Rios under Alternative 5C and Alternative 7.** Caltrans will require the project design team to develop conceptual site plans for the potential replacement property/properties, in consultation with the WCA, to ensure that the replacement property/properties and facilities are equivalent to or greater than the land and facilities used at Parque Dos Rios by the selected alternative. Those preliminary plans will identify the following:

- The recreation amenities and landscaping/native plant materials to be provided on the replacement property/properties.

- The connections that will be provided between the replacement property/properties and other recreation resources.

PR-6 **Acquisition of Replacement Property/Properties for Parque Dos Rios under Alternative 5C and Alternative 7.** Based on agreement with the WCA on the selected replacement property/properties, Caltrans will require its Division of Right of Way and Land Surveys to acquire those selected property/properties.

PR-7 **Final Site Plan and Plan Installation for Parque Dos Rios under Alternative 5C and Alternative 7.** Caltrans will require the project design team to coordinate with the WCA on the development of the final site plan for the replacement property/properties and on the selection of a contractor to install the recreation facilities and landscaping/native plants as shown on that final site plan.

PR-8 **Transfer of Property Ownership for Parque Dos Rios under Alternative 5C and Alternative 7**. On the completion of the installation of the recreation facilities and landscaping/native plants, and on acceptance of those improvements by the WCA, Caltrans will require its Division of Right of Way and Land Surveys to deed the replacement property/properties to the WCA for recreation uses in perpetuity.

PR-9 **Temporary Construction Easement at Parque Dos Rios.** At the completion of construction activities that use the TCEs at Parque Dos Rios, Caltrans will require the Construction Contractor to return the area occupied by that TCE to a condition as good as or better than prior to its use for the TCE. The required improvements for the rehabilitation of that area will be determined in consultation among Caltrans, the WCA, and the Construction Contractor and will be coordinated with the plan for the remaining portion of the park, as described in Measure PR-3, above.

PR-10 **Design Refinements at Cesar E. Chavez Park**. If a build alternative is selected, Caltrans will continue to identify and incorporate design refinements to avoid or minimize the permanent incorporation of, permanent easements at, and/or temporary use of land from, Cesar E. Chavez Park in the final design of the build alternatives.

PR-11 **Future Boundaries and Improvements at Cesar E. Chavez Park**. During final design, Caltrans will request that the City of Long Beach define the final boundaries of Cesar E. Chavez Park that will be the basis for the transfer of land from the public street right of way for Shoreline Dr. through Cesar E. Chavez Park (currently owned by the City of Long Beach) to within the boundary of the park. This shall be an internal transfer within the City of Long

Beach, as the City currently owns the land for both Shoreline Dr. and Cesar E. Chavez Park.

After the City has identified the new boundaries of the park, including the consolidation of the six discontinuous parcels into three larger parcels, Caltrans will coordinate with the City of Long Beach to:

- Identify park improvements for the new areas added to the park, including removal of pavement and other materials from Shoreline Dr. the landscaping of those areas, and the provision of sidewalks and bicycle paths, as appropriate, connecting the consolidated parcels;
- Develop a landscaping plan and bicycle path plan for the area over the 3rd St. depressed cross section;
- Develop a plan for public access to the northwest portion of the park for passive activities such as wildlife viewing and walking.
- Develop the plan for replacing the basketball courts in the portion of the park west of Cesar E. Chavez Elementary School.

PR-12 **Replacement of Basketball Courts at Cesar E. Chavez Park**. Caltrans will coordinate with the City of Long Beach on the replacement of the basketball courts that will be removed by the build alternatives in a location accessible to Cesar E. Chavez Elementary School and park visitors. Because the basketball courts are in the area used by the school, the replacement courts will be constructed no later than three months after closure of the existing courts.

PR-13 **Temporary Closures of Portions of Cesar E. Chavez Park**. Caltrans will require the Construction Contractor to identify all proposed closures of areas within Cesar E. Chavez Park (including streets), no less than 90 days prior to when each closure would begin.

No less than 90 days prior to when a closure would begin, Caltrans will require the project Construction Contractor to provide the following to the City of Long Beach Parks, Recreation, and Marine Department:

- A map of each proposed closure, clearly showing each park area proposed to be closed temporarily, including identification of any street closures.
- A plan for providing signage and notifications through other public information outlets to inform the public and park visitors of upcoming closures of areas within the park.

- Estimate of the duration of each closure.
- Identification of alternative vehicle and trail routes to/through and/or around the park, as appropriate.
- Identification of park features that would be unavailable to the public during the closure.

Caltrans will require the Construction Contractor to obtain written approval from the City of Long Beach for each proposed closure no less than 45 days prior to when the closure would begin.

Caltrans will require the Construction Contractor to provide an information telephone number that park visitors can use to contact the Construction Contractor for more information regarding individual closures. The Construction Contractor may also provide an information website. The contact number and website information are to be provided at the construction site, at/around each closed area, and on information signs discussing the individual closures. The Construction Contractor will also be required to provide this information to the City of Long Beach Parks, Recreation, and Marine Department.

Caltrans will require the Construction Contractor to return areas of the park closed temporarily during construction to their original, or better, conditions after completion of construction, and those temporarily closed areas will be returned to the City.

PR-14 **Temporary Construction Easement at Cesar E. Chavez Park.** At the completion of construction using the TCE at Cesar E. Chavez Park, Caltrans will require the Construction Contractor or will compensate the City to return the area occupied by that TCE to its original condition.

PR-15 **Temporary Closure for Detour Road in Cesar E. Chavez Park.** When the temporary detour road in Cesar E. Chavez Park is no longer needed, Caltrans will require the Construction Contractor or will compensate the City to remove the road materials and return the area occupied by the temporary detour road to its original condition and/or incorporate enhancements to the road.

PR-16 **Permanent Access to the Easement Area at Bandini Park.** Caltrans will coordinate with the City of Commerce to identify Caltrans' need for permanent access to the easement area to access the elevated freeway structure for inspections, repairs, maintenance, and other activities. In addition, Caltrans and the city will coordinate to identify possible park uses that could be developed within the permanent easement area, in the event the City wishes to use some or

all of the easement area for future recreation uses. Any such uses would not be allowed to conflict with Caltrans' need to access the elevated freeway structure. The easement agreement between Caltrans and the City of Commerce will specify how Caltrans and the City will restrict public access to the easement area during periods when Caltrans is using the easement area (temporary fencing, and signing, etc.). The agreement for the easement will specify that Caltrans' access to the easement area will be from the adjacent State highway right of way and not through the park, unless approved in writing by the City of Commerce prior to any access through the park.

PR-17 **Development of Closures of the Los Angeles River and the Rio Hondo Trails.** Prior to any temporary closures of the Los Angeles River Trail and/or the Rio Hondo Trail, Caltrans will require the Construction Contractor to meet with the Los Angeles County Department of Public Works (LACDPW) to review the location and need for each closure. Detours for each closure will be developed in consultation with the LACDPW.

PR-18 **Signing for Detours of the Los Angeles River and Rio Hondo Trails.** Caltrans will require the Construction Contractor to develop signs directing trail users to alternative routes in consultation with the LACDPW and the local jurisdictions through which detours would be routed. Appropriate directional and informational signage will be provided by the Construction Contractor prior to each closure and far enough away from the closure, so that trail users will not have to backtrack to get to the detour route.

PR-19 **Contact Information during Closures and Detours of the Los Angeles and Rio Hondo Trails.** Caltrans will require the Construction Contractor to provide a contact number and other information to trail users to contact the Construction Contractor regarding upcoming or active trail closures. The Construction Contractor will also be required to provide that information to the LACDPW and the City Public Works Departments in the jurisdictions where the closures/detours are located.

PR-20 **Restoration of Closed Areas on the Los Angeles and Rio Hondo Trails.** Caltrans will require the Construction Contractor to return trail segments closed temporarily during construction to the LACDPW in their original, or better, condition after completion of construction, and the ownership of those temporarily closed areas will remain with the original owner (the LACDPW).

PR-21 **Temporary Construction Activities on the Dominguez Gap and DeForest Treatment Wetlands.** At the completion of construction activities on the Dominguez Gap and DeForest Treatment Wetlands, Caltrans will require the Construction Contractor to return the area occupied by the construction activities to a condition as good as or better than prior to its use for construction. The required improvements for the rehabilitation of that area will be determined in consultation among Caltrans, the LACDPW, and the Construction Contractor.

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3.2 GROWTH

The information in this section is based on the following documents:

- *Community Impact Assessment* (CIA) (July 2017)
- *I-710 Railroad Goods Movement Study* (2009)
- *Initial Feasibility Analysis* (2009)
- *I-710 Corridor Project RDEIR/SDEIS Travel Demand Modeling Methodology* (2017)

3.2.1 REGULATORY SETTING

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act of 1969, requires evaluation of the potential environmental effects of all proposed federal activities and programs. This provision includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations, 40 Code of Federal Regulations (CFR) 1508.8, refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. CEQA guidelines, Section 15126.2(d), require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

3.2.2 AFFECTED ENVIRONMENT

3.2.1.1 GROWTH TRENDS AND CONSTRAINTS TO POPULATION, HOUSING, AND EMPLOYMENT GROWTH

REGIONAL LEVEL. While much of Los Angeles County is urbanized and close to being built out, especially within the I-710 Corridor Project Study Area, the Southern California Association of Governments (SCAG) anticipates population, housing, and employment growth to occur through 2035 within the Gateway Cities Subregion and Los Angeles County overall. Table 3.2-1 identifies the increases in population, housing, and employment that occurred between 2012 and 2020, and the growth rates projected by SCAG between 2012 and 2035 for Los Angeles County. Impacts related to projected growth in the Study Area have been evaluated in SCAG's

Program Environmental Impact Reports (PEIR) for the 2012[1] and 2016[2] Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and those documents are hereby incorporated by reference.

Table 3.2-1: Growth Trends at Regional Levels

	2012	2020	2035	Percent Change between 2012 and 2035
Los Angeles County				
Population	9,992,600	10,326,200	11,145,100	+12%
Households	3,257,600	3,493,700	3,809,300	+17%
Employment	4,246,600	4.662.500	6,062,100	+19%

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).

LOCAL LEVEL. Table 3.2-2 identifies the increases in population, housing, and employment between 2012 and 2020, and the growth rates projected by SCAG between 2012 and 2035 for the affected cities in the Study Area. Because growth trend data is not available at the community level for Boyle Heights, San Pedro, and Wilmington, data for the City of Los Angeles, in which these communities are located, has been provided in Table 3.2-2.

Table 3.2-2: Growth Trends for Affected Cities

	2012	2020	2035	Percent Change between 2012 and 2035
City of Bell				
Population	35,700	25,800	36,400	+2%
Households	8,900	8,900	9,100	+2%
Employment	12,400	13,000	13,400	+8%
City of Bell Gardens				
Population	42,300	42,400	43,300	+2%
Households	9,700	9,700	9,900	+2%
Employment	9,400	9,900	10,300	+10%

1 SCAG. 2016. Website: http://rtpscs.scag.ca.gov/Pages/Final-2012-PEIR.aspx (accessed July 7, 2017).

2 SCAG. 2016. Website: http://scagrtpscs.net/Pages/FINAL2016PEIR.aspx (accessed July 7, 2017).

Table 3.2-2: Growth Trends for Affected Cities

	2012	2020	2035	Percent Change between 2012 and 2035
City of Carson				
Population	92,00	96,100	104,200	+13%
Households	25,300	27,400	29,800	+18%
Employment	58,500	64,000	67,400	+15%
City of Commerce				
Population	12,900	13,000	13,400	+4%
Households	3,400	3,400	3,500	+3%
Employment	44,600	46,900	48,200	+8%
City of Compton				
Population	97,300	97,400	99,100	+2%
Households	23,100	23,100	23,600	+2%
Employment	25,400	26,900	27,600	+7%
City of Cudahy				
Population	23,800	23,800	23,800	0%
Households	5,600	5,600	5,600	0%
Employment	2,900	2,900	2,900	0%
City of Downey				
Population	112,500	114,400	119,000	+6%
Households	33,900	35,000	36,400	+7%
Employment	47,500	50,100	51,500	+8%
City of Huntington Park				
Population	58,500	60,800	65,400	+12%
Households	14,600	15,600	16,900	+16%
Employment	15,600	16,900	18,000	+15%
City of Lakewood				
Population	80,600	81,500	83,300	+3%
Households	26,600	27,100	27,700	+4%
Employment	16,742	17,364	19,514	12
City of Long Beach				
Population	466,300	478,300	481,500	+3%
Households	163,800	170,800	173,200	+6%
Employment	153,200	165,800	175,500	+15%
City of Los Angeles				
Population	3,845,500	4,017,700	4,442,500	+16%
Households	1,325,500	1,441,400	1,618,900	+22%
Employment	1,696,400	1,899,500	2,104,100	+19%
City of Lynwood				
Population	70,300	71,800	74,300	+6%
Households	14,700	15,200	15,800	+8%
Employment	9,200	9,900	10,500	+14%
City of Maywood				
Population	27,500	27,700	28,400	+3%
Households	6,600	6,600	6,800	+3%
Employment	3,600	3,800	3,900	+8%
City of Paramount				
Population	54,500	54,900	56,900	+4%

Table 3.2-2: Growth Trends for Affected Cities

	2012	2020	2035	Percent Change between 2012 and 2035
Households	13,900	14,100	14,600	+5%
Employment	19,600	21,000	21,800	+11%
City of Signal Hill				
Population	11,200	11,300	11,800	+5%
Households	4,200	4,400	4,500	+7%
Employment	13,800	15,200	16,000	+16%
City of South Gate				
Population	94,700	99,300	107,300	+13%
Households	23,200	25,200	27,200	+17%
Employment	20,400	22,100	23,200	+14%
City of Vernon				
Population	100	300	300	+200%
Households	0	100	100	+100%
Employment	43,200	45,300	45,700	+6%

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).

Within the Study Area, there are several physical constraints to growth in population and housing. Most of the cities are close to being built out and have very limited vacant land for new development. Planning efforts by the cities are concentrated on reuse of existing uses to better utilize available land. In the northern part of the Study Area, the railroad yards and tracks also act as a constraint to growth, providing physical boundaries to new developments and expansion of existing land uses. Southern California Edison (SCE) and the Los Angeles Department of Water and Power (DWP) utility corridors within the Study Area are also a physical boundary to growth. These two major utility corridors are located parallel to the Los Angeles River, in addition to other electric transmission corridors within the City of Long Beach and other affected cities within the Study Area. Other existing public infrastructure, such as the Interstate 405 (I-405), State Route 91 (SR-91), Interstate 110 (I-110), and Interstate 5 (I-5), freeways also create physical boundaries that constrain new land development or reuse within the Study Area.

Table 3.25-1 in Section 3.25 (Cumulative Impacts) provides a listing of approved and proposed major public infrastructure, goods movement, and land development/redevelopment projects within the Study Area.

3.2.1.2 Growth Trends and Constraints Related to Goods Movement

The I-710 Corridor is located within the Gateway Cities Subregion of Los Angeles County. The Gateway Cities Subregion as a whole has experienced population, housing, and employment growth since the early 1900s and is anticipated to continue this growth pattern through 2035

(see Table 3.2-1). In the 20th century, the regional economy transitioned from an agricultural base to a manufacturing/industrial base, with a heavy emphasis on the aerospace and defense industries in the 1950s through the 1970s. As these industries declined in the 1980s, an expansion in global trade, as well as containerization of global freight, resulted in goods movement becoming an important element of the Gateway Cities Subregion's economy. Today, the Port of Long Beach (POLB) and the Port of Los Angeles (POLA) (collectively known as the Ports), the railroads, and the trucking industry provide goods movement not just within the Study Area, but also for the Gateway Cities Subregion, the SCAG region, and the nation as a whole.

Los Angeles County's goods movement system serves as a gateway for both international and domestic commerce, especially within the Study Area, where the POLB and the POLA, the Burlington Northern Santa Fe Railroad (BNSF Railroad) Hobart rail yard, and the Union Pacific Railroad (UP Railroad) East Los Angeles rail yard, the ICTF, and the Alameda Corridor are located. The Ports, the railroads, and the interstate and State highways all play a critical role related to goods movement within the Study Area. The growth trends and constraints of each of these goods movement system components are discussed below.

PORTS. The POLB and the POLA handle approximately 40 to 45 percent of all of the nation's imported containerized goods. Approximately 25 percent of the imported goods are destined for the local southern California and southwestern U.S. markets, while 75 percent are destined for national distribution to other parts of the U.S. In addition, the goods movement through the Ports provides approximately 1.3 million jobs locally and approximately 4.0 million jobs nationally.

As illustrated in Figure 1.2-5 (Goods Movement) in Chapter 1.0 (Purpose and Need) of this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS), cargo containers at the Ports are transported from ships one of three ways: to the marine terminals as property, to on-dock rail facilities, or to trucks that are used either for direct distribution to local and regional warehouses or for movement to near-dock and off-dock rail yards. As of 2012, the Ports processed approximately 14.1 million twenty-foot-equivalent units (TEUs) annually. Cargo container shipping demand at the Ports is projected to grow to almost 41.4 million TEUs by 2035, which will exceed planned capacity (*I-710 Travel Demand Modeling Report,* 2017).

RAILROADS. The present rail network in the SCAG region, including the Study Area, is composed of BNSF and UP Railroad rail lines, terminals/yards, and on-dock rail terminals at the Ports. Rail routes include the Alameda Corridor, BNSF Railroad's San Bernardino Subdivision, and UP Railroad's Los Angeles and Alhambra Subdivisions. The *I-710 Railroad Goods Movement Study* (2009) was prepared to assess the available capacity of the Southern California rail network to handle the projected demand in the movement of containerized freight to and from the Ports. One of the fundamental assumptions in developing the 2035 travel demand forecasts for the I-710 Corridor Project is that the calculated maximum utilization of the

amount of containers moved by rail would be consistent with the rail network (*I-710 Railroad Goods Movement Study)*. Taking into consideration the inland origins and destinations of the port cargo and operational characteristics of the railroads, it was assumed that approximately 34.4 percent of the cargo growth (approximately 14.1 million annual TEUs) in 2035 could be moved directly by rail from either on-dock or off-dock intermodal terminals.[3] Key information related to existing and future capacity of the rail system is summarized and cited below.

- As of 2015, the Alameda Corridor was operating 38 trains per day,[4] a decrease from previous years, due primarily to longer trains. By 2035, the Alameda Corridor is projected to be operating 108 trains daily. The Alameda Corridor has three tracks and sufficient capacity to handle the projected traffic.
- As of 2010, BNSF Railroad's San Bernardino Subdivision operated up to 99 trains per day (45 freight trains and 54 commuter trains) in its most heavily trafficked segments. By 2035, BNSF's San Bernardino Subdivision is projected to be operating up to 189 trains daily in its most heavily trafficked segments.[5] In most sections, the BNSF Railroad has constructed or has plans to construct three tracks on the San Bernardino Subdivision, sufficient capacity to handle the projected train volumes. The UP Railroad operates the Los Angeles and Alhambra Subdivisions as essentially parallel facilities that provide them with routing flexibility. According to the Regional Rail Simulation Update Summary Report prepared for SCAG's November 2011 Comprehensive Regional Goods Movement Plan and Implementation Strategy, 51 through-freight trains operated collectively over the subdivisions in 2010, and is forecast to rise to 111 trains in 2035. The Los Angeles Subdivision operated 12 Metrolink passenger trains per day, which is also forecast to rise to 20 trains in 2035. The Alhambra subdivision conversely carries very little passenger train traffic (one train per day in 2010, with no forecast increase to 2035)[6]. Through most of its length, the Los Angeles Subdivision will have two tracks but sections that will have only one track are not likely to carry more than 50 trains daily. Thus, this subdivision should have sufficient capacity to carry the projected traffic. East

[3] Some port cargo is "transloaded," i.e., transferred from marine containers to larger domestic containers, and then moved by rail in these large containers. The transloaded cargo moved by rail is above and beyond the 34.4 percent that is moved directly by rail.

[4] Alameda Corridor Transportation Authority. Website: http://www.acta.org/pdf/CorridorTrainCounts.pdf (accessed December 28, 2016).

[5] Southern California Association of Governments (SCAG). 2013. On The Move: Southern California Delivers the Goods. Comprehensive Regional Goods Movement Plan and Implementation Strategy, Final Report. February 2013. Website: http://www.freightworks.org/DocumentLibrary/CRGMPIS%20-%20Final%20%20-%20Chapter%204.pdf (accessed December 28, 2016).

[6] SCAG Freightworks. Website: http://www.freightworks.org/DocumentLibrary/Comprehensive%20Regional%20Goods%20Movement%20Plan%20and%20Implementation%20Strategy%20-%20Regional%20Rail%20Simulation%20Update.pdf (accessed December 28, 2016).

of Pomona (the more heavily trafficked segment), the Alhambra Subdivision is or will be two tracks. Thus, the Alhambra Subdivision, especially given the operating flexibility provided by the Los Angeles Subdivision, would have sufficient capacity to carry the projected traffic.

In addition to the capacity of the rail facilities themselves, there are three types of intermodal facilities that may impact growth for the railroads: on-dock, near-dock, and off-dock. On-dock refers to an intermodal facility that is situated at a port marine terminal. As of 2007, the on-dock rail volume per year was at 23.5 percent of its capacity; however, by 2035, these facilities are projected to reach capacity.

Near-dock refers to an intermodal facility situated within five miles of POLA and POLB. The container volume handled at the Intermodal Container Transfer Facility (ICTF) as of 2012 was approximately 800,000 containers, and the capacity is projected to be 1,500,000 containers by 2035, assuming plans to expand the facility are implemented. Plans to build a new facility (SCIG) are in progress (a Final EIR for the SCIG project was certified in 2013, but that approval was vacated by the Contra Costa County Superior Court in 2016). Both of these facilities are assumed to be constructed and operational in the travel demand forecasting conducted for the I-710 Corridor Project.

Off-dock refers to an intermodal facility located more than five miles from POLA and POLB. There are two off-dock facilities in the Study Area: BNSF Railroad's Hobart and UP Railroad's East Los Angeles facilities. As of 2012, these off-dock facilities were operating below capacity, but they are projected to reach capacity by 2035.. Additional off-dock rail yards are located further inland to the east of I-710 along with warehouses and distribution centers that are also serviced by trucks carrying goods from POLA and POLB.

HIGHWAYS. According to the *I-710 Travel Demand Modeling Report* (2017), some port cargo movements may be associated with high-density truck flows between origin and destination points, including:

- Primary port truck distributions;
- Transload secondary and true domestic intermodal trips (secondary truck trips associated with transloading of container cargo, as well as pure domestic intermodal trips that are not directly related to port activity); and
- Secondary transload truck trips (cargo in 20- and 40-foot international containers is transferred to 53-foot domestic containers).

The same report noted that about 80 percent of the primary port truck trips are destined to or originated from locations within 20 miles of the Ports.

The Goods Movement Appendix of SCAG's 2012 Regional Transportation Plan (RTP)/ Sustainable Communities Strategy (SCS) states that the vast majority of trips leaving the San Pedro Bay Ports are destined for locations in the southern Gateway Cities, off-dock railyards near downtown Los Angeles, and other locations along the I-710 Corridor The *I-710 Travel Demand Modeling Report* predicts that regional daily truck vehicle miles traveled (VMT) would increase by approximately 42 percent between 2012 and 2035. Table 1.2-1 (I-710 Daily Traffic Volumes) in Chapter 1.0 (Purpose and Need) of this RDEIR/SDEIS shows that the percentage increase in truck volumes (both port-related and non-port truck trips) from 2013 to 2035 is much greater than the percentage increase in automobile volumes during the same time period.

The *I-710 EIR/EIS Initial Feasibility Analysis* (2009) provides an analysis of where cargo containers not moved by rail would be distributed onto the regional highway system. The *I-710 EIR/EIS Initial Feasibility Analysis* evaluated what the highway system capacity needs would be (with a focus on the I-710 freeway mainline) given both the growth in cargo container handling demand at the Ports, as well as considering the maximum utilization of the rail system for the movement of containerized freight. One of the objectives of the *I-710 EIR/EIS Initial Feasibility Analysis* was to evaluate the highway system travel demand under three different cargo container demand growth scenarios, as follows:

1. **HIGH PORT CARGO GROWTH SCENARIO WITHOUT NEAR-DOCK INTERMODAL TERMINAL EXPANSION.** This scenario assumed that marine terminal capacity at the Ports would be expanded from 2008 levels, based on existing plans by the two Ports to accommodate growth to approximately 43 million TEUs annually. Along with marine terminal expansion, this scenario assumed that the Ports would expand their existing on-dock rail terminal capacity to allow for 30 percent of total containerized cargo to be loaded onto rail at the Ports. It assumed that the UP and BNSF Railroads would both be unsuccessful in getting their near-dock expansion plans approved. If approved, these plans would expand UP Railroad's ICTF and would build a new BNSF Railroad terminal (SCIG). As a result of not being able to make these near-dock terminal expansions, the railroads would be forced to pursue strategies that would involve a combination of expanded operations at existing downtown yards (mostly through changes in operating practices), expansion of selected existing rail yards where they have available property that they already own, and/or development of new intermodal terminals in locations such as Victorville. It also assumed that the railroads would be able to accommodate this growth in cargo volume on their mainline tracks after completing ongoing capacity expansion projects and by increasing the length of trains. In some locations, additional mainline capacity (third and fourth tracks) would be necessary (*I-710 Railroad Goods Movement Study,* 2009). This was the port cargo growth scenario adopted by the I-710 Corridor Project Committee in April 2009 to provide a conservative basis for the I-710 Corridor Project travel demand forecasting.

2. **HIGH PORT CARGO GROWTH WITH NEAR-DOCK INTERMODAL TERMINAL EXPANSION.** This scenario was the same as the previous scenario, except that it assumed that UP Railroad would expand its existing near-dock intermodal terminal (ICTF), and that BNSF Railroad would build a new near-dock intermodal terminal (SCIG). This scenario would be expected to reduce truck traffic on I-710 as compared with the high port cargo growth scenario, due to the diversion of truck trips to the near-dock terminals that would have otherwise been destined to the off-dock terminals.

3. **LOW PORT CARGO GROWTH.** This scenario assumed that the Ports would be unable to expand marine terminals beyond their existing terminal footprint, but that they would be able to achieve some improved operating efficiencies. This would result in growth to 28.5 million TEUs processed annually. Because marine terminals would not be expanded, associated new and expanded on-dock rail projects could not be built, thereby limiting the amount of containers that could be loaded on-dock to approximately 5.6 million TEUs. As in the high port cargo growth without near-dock terminal expansion scenario, it was assumed that ICTF would not be expanded and the SCIG would not be built. Both railroads would need to expand their existing intermodal terminal capacity, and they would do so in the same ways as described in the high port cargo growth scenario. In the low port cargo growth scenario, it was further assumed that the large increase in train volume would make it difficult for the railroads to continue the practice of operating longer trains, and that they would have right-of-way constraints that would limit their ability to build new mainline track beyond what is currently under construction.

A summary of these scenarios is presented in Table 3.2-3, below.

Table 3.2-3: Port Cargo Growth Scenarios (in Million Annual TEUs)

Scenario	Port Cargo Volume Forecast	40% Direct Rail	Projected On-Dock Terminal Throughput	Projected Near-Dock Terminal Throughput	Remaining Off-Dock Capacity Needed	Container Movements by Truck Likely to Occur on I-710 North of PCH
High port cargo growth without near-dock terminal expansion	43	17.1	12.8	1.4	2.9	28.5
High port cargo growth with near-dock terminal expansion	43	17.1	12.8	4.3	0.0	25.6
Low port cargo growth	28.5	11.4	5.6	1.4	4.4	21.5

Source: URS. *I-710 EIR/EIS Initial Feasibility Analysis* (2009).
I-710 = Interstate 710
PCH = Pacific Coast Highway
TEUs = twenty-foot-equivalent units

The analysis of travel demand on the highway system under the three different port cargo growth scenarios tabulated the total volume of auto and truck traffic crossing four different "screenlines" within the I-710 Corridor, which included not just I-710, but also I-405, I-110, Interstate 605 (I-605) and major north-south arterial highways such as Alameda Ave. and Atlantic Blvd. The results of this screenline analysis are shown in Figure 3.2-1. The results, presented in Figure 3.2-1, are presented as the estimated number of lanes required to accommodate total auto and truck travel demand on I-710. As shown in this figure, even though the three alternative port cargo growth scenarios have different assumptions and there were some differences in traffic volumes on I-710 under each port cargo growth scenario, the number of lanes needed on I-710 is estimated to be the same for all three scenarios at each screenline. This is because the number of lanes estimated in the analysis was rounded up to the nearest whole number and the traffic volume differences among scenarios is less than a lane's volume of traffic.

As stated in the *I-710 Travel Demand Modeling Methodology Report*, annual Port containerized cargo throughput is projected to increase from 14.1 million twenty foot equivalent units (TEUs) in 2012 to 41.4 million by 2035. This assumption was provided by the Ports of Los Angeles and Long Beach based on their most current estimates of throughput and marine terminal capacity.

Under the prior forecasts used for the I-710 Corridor Project Draft EIR/EIS (2012), the 2035 Port cargo assumption was for 43.2 million annual TEUs. Because the current 2035 port cargo demand forecast of 41.4 million TEUs is only four percent lower than the forecast used for the *Initial Feasibility Analysis* (IFA), the results of the IFA are still considered to be valid for purposes of analyzing the growth-related effects of the I-710 Corridor Project. This projected increase is not substantially different than what was used in the 2009 *Initial Feasibility Analysis*. Therefore, the *Initial Feasibility Analysis* was used for this updated growth analysis.

3.2.3 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to growth are located in Section 3.24.3.2.

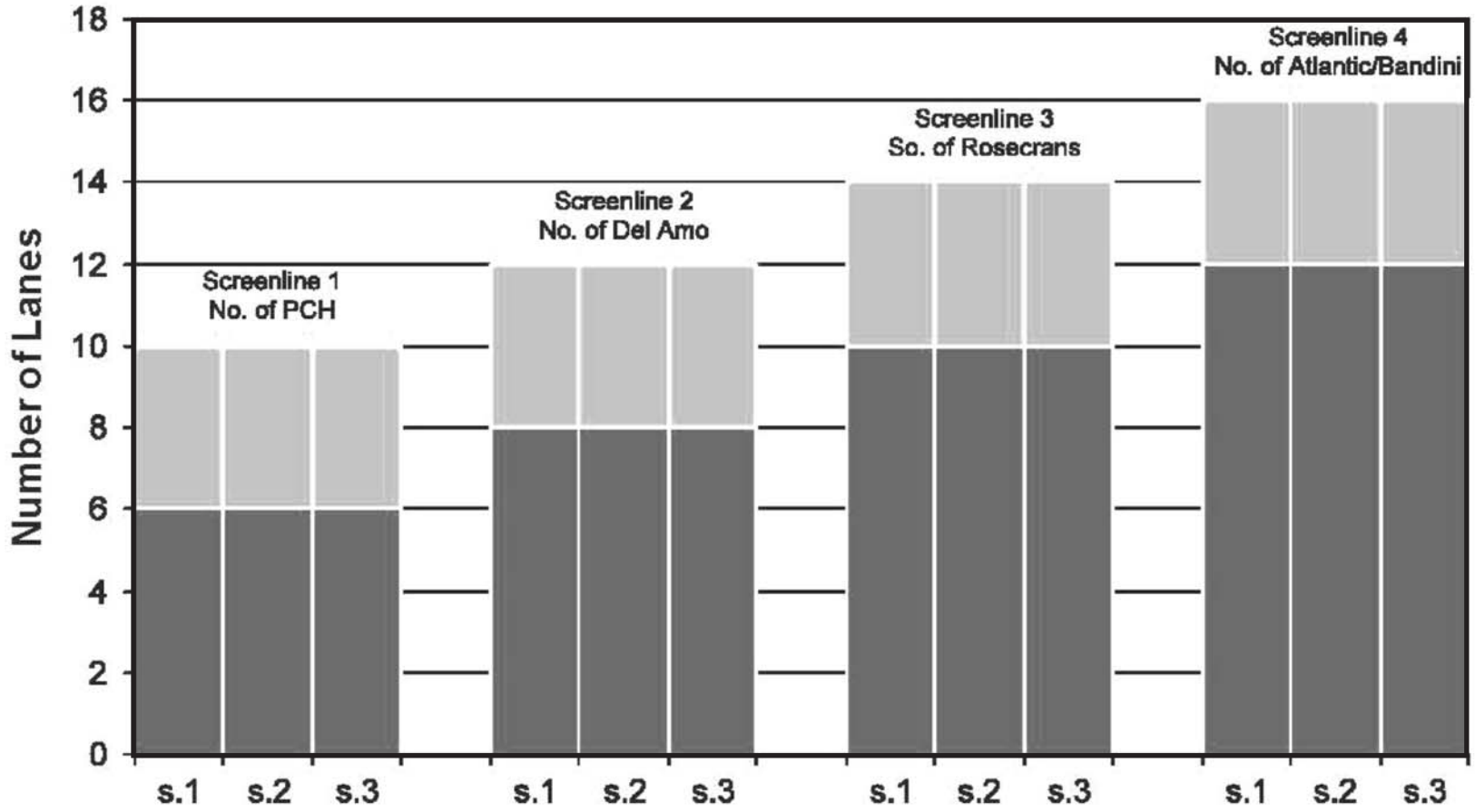

FIGURE 3.2-1

"Rounded" Trucks
"Rounded" Autos

Scenarios: S.1: Port High Growth, no SCIG
S.2: Port High Growth, with SCIG
S.3: Port Low Growth

I-710 Corridor Project RDEIR/SDEIS
Screenline Analysis (2035 No Build)

SOURCE: I-710 Corridor Project Initial Feasibility Analysis (Metro, 2009)

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3.2.3.1 PERMANENT IMPACTS

BUILD ALTERNATIVES/CONSIDERATIONS RELATED TO POPULATION, HOUSING, AND EMPLOYMENT GROWTH. The growth-related effects of the I-710 Corridor Project were assessed using the California Department of Transportation's (Caltrans) *Guidance for Preparers of Growth-Related, Indirect Impacts Analysis.* The guidance specifically deals with the subset of indirect effects referred to as "growth-related impacts" associated with highway projects that encourage or facilitate land use or development that changes the location, rate, type, or amount of growth. The potential for the I-710 Corridor Project build alternatives to influence growth was based on consideration of the following questions:

- How, if at all, does the proposed project potentially change accessibility?
- How, if at all, do the proposed project type, project location, and growth pressure potentially influence growth? Some transportation projects may have very little influence on future growth, whereas others may have a great influence. Some geographic locations are more conducive to influencing growth, whereas others are highly constrained. These differences may result from physical constraints, planning and zoning factors, or local political considerations.
- Is project-related growth reasonably foreseeable as defined in the National Environmental Policy Act (NEPA)? Under NEPA, indirect impacts need only be evaluated if they are reasonably foreseeable as opposed to remote or speculative.
- If there will be project-related growth, how, if at all, would resources of concern be impacted?

A discussion regarding each of the above questions/considerations is provided below.

How, if at all, does the project potentially change accessibility?

The build alternatives would improve the vehicle, person, and goods movement travel times within the I-710 Corridor to more effectively serve existing and future travel demand. The build alternatives would also improve intersecting local roads (interchange improvements and ramp modifications) along I-710 to more effectively serve existing and forecast intra-regional travel demand and to reduce the diversion of regional traffic from the I-710 freeway into the surrounding communities. Due to the lack of vacant or less developed land within the I-710 Corridor, the build alternatives would not facilitate new development by opening up access to previously undeveloped or less developed areas. It is important to note that for this analysis, there is no appreciable difference between the build alternatives.

How, if at all, do the project type, project location, and growth pressure potentially influence growth?

The build alternatives are consistent with the forecasts used for population and employment growth in the 2012 RTP/SCS. The build alternatives are also consistent with growth-related goals and policies of the regional and local agencies within the I-710 Corridor. As discussed earlier in Section 3.1.2.2, Environmental Consequences, the I-710 Corridor Project build alternatives would require the County of Los Angeles and some cities within the I-710 Corridor Project Study Area to amend their General Plan Land Use and Circulation Elements to reflect the adopted project alternative, interchange locations, and redesignation of land acquired for the project to transportation designations. The existing land uses affected by the I-710 Corridor Project build alternatives that would require redesignation in the local land use plans are shown on Figure 3.1-1 in Section 3.1 (Land Use) of this RDEIR/SDEIS.

With the exception of the redesignation of land uses for areas incorporated into the transportation uses, the I-710 Corridor Project build alternatives are not expected to result in other changes to land uses in the Study Area. This is because at both a regional and local level, communities within the I-710 Corridor have experienced population, housing, and employment growth over the last century, and in particular, after World War II. As shown previously in Tables 3.2-1 and 3.2-2, Los Angeles County, the Gateway Cities Subregion, and the communities within the Gateway Cities subregion are projected to continue to experience some growth in population and jobs even in the jurisdictions that are relatively constrained by limited land available for development. As documented in the Program EIR for the 2016 RTP/SCS (SCAG 2016; see page 4-11 of the PEIR at http://scagrtpscs.net/Pages/DRAFT2016PEIR.aspx), growth in the SCAG region is expected to occur with or without the projects included in the RTP/SCS, including the I-710 Corridor Project. The improved mobility expected to be achieved as a result of the build alternatives could have a slight influence on demand for residential and nonresidential uses in the cities and communities in the Gateway Cities subregion; however, it would not be expected to be sufficient to result in the need to modify adopted General Plans to allow for greater levels of development (residential and nonresidential). The I-710 Corridor Project build alternatives are expected to accommodate existing, approved, and planned land uses in the Study Area, but are not expected to influence the amount, timing, or location of growth in the Study Area.

Is project-related growth reasonably foreseeable (as defined by NEPA, i.e., indirect impacts need only be evaluated if they are reasonably foreseeable as opposed to remote and speculative)?

The I-710 Corridor Project responds to existing and forecasted traffic congestion due to growth, both locally and regionally, that has already occurred or is planned to occur, in accordance with the General Plan Land Use Elements of the County and cities within the Study Area. I-710 was

constructed as a six-lane freeway in various segments from 1955 to 1965, with the final segment between I-5 and I-10 completed in 1965. Since that time, the population of Los Angeles County has increased over 60 percent, from approximately 6,039,000 in 1960 to over 9,992,600 in 2012. Although I-710 was later widened to eight lanes between I-405 and I-5, as described in Chapter 1.0, Purpose and Need, the capacity of I-710 is insufficient to handle the existing travel demand that has resulted from the growth in population and employment that has occurred since the freeway was first built. The design of the freeway is also in need of modernization, as the existing freeway was designed to handle the demands of a smaller population and a different mix of vehicles (i.e., fewer trucks) than exists today.

As shown in Table 3.2-2, most of the cities in the Study Area are projected to continue to experience growth in population and jobs even in jurisdictions relatively constrained by limited land available for development. The I-710 Corridor Project build alternatives are not expected to influence the amount, timing, or location of growth in the project area because the proposed project improves existing transportation infrastructure, the Study Area is already highly developed, and there is limited land available for new development or redevelopment. Accordingly, there is no reasonably foreseeable project-related growth expected to result from any of the I-710 Corridor Project build alternatives.

If there is project-related growth, how, if at all, will that impact resources of concern?

As discussed above, there are no reasonably foreseeable project-related growth impacts under any of the I-710 Corridor Project build alternatives; therefore, there would be no impacts to resources of concern.

BUILD ALTERNATIVES/REGIONAL GROWTH CONSIDERATIONS RELATED TO GOODS MOVEMENT. In addition to the questions presented above for evaluating the potential of the I-710 Corridor Project to result in growth-related effects relative to population, housing, and employment, a focused assessment was conducted to assess the potential of the I-710 Corridor Project to result in growth-related effects relative to goods movement. In recognition of the I-710 Corridor's function as a major corridor for goods movement, the following questions were considered:

- How would the I-710 Corridor Project alternatives affect the demand for growth of terminal facilities at the Ports, as well as growth in port cargo demand?
- How would growth in port cargo demand affect travel demand on I-710?

A discussion regarding each of these questions is provided below.

How would the I-710 Corridor Project alternatives affect the demand for growth of terminal facilities at the Ports, as well as growth in port cargo demand?

The assessment to address this question is based upon review of published reports[7] that consider the influence that the availability of landside goods movement infrastructure (i.e., rail and trucks) has on the demand for shippers to use a particular port. Many factors influence the demand for more cargo being handled through the Ports, including global trade demand, availability of alternative port options, capacity of near-dock and off-dock intermodal facilities, and railroad and highway infrastructure capacity. Although the literature on factors determining port selection is limited, it does provide perspective to assess the degree to which roadway infrastructure improvements may influence demand for use of one port over another. The above factors that affect port cargo demand in turn affect the demand for growth of terminal facilities at the Ports. One constraint to the ability to expand terminal facilities at the Ports is the availability of land to construct new or expanded facilities.

The *San Pedro Bay Cargo Forecast* (December 2007) states that the competitiveness of both the POLB and the POLA is based on the following factors:

- The large size of the local Southern California market;
- The region's role as a U.S. distribution hub;
- First-call vessel services that attract service-sensitive intermodal imports; and
- A supply of domestic trailers and containers for transloading.

The *San Pedro Bay Cargo Forecast* (2007) study concludes that the only developments considered likely to alter these basic competitive advantages are the new port at Prince Rupert in northern British Columbia and the improved U.S. rail access to the Lazaro Cardenas Port in Michoacán, Mexico. This is consistent with a more recent report prepared by Mercator International and Oxford Economics in January 2016, the *Executive Summary for San Pedro Bay Long-Term Unconstrained Cargo Forecast*. In assessing demand for cargo handling at all West Coast ports, the study concluded that the currently projected capacity at West Coast ports will eventually be outpaced by cargo growth forecasted in every region.

With regard to potential diversion of cargo to other gateway ports, the *Executive Summary for San Pedro Bay Long-Term Unconstrained Cargo Forecast* (2016) states that local/trans-loads movements via truck are considered to have very little susceptibility to diversion because additional inland costs associated with moving containers into the Ports catchment areas via an alternative gateway port will outweigh any port or terminal cost savings. Additionally, the

[7] Tioga Group. 2007. *San Pedro Bay Cargo Forecast,* December 2007; and *Updated San Pedro Bay Cargo Forecast*, Tioga Group, 2009, *Port Choice Determinants in a Competitive Environment*, Dr. Jose Tongzon, 2002; and I-710 Corridor Project RDEIR/SDEIS *Travel Demand Modeling Methodology*, 2016.

relatively large population of the Ports' local market in Southern California makes the Ports an essential call for ocean carriers.

Another study conducted for the Port of Singapore (*Port Choice Determinants in a Competitive Environment*, 2002) ranked the factors that determine port selection by freight forwarders; the results are presented in Table 3.2-4. Based on this study, adequate infrastructure ranks third out of seven factors determining port selection. Infrastructure, as defined in the study, includes the number of container berths, cranes, tugs and terminal area, quality and effectiveness of information systems, availability of intermodal transport (such as roads and railways), the approach channel provided, and the preparedness of the port management.

Table 3.2-4: Ranking of Port Choice Factors: Freight Forwarders' Perspective

Ranks	Mean	Standard Deviation
1. Efficiency	3.2	1.83
2. Shipping frequency	4.2	2.01
3. Adequate infrastructure	4.4	2.02
4. Location	4.6	2.09
5. Port charges	5.2	2.06
6. Quick response to port users' needs	5.4	2.24
7. Reputation for cargo damage	7.1	2.34
N = 47		

Source: Tongzon, Jose. *Port Choice Determinants in a Competitive Environment* (September 2002).
Note: Ranking ranges from 1 (most important) to 7 (least important).

These studies indicate that demand for port growth is primarily driven by the availability and competitiveness of comparable port facilities on the west coast of North America, port efficiency, shipping frequency, and adequacy of infrastructure. Highway infrastructure capacity constitutes one of many infrastructure considerations, as mentioned above. When considered in the context of the many variables that influence growth, particularly international competition, world economic trends, and other infrastructure considerations, improving highway system capacity as a result of the I-710 Corridor Project build alternatives would be expected to have a very minor influence on increased demand for shippers to use terminal facilities at the POLB and the POLA. Based on the review of these previous studies, the I-710 Corridor Project build alternatives are not expected to have a substantial effect on the demand for port cargo growth or expansion of marine terminal facilities at the POLB and the POLA for the following reasons:

- The global economy is the primary driver of cargo demand, which ultimately determines overall world demand for port services.
- The POLB and the POLA benefit from intrinsic competitive advantages, such as the large size of the local Southern California market.

- Local/trans-loads movements via truck are considered to have very little susceptibility to diversion because additional inland costs associated with moving containers into the Ports catchment areas via an alternative gateway port will outweigh any port or terminal cost savings.
- A study of factors that determine port selection by freight forwarders indicated that port efficiency and shipping frequency are more important than adequate cargo servicing infrastructure (e.g., highways).
- Roadway capacity is one of numerous infrastructure considerations that can influence the level of demand for a particular port. Other equally important infrastructure elements are the number of container berths, cranes, tugs and terminal area, the quality and effectiveness of information systems, railway capacity, warehousing facilities, and the capacity of the approach channel.
- Other freeway routes, such as I-110, State Route 103 (SR-103), I-405, and I-605, and parallel surface streets are available to Port trucks to avoid the higher levels of traffic congestion on the I-710 Corridor that would occur under Alternative 1 (No Build).

How would growth in port cargo demand affect travel demand on I-710?

As discussed above in Section 3.2.2.2, the *I-710 EIR/EIS Initial Feasibility Analysis* (2009) analyzed three port cargo growth scenarios and projected cargo container movements by truck likely to occur on I-710 north of Pacific Coast Highway. The growth scenarios analyzed were based on assumptions about the availability and utilization of on-dock intermodal rail terminal capacity at the marine terminals, the availability of near-dock intermodal terminal capacity, the availability and location of off-dock intermodal terminals, and the availability and limitations of rail system capacity.

At the time the Initial Feasibility Analysis was prepared, In the low-growth scenario where annual port cargo demand is limited to 28.5 million annual TEUs, marine terminals are not expanded beyond the port capacity that already has been approved, and associated on-dock rail projects are not built, thereby limiting the amount of containers that can be loaded on-dock to approximately 5.6 million TEUs annually. The resulting number of *daily* port-related truck trips for each growth scenario is presented in Table 3.2-5.

Table 3.2-5: 2035 Port Cargo Growth and Container Movements by Truck

Port Cargo Growth Scenario (Year 2035)	Port Volume Cargo Forecast (in Million TEUs)	Container Movements by Truck on I-710 North of PCH (in Million TEUs)	Total Daily Port Truck Trips
High port cargo growth without near-dock (rail) terminal expansion	43.0	28.5	114,400
High port cargo growth with near-dock (rail) terminal expansion	43.0	25.6	114,400
Low port cargo growth	28.5	21.5	102,200

Source: URS. *I-710 EIR/EIS Initial Feasibility Analysis* (2009).
EIR/EIS = Environmental Impact Report/Environmental Impact Statement
I-710 = Interstate 710
PCH = Pacific Coast Highway
TEUs = twenty-foot-equivalent units

The low-growth scenario results in only 11 percent fewer daily port truck trips as compared to the high-growth scenarios even though the low-growth scenario has 33 percent less containerized cargo throughput compared to the high-growth scenarios. This is because in the low-growth scenario, there is much less on-dock rail capacity than in the high-growth scenarios, as this scenario assumes no further expansion of the Ports' marine terminals and their associated facilities (e.g., on-dock rail). Therefore, there is an increase in the total forecasted number of containers and associated truck trips going to off-dock terminals in the low growth scenario as compared to the high-growth scenarios. As shown previously in Figure 3.2-1, even under the low-growth scenario, the forecasted travel demand by all vehicles on I-710 (automobiles and trucks) would require the same number of lanes on I-710 to serve that demand as under the higher-growth scenarios.

Additionally, according to the Goods Movement Appendix of the SCAG 2012 RTP/SCS, in 2008, the San Pedro Bay Ports were responsible for approximately 50,000 direct daily regional truck trips constituting 3.7 percent of regional truck trips. By 2035, it is anticipated that there will be approximately 120,000 daily regional truck trips, an increase of nearly 150 percent. For informational purposes, truck trip data included in the 2016 RTP/SCS indicated that in 2012, the San Pedro Bay Ports were responsible for approximately 55,000 direct daily regional truck trips (constituting approximately 5 percent of regional truck trips), which were anticipated to grow by 58 percent to approximately 87,000 daily regional truck trips by 2040. Recent data indicates that the vast majority of trips leaving the San Pedro Bay Ports are destined for locations in the southern Gateway Cities, off-dock railyards near downtown Los Angeles, and other locations along the I-710 Corridor. However, this pattern is expected to shift in the future with an increase in the number of daily trucks traveling to warehouses in the San Gabriel Valley and the Inland Empire. For example, in 2008, 0.5 percent and 2.3 percent of all truck trips from the San Pedro Bay Ports moved to eastern San Bernardino Valley and western San Bernardino Valley, respectively. By 2035, it is anticipated that 8.8 percent and seven percent of those truck trips will move

to eastern San Bernardino Valley and western San Bernardino Valley, respectively. All key regional highway corridors used to move goods are expected to see an increase in overall truck volumes by 2035. At the corridor level, the highest growth in truck traffic is expected on I-710 as a result of growth in port-related traffic.

The *I-710 Travel Demand Modeling Methodology Report* updated the projected 2035 daily Port truck trips. The Ports combined are estimated to generate about 110,000 daily container related truck trip ends (sum of arrivals and departures at the terminals) in 2035.

BUILD ALTERNATIVES/SUMMARY OF GROWTH CONSIDERATIONS RELATIVE TO PROJECT PURPOSE. A key element of the project purpose of the I-710 Corridor Project is to address projected growth in population, employment, and economic activities related to goods movement. The increase in capacity on I-710 under the I-710 Corridor Project build alternatives is not expected to influence demand for growth at the Ports, based on the review of published reports[8] on the importance of landside transportation infrastructure (specifically highways) in cargo shipper selection of a particular port. Also, as shown in Table 3.2-5, growth of port cargo handling capacity at the Ports would not substantially increase travel demand on I-710 (i.e., the high-growth scenario analyzed at the Ports showed an 11 percent increase in total daily port truck trips even with a 50 percent increase in port cargo growth). However, by adding highway system capacity to the goods movement infrastructure in Southern California, all of the I-710 Corridor Project build alternatives will have a beneficial effect in accommodating the forecasted growth in the movement of cargo containers via truck within the I-710 Corridor. Furthermore, according to the Goods Movement Appendix of the SCAG 2012 RTP/SCS, the projected increase in freight moving through the region will place greater strain on an already congested transportation system, directly affecting residents and businesses. This will result in the need to expand marine terminal facilities, improve highway connections (particularly those connecting directly to the Ports like I-710), and address on-dock and off-dock intermodal terminal capacities. If port-related rail traffic and commuter demand are to be satisfied, additional mainline capacity improvements will be required. Alternative 7 would have a greater beneficial effect than Alternative 5C by providing dedicated lanes for freight movement within the I-710 Corridor.

NO BUILD ALTERNATIVE. Alternative 1 would not provide capacity increases to accommodate more vehicles and trucks along the I-710 mainline; therefore, the beneficial growth-related effects relative to employment and economic activities associated with goods movement discussed above for the I-710 Corridor Project build alternatives would not occur within the I-710 Corridor under Alternative 1.

[8] Tioga Group. 2007. *San Pedro Bay Cargo Forecast*, December 2007, and *Updated San Pedro Bay Cargo Forecast*, 2009; Dr. Jose Tongzon. 2002. *Port Choice Determinants in a Competitive Environment*, and *Executive Summary for San Pedro Bay Long-Term Unconstrained Cargo Forecast*.

3.2.1.3 PUBLIC HEALTH CONSIDERATIONS

As discussed in Chapter 1.0, Purpose and Need, the growth in population, employment, and goods movement in the I-710 Corridor results in increased travel demand on I-710 by both automobiles and trucks. Although the analysis above concludes that there are no reasonably foreseeable growth-related effects of the build alternatives, the projected growth in travel demand for all alternatives (including Alternative 1) does result in increased traffic volumes within the I-710 Corridor, which in turn have the potential to affect public health as a result of increases in air pollutant emissions and traffic noise. Please refer to Section 3.13, Air Quality, and Section 3.14, Noise, for a discussion of the public health considerations related to air quality and noise, respectively.

3.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

There are no adverse growth-related effects of the I-710 Corridor Project build alternatives; therefore, no measures are required.

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3.3 COMMUNITY IMPACTS

3.3.1 COMMUNITY CHARACTER AND COHESION

The information in this section is based on the following documents:

- *Community Impact Assessment* (CIA) (July 2017)
- *Relocation Impact Report* (RIR) (March 2017)

3.3.1.1 REGULATORY SETTING

The National Environmental Policy Act (NEPA) of 1969, as amended, established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). The Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the California Environmental Quality Act (CEQA), an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

3.3.1.2 AFFECTED ENVIRONMENT

STUDY AREA COMMUNITIES. The Study Area includes 17 cities and parts of unincorporated Los Angeles County, including the unincorporated communities of East Los Angeles, East Rancho Dominguez, and Rancho Dominguez, that are located either directly adjacent to the project improvements in which the direct impacts would occur or where the indirect impacts may occur. The following is a discussion of the boundaries and a general description of each of these communities. In addition to the physical constraints described below, citizens within the Interstate 710 (I-710) Corridor communities actively participate in various committees and commissions, including the I-710 Corridor Project Local Advisory Committees (refer to Chapter 5.0, Comments and Coordination, for a full discussion of community participation and public involvement on the I-710 Corridor Project).

BELL. The City of Bell is bordered by the Cities of Maywood and Commerce to the north, the City of Huntington Park to the west, the City of Downey to the east, and the Cities of Cudahy and Bell Gardens to the south. The City of Bell consists of two district areas

connected by the Los Angeles River and I-710. The southern part of the City of Bell is known as "Central City" and contains residential and supporting commercial areas. The northern part of the City is developed with industrial areas and is known as the "Cheli Industrial Area." The City of Bell is directly served by I-710 via interchanges at Atlantic Blvd. and Florence Ave.

Los Angeles County Metropolitan Transportation Authority (Metro) serves the City via the Metro Local lines and Metro Rapid lines. Metro provides service on Atlantic Blvd. and Florence Ave. The Metro service on Wilcox Ave. provides service to nearby cities, including Maywood, Cudahy, Huntington Park, and South Gate. In addition, the City of Bell offers Dial-A-Ride service to senior and disabled residents Monday through Saturday.

Segments of the Los Angeles River Trail are located in the City of Bell. Access points to the trail are provided at Florence Ave., Gage Ave., Randolph St., and Slauson Ave. on the west side of the river.

BELL GARDENS. The City of Bell Gardens is bordered by the City of Downey to the east and south; the Cities of Bell, Cudahy, and South Gate to the west; and the City of Commerce to the north. Residential areas are located throughout the City, and commercial and service areas are concentrated along major local roadways, including Florence Ave., Gage Ave., Garfield Ave. and Eastern Ave. In addition, there is a major retail center located by the I-710 mainline near Florence Ave. and Eastern Ave., and the City identifies this area as the hub of its commercial activity. The City is served by I-710 and Interstate 5 (I-5). I-710 is on the westerly boundary of the City and access within the City to I-710 is provided by a full interchange at Florence Ave. Access to and from I-5 is provided by an interchange at the east end of Gage Ave., just past the City boundary, in the City of Commerce.

The City of Bell Gardens is served by several public transit services and also offers Dial-A-Ride service within the City. Metro has several bus lines that serve the City along Eastern Ave., Gage Ave., and Florence Ave. In addition, the Montebello Bus Line provides service in the City of Bell Gardens along Garfield Ave., toward the City of South Gate, and continues service to the cites of Commerce, Montebello, and other cities in the San Gabriel Valley. The City of Bell Gardens also provides a Fixed-Route Bus called the Town Trolley Bus that operates Monday through Saturday, 6:30 a.m. to 5:30 p.m.

BOYLE HEIGHTS. Boyle Heights is bordered by the communities of Lincoln Heights and El Sereno within the City of Los Angeles to the north; downtown Los Angeles to the west; the City of Vernon to the south; and the unincorporated community of East Los Angeles to the east. Residential areas are located throughout the community, and commercial and service uses are located primarily along major roadways including Whittier Blvd., 1st St., and Cesar Chavez Ave. The community of Boyle Heights is served directly by I-5, Interstate 10 (I-10), and State Route 60 (SR-60). The I-710 mainline is located east of Boyle Heights, and

access is provided by Washington Blvd. and Cesar E. Chavez Ave. in adjacent communities.

Public transportation in Boyle Heights is provided by Metro bus services and light rail services via the Metro Rail Gold Line. Metro provides bus services along major roadways, including 1st St., 4th St., Cesar E. Chavez Ave., Lorena St., Soto St., and Whittier Blvd. Metro Rail Gold Line stations in Boyle Heights include the Soto Station, Mariachi Plaza Station, and Pico/Aliso Station. In addition, the Los Angeles Department of Transportation (LADOT) provides a Dependable, Accessible, Senior and Handicapped (DASH) Transportation bus line that operates the Boyle Heights/East Los Angeles route, with several stops in Boyle Heights, Monday through Saturday.

In addition, there are two Class 3 Bikeways located within Boyle Heights, along Lorena St. and 8th St. Neither of these bikeways is located within 0.5 mile of the I-710 Corridor Project improvements.

CARSON. The City of Carson is bordered by parts of unincorporated Los Angeles County to the west; the City of Los Angeles to the west and south; the City of Long Beach to the east; and the City of Compton and the unincorporated community of Rancho Dominguez to the north. Nearly 50 percent of the City of Carson's area is used for industrial purposes, which are primarily located in the eastern part of the City. Residential areas are primarily located in the western part of the City, and main commercial areas include the Carson Mall, located near Interstate 405 (I-405) and Avalon Blvd. The City of Carson is directly served by I-405 via interchanges at Wilmington Ave., Carson St., Avalon Blvd., and Main St., and by I-710 via an interchange at Del Amo Blvd.

Public transportation in Carson is provided primarily by the Carson Circuit. The Carson Circuit provides local transit via eight routes throughout the City. Buses depart from the Transit Center just north of the South Bay Pavilion, and each of the routes operates Monday through Saturday, with service every 40 minutes. The fare is 50 cents; seniors and disabled persons ride for free with a City-issued identification.

Other modes of public transportation in the City of Carson include Torrance Transit, the Metro bus lines, and the Metro Rail Blue Line. Limited public transportation services in the City of Carson are also provided by Long Beach Transit and Gardena Municipal Bus Lines. A north/south shuttle is also provided by the City of Carson. The shuttle connects to the Carson Circuit, Torrance Transit, and Metro bus lines. Dial-A-Ride service is available to seniors and/or disabled citizens 24 hours per day, seven days per week. Service is provided anywhere within the City limits and to specific medical and social service appointments.

Class 1, 2, and 3 Bikeways are also provided in the City of Carson. None of these bikeways are located within 0.5 mile of the I-710 Corridor Project improvements.

COMMERCE. The City of Commerce is bordered by the Cities of Vernon and Maywood to the west; the Cities of Bell, Bell Gardens, and Downey to the south; the City of Montebello to the east; and the unincorporated community of East Lost Angeles to the north. The city is built up primarily with industrial areas located west of I-710, east of Telegraph Rd., and south of Washington Blvd. Residential areas are primarily located in the north and central areas of the City in the Northwest, Bandini-Rosini, and Rosewood planning areas, as well as additional residential uses in the southern part of the City in the Southeast planning area. In addition, the Ayers neighborhood is located west of I-710, between the mainline and the rail yards in the West planning area. The City of Commerce is directly served by I-5 and I-710 and is located in the center of the Southern California freeway network. Local interchanges for the I-710 mainline that service the City of Commerce include Washington Blvd. and Atlantic Blvd./Bandini Blvd. Local interchanges on I-5 that directly serve the City include Atlantic Ave., Washington Blvd., Garfield Ave., and Slauson Ave. Major roadways in Commerce include Atlantic Blvd., Washington Blvd., Telegraph Rd., Garfield Ave., Eastern Ave., and Slauson Ave.

Public transportation in the City of Commerce is provided by Metro and the City of Commerce. Metro provides bus service along Atlantic Blvd., Eastern Ave., and Telegraph Rd. Metro also provides Metro Rail commuter train service (the Orange County line) and has a station near the intersection of Garfield Ave., I-5, and 26th St. This station also has a park-and-ride facility with approximately 135 parking spaces and offers connecting transit on various other routes.

The City of Commerce has its own municipal bus system that carries approximately 970,000 passengers annually at no charge. The city's transit system consists of five routes that run within the City limits Monday through Saturday. Two routes operate on Sunday, with one stopping at the Commerce Shopping Center on Whittier Blvd./Goodrich Blvd. and the other route stopping at churches located throughout the City.

The City of Commerce also provides a Medi-Ride service for senior and disabled Commerce residents for transportation to and from medical appointments within a 12-mile radius of City Hall.

COMPTON. The City of Compton is bordered by the City of Carson and the unincorporated community of Rancho Dominguez to the south; the City of Long Beach to the south and east; the City of Paramount to the east; the City of Lynwood to the north; and unincorporated areas of Los Angeles County to the north and west. Three pockets of unincorporated Los Angeles County land are located in the City of Compton, including unincorporated East Rancho Dominguez. Residential areas are located throughout the City, and commercial and service uses are concentrated along major roadways including Compton Blvd., Rosecrans Ave., and Long Beach Blvd. The City of Compton is served by I-

710 and State Route 91 (SR-91). Access to I-710 is provided by Alondra Blvd. and Rosecrans Ave.

The City of Compton is served by the Metro Rail Blue Line, with two stations located in the City of Compton: the Compton Station/Martin Luther King Jr. Transit Center and the Artesia Station. The Compton Station/Martin Luther King Jr. Transit Center is located at 275 Willowbrook Ave. and includes a park-and-ride facility and a Greyhound Bus Hub. The Artesia Station is located at 1920 ½ Acacia Ave. and includes a park-and-ride facility that is owned and operated by Metro. The park-and-ride facility has 380 free parking stalls and eight bike racks. Neither transit center is located within 0.5 mile of the I-710 Corridor Project improvements.

Compton Renaissance Transit also provides transit service within the City. There are five bus routes that operate from the Compton Station/Martin Luther King Jr. Transit Center to various destinations (Compton Airport; El Camino College Compton Center; California State University, Dominguez Hills; Gateway Plaza; and the Renaissance Center) in the City and to the City of Lynwood. The City of Compton also has a Dial-A-Ride program that provides a curb-to-curb, shared ride service for senior citizens 60 years of age or older and eligible handicapped persons, and a bus service that is provided by Metro.

The City of Compton has several bikeways within the City. A Class 1 Bikeway is located along Compton Creek within the City (also known as the Compton Creek Bike Path); it continues into the unincorporated community of Rancho Dominguez and ends in the City of Long Beach at the Los Angeles River. In addition, parts of the Los Angeles River Trail are located in the City of Compton; however, there are no access points to the trail provided in the City of Compton. Class 2 Bikeways are also located along Santa Fe Ave., Alondra Blvd., and Greenleaf Blvd.

CUDAHY. The City of Cudahy is bordered by the City of South Gate to the south; the City of Bell Gardens to the east; the City of Bell to the north; and the City of Huntington Park to the west. The city consists primarily of residential areas. Commercial uses are concentrated along Atlantic Ave. The I-710 mainline is located just east of Cudahy, and access is provided to the north in the City of Bell at Florence Ave. and to the south in the City of South Gate at Firestone Blvd. Major arterials in Cudahy include Atlantic Ave., which runs north-south, and Salt Lake Ave., which follows the curve of the railroad tracks and the City's western boundary.

Public transportation in Cudahy is provided by Metro bus lines that operate on Atlantic Ave. and Wilcox Ave. Metro also provides bus service in the City via Metro Local or Limited lines, the Metro Shuttle line, and the Metro Rapid line. The City of Cudahy also provides a municipal bus system, Cudahy Area Rapid Transit (CART), which provides service within

the City. CART operates Monday through Friday from 7:00 a.m. to 5:00 p.m. The City also offers Dial-A-Ride service for the elderly and disabled.

A part of the Los Angeles River Trail is in the City of Cudahy. Access points to the trail are provided within the City of Cudahy at Live Oak St., Clara St., Cudahy Park, and Fostoria St. on the west side of the Los Angeles River.

DOWNEY. The City of Downey is bordered by the Cities of Bellflower and Paramount to the south; the City of South Gate to the west; the Cities of Bell Gardens, Commerce, Montebello, and Pico Rivera to the north; and the Cities of Santa Fe Springs and Norwalk to the east. The City of Downey consists primarily of residential areas located throughout the City and commercial and service areas that are located along major roadways, including Firestone Blvd. and Florence Ave. The City of Downey is directly served by I-5 and Interstate 605 (I-605), and indirectly by I-710. Access to and from I-5 is provided by Paramount Blvd. and Rosemead Blvd. Access to and from I-605 is provided by Florence Ave. I-710 is located one mile west of the City limits, and access to and from I-710 is provided by Florence Ave., Firestone Blvd., and Imperial Hwy

The City of Downey is served by Metro bus service, which includes lines along Imperial Hwy., Bellflower Blvd., Lakewood Ave., and Clark St. In addition, the Metro Rail Green Line provides light-rail services along Interstate 110 and has one station located along Lakewood Blvd. and I-110. The station has a park-and-ride facility with 414 parking stalls, 22 bike rack spaces, and 12 bike lockers.

The City of Downey also provides DowneyLINK and Dial-A-Ride services. DowneyLINK has four routes operating throughout the City, Monday through Friday, and stops at the Civic Center, the Aquatic Center, schools, and major shopping and entertainment attractions. The Downey Dial-A-Ride provides bus service for seniors and disabled residents of any age. Service is provided to any destination within Downey and to selected medical facilities outside the City. Dial-A-Ride operates seven days per week and registration is required.

EAST LOS ANGELES. The unincorporated community of East Los Angeles is bordered by the City of Commerce to the south; the Cities of Montebello and Monterey Park to the west; and the City of Los Angeles to the north and west. Residential areas are located throughout the City, and commercial and service areas are concentrated along major roadways, including Olympic Blvd., Whittier Blvd., and Atlantic Blvd. East Los Angeles is served directly by I-710, I-5, and SR-60. I-710 and SR-60 bisect East Los Angeles north to south and east to west, respectively. I-5 is located in the southern part of the community. Access to and from I-710 is provided at Eastern Ave. and 3rd St. Access to and from I-5 and SR-60 is provided along Atlantic Blvd.

Metro provides bus and light-rail services throughout the East Los Angeles area. Bus services are provided along major roadways, including Indiana St., Rowan Ave., Ford St., Arizona Ave., and Atlantic Blvd. Service is also provided north to the San Gabriel Valley and south to the Cities of Bell, Bell Gardens, and South Gate. The east-west line also provides service on Olympic Blvd. to downtown Los Angeles. Light rail services are provided via the Metro Rail Gold Line, and there are four stations located in East Los Angeles (Atlantic, East Los Angeles Civic Center, Maravilla, and Indiana). The Maravilla Station is located within 0.5 mile of the I-710 Corridor Project improvements.

Montebello Bus Lines also provides service in East Los Angeles along Beverly Blvd. west to downtown Los Angeles, and east to Montebello and Norwalk. The El Sol Shuttle, provided by the Los Angeles County Department of Public Works, has three lines in East Los Angeles, with stops at the Roybal Health Center; California State University, Los Angeles (CSULA); East LA Community College, and shopping areas on Cesar E. Chavez Ave. and Whittier Blvd. The Children's Court Shuttle connects CSULA, the Sheriff's Headquarters, and Edmond D. Edelman Children's Court.

HUNTINGTON PARK. The City of Huntington Park is bordered by the Cities of Vernon and Maywood to the north; the Cities of Bell and Cudahy to the east; the City of South Gate to the south; and the City of Walnut Park to the south and west. Residential areas are located throughout the City, with the exception of the far western part of the City, which consists of mostly industrial areas. Commercial and service areas are concentrated along major roadways, including Florence Ave., Gage Ave., and Pacific Blvd. Huntington Park is located south of downtown Los Angeles and is not served directly by the regional highway system. The I-710 mainline is located east of the City and access to the freeway is provided in the Cities of Maywood and Bell.

The City is served by the Huntington Park Local Transit Bus (known as the HP Express), which operates every day of the year except major holidays. Stops are located at major intersections, and seniors, disabled, and children under four years of age ride for free. The City also offers Dial-A-Ride service 24 hours per day, seven days per week, including holidays, for residents age 62 or older and disabled individuals. Additional bus service is provided by Metro, which has both Metro Local or Limited Lines and Metro Rapid Lines and stops within the City.

LAKEWOOD. The City of Lakewood is bordered by the City of Long Beach to the south and west; the City of Hawaiian Gardens to the south; the Cities of Bellflower and Cerritos to the north; and the City of Cypress to the east. Residential areas are located throughout the City, and commercial areas include the Lakewood Mall. Lakewood is directly served by I-605 and indirectly served by I-710 and SR-91. Access to and from I-710 is provided by Del Amo Blvd. Major north-south arterials in Lakewood include: Palo Verde Ave., Woodruff Ave., Bellflower

Blvd., Lakewood Blvd., and Paramount Blvd. Major east-west arterials in Lakewood include Carson St., Del Amo Blvd., and South St.

Public transportation is provided by three bus systems with local connections: Metro, Long Beach Transit (LBT), and the Orange County Transportation Authority (OCTA). The City of Lakewood also provides DASH Transportation to seniors and disabled residents for transportation to medical appointments, shopping, and recreational events. The City of Lakewood also subsidizes the use of LBT's Dial-A-Lift service for disabled adult Lakewood residents.

Class 1, 2, and 3 Bikeways are also provided in the City of Lakewood. None of these bikeways are located within 0.5 mile of the I-710 Corridor Project improvements.

LONG BEACH. The City of Long Beach is bordered by the Pacific Ocean to the south; the Cities of Los Angeles, Carson, and Compton to the west; the City of Paramount to the north; the Cities of Lakewood and Bellflower to the north and east; and the Cities of Hawaiian Gardens, Los Alamitos, and Seal Beach to the east. Over the years, the City of Long Beach has continued to grow and develop, resulting in distinct neighborhoods throughout the City that are characterized by the schools, parks, and other community resources. A total of 29 neighborhoods are located within 0.5 mile of the I-710 Corridor Project mainline and interchange improvements. The City of Long Beach is served directly by I-710, I-405, and SR-91. I-710 is located in the western part of the City of Long Beach and connects with I-405 and SR-91 within the City limits. Access to I-710 is provided by Shoreline Dr., 3rd St., 7th St., Anaheim St., Pacific Coast Hwy., Willow St., Wardlow Rd., Del Amo Blvd., Long Beach Blvd., and Artesia Blvd.

Within the City of Long Beach, public transportation is provided by LBT, the City of Long Beach, and Metro. LBT is the principal provider of public transportation in the City of Long Beach and provides transportation via bus, shuttle, and water taxi (water taxi services are provided between May and September with a limited weekend schedule from September to October). LBT currently operates 34 bus routes, with nearly 2,000 bus stops and offers connections to local rail service and to the neighboring Cities of Carson, Compton, Paramount, Bellflower, Artesia, Cerritos, Hawaiian Gardens, and Norwalk. The Passport Shuttle is a free local bus service that serves various neighborhoods including CSULB and downtown Long Beach/Pine Ave. The City of Long Beach provides Dial-A-Lift service, which offers a curb-to-curb, shared-ride transit service exclusively for the mobility-impaired residing in and traveling throughout the Cities of Long Beach, Lakewood, and Signal Hill.

Metro operates the Blue Line light rail in the City of Long Beach, and there are eight Blue Line stations located in the City. The Wardlow Blue Line Station and the Willow Blue Line Station each have a park-and-ride facility that is owned and operated by Metro. The Wardlow Blue Line Station has 61 parking stalls, paid parking, eight bike racks, and 16 bike

lockers. The Willow Blue Line Station has 863 parking stalls (free and paid), most within a parking garage, 16 bike racks, and eight bike lockers. The Transit Mall, Pacific, Wardlow, and Del Amo Stations are located within 0.5 mile of the I-710 Corridor Project improvements.

Parts of the Los Angeles River Trail (a Class 1 Bikeway) are located in the City of Long Beach. Access points to the Los Angeles River Trail in the City of Long Beach are provided just north of Shoemaker Bridge near DeForest Ave., on the east side of the river, and on Pacific Coast Hwy., Willow St., Wardlow Rd., Del Amo Blvd., Long Beach Blvd., and Artesia Blvd. In addition, other Class 1, 2, and 3 Bikeways are located throughout the City

LYNWOOD. The City of Lynwood is bordered by the City of Compton to the south; the City of Paramount to the east; the City of South Gate to the east and north; and unincorporated areas of Los Angeles County and the City of Los Angeles to the west. Residential areas are located throughout the City. Commercial and service areas in the City are concentrated along major roadways and include the Plaza Mexico, Atlantic Crossing, and the Long Beach Pluma shopping centers. The City of Lynwood is directly served by I-710 and I-105. I-710 serves as the eastern boundary of the City and access is provided by Martin Luther King Jr. Blvd. and Imperial Hwy. I-105 bisects the City east-west, and access to and from I-105 is provided by Long Beach Blvd.

The City of Lynwood has several transit options, including bus, trolley, the Metro Rail Green Line, and Dial-a-Ride. The City of Lynwood is served by the Metro Bus service through the Metro Shuttle, Metro Local Lines, Metro Rapid Line, and Municipal Bus line. The Lynwood Trolley serves both residential streets and major boulevards in the City for a nominal fee. The Metro Rail Green Line light rail that runs east-west along the I-105 median has one stop in the City, at Long Beach Blvd. The Green Line Station has a park-and-ride facility that is owned and operated by the California Department of Transportation (Caltrans) and provides 650 parking stalls. The Dial-A-Ride program also serves the transportation needs of Lynwood's seniors and disabled citizens and provides curb-to-curb transportation service to the supermarket, the bank, personal appointments, and medical appointments throughout Lynwood.

The City of Lynwood has one Class 2 Bikeway located in the southern part of the City, along Santa Fe Ave. This bikeway is not located within 0.5 mile of the I-710 Corridor Project improvements.

MAYWOOD. The City of Maywood is bordered by the Cities of Huntington Park and Bell to the south; the City of Commerce to the east; and the City of Vernon to the north and west. The city consists primarily of residential areas with commercial and service uses located along Slauson Ave. and Atlantic Blvd. I-710 is located approximately 0.25 mile east of the City of Maywood, and access to and from I-710 is provided by Atlantic Blvd. The major north-south

roadway in the City of Maywood is Atlantic Blvd. and the major east-west roadway is Slauson Ave.

Public transportation is provided by Metro, which provides scheduled bus routes along Slauson Ave. The City of Maywood also offers the Maywood Dial-A-Ride service, which provides free transportation to its senior and disabled residents. The system provides transportation within the City limits for a nominal one-way fee and outside the City to select medical facilities. The service is available seven days per week, from 8:00 a.m. to 5:00 p.m., and registration is required.

An access point to the Los Angeles River Trail (a Class 1 Bikeway) is provided at Slauson Blvd. on the west side of the river, along the City boundary.

PARAMOUNT. The City of Paramount is bordered by the Cities of Compton and Lynwood to the west; the City of Long Beach to the south; the City of Bellflower to the east; and the Cities of Downey and South Gate to the north. Industrial areas are located in the center of the City and include the Central Industrial District. Commercial areas are located east of the industrial areas and include the Central Business District. Residential areas are located throughout the City. The City of Paramount is served by I-710 and I-105. Access to I-710 within the City is provided by a full interchange at Rosecrans Ave. and additional access is provided at the Alondra Blvd. interchange adjacent to the City within the City of Compton. Access to and from I-105 is provided at Garfield Ave. and Paramount Blvd.

The City of Paramount is served by the Metro Bus service, which operates along Alondra Blvd., Rosecrans Ave., Paramount Blvd., and Lakewood Blvd. Local transportation is provided by the Easy Rider Shuttle, Paramount Dial-A-Ride, and Paramount Dial-A-Taxi. For a nominal fee, the Easy Rider Shuttle transports residents along a fixed route throughout town, with stops at major shopping outlets, schools, and City parks. In addition, the Easy Rider Shuttle system was also expanded in 2009 to provide transportation to the Metro Rail Green Line light rail station on Lakewood Blvd. The City of Paramount also contracts for Dial-A-Ride service for senior residents needing assistance and transportation to medical appointments, shopping, errands, etc.

Parts of the Los Angeles River Trail are located in the City of Paramount along the east side of the Los Angeles River. Access points to the trail in the City of Paramount are provided at Rosecrans Ave., Somerset Blvd., and Alondra Blvd.

SIGNAL HILL. The City of Signal Hill is bordered by the City of Long Beach in all directions. Residential areas are primarily located in the southern part of the City, and commercial areas, including the Signal Hill Auto Center, are located primarily in the northern part of the City. The City of Signal Hill is directly served by I-405 and local interchanges are located along Atlantic Ave. and Cherry Ave. Major north-south roadways within the City include

Temple Ave., Cherry Ave., Orange Ave., California Ave., and Atlantic Ave. Major east-west roadways within the City include Pacific Coast Hwy., Willow St., and Spring St.

Public transportation in the City of Signal Hill is provided by the Metro Bus service and Long Beach Transit (LBT) bus service. Metro provides bus service along Long Beach Blvd. from downtown Long Beach to downtown Los Angeles. LBT also provides bus service, with 12 bus routes serving the major streets in Signal Hill, including Pacific Coast Hwy., Willow St., Spring St., Wardlow Rd., Long Beach Blvd., Atlantic Ave., Orange Ave., Cherry Ave., and Redondo Ave. In addition, the LBT connects residents to Metro and Orange County transit opportunities, and provides a Dial-A-Lift service for residents over the age of 18 with ambulatory disabilities. The Dial-A-Lift service is provided to any destination in Signal Hill, Lakewood, and Long Beach and operates six days per week.

Class 2 and 3 Bikeways are also located within the City of Signal Hill. A Class 2 bikeway is located along Spring St. in the Atlantic/Spring neighborhood and a Class 3 Bikeway is located along Pacific Coast Hwy. at the southern border of the City limits. Neither of these bikeways is located within 0.5 of the I-710 Corridor Project improvements.

SOUTH GATE. The City of South Gate is bordered by unincorporated areas of Los Angeles County to the north and west; the City of Los Angeles to the west; the Cities of Lynwood and Paramount to the south; the City of Downey to the east; and the Cities of Bell Gardens, Cudahy, and Huntington Park to the north. Residential areas are primarily located west of I-710, and industrial areas are located east of I-710. Commercial areas are located along major roadways and include the El Paseo/South Gate Towne Center, which is located in the northeastern part of the City along Firestone Blvd. The city is served by I-710, and access to I-710 is provided by full interchanges at Firestone Blvd. and Imperial Hwy.

The City of South Gate is served by the Metro Bus system through the Metro Shuttle, Metro Local Lines, and Metro Rapid Line. Locally, the City of South Gate provides transportation services through the Phone-A-Ride program. The Phone-A-Ride program provides residents with limited transportation options, such as senior citizens and the disabled, with reliable and affordable transportation for medical appointments, the grocery store, and other necessary trips within the City limits. Additionally, the City operates a local transit bus called the Get Around Town Express (GATE) that runs on a continuous loop with convenient stops near many popular destinations around the City. Service is offered Monday through Friday, 6:00 a.m.–7:00 p.m., and Saturdays 8:00 a.m.–5:00 p.m.

Parts of the Los Angeles River and Rio Hondo trails are located in the City of South Gate. Access points to the Los Angeles River Trail are provided within the City of South Gate at Firestone Blvd., Southern Ave., Tweedy Blvd., and Imperial Hwy. on the west side of the river. Additional access points are provided on the east side of the Los Angeles River near Borwick Ave. and Hollydale Park. Access points are also provided within the City of South

Gate to the Rio Hondo Trail at Imperial Hwy., Garfield Ave., Southern Ave., and Firestone Blvd. A Class 2 Bikeway is also located along Southern Ave., just west of the Los Angeles River Trail, and this trail turns into a Class 1 Bikeway near South Gate Park as it continues west to Cesar Chavez Park.

VERNON. The City of Vernon is bordered by areas of unincorporated Los Angeles County to the north; the Cities of Maywood and Huntington Park to the south; the City of Commerce to the east; and the City of Los Angeles to the west. The City of Vernon is primarily built up with industrial uses; however, there is a small pocket of residential uses in the western part of the City along Vernon Ave. The City of Vernon is served by I-710. The I-710 mainline crosses through the eastern part of the City, and access to and from I-710 is provided at Atlantic Ave./Bandini Blvd. Public transportation is provided by Metro, which provides scheduled bus routes along various City streets, including Vernon Ave., Solo St., and District Ave. In addition, the Metro Rail Blue Line provides light-rail service and is located west of the City, with the nearest station (Vernon Station) located 0.5 mile west of the City boundary at Vernon Ave.

Parts of the Los Angeles River Trail are located in the City of Vernon. Access points to the trail in the City of Vernon are provided at Atlantic Ave.

WILMINGTON/SAN PEDRO. Wilmington is bordered by Lomita Blvd., the City of Long Beach, the Port of Los Angeles (POLA), Gaffey St., and Normandie Ave. San Pedro is bordered by Taper Ave. to the north; John Gibson Blvd., Harbor Blvd., the West Channel of POLA, and Cabrillo Beach to the east; the Pacific Ocean to the south; and the City of Rancho Palos Verdes to the west. Residential areas are located in the western part of Wilmington and throughout San Pedro. Public transportation in the communities of Wilmington and San Pedro is provided by Metro and the LADOT. Metro provides local bus lines as well as the Metro Express Line, which provides express bus service to downtown Los Angeles via the Harbor Transitway, a high-occupancy vehicle roadway that runs in the median of I-110. LADOT provides DASH Transportation, Commuter Express, and Cityride public transportation services. DASH Transportation provides local bus service around the communities of Wilmington and San Pedro for a nominal fare. Commuter Express provides commuter bus service from the San Pedro and Wilmington areas to the Financial District in downtown Los Angeles and to the City of Long Beach. Commuter Express operates during peak commute times. The Cityride service is a transportation assistance program for residents age 65 and over and individuals with disabilities.

Park-and-ride facilities are also located in Wilmington and San Pedro. Wilmington has one park-and-ride facility located on Pacific Coast Hwy. that is owned and operated by Caltrans. The Wilmington park-and-ride facility has 244 parking stalls available. In San Pedro, there are two park-and-ride facilities for residents to use, the Channel Street Lot and the San

Pedro II Lot. The Channel Street Lot is located where Battery St., Gaffey St. and Channel St. converge and is also owned and operated by Caltrans. The Channel Street Lot has 106 parking stalls available. The San Pedro II Lot is located at the intersection of North Beacon St. and Harbor Blvd. and is owned and operated by Caltrans. The San Pedro II Lot has 280 parking stalls available.

Wilmington and San Pedro also include several Class 1, 2, and 3 Bikeways along major roadways throughout each community. None of these bikeways are located within 0.5 mile of the I-710 Corridor Project improvements.

STUDY AREA DEMOGRAPHICS. Community cohesion is the degree to which residents have a sense of belonging to their neighborhood, their level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time (*Community Impact Assessment Handbook*, Caltrans, June 1997). The demographic characteristics for the Study Area provided within this assessment were obtained from a combination of sources, including the United States Census Bureau (2010 Census and American Community Survey [ACS] 2010–2014) and the Southern California Association of Governments (SCAG).

Elements of community cohesion can be found in demographic data used to profile communities from the United States Census. Typical indicators of community cohesion are described below, followed by a specific discussion of these indicators within the Study Area.

- **AGE:** In general, communities with a high percentage of elderly residents (65 years or older) tend to demonstrate a greater social commitment to their community. This is because the elderly population, which includes retirees, often tends to be more active in the community as they have more time available for volunteering and participating in social organizations.
- **ETHNICITY:** In general, homogeneity of population contributes to higher levels of cohesion. Communities that are ethnically homogenous often speak the same language, hold similar beliefs, and share a common culture and are, therefore, more likely to engage in social interaction on a routine basis.
- **HOUSEHOLD SIZE:** In general, communities with a high percentage of families with children are more cohesive than communities consisting of mainly single people. This appears to occur as children tend to establish friendships with other children in their community. The social networks of children often lead to the establishment of friendships and affiliations among parents in the community. Although the Census Bureau does not provide specific data regarding the number of children present in each household, data regarding the persons per household in Los Angeles County as well as in each city, and community (including unincorporated areas) in the Study Area that can serve as a proxy for households with children.

- **HOUSING OCCUPANCY:** Communities with a high percentage of owner-occupied residences are typically more cohesive because their population tends to be less mobile. Since they have a financial stake in their community, homeowners often take a greater interest in what is happening in their community than renters do. This means they often have a stronger sense of belonging to their community.
- **HOUSING TENURE:** Communities with a high percentage of long-term residents are typically more cohesive because a greater proportion of the population has had time to establish social networks and develop an identity with the community. For purposes of this analysis, long-term residents are considered those who have lived in their current residence 10 years or more.
- **TRANSIT-DEPENDENT POPULATION:** Communities with a high percentage of residents that are dependent on public transportation typically tend to be more cohesive than communities that are dependent on automobiles for transportation. This is because residents who tend to walk or use public transportation for travel tend to engage in social interaction with each other more frequently than residents who travel by automobile.

AGE. In 2010, the percentage of the population in the Study Area considered transit-dependent (under the age of 19 and over the age of 65) ranged between 0 and 48.2 percent based on the ACS 2010 to 2014 data. Table 3.3-1 provides the median age demographic in 2010 and the transit-dependent populations for the affected cities and communities.

ETHNICITY. Table 3.3-2 shows the ethnic composition of the affected cities and communities in the Study Area in 2010. As shown in that table, the largest racial category for most of the affected cities and communities is Latino (Hispanic).

HOUSEHOLD SIZE. Based on the 2010 census, the average household size within the affected cities and communities in the Study Area ranged between 2.64 and 4.57 persons (refer to Table 3.3-3 for a breakdown of the average household size within each affected city and community). As shown in Table 3.3-3, seven of the affected cities have an average household size greater than four persons.

HOUSING TENURE. Table 3.3-4 provides the housing tenure for the affected cities and communities in the Study Area as documented in the 2010 Census. As shown in that table, approximately 69 percent or more of the households have lived in their unit 10 years or more.

Table 3.3-1: Age of Population in the Study Area

City	Median Age (Years)	Transit-Dependent Population
Bell	28.9	10,975 (40.5%)
Bell Gardens	27.3	13,179 (42.5%)
Carson	37.6	19,792 (26.1%)
Commerce	31.2	4,023 (38.8%)
Compton	28	27,415 (38.0%)
Cudahy	27	7,884 (45.6%)
Downey	33.3	22,478 (25.1%)
East Los Angeles	29.1	45,168 (42.6%)
Huntington Park	28.9	21,194 (48.2%)
Lakewood	37.5	10,663 (16.3%)
Long Beach	33.2	103,439 (27.6%)
City of Los Angeles (includes Boyle Heights, Wilmington, and San Pedro)	34.1	966,131 (31.6%)
Lynwood	27.8	20,211 (38.2%)
Maywood	27.9	8,835 (44.3%)
Paramount	28.6	15,024 (36.6%)
Signal Hill	36	1,964 (22.8%)
South Gate	29.4	27,498 (37.4%)
Vernon	36.1	0 (0.0%)

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
I-710 = Interstate 710

Table 3.3-2: Ethnicity Composition in the Study Area

County/City	Black or African-American	American Indian and Alaskan Native	Asian	Latino (Hispanic)	Native Hawaiian and Other Pacific Islander	White	Other
Los Angeles County	856,874 (8.7%)	72,828 (0.7%)	1,346,865 (13.7%)	4,687,889 (47.7%)	26,094 (0.3%)	2,208,278 (22.5%)	220,288 (2.3%)
Bell	214 (0.6%)	64 (0.2%)	229 (0.6%)	33,028 (93.1%)	2 (0.01%)	1,728 (4.9%)	212 (0.6%)
Bell Gardens	201 (0.5%)	97 (0.2%)	226 (0.5%)	40,271 (95.7%)	28 (0.1%)	1,133 (2.7%)	116 (0.3%)
Carson	21,385 (23.3%)	152 (0.2%)	23,105 (25.2%)	35,417 (38.6%)	2,291 (2.5%)	7,022 (7.7%)	2,342 (2.6%)
Commerce	66 (0.5%)	48 (0.4%)	134 (1%)	12,114 (94.5%)	7 (0.1%)	402 (3.1%)	52 (0.4%)
Compton	30,992 (32.1%)	175 (0.2%)	222 (0.2%)	62,669 (65%)	684 (0.7%)	782 (0.8%)	931 (1%)
Cudahy	193 (0.8%)	46 (0.2%)	110 (0.5%)	22,850 (96%)	8 (0.03%)	505 (2.1%)	93 (0.4%)
Downey	3,834 (3.4%)	212 (0.2%)	7,484 (6.7%)	78,996 (70.7%)	170 (0.2%)	19,786 (17.7%)	1,290 (1.2%)
East Los Angeles	322 (0.3%)	167 (0.1%)	962 (0.8%)	122,784 (97.1%)	13 (0.01%)	1,917 (1.5%)	321 (0.3%)
Huntington Park	211 (0.4%)	29 (0.05%)	320 (0.6%)	56,445 (97.1%)	15 (0.03%)	935 (1.6%)	15 (0.03%)
Lakewood	6,663 (8.3%)	234 (0.3%)	12,811 (16%)	24,101 (30.1%)	686 (0.9%)	32,774 (40.9%)	2,779 (3.5%)
Long Beach	59,925 (13%)	1,349 (0.3%)	58,268 (12.6%)	188,412 (40.8%)	4,915 (1.1%)	135,698 (29.4%)	13,690 (3%)
The City of Los Angeles (includes Boyle Heights, Wilmington, and San Pedro)	347,380 (9.2%)	6,589 (0.2%)	420,212 (11.1%)	1,838,822 (48.5%)	4,300 (0.1%)	1,086,908 (28.7%)	88,410 (2.3%)
Lynwood	6,752 (9.7%)	76 (0.1%)	390 (0.6%)	60,452 (86.6%)	170 (0.2%)	1,539 (2.2%)	393 (0.6%)
Maywood	49 (0.2%)	24 (0.1%)	61 (0.2%)	26,696 (97.4%)	14 (0.1%)	498 (1.8%)	53 (0.2%)
Paramount	5,980 (11.1%)	86 (0.2)	1,531 (2.8%)	42,547 (78.6%)	396 (0.7%)	3,015 (5.6%)	543 (1%)
Signal Hill	1,427 (13.0%)	27 (0.2%)	2,211 (20.1%)	3,472 (31.5%)	112 (1%)	3,340 (30.3%)	427 (3.9%)
South Gate	585 (0.6%)	110 (0.1%)	647 (0.7%)	89,442 (94.8%)	69 (0.1%)	3,233 (3.4%)	147 (0.3%)
Vernon	4 (3.6%)	0 (0%)	2 (1.8%)	48 (42.9%)	0 (0%)	58 (51.8%)	0 (0%)

Source: United States Census Bureau (2010 Census).
I-710 = Interstate 710

Table 3.3-3: Average Household Size in the Study Area

City	Average Household Size
Bell	3.93
Bell Gardens	4.31
Carson	3.56
Commerce	3.77
Compton	4.15
Cudahy	4.24
Downey	3.27
East Los Angeles	4.09
Huntington Park	3.96
Lakewood	3.01
Long Beach	2.78
The City of Los Angeles (includes Boyle Heights, Wilmington, and San Pedro)	2.81
Lynwood	4.57
Maywood	4.16
Paramount	3.87
Signal Hill	2.64
South Gate	4.05
Vernon	4.0

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
I-710 = Interstate 710

Table 3.3-4: Housing Tenure in the Study Area

City	1979 or earlier	1980–1989	1990–1999	2000–2009	2010 or later
Bell	347 (4.8%)	535 (6.4%)	1,893 (20.6%)	4,031 (49.4%)	2,148 (17.9%)
Bell Gardens	264 (2.7%)	650 (6.7%)	1,770 (18.3%)	4,430 (45.7%)	2,499 (25.8%)
Carson	2,845 (17.1%)	2,457 (9.9%)	4,649 (18.8%)	8,978 (36.3%)	4,224 (17.1%)
Commerce	292 (8.3%)	433 (12.3%)	501 (14.2%)	1,547 (43.8%)	483 (13.7%)
Compton	1,466 (6.3%)	2,193 (9.4%)	3,892 (16.6%)	9,004 (38.5%)	5,041 (21.5%)
Cudahy	81 (1.4%)	350 (6.2%)	727 (12.9%)	2,882 (51.3%)	1,560 (27.8%)
Downey	1,904 (5.7%)	2,502 (7.5%)	5,664 (17.1%)	13,430 (40,5%)	8,416 (25.4%)
East Los Angeles	2,171 (6.9%)	2,816 (8.9%)	5,116 (16.2%)	12,505 (39.7%)	6,854 (28.1%)
Huntington Park	671 (4.6%)	1,448 (9.9%)	2,552 (17.4%)	6,276 (42.9%)	3,571 (24.4%)
Lakewood	1,789 (6.8%)	2,562 (9.7%)	5,220 (19.8%)	9,322 (35.4%)	5,149 (19.5%)
Long Beach	6,038 (3.7%)	9,288 (5.7%)	25,082 (15.4%)	66,845 (41.0%)	51,105 (31.3%)
The City of Los Angeles (includes Boyle Heights, Wilmington, and San Pedro)	61,712 (4.6%)	88,175 (6.6%)	216,497 (16.3%)	523,744 (39.4%)	394,693 (29.7%)
Lynwood	920 (6.1%)	1,498 (9.9%)	2,853 (18.8%)	6,626 (43.6%)	3,085 (20.3%)
Maywood	313 (5.0%)	541 (8.6%)	1,025 (16.3%)	2,863 (45.5%)	1,508 (24.0%)
Paramount	438 (3.2%)	846 (6.2%)	2,777 (20.2%)	5,620 (40.9%)	3,804 (27.7%)
Signal Hill	27 (0.7%)	273 (6.9%)	641 (16.1%)	1,817 (45.7%)	1,212 (30.5%)
South Gate	1,424 (6.1%)	2,322 (9.9%)	4,798 (20.5%)	9,024 (38.6%)	5,469 (23.4%)
Vernon	0 (0.0%)	0 (0.0%)	3 (15.0%)	12 (60.0%)	5 (20.0%)

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).

COMMUNITY COHESION SUMMARY. Based on the data in Tables 3.3-1 through 3.3-4 and the analysis above, all of the Study Area cities and communities are considered to be highly cohesive based on the factors of median age, ethnic homogeneity, high tenure of residents, above-average household size, high percentage of transit-dependent population, and percentage of elderly residents.

COMMUNITY FACILITIES. In addition to parks and recreation areas discussed in Section 3.1.3 and public safety facilities discussed in Section 3.4 of this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS), other community facilities such as schools, libraries, and places of worship within the Study Area are discussed below.

SCHOOLS. The Study Area is served by several school districts. The following is a list of the school districts and the affected cities in the Study Area served by each district.

- The Los Angeles Unified School District (LAUSD) serves residents for grades Kindergarten to 12 in several of the communities within the Study Area, including the Cities of Bell, Carson, Cudahy, Huntington Park, Maywood, South Gate, and Vernon, as well as parts of East Los Angeles, Boyle Heights, Wilmington, and San Pedro.
- The Montebello Unified School District (MUSD) serves the residents of the Cities of Bell Gardens and Commerce, as well as parts of East Los Angeles, for grades K–12. The Compton Unified School District (CUSD) serves the residents in the City of Compton for grades Kindergarten to12.
- The Downey Unified School District (DUSD) serves the residents in the City of Downey for grades Kindergarten to 12.
- The Long Beach Unified School District (LBUSD) serves the residents in the City of Long Beach, as well as the City of Signal Hill and parts of the City of Lakewood for grades Kindergarten to 12.
- The Lynwood Unified School District (LUSD) serves the residents in the City of Lynwood for grades Kindergarten to 12.
- The Paramount Unified School District (PUSD) serves the residents in the City of Paramount, as well as parts of the Cities of South Gate and Lakewood for grades Kindergarten to 12.

Table 3.3-5 lists the location, associated school district, and estimated enrollment for schools located within 0.5 mile of the I-710 mainline and interchange improvements. Also, refer to Figure 3.3-1 for the locations of these schools in the Study Area.

In addition, El Camino College Compton Center, in the City of Compton is located on Artesia Blvd. within 0.5 mile of the I-710 Corridor Project mainline and interchange improvements.

Table 3.3-5: Schools Located within 0.5 Mile of the I-710 Mainline and Interchange Improvements

School	Address	Grades	No. of Students
Los Angeles Unified School District			
Woodlawn Avenue Elementary	6314 Woodlawn Ave., Bell	K–5	800
Richard N. Slawson Southeast Occupational Center	5500 Rickenbacker Rd., Bell	Adult	N/A
Dominguez Elementary School	21250 Santa Fe Ave., Carson	K–5	575
Ellen Ochoa Learning Center	5027 Live Oak St., Cudahy	K–8	1,400
Park Avenue Elementary School	820 Park Ave., Cudahy	K–6	550
Rancho Dominguez Preparatory School	4110 Santa Fe Ave., Long Beach	6-12	1,115
Ford Boulevard Elementary School	1112 S. Ford Blvd., East Los Angeles	K–6	1,215
Humphreys Avenue Elementary	500 S. Humphreys Ave., East Los Angeles	K–5	770
Eastman Avenue Elementary	4112 E. Olympic Ave., East Los Angeles	K-5	980
David Wark Griffith Middle School	4765 E. 4th St., East Los Angeles	6-8	1,396
Marianna Avenue Elementary School	4215 Gleason St., East Los Angeles	K-6	376
Alfonso B. Perez Special Education Center	4540 Michigan Ave., East Los Angeles	K-12	280
Solis Learning Academy	319 N. Humphreys Ave., East Los Angeles	9-12	291
Roosevelt Garfield Community Adult School (Eastside Campus)	4343 New York St., Los Angeles	Adult	N/A
Brooklyn Avenue Elementary	4620 East Cesar E. Chavez Ave., East Los Angeles	K-8	621
Soledad Enrichment Action Inc. School	222 N. Virgil Ave., Los Angeles	14-18	3,500
Tweedy Elementary School	9724 Pinehurst Ave., South Gate	K–5	678
Legacy High School Complex (3 schools)	5225 Tweedy Blvd., South Gate	6–12	1,617 (total for 3 schools
Heliotrope Avenue Elementary School	5911 Woodlawn Ave., Maywood	K–5	729
Maywood Elementary School	5200 Cudahy Ave., Maywood	K–5	462
South Region High School No. 8 (planned)	5800 King Ave., Maywood	6-12	N/A
Montebello Unified School District			
Bell Gardens Elementary School	5620 Quinn St., Bell Gardens	K–4	1,110
Bell Gardens Intermediate School	5841 Live Oak St., Bell Gardens	5–8	1,200
Bandini Elementary School	2318 Couts Ave., Commerce	K–5	480

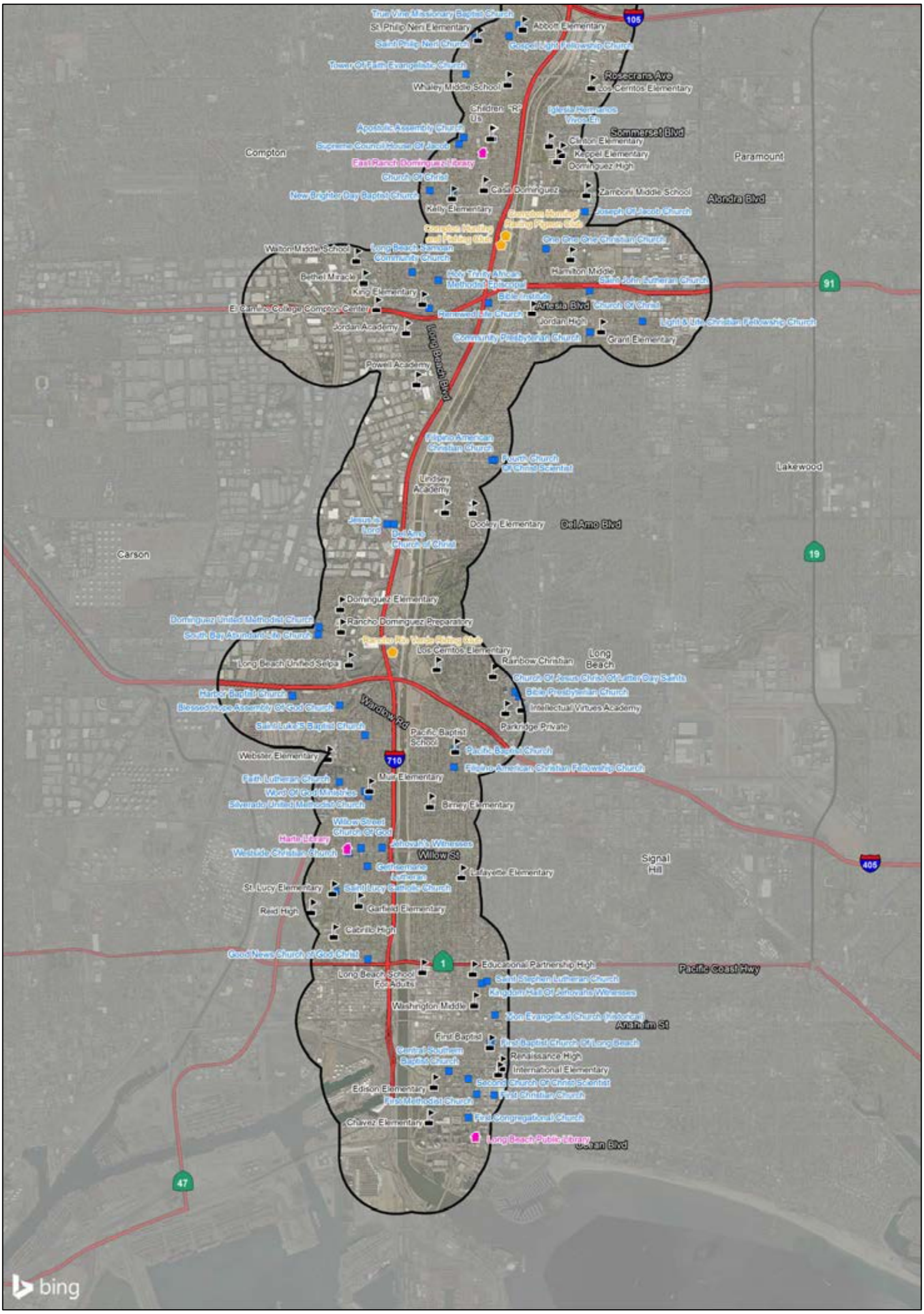
Table 3.3-5: Schools Located within 0.5 Mile of the I-710 Mainline and Interchange Improvements

School	Address	Grades	No. of Students
Compton Unified School District			
Clinton Elementary School	6500 E. Compton Blvd., Compton	K–5	1,010
Kelly Elementary School	2320 E. Alondra Blvd., Compton	K–5	775
Whaley Middle School	14401 S. Gibson Ave., Compton	6–8	740
Walton Middle School	901 W. Greenleaf Dr., Compton	6-8	393
Dominguez High School	15301 S. San Jose Ave., Compton	9–12	2,060
Long Beach Unified School District			
Alice M. Birney Elementary School	710 W. Spring St., Long Beach	K–5	686
Cesar Chavez Elementary School	730 W. 3rd St., Long Beach	K–5	472
Colin Powell Academy	150 Victoria St., Long Beach	K–8	1,377
Daniel Webster Elementary School	1755 W. 32nd Wy., Long Beach	K–5	617
Dooley Global Studies Magnet School	5057 Long Beach Blvd.	K–5	1,102
James A. Garfield Elementary School	2240 Baltic Ave., Long Beach	K–5	772
John Muir School	3038 Delta Ave., Long Beach	K–8	1,083
Lafayette Elementary School	2445 Chestnut Ave., Long Beach	K–5	972
Los Cerritos Elementary School	515 W. San Antonio Dr., Long Beach	K–5	535
Thomas Starr King Elementary School	145 E. Artesia Blvd., Long Beach	K–5	831
Thomas A. Edison Elementary School	625 Maine Ave., Long Beach	K–5	715
Ulysses S. Grant Elementary School	1225 E. 64th St., Long Beach	K–5	1,101
Alexander Hamilton Middle School	1060 E. 70th St., Long Beach	6–8	922
George Washington Middle School	1450 Cedar Ave., Long Beach	6–8	1,086
Jordan Freshman Academy	171 Bort St., Long Beach	9	Total provided with Jordan High School
Perry Lindsey Middle School	5075 Daisy Ave., Long Beach	6–8	860
William Logan Stephens Middle School	1830 W. Columbia St., Long Beach	6–8	790
David Starr Jordan High School	6500 Atlantic Ave., Long Beach	9–12	3,367
Juan Rodriguez Cabrillo High School	2001 Santa Fe Ave., Long Beach	9–12	2,768
Long Beach School for Adults	1794 Cedar Ave., Long Beach	Adult classes	Unknown
Lynwood Unified School District			
Abbott Elementary School	5260 E. Clark St., Lynwood	K–6	733
Will Rogers Elementary School	11220 Duncan Ave., Lynwood	K–6	730
Lugo Elementary School	4345 Pendleton St., Lynwood	K–6	429
Washington Elementary School	4225 Sanborn Ave., Lynwood	K-6	836
Lynwood High School	4050 Imperial Hwy., Lynwood	9–12	2,351
Vista Continuation High School	11300 Wright Rd., Lynwood	9–12	168

Table 3.3-5: Schools Located within 0.5 Mile of the I-710 Mainline and Interchange Improvements

School	Address	Grades	No. of Students
Firebaugh High School	5246 Martin Luther King Jr. Blvd., Lynwood	9–12	1,919
Lynwood Adult Education	4050 Imperial Hwy., Lynwood	Adult classes and child development	Unknown
Lynwood Community Adult School	11277 Atlantic Ave., Lynwood	Adult classes and child development	3,000
Paramount Unified School District			
Los Cerritos Elementary School	14626 Gundry Ave., Paramount	K–5	615
Keppel Elementary School	6630 Mark Keppel St., Paramount	K–5	614
Zamboni Middle School	15733 Orange Ave., Paramount	6–8	949
Hollydale Elementary School	5511 Century Blvd., South Gate	K–8	1,063
Private Schools			
Al Hadi Elementary School	5150 Gage Ave., Bell	1–8	60
Heritage Christian School	8300 Eastern Ave., Bell Gardens	K-12	Unknown
Rainbow Christian School	3816 N. Weston Pl., Long Beach	1-12	Unknown
Bethel Miracle School	6465 Cherry Ave., Long Beach	K–9	Unknown
St. Lucy School	2320 Cota Ave., Long Beach	K–8	Unknown
Pacific Baptist School	3332 Magnolia Ave., Long Beach	K–12	Unknown
Parkridge Private	3605 Long Beach Blvd. Long Beach	K-12	Unknown
International/Oropeza Elementary	700 Locust Ave. Long Beach	K-5	Unknown
Renaissance High School for the Arts	1400 E. 20th St., Long Beach	9-12	Unknown
Educational Partnership High School	1794 Cedar Ave., Long Beach	9-12	Unknown
St. Philip Neri Elementary School	12522 Stoneacre Ave., Lynwood	K–8	Unknown

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
NA = not available



LEGEND

- I-710 Focus Area
- Cemetery
- School
- Library
- Place of Worship
- Other Facility

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FEET

SOURCE: Bing Maps (~2014); LA County LMS (1/2016

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FIGURE 3.3-1
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I-710 Corridor Project RDEIR/SDEIS

Community Facilities

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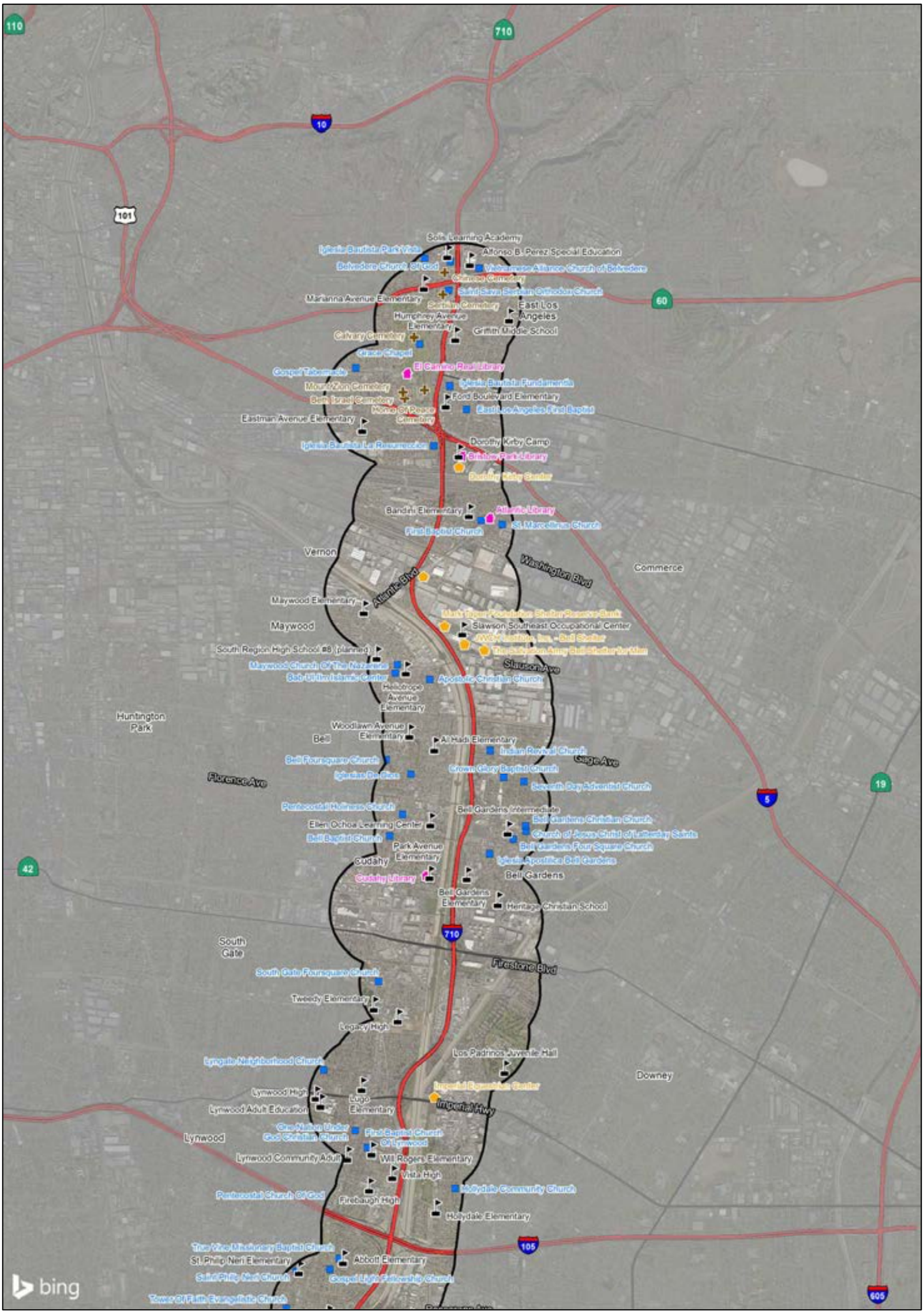

LEGEND

- I-710 Focus Area
- Cemetery
- School
- Library
- Place of Worship
- Other Facility

0 2100 4200
FEET

SOURCE: Bing Maps (~2014); LA County LMS (1/2016

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FIGURE 3.3-1
Page 2 of 2

I-710 Corridor Project RDEIR/SDEIS

Community Facilities

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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LIBRARIES. Library services within the Study Area are provided primarily by the County of Los Angeles Public Library System; however, the Cities of Commerce, Downey, Long Beach, Los Angeles, Signal Hill, and Vernon also provide library services for their residents. The following is a list of libraries located within 0.5 mile of the I-710 mainline and interchange improvements (also refer to Figure 3.3-1).

- **Atlantic Library, 2269 S. Atlantic Blvd., Commerce:** Atlantic Library has books, CDs, videos, DVDs, computer software, magazines, newspapers, audiotapes, and books on cassette, available in English or Spanish.
- **Bristow Park Branch Library, 1466 S. McDonnell Ave., Commerce:** Bristow Park Library has a vast variety of materials, including books, CDs, entertainment and educational videos and DVDs, computer software, magazines, newspapers, audiotapes, and books on cassette, available in English and Spanish.
- **Cudahy Library, 5218 Santa Ana St., Cudahy:** Cudahy Library first opened in 1913. After several relocations, the library moved to its current location in 1968. The Cudahy Public Library offers a full range of services, including reference, children's programming (story time, summer reading club, class visits), free internet access, and three online public access catalogs.
- **East Rancho Dominguez Library, 4420 E. Rose St., Compton:** East Rancho Dominguez Library offers adult, children's, and Spanish language materials, reference services, a homework center and public computers with internet access. The library is located within 0.5 mile of the proposed I-710 Corridor Project improvements.
- **El Camino Real Library, 4264 E. Whittier Blvd., East Los Angeles:** This library first opened in 1929 and moved to its current location in 1972. The library is approximately 3,000 square feet in size, and the collection contains over 57,000 books in English and Spanish, 3,400 audio recordings, 2,315 video recordings, and 41 magazine and newspaper subscriptions as well as pamphlets.
- **Main Library, 101 Pacific Ave., Long Beach:** The Main Library was built in 1977 and is approximately 145,000 square feet in size. The library serves close to 500,000 residents in Long Beach, as well as six schools.
- **Harte Neighborhood Library, 1595 W. Willow St., Long Beach:** The Harte Library was built in 1957 and is approximately 6,500 square feet in size. The library serves close to 36,000 residents in Long Beach, as well as nine schools.

OTHER COMMUNITY FACILITIES. Within the Study Area, there are numerous places of worship that provide community gathering areas. Table 3.3-6 provides a list of places of worship located within 0.5 mile of the I-710 mainline and interchange improvements (also refer to Figure 3.3-1).

Table 3.3-6: Places of Worship within 0.5 Mile of the I-710 Mainline and Interchange Improvements

Facility Name	Address
Bell Foursquare Church	6706 Vinevale Ave., Bell
Iglesia de Dios (Séptimo Día)	6830 Wilcox Ave., Bell
Iglesias Apostilica Church	7812 Eastern Ave., Bell Gardens
Crown Glory Church	6625 Ajax Ave., Bell Gardens
Bell Gardens Christian Church	7413 Jaboneria Rd., Bell Gardens
Church of Jesus Christ of Latter-day Saints	7420 Jaboneria Rd., Bell Gardens
Bell Gardens Four Square Church	7563 Jaboneria Rd., Bell Gardens
Seventh Day Adventist Church	5913 Lubec St., Bell Gardens
Indian Revival Church	5602 Gage Ave., Bell Gardens
South Bay Abundant Life Church	2679 E. Carson St., Carson
Dominguez United Methodist Church	20513 S. Prospect, Carson
Church of Christ	2301 E. Alondra Blvd., Compton
New Brighter Day Baptist Church	1911 E. Alondra Blvd., Compton
First Baptist Church of Commerce	5102 Kinsie St., Commerce
Iglesia Bautista La Resurreccion	1400 S. Eastern Ave., Commerce
St. Marcellinus Church	2349 Strong Ave., Commerce
Bell Baptist Church	4900 Clara St., Cudahy
Pentecostal Holiness Church	7333 Wilcox Ave., Cudahy
First Congregational Church	241 Cedar Ave., Long Beach
Second Church of Christ Scientist	655 Cedar Ave., Long Beach
First Methodist Church	507 Pacific Ave., Long Beach
Central Southern Baptist Church	737 Magnolia Ave., Long Beach
First Baptist Church of Long Beach	1000 Pine Ave., Long Beach
Zion Evangelical Church	W. 14th St., Long Beach
Foursquare Church	17th St., Long Beach
Kingdom Hall of Jehovah's Witnesses	1608 Pacific Ave., Long Beach
Saint Stephen Lutheran Church	1629 Pine Ave., Long Beach
Good News Church of God-Christ	1833 Harbor Ave., Long Beach
Long Beach Bible Institute	455 E. Artesia Blvd., Long Beach
Saint Lucy Catholic Church	2301 Santa Fe Ave., Long Beach
Gethsemane Lutheran Church	1392 W. 25th St., Long Beach
Westside Christian Church	1594 W. Willow St., Long Beach
Willow Street Church of God	1455 W. Willow St., Long Beach
Kingdom Hall of Jehovah's Witnesses	1295 W. Willow St., Long Beach
Silverado United Methodist Church	2990 Delta Ave., Long Beach
Word of God Ministries	1401 W. Spring St., Long Beach
Faith Lutheran Church	3040 Santa Fe Ave., Long Beach
Filipino-American Christian Fellowship Church	3190 Magnolia Ave., Long Beach
Pacific Baptist Church	3332 Magnolia Ave., Long Beach
Saint Luke's Baptist Church	1401 34th St., Long Beach
Blessed Hope Assembly of God Church	3640 Santa Fe Ave., Long Beach

Table 3.3-6: Places of Worship within 0.5 Mile of the I-710 Mainline and Interchange Improvements

Facility Name	Address
Harbor Baptist Church	2300 W. Wardlow Rd., Long Beach
Fourth Church of Christ Scientist	3629 Atlantic Ave., Long Beach
Community Presbyterian Church	6380 Orange Ave., Long Beach
Light and Life Christian Fellowship Church	5951 Downey Ave., Long Beach
Renewed Life Church	132 E. Artesia Blvd., Long Beach
Church of Christ	1128 E. Artesia Blvd., Long Beach
Saint John Lutheran Church	6698 Orange Ave., Long Beach
Holy Trinity African Methodist Episcopal	200 E. 68th St., Long Beach
Long Beach Samoan Community Church	6857 Long Beach Blvd., Long Beach
One One One Christian Church	700 E. 70th St., Long Beach
East Los Angeles First Baptist Church	1120 S. McDonnell Ave., East Los Angeles
Iglesia Bautista Fundamental	942 S. Ford Blvd., East Los Angeles
Grace Chapel	Eastern Ave., East Los Angeles
Saint Sava Serbian Orthodox Church	4355 E 2nd St., East Los Angeles
Gospel Tabernacle	832 South Eastman Ave., East Los Angeles
Vietnamese Alliance Church of Belvedere	4603 E. 1st St., East Los Angeles
Belvedere Church of God	200 N. Humphreys Ave., East Los Angeles
Iglesia Bautista Park Vista	4200 Michigan Ave., East Los Angeles
Catholic Mission of Soledad Church.	482 Civic Center Way, East Los Angeles
Calvary Mortuary Cemetery	4201 Whittier Blvd., East Los Angeles
Home of Peace Memorial Park Cemetery	4334 Whittier Blvd., East Los Angeles
Beth Israel Cemetery	1068 S. Downey Rd., Los Angeles
Mount Zion Cemetery	1030 S. Downey Rd., Los Angeles
Serbian Cemetery	4355 E. 2nd St., East Los Angeles
Chinese Cemetery	102 S. Eastern Ave., East Los Angeles
St. Philip Neri Church	4311 Olanda St., Lynwood
Gospel Light Fellowship Church	4619 Carlin Ave., Lynwood
True Vine Missionary Baptist Church	5238 Clark St. Lynwood
Iglesia Bautista Alpha and Omega Baptist Church	11200 Pope Ave., Lynwood
One Nation Under God Christian Church	12438 Waldorf Dr., Lynwood
Lyngate Neighborhood Church	4654 Abbott Rd., Lynwood
Maywood Faith Church of the Nazarene	4756 Slauson Ave, Maywood
Bab-Ul-IIm Islamic Center	5950 Heliotrope Circle, Maywood
Apostolic Christian Church	5001 East 60th St., Maywood
Joseph of Jacob Church	16303 Orange Ave.,
Hollydale Community Church	11801 Utah Ave., South Gate
South Gate Foursquare Church	9512 Pinehurst Ave., South Gate

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).

In addition, the Dorothy Kirby Center and Camp School in the City of Commerce is another community facility located within 0.5 mile of the I-710 mainline and interchange improvements, and it provides intensive intervention for minors (ranging in age from 8 to 18) in a residential setting while they await adjudication and disposition of legal matters. The Girls' and Boys' Town of Compton is located at 15116 S. Gibson Ave. in Compton. This facility provides services to children and youths and is located within 0.5 mile of the I-710 mainline. Within East Los Angeles, the Calvary Mortuary, Home of Peace Memorial Park, Beth Israel, Mount Zion, the Serbian and Chinese cemeteries are located within 0.5 mile of the I-710 mainline and interchange improvements.

HOSPITALS. The following is a list of hospitals located within 0.5 mile of the I-710 mainline and interchange improvements (also refer to Figure 3.3-1).

- **COLLEGE MEDICAL CENTER, SOUTH CAMPUS:** Located at 1725 Pacific Ave., Long Beach
- **LOS ANGELES COMMUNITY HOSPITAL:** Located on Whittier Blvd., East Los Angeles
- **EAST LOS ANGELES DOCTORS HOSPITAL:** Located on East Olympic Blvd., East Los Angeles
- **ROYBAL COMPREHENSIVE HEALTH CENTER:** Located on S. Fetterly Ave., East Los Angeles

HOMELESS FACILITIES. There are several homeless shelters and service providers located in the I-710 Corridor Project Study Area. Facilities that are located within 0.5 mile of the I-710 Corridor Project improvements are:

- Catholic Charities Community Center, located on East 14th St., Long Beach;
- Long Beach Rescue Mission, Lydia House, located on Pacific Ave., Long Beach;
- Long Beach Rescue Mission, located on Pacific Ave., Long Beach;
- Women's Shelter of Long Beach, located on Pacific Ave., Long Beach;
- Christian Outreach in Action Transitional Housing, located on E. 3rd St., Long Beach
- Long Beach Multi-Service Center, located on W. 12th St., Long Beach
- East Rancho Dominguez Service Center, located on S. Atlantic Blvd., Compton
- Salvation Army's Bell Shelter and the John Wesley Community Health (JWCH) Institute, Inc. Medical Center, located on Rickenbacker Rd., Bell
- S. Mark Taper Foundation Shelter Resource Bank, located on Rickenbacker Rd., Bell
- United States Armed Forces Reserve Center, located on Bandini Blvd., Bell

ECONOMICS.

EMPLOYMENT. Within the Study Area, manufacturing, wholesale trade, retail trade, and educational services, health care and social assistance sectors are generally the highest sectors for number of businesses and employment within the Study Area. In addition, the employment profile for the affected cities in the Study Area is provided in Table 3.3-7. As shown in that table, the unemployment rates in the Study Area range from lower to slightly higher (2.8 percent to 8.1 percent) than Los Angeles County (5.2 percent) and State (5.5 percent) unemployment rates. The City of Vernon has the lowest unemployment rate (2.8 percent) and the City of Compton has the highest unemployment rate (8.1 percent) in the Study Area (as of September 2016).

Table 3.3-7: Employment Profile in the Study Area

City	Employed Civilian Labor Force	Unemployment Rate (percent)
Bell	14,600	7.1
Bell Gardens	17,600	6.0
Carson	44,600	6.7
Commerce	5,300	7.7
Compton	37,600	8.1
Cudahy	9,800	6.6
Downey	55,900	4.6
East Los Angeles	55,100	6.2
Huntington Park	25,900	6.9
Lakewood	42,000	4.0
Long Beach	231,100	5.7
City of Los Angeles (includes Boyle Heights, Wilmington and San Pedro)	1,950,600	5.5
Lynwood	27,500	6.5
Maywood	12,100	5.4
Paramount	23,900	6.1
Signal Hill	6,000	5.7
South Gate	41,500	6.8
Vernon	100	2.8
Los Angeles County	4,881,700	5.2
State of California	18,278,500	5.5

Source: State of California Employment Development Department, Labor Market Information Division, *Monthly Labor Force Data for Cities and Census-Designated Places (CDP)*, September 2016 – Preliminary.
I-710 = Interstate 710

For a discussion of commuting patterns within the Study Area, refer to Section 3.1.1.

3.3.1.3 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to community impacts are located in Section 3.24.3.3.

PERMANENT IMPACTS.

BUILD ALTERNATIVES. Impacts to community cohesion generally depend on whether a project is likely to create a barrier or disrupt connectivity of a community. Either of these can be a result of disruptions in access or residential and business acquisitions. Direct and indirect impacts to community facilities, as a result of Alternatives 5C and 7, are described in Table 3.3-8. Those community facilities include parks and recreational facilities, and police and fire facilities, which are further discussed in Sections 3.1 (Land Use), and 3.4, (Utilities/ Emergency Services), respectively.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Salvation Army's Bell Shelter, which includes an emergency and community service center and the John Wesley Community Health (JWCH) Institute, Inc. medical center	5600 Rickenbacker Rd., Bell	Salvation Army and JWCH Institute, Inc.	Alternative 5C would not result in direct impacts to this shelter and medical center. As indicated in the *Relocation Impact Report* (2017), Alternative 7 would require the partial acquisition of the property and displacement of the transitional housing structures on the property.
S. Mark Taper Foundation Shelter Resource Bank	5600 Rickenbacker Rd., Bell	S. Mark Taper Foundation	Alternative 5C would require a partial acquisition along the western part of the property. Improvements to the I-710 mainline under Alternative 7 would result in direct impacts to this resource bank. As indicated in the *Relocation Impact Report* (2017), Alternative 7 would require the full acquisition of this property and displace this facility. As the operations of this facility are intertwined with those of the Bell Shelter, the relocation of this facility could have indirect impacts to the Bell Shelter.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Richard N. Slawson Southeast Occupational Center	5500 Rickenbacker Rd., Bell	LAUSD	Improvements to the I-710 mainline and local arterials would not result in direct impacts to this occupational center. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Rickenbacker Rd.; however, a TMP would be prepared to minimize impact and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Bell Gardens Elementary School	5620 Quinn St., Bell Gardens	Montebello Unified School District	Improvements to the I-710 mainline and local arterials would not result in direct impacts to the school. As indicated in *the Traffic Noise Study Report* (2016), sound barriers were found to be feasible under both I-710 Corridor Project build alternatives along the east side of the I-710 that could provide noise reduction to this school and surrounding land uses.
Del Amo Church of Christ	20411 S. Susana Rd., Carson	Private	This church, located within a commercial/industrial complex, would be displaced under both build alternatives due to the removal of access to Susana Rd. south of Del Amo Blvd. In accordance with the Uniform Act, Caltrans would be required to locate a suitable relocation site for the church.
Jesus Is Lord	20411 S. Susana Rd., Carson	Private	This church, located within a commercial/industrial complex, would be displaced under both build alternatives due to the removal of access to Susana Rd. south of Del Amo Blvd. In accordance with the Uniform Act, Caltrans would be required to locate a suitable relocation site for the church.
Atlantic Library	2269 Atlantic Blvd., Commerce	City of Commerce	The library is not located adjacent to the I-710 mainline and improvements to Atlantic Blvd. would not result in direct impacts to this library. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Atlantic Blvd.; however, a TMP would be prepared to minimize impact and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Ellen Ochoa Learning Center	5027 Live Oak St., Cudahy	LAUSD	The school is not located adjacent to the I-710 mainline. Improvements to Florence Ave. would not result in direct impacts to the school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Florence Ave; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Kelly Elementary School	2320 E. Alondra Blvd., Compton	CUSD	The school is not located adjacent to the I-710 mainline, or along arterials impacted as a result of the I-710 Corridor Project build alternatives; therefore, the I-710 Corridor Project build alternatives would not result in direct impacts to this school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Whaley Middle School	14401 S. Gibson Ave., Compton	CUSD	The school is not located adjacent to the I-710 mainline, and improvements to Rosecrans Ave. would not result in direct impacts to the school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Rosecrans Ave.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Walton Middle School	901 W. Greenleaf Dr., Compton	CUSD	The school is not located adjacent to the I-710 mainline, and improvements to Long Beach Blvd. at the SR-91 interchange would not result in direct impacts to the school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Long Beach Blvd. at the SR-91 interchange; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Dominguez High School	15301 S. San Jose Ave., Compton	CUSD	The school is not located adjacent to the I-710 mainline, and improvements to Alondra Blvd. would not result in direct impacts to the school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
El Camino College Compton Center	1111 E. Artesia Blvd., Compton	Compton Community College District	The school is not located adjacent to the I-710 mainline or along arterials impacted as a result of the I-710 Corridor Project Build Alternatives; therefore, the I-710 Corridor Project Build Alternatives would not result in direct impacts to this school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Artesia Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Church of Christ	2301 E. Alondra Blvd., Compton	Private	The church is not located adjacent to the I-710 mainline, and improvements to Alondra Blvd. would not result in direct impacts to the church. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
New Brighter Day Baptist Church	1911 E. Alondra Blvd., Compton	Private	The church is not located adjacent to the I-710 mainline, and improvements to Alondra Blvd. would not result in direct impacts to the church. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
The Girls' and Boys' Town of Compton	15116 S. Gibson Ave., Compton	Private	This facility is located adjacent to the I-710 mainline, and a TCE is planned to be located on the parcel of land that is south of this facility. The improvements of the build alternatives would not result in direct impacts to the facility. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Gibson Ave.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Cudahy River Park	River Rd., Cudahy	City of Cudahy	The Los Angeles River also separates this park and the I-710 mainline. This park would not be impacted as a result of the I-710 Corridor Project build alternatives. Therefore, the I-710 Corridor Project build alternatives would not result in direct impacts to this park. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access to the park from Clara St.; however, a TMP would be prepared to minimize impacts and provide alternative access points, if necessary (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Clara Park	4835 Clara St., Cudahy	City of Cudahy	The park is not located adjacent to the I-710 mainline or along arterials impacted as a result of the I-710 Corridor Project build alternatives; therefore, the I-710 Corridor Project build alternatives would not result in direct impacts to this park. During construction, the I-710 Corridor Project build alternatives also have the potential to result in temporary impacts to access to the park from Clara St.; however, a TMP would be prepared to minimize impacts and provide alternative access points, if necessary (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Fire Station No. 3	1222 Daisy Ave., Long Beach	City of Long Beach	The fire station is not located adjacent to the I-710 mainline, and improvements to Anaheim St. would not result in direct impacts to this fire station. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Anaheim St.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Fire Station No. 11	160 E. Market St., Long Beach	City of Long Beach	The fire station is not located adjacent to the I-710 mainline, and improvements to Long Beach Blvd. would not result in direct impacts to this fire station. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Long Beach Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Fire Station No. 12	6509 Gundry Ave., Long Beach	City of Long Beach	The fire station is not located adjacent to the I-710 mainline, and improvements to Willow St. would not result in direct impacts to this fire station. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Willow St.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Fire Station No. 13	2475 Adriatic Ave., Long Beach	City of Long Beach	This facility is not located adjacent to the I-710 mainline, and improvements to Artesia Blvd. would not result in direct impacts to this fire station. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Artesia Blvd.; however, a TMP (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Long Beach West Division Police Station	1835 Santa Fe Ave., Long Beach	City of Long Beach	The police station is not located adjacent to the I-710 mainline, and improvements to Pacific Coast Hwy. would not result in direct impacts to this station. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Pacific Coast Hwy.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Cesar Chavez Elementary School	730 W. 3rd St.	LBUSD	The school is not located adjacent to the I-710 mainline, and improvements to the downtown area would not result in direct impacts to this school. Under both build alternatives, temporary construction impacts would occur at the adjacent Cesar Chavez Park, with which the elementary school has a joint-use agreement. Additionally, it may be necessary for the City of Long Beach and the LBUSD to amend the agreement based on the reconfigured park. See Appendix B, Section 4(f)/6(f) Evaluation, for more details on impacts at Cesar Chavez Park. A TMP would be prepared to minimize impacts at the park that may have indirect impacts on this school (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts).
Zion Evangelical Church	W. 14th St., Long Beach	Private	The church is not located adjacent to the I-710 mainline, and improvements to Anaheim St. would not result in direct impacts to this church. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Anaheim St.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Foursquare Church	17th St., Long Beach	Private	The church is not located adjacent to the I-710 mainline, and improvements to Pacific Coast Hwy. would not result in direct impacts to this church. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Pacific Coast Hwy.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Long Beach Bible Institute	455 E. Artesia Blvd., Long Beach	Private	Alternative 7 would result in a direct impact to this facility due to the construction of the freight corridor; however, the *Relocation Impact Report* (2017) indicates there are available areas within a five-mile radius of the facility for relocation. During construction, Alternative 5C would have the potential to result in temporary impacts to access along Artesia Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Multi-Service Center	1301 W. 12th St., Long Beach	City of Long Beach	Alternative 5C would not directly or indirectly impact this facility. Alternative 7 would result in a direct impact to this facility due to construction of the freight corridor ramps at the I-710/Anaheim St. interchange. The *Relocation Impact Report* (2017), reports there is an available area within a five-mile radius of the facility for relocation. However, the relocation of this facility would require a comprehensive relocation plan and include changes to zoning and other issues that would make the move difficult. Early planning for a replacement site would be required, as well as obtaining public input for city planning commission approval for a replacement location.
Fire Station No. 3	930 S. Eastern Ave., East Los Angeles	Los Angeles County Fire Department	Improvements to the I-710 mainline would not result in direct impacts to the fire station. In addition, the fire station is not located along arterials impacted as a result of the I-710 Corridor Project Build Alternatives. Therefore, the I-710 Corridor Project Build Alternatives would not result in direct impacts to this fire station. During construction, the I-710 Corridor Project build alternatives (Options 3A and 3B), have the potential to result in temporary impacts to access to Eastern Ave. and Whittier Blvd.; however, a TMP would be prepared to minimize impacts and provide alternative access points, if necessary (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Humphreys Avenue Elementary School	500 S. Humphreys Ave., East Los Angeles	LAUSD	Improvements to the I-710 mainline and arterials impacted as a result of the I-710 Corridor Project build alternatives would not result in direct impacts to the school. As indicated in the *Traffic Noise Study Report* (2017) prepared for the proposed project, there is an existing 12-foot sound wall along northbound I-710 that provides noise reduction to this school. Noise abatement has been considered at this location; however, it was determined that the extension of the height of the sound wall would not provide the required noise reduction of five dBA.
Lynwood High School	4050 Imperial Hwy., Lynwood	LUSD	The school is not located adjacent to the I-710 mainline. Improvements to I-710 and Imperial Hwy. would not result in direct impacts to the school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Imperial Hwy.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Lynwood Adult Education School	4050 Imperial Hwy., Lynwood	LUSD	The school is not located adjacent to the I-710 mainline. Improvements to I-710 and Imperial Hwy would not result in direct impacts to the school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Imperial Hwy.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Heliotrope Avenue Elementary School	5911 Woodlawn Ave., Maywood	LAUSD	The school is not located adjacent to the I-710 mainline. Improvements to I-710 and Slauson Ave. would not result in direct impacts to the school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Slauson Ave.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Maywood Elementary School	5200 Cudahy Ave., Maywood	LAUSD	The school is not located adjacent to the I-710 mainline. Improvements to I-710 and Slauson Ave. would not result in direct impacts to the school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Slauson Ave.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Apostolic Christian Church	Located along Alamo Ave., Maywood	Private	The church is not located adjacent to the I-710 mainline. Improvements to I-710 and Slauson Ave. would not result in direct impacts to this facility. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Slauson Ave.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Zamboni Middle School	15733 Orange Ave., Paramount	PUSD	The school is not located adjacent to the I-710 mainline. Improvements to Alondra Blvd. would not result in direct impacts to the school. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Fire Station No. 54	4867 Southern Ave., South Gate	Los Angeles County Fire Department	The fire station is not located adjacent to the I-710 mainline and improvements to Southern Ave. would not result in direct impacts to the fire station. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Firestone Blvd. and Southern Ave., northwest and west of the fire station; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Fire Station No. 57	5720 Gardendale St., South Gate	Los Angeles County Fire Department	The fire station is not located adjacent to the I-710 mainline and improvements to Imperial Hwy. and Garfield Ave. would not result in direct impacts to the fire station. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Imperial Hwy., and Garfield Ave. north of the fire station; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.
Hollydale Community Church	11801 Utah Ave., South Gate	Private	This place of worship is not located adjacent to the I-710 mainline and improvements to Imperial Hwy. would not result in direct impacts to the place of worship. During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Imperial Hwy. which is north of this place of worship, and Garfield Ave., which is south of this place of worship; however, a TMP would be prepared to minimize impacts and provide detours (refer to Measure CON-TR-1 in Section 3.24, Construction Impacts). These potential impacts would cease once construction was complete.

Table 3.3-8: Permanent Direct and Indirect Impacts to Schools and Other Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Vernon Fire Station No. 4	4530 Bandini Blvd., Vernon	City of Vernon	The build alternatives include improvements to the existing Bandini Blvd./Atlantic Ave. interchange, and as a result of widening and realignment of the existing southbound I-710 off-ramp to Bandini Blvd., acquisition and relocation of the City of Vernon Fire Station No. 4 will be required. While a potential site for relocation has not been identified at this time, Caltrans will coordinate with the City of Vernon in identifying a new site for relocation within the general vicinity of the existing station so as to maintain the existing response times and service area. In addition, the existing fire station would not be demolished until the new fire station is operational.

Sources: *Community Impact Assessment* (July 2017).
CUSD = Compton Unified School District
Caltrans = California Department of Transportation
dBA = A-weighted decibels
I-710 = Interstate 710
LAUSD = Los Angeles Unified School District
LUSD = Lynwood Unified School District
PUSD = Paramount Unified School District
TCE = Temporary Construction Easement
TMP = Transportation Management Plan

The removal of on-street parking on major arterials during peak periods, as listed in Section 2.3.2.1, are described for each jurisdiction in Table 3.3-9. The number of parking spaces impacted is conservative as it does not represent the quantity of parking spaces being displaced, but indicates a theoretical supply based on linear feet of available curb space. In each jurisdiction, field observations have verified that the observed parking demand could be adequately absorbed in off-street parking areas for uses that generate the demand (e.g., parking lots) as well as in on-street parking areas directly off of these main arterials.

Improvements proposed under both the build alternatives would provide increased connectivity around the Study Area. These include the construction of pedestrian/bicycle-only bridges at Pacific Pl., crossing over I-405 and the Blue Line in the City of Long Beach, Clara St., crossing I-710 and the Los Angeles River in Bell Gardens/Cudahy, and Humphreys Ave., crossing I-710 in the Community of East Los Angeles. These elements would improve connectivity for these cities and communities by adding connections that do not currently exist. Additionally, both build alternatives propose to connect Southern Ave. over I-710 and to E. Frontage Rd, also providing increased connectivity to the residents of the Thunderbird Villa Mobile Home Park in South Gate.

Table 3.3-9: Parking Impacts by Jurisdiction

Jurisdiction	Number of Impacted Parking Spaces
City of Bell	110
City of Bell Gardens	285 (304 during peak hour only)
Community of Boyle Heights	0
City of Carson	0[1]
City of Commerce	589
City of Compton	478
City of Cudahy	144
City of Downey	0
City of Huntington Park	0
City of Lakewood	0
City of Long Beach	1,686
Community of East Los Angeles	329
City of Lynwood	754
City of Maywood	119
City of Paramount	372
City of Signal Hill	46
City of South Gate	348
City of Vernon	0
Communities of Wilmington & San Pedro	0

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).

[1] On-street parking is currently not allowed on Santa Fe Ave., Del Amo Blvd., or Carson St. in the vicinity of the I-710 Corridor Project build alternatives and would not be permitted on these streets under any of the build alternatives; therefore, no change to parking would occur as a result of the I-710 Corridor Project build alternatives in the City of Carson.

ALTERNATIVE 5C. Alternative 5C would result in physical changes in the Study Area; however, the existing community character and cohesion for the affected communities would remain intact, with the exception of the City of Commerce as described below. Alternative 5C includes widening of the existing I-710 mainline, as well as improvements to existing interchanges. Existing sidewalks and crosswalks modified as a result of the I-710 Corridor Project improvements would be replaced with new sidewalks and crosswalks to maintain and improve pedestrian access. All replaced and new sidewalks will comply with the Americans with Disabilities Act (ADA).

While a number of existing routes used to travel from one part of the community to another and that are familiar to residents would be redesigned to accommodate the widening of I-710 and the modernized design of the freeway interchanges, overall connectivity within these affected communities would remain intact. Where the project does result in changes in access (e.g., due to relocation of a freeway on-ramp or off-

ramp), alternative routes are available nearby to maintain existing residential and business access, as well as access to community facilities.

Property acquisitions for Alternative 5C would result in the relocation of residents, established businesses, and places of employment to other parts of the Study Area; however, any residences or businesses acquired as a result of Alternative 5C would be relocated prior to construction (refer to Section 3.3.3 for additional details). Due to the reconstruction of the I-710/I-5 interchange, a portion of the Sydney Neighborhood within the City of Commerce, along S. Sydney Dr. between Dunham St. and Triggs St. would be displaced. Please refer to Section 3.1.3 (Park and Recreation Facilities) for a description of impacts to park and recreation facilities and to Section 3.4 (Utilities/Emergency Services) for a detailed description of impacts to police and fire protection facilities. Generally, the relocations proposed under Alternative 5C would not represent a substantial adverse impact to the cities and communities within the I-710 Corridor because these relocations would occur along the fringes of the I-710 Corridor, impacting parts of communities rather than whole neighborhoods. Throughout the Study Area, the construction of Alternative 5C would result in the reconfiguration of local interchanges, generally into a diverging diamond configuration. This reconfiguration would retain the existing access points, but often relocate them, which may require temporary closures. Other temporary impacts regarding those to access, transit service, sidewalks, and nearby trails or bicycle lanes would be minimized to the greatest extent possible via the preparation of a TMP and are discussed in more detail in Section 3.24, Construction Impacts.

Two additional pedestrian/bicycle-only bridges are proposed under Alternative 5C at Spring St. and Hill St., crossing I-710 and the Los Angeles River, in Long Beach. These elements represent a connectivity benefit to the City of Long Beach, as they would implement connections that do not currently exist.

ALTERNATIVE 7. Alternative 7 would result in impacts to community cohesion similar to those resulting from Alternative 5C; however, additional impacts to the community would result from implementation of Alternative 7 due to the increased right-of-way required for the four-lane freight corridor. Specifically, Alternative 7 includes two design options for the I-710/Washington Blvd. interchange and the connection into the rail yards in the Cities of Commerce and Vernon. In these cities, Alternative 7 Option 1B would retain the proposed interchange configuration of Alternative 7, but local street circulation, highway alignment, and right-of-way requirements would differ from those of Alternative 7. Alignments would shift generally easterly. The cul-de-sac at Ransom would be removed; the one-way street between the ramp intersection and Sheila St. would be shifted easterly, and parts of Noble St. would be realigned and reconstructed, resulting in some changes in access within the Cities of Bell, Commerce and Vernon. Similarly, changes in

access and reconfiguration of the freeway and arterial connection points (specifically at Eastern Ave. and Whittier Blvd.) are also proposed under Alternative 7 Option 3B, within the City of Commerce and Community of East Los Angeles. Although 12 schools are located near the improvements proposed by the build alternatives, they will not be directly impacted by Alternative 7.

Relocations of residential and non-residential parcels in the City of Commerce are discussed in Section 3.3.2.3, below. As a result of the relocations of the residents, (specifically located in the Ayers Neighborhood at Washington Blvd. and I-710 and the Sydney Neighborhood along S. Sydney Dr. between Dunham St. and Triggs St.), businesses, and/or vital community facilities under Alternative 7, the City of Commerce would experience adverse impacts to community character and cohesion as a result of these relocations. Refer to Measure C-1 in Section 3.3.2.4 for relocation assistance for residents of the Ayers and Sydney Neighborhoods.

While temporary disruption of community character and cohesion would occur as a result of construction of the build alternatives (refer to discussion in Section 3.24, Construction Details), the mobility improvements provided by the I-710 Corridor Project would also benefit the affected communities by providing an improved connection to other parts of the Study Area. Community services within the Study Area, such as fire, police protection, and other emergency responders would be more readily available with the build alternatives since mobility within the Study Area would improve over existing conditions. However, the Cities of Commerce, Bell, and Long Beach would experience adverse impacts to community character and cohesion as a result of relocations of residents, businesses, and/or vital community facilities under Alternative 7 as indicated above.

The build alternatives have been developed through an extensive community outreach process that involves input from multiple public agencies and stakeholders in order to avoid impacts to the human and natural environments. Community concerns and comments have been expressed throughout the design process and the build alternatives have been refined as much as possible to address the community's concerns and to maintain community character and cohesion. Therefore, with the exception of the impacts to the cities of Commerce, Bell, and Long Beach under Alternative 7, the community character and cohesion of the communities within the Study Area would remain intact with implementation of the build alternatives, because none of the build alternatives would create a barrier or disrupt the connectivity of the communities.

In summary, the majority of the cities and communities in the Study Area, (which include Bell Gardens, the Boyle Heights Community, Carson, Cudahy, Downey, Huntington

Park, Lakewood, the community of East Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, Vernon, and the communities of Wilmington and San Pedro) would have no adverse impacts to community character and would remain cohesive and intact with construction and operation of the I-710 Corridor Project Build Alternatives.

NO BUILD ALTERNATIVE. Under Alternative 1, the impacts (including improved mobility in the Study Area) to community cohesion described above for the build alternatives would not occur.

3.3.1.4 PUBLIC HEALTH CONSIDERATIONS

The following community impact categories are relevant to public health considerations for the I-710 Corridor Project: social cohesion, access to schools, and jobs and economic development.

SOCIAL COHESION.

PUBLIC HEALTH STATEMENT. Social cohesion, including increases in social support or strengthening of social networks, is associated with decreased stress; increased assistance in emergencies; increased access to jobs, income, and job benefits; and increased access to other essential resources. Communities that become isolated or segregated lose political power, which is associated with increased exposure to crime and violence, causing both injury and stress and additional impacts to mental health (P. Simon et al. 2009).

Health considerations associated with displacement are generally psychological in nature. For some people, displacement can disturb their psychology of "place" or the connection between individuals and their intimate environments. Individuals are linked to their environment through three psychological processes: attachment, familiarity, and identity. Attachment is the mutual caretaking bond between a person and a beloved place. Familiarity refers to the processes by which people develop detailed cognitive knowledge of their environs. Place identity is concerned with the extraction of a sense of self, based on the places in which one passes one's life. When each of these processes is threatened by displacement, it potentially results in nostalgia, disorientation, and even alienation (Fullilove, 1996).

If displaced residents are required to relocate outside of their neighborhood, supportive family and community relationships can be lost both for those leaving, as well as for those remaining behind. Neighbors, friends, and family provide material as well as emotional support. Support, either perceived or provided, can buffer stressful situations, prevent damaging feelings of isolation, and contribute to a sense of self-esteem and value. (Guzman and Bhatia, 2005).

Residents have disclosed symptoms of stress, loss, grief, and poorer mental health following housing displacement and relocation. Certain groups, including children, the elderly, the

intellectually disabled, and marginalized groups, can be particularly vulnerable to the health effects of housing displacement. (Regional Public Health 2011). Within the I-710 Corridor, long-term residents who are elderly may require specialized relocation assistance.

I-710 CORRIDOR PROJECT. As discussed earlier in this section, impacts to community cohesion generally depend on whether a project is likely to create a barrier or disrupt connectivity of a community. Either of these can be a result of disruptions in access or residential and nonresidential acquisitions. The build alternatives would result in impacts to access as well as residential and nonresidential property acquisitions.

For residential and nonresidential acquisitions, a RIR (February 2017) has been prepared for the I-710 Corridor Project. This report analyzes the impacts to residential and nonresidential properties within the Study Area as a result of the build alternatives. Several factors were considered in this report to determine whether the I-710 Corridor Project would result in direct or indirect relocations, including loss of access or parking that could isolate or segregate a residence or business (refer to Section 3.3.3 for additional details). According to the RIR, comparable replacement areas for purchase or lease, both residential and nonresidential, are located within or adjacent to the potential displacement areas as a result of the I-710 Corridor Project.

However, due to the affordability challenges for single-family residences and the limited supply of mobile homes, along with the special needs of impacted businesses, it may be necessary to consider available properties within a larger relocation radius. However, the proximity of these areas would ensure comparable neighborhoods, amenities (e.g., public transportation and close proximity to education), access, facilities, general occupancy characteristics, and demographics.

While adequate comparable replacement housing appears to exist presently in neighboring cities, new replacement dwellings under Last Resort Housing may be considered for these cities as a method of providing comparable replacement housing to displaced persons who reside in areas where the replacement housing is low. Last Resort Housing is being considered in response to the affected cities' request to keep housing within their cities rather than having the replacement housing be in neighboring cities. Last Resort Housing allows agencies to pay Replacement Housing Payments above the statutory limits of $5,250 to tenants and $22,500 to homeowners to make comparable replacement housing affordable.

In addition, for any property (residential or nonresidential) that would be relocated by the build alternatives, Caltrans would be required to adhere to the Relocation Assistance Program (RAP), which is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act) and Title 49 CFR Part 24. The purpose of the RAP is to ensure that persons displaced as a result of a

transportation project are treated fairly, consistently, and equitably so that such persons would not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. The RAP also requires that certain relocation services and payments by Caltrans be made available to eligible residents, businesses, and nonprofit organizations displaced by its projects; such payments include moving expenses for the actual reasonable costs. In addition, consideration would be given to commercial and industrial land uses subject to partial acquisitions to reconfigure on site in such a manner as to remain in operation. Refer to Section 3.3.2 of this RDEIR/SDEIS for additional details and requirements associated with the Federal Uniform Act and Title 49 CFR Part 24.

Based on the limited extent of access changes in the Study Area, the proximity of these changes to residential and nonresidential properties, the availability of comparable properties for relocation and consideration of Last Resort Housing, and the comprehensive Relocation Assistance Program provided by Caltrans for those being relocated, the build alternatives would not result in isolation and/or segregation of residents without resources to relocate within their existing communities. Therefore, the build alternatives would not result in adverse effects to public health related to social cohesion.

ACCESS TO SCHOOLS.

PUBLIC HEALTH STATEMENT. Increases in walking and biking are positively associated with improvements in health, including decreased obesity, chronic disease, and stress. Childhood obesity is a particularly important issue that could be addressed through increased student walking or biking to school (P. Simon et al. 2009).

I-710 CORRIDOR PROJECT. As discussed earlier in this section, the build alternatives would improve local streets by constructing new curbs, gutters, and striping, as well as new sidewalks and outside shoulders to allow pedestrian and bicyclist mobility and safety. While the build alternatives would result in some changes in access, these changes would not result in adverse impacts to access to schools within the Study Area.

During construction, the build alternatives would result in temporary access impacts due to local roadways and interchanges being improved as part of the I-710 Corridor Project, and these proposed improvements have the potential to temporarily impact travel (driving, walking, and/or biking) for students who use these roadways to get to school. There are a total of 12 schools at which students may experience temporary impacts in access from construction (refer to Table 3.3-8). These schools include: The Ellen Ochoa Learning Center, (LAUSD), Kelly Elementary School (CUSD), Whaley Middle School (CUSD), Walton Middle School (CUSD), Dominguez High School (CUSD), Compton Community College (CCCD), Humphreys Avenue Elementary School (LAUSD), Lynwood High School (LUSD), Lynwood Adult School (LUSD), Heliotrope Avenue Elementary School (LAUSD), Maywood Elementary School (LAUSD), and Zamboni Middle School (PUSD). As discussed further in

Section 3.24, Construction Impacts, a TMP would be prepared prior to construction to identify strategies for minimizing these impacts and to maintain access and connectivity for travel. Detours would be provided during construction to ensure students' access to the schools in a timely manner. In addition, for any school that has identified Safe Pedestrian Routes (e.g., Dominguez Elementary School), should construction impact any part of an identified Safe Pedestrian Route, the detour identified would include mechanisms for safe crossing of roadways (e.g., crossing guards or stop signs) similar to that provided in the existing Safe Pedestrian Route.

For any students using bus transportation (including that provided by the schools, Metro bus service, and other municipal bus services), should construction impact a local bus stop, the bus stop would be relocated in the vicinity of the existing stop prior to construction to maintain service and student accessibility.

All construction-related activities would cease after completion of construction, and direct access would be returned. Once in operation, the build alternatives would not result in adverse impacts to modes of travel for students and would enhance access to schools by reducing traffic congestion.

Based on the above considerations, the build alternatives would not result in adverse effects to public health related to access to schools.

JOBS AND ECONOMIC DEVELOPMENT.

PUBLIC HEALTH STATEMENT. New jobs, especially higher-paying jobs with adequate benefits such as healthcare and paid time off, are associated with increased ability to afford healthy food, health- and childcare, and adequate housing. This positively benefits all health outcomes, including decreases in obesity and chronic disease. Increases in jobs are associated with increases in local economic activity; higher property values; decreased blight, crime, and stress; and improved mental health (P. Simon et al. 2009).

I-710 CORRIDOR PROJECT. Construction activities for the build alternatives would occur over an extended time period and would generate direct and indirect jobs. Direct jobs as a result of construction would be the number of construction jobs generated to complete the I-710 Corridor Project and are, therefore, considered temporary. The indirect jobs would be the additional employment and business activity that would be generated in the regional economy by the initial construction expenditure for the I-710 Corridor Project. It is estimated that anywhere from 99,885 to 179,180 (total direct and indirect) jobs may be generated, depending on the alternative and option selected.

As shown in Table 3.3-10, based on the preliminary cost estimates, construction of Alternative 5C would generate an estimated 34,238 direct and 65,647 indirect jobs, for a total of 99,885 jobs.

Table 3.3-10: Estimated Construction Employment for the I-710 Corridor Improvement Project

Estimated Capital Construction Costs[1]			Estimated Employment Generated[2]		
			Direct Jobs	Indirect Jobs	Total Jobs
Alternative 5C		$3.59 billion	34,238	65,647	99,885
Alternative 5C	Option 1A	$3.59 billion	34,238	65,647	99,885
	Option 2A	$3.62 billion	34,524	66,195	100,719
	Option 3A	$3.69 billion	35,192	67,475	102,667
Alternative 7		$6.32 billion	60,274	115,568	175,842
Alternative 7	Option 1B	$6.33 billion	60,369	115,750	176,119
	Option 3B	$6.44 billion	61,418	117,762	179,180

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).

[1] Capital construction costs from AECOM (April 2017). Amount does not include right of way or support costs.

[2] ARTBA estimates every $1 billion invested in highways supports 27,823 jobs, including 9,537 on-site construction jobs, 4,324 jobs in supplier industries, and 13,962 jobs throughout the rest of the economy.

ARTBA = American Road and Transportation Builders Association

I-710 = Interstate 710

Option 1A of Alternative 5C would generate an estimated 34,238 direct and 65,647 indirect construction jobs, for a total of 99,885 jobs. Option 2A of Alternative 5C would generate an estimated 34,524 direct and 66,195 indirect construction jobs, for a total of 100,719 jobs, and Option 3A of Alternative 5C would generate an estimated 35,192 direct and 67,475 indirect construction jobs, for a total of 102,667 jobs. These construction jobs would generate temporary employment and revenues for both the local and regional economies.

Alternative 7 would generate an estimated 60,274 direct and 115,568 indirect construction jobs, for a total of 175,842 jobs. Option 1B of Alternative 7 would generate an estimated 60,369 direct and 115,750 indirect construction jobs, for a total of 176,119 jobs and Option 3B of Alternative 7 would generate an estimated 61,418 direct and 117,762 indirect construction jobs, for a total of 179,180 jobs These construction jobs would generate temporary employment and revenues for both the local and regional economies. In addition, it is anticipated that the zero-emission/near zero-emission freight corridor component of Alternative 7 would generate additional indirect employment as the technology is developed and eventually maintained within the I-710 Corridor.

The build alternatives would also impact nonresidential parcels and result in possible permanent job loss with relocation of businesses. Section 3.3.2, Relocations and Real Property Acquisition of the RDEIR/SDEIS, provides additional detail regarding relocations. However, the goal of the relocation program for the I-710 Corridor Project is that relocations occur within the affected cities to minimize impacts.

3.3.1.5 MOTION 22.1

As described in Chapter 2.0, Section 2.2.2.1 (Community Alternative 7) of this RDEIR/SDEIS, the Metro Board of Directors passed Board Motion 22.1 in October 2015 that directed Metro and Caltrans to study a number of additional items as a part of the I-710 Corridor Project Description. Motion 22.1 includes the following two elements that will promote community cohesion:

- **The replacement/enhancement of approximately 28 existing bridges/underpasses and the construction of at least five new pedestrian/bike bridges/underpasses to ensure safe and easily accessible freeway and river crossings to reduce gaps between crossings further than 0.5 mile where demand for increased access exists along the project corridor.** This measure (particularly the new pedestrian/bike bridges/underpasses) will promote greater community cohesion by providing safer bicycle and pedestrian connectivity within and between affected communities.
- **Ensure implementation of Complete Streets treatments that promote sustainable and "livable neighborhoods" for all those arterials, ramp termini, and intersections as part of the proposed I-710 project. Designs shall be consistent with the principles outlined in Caltrans' *Main Streets, California: A Guide for Improving Community and Transportation Vitality.*** This measure will also promote greater community cohesion by providing safer bicycle and pedestrian connectivity within and between affected communities.

3.3.1.6 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

As previously discussed in this section, the build alternatives would not result in permanent impacts to community character and cohesion in most communities within the Study Area. Community cohesion impacts do occur at a localized level within Commerce, Bell, and Long Beach due to relocations of existing cohesive communities or vital community facilities. Measures that address relocations within these communities is provided through implementation of Measure C-1 described in Section 3.3.2.4. Please refer to Section 3.24.4.3 for measures to reduce temporary impacts during construction. Additionally, the build alternatives would result in temporary and permanent opportunities for employment and economic development. Therefore, measures to address jobs and economic development are not needed.

3.3.2 Relocations and Real Property Acquisition

The information in this section is based on the RIR. Acquisitions/relocations are based on the design of the build alternatives. The footprints of Alternatives 5C and 7 and their options have been developed to minimize the effects of the acquisition of land adjacent to the existing I-710 corridor. Refer to Appendix D of this RDEIR/SDEIS for additional information on Caltrans Relocation Assistance Program policies and guidelines. Also, refer to Section 3.2.2.2 for a discussion on the public health considerations regarding relocations.

3.3.2.1 Regulatory Setting

Caltrans' Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix D for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 United States Code [USC] 2000d, et seq.). Please see Appendix C for a copy of the Department's Title VI Policy Statement.

3.3.2.2 Affected Environment

Each of the build alternatives will require the acquisition of property to be incorporated into the project transportation facilities. To minimize the impacts of property acquisition on residents, businesses, and communities (particularly low-income, minority communities), the following steps were conducted:

- The project limits were carefully evaluated during design and those limits were narrowed or otherwise modified to avoid or minimize the need for acquisition of right-of-way for the build alternatives.
- The traffic analysis carefully considered traffic improvements that would require additional right-of-way and, where those improvements were not necessary for efficient traffic operations, they were not included in the build alternatives.
- The properties that would be affected by full parcel acquisitions were assessed to determine whether those acquisitions could be reduced to partial acquisitions. Similarly, the properties that would be affected by partial parcel acquisitions were assessed to determine whether those acquisitions could be further minimized or avoided altogether.

If a build alternative is selected for implementation, Caltrans will continue to evaluate ways to minimize the amount of right-of-way needed for the project. All of the communities within the Study Area described in Section 3.3.1 could be affected by full acquisitions and partial acquisitions of residential and nonresidential property, including mobile homes. Nonresidential properties include retail trade, finance, insurance, services, government/nonprofit, utilities, and other types of nonresidential property uses.

A full acquisition of a property is defined as an area within which the I-710 Corridor Project would require close to full, if not 100 percent, acquisition of the parcel. A partial acquisition is when a small area of a property is acquired. Generally, with partial acquisitions, full use of the property and dwelling structures, including multifamily units, would remain. For example, partial acquisitions could consist of parts of a back, side, or front yard; landscaping; or parking. For areas containing multifamily residences, a project may not affect all units on the parcel. Both full and partial acquisitions could also result in relocations. For example, a project could require acquisition of a small percentage of a parcel that consists of over 100 mobile homes. While the I-710 Corridor Project would result in a partial acquisition of the parcel itself, relocation of any mobile homes in that parcel acquisition area would be required. In addition, a project could result in the removal of access or parking for a nonresidential property but have no effect on the building. Relocation could still be required for the partial acquisition because the impact to access and/or parking would result in the business no longer being able to operate due to the loss of access or loss of parking.

The severity of property acquisition impacts varies greatly depending on the population involved. For instance, if a person is highly mobile and has had a history of changing residences frequently, the impact may only be a minor inconvenience. However, if the community is stable and cohesive and residents have been in their homes for many years, many of the displaced persons may have a difficult time adjusting to new homes and neighborhoods because they have a strong attachment to their existing homes and neighborhoods.

3.3.2.3 Motion 22.1 Right of Way Avoidance Analysis

In compliance with Metro Board Motion 22.1, an analysis was undertaken to examine the right of way impacts of Alternative 7, identify major impacts to homes, businesses, and/or community resources, and provide documentation of the rationale and constraints that make these impacts unavoidable. The information provided herein is from a memorandum entitled “Avoidance Concepts Applicable to Alternative 7” (AECOM, October 2016). This memorandum detailed design concepts for the previous freight corridor alternatives (Alternatives 6A, 6B, and 6C) evaluated in the 2012 Draft EIR/EIS in addition to Alternative 7; this summary will focus on Alternative 7. The memorandum is provided in Appendix T of this RDEIR/SDEIS.

Five areas were identified for closer examination. These areas are:

- Anaheim St. – Within the City of Long Beach, in the vicinity of the Anaheim St. local interchange and adjacent uses. The Long Beach Multi-Service Center for Homelessness (MSC) is located in this area.
- Alondra Blvd. – Within the Cities of Compton and Paramount as well as unincorporated East Compton, in the vicinity of the Alondra Blvd. local interchange and adjacent uses. The Seasons Senior Apartments (recently completed in 2011, with 84 units to serve the needs of senior citizens with disabilities) and the El Rancho Mobile Home Park are located in this area.
- Slauson Ave. – Within the Cities of Bell, Commerce, and Maywood, in the vicinity of the Slauson Ave. local crossing and adjacent uses. The Salvation Army Bell Shelter and S. Mark Taper Foundation Resource Bank are located in this area.
- Washington Blvd. – Within the City of Commerce, in the vicinity of the Washington Blvd. local interchange and adjacent uses. The Ayers residential neighborhood, part of the City of Commerce's Bandini-Rosini Residential Planning Area, is located in this area.
- I-5 – Within the City of Commerce, in the vicinity of the I-710/I-5 interchange and adjacent uses near both freeways. Of particular focus in this area are the approximately 30 residences located along Sydney Dr., part of the City of Commerce's Northwest Residential Planning Area.

It is inherent in the mission of Caltrans to employ context-sensitive design solutions that consider collaborative, community-sensitive approaches to transportation decision-making. To support these approaches, Caltrans has adopted a number of policies, including the Director's Policy on Context Sensitive Solutions (DP-22)[1], Deputy Directive on Accommodating Non-Motorized Travel (DD-64)[2], as well as the publication of "*Main Street, California: A Guide for Improving Community and Transportation Vitality*."[3] Context-sensitive design solutions are defined as "a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility…an approach that considers the total context within which a transportation improvement project will exist."[4]

1 Caltrans. Website: http://www.dot.ca.gov/hq/transprog/ocip/te/dp-22.pdf (accessed March 1, 2017).

2 Caltrans. Website: http://www.dot.ca.gov/hq/tpp/offices/bike/sites_files/DD-64-R1_Signed.pdf (accessed March 1, 2017).

3 Caltrans. Website: http://www.dot.ca.gov/hq/LandArch/mainstreet/main_street_3rd_edition.pdf (accessed March 1, 2017).

4 Caltrans. Website: http://www.dot.ca.gov/hq/tpp/offices/ocp/css.html (accessed March 1, 2017).

When considering adjacent uses and the overall context of a project's location, other factors are considered as well. When justified by the context, non-standard design features can be utilized to avoid or minimize adverse environmental or social impacts; however, features that have substantial adverse impacts on the safety and operation of the highway facility would not be utilized.

Avoidance objectives are identified for each location and the specific geometric design elements causing the impacts are described. The analysis compares differences in right of way impacts, differences in safety and mobility, and differences in capital costs in order to determine the viability of the avoidance concept and inform further project development.

ANAHEIM ST. The main avoidance objective for the Anaheim St. area is to avoid relocation of the Long Beach MSC that would occur due to the placement of the truck-only interchange ramps at Harbor Ave. and Anaheim St. Three avoidance concepts were proposed that would achieve the objective, and are summarized as follows.

- **M1:** Elimination of the truck ramps at Anaheim St. would achieve the objective and avoid relocation of the MSC. Removal of these ramps would divert truck traffic to the I-710 mixed-flow lanes that are accessible at Anaheim St. The projected amount of truck traffic expected to access the freight corridor at Anaheim St. is 9,800 trucks per day. If the Anaheim St. ramps are eliminated, utilization of the southern four-mile segment of the freight corridor would decrease by up to 25 percent in the peak hours, meaning that up to 70 percent of trucks would be utilizing the mixed-flow freeway lanes rather than the freight corridor. The success of the freight corridor depends upon its ability to remove a substantial majority of diesel trucks from the freeway lanes and deliver travel and air quality benefits relative to its projected cost. The decrease in utilization as noted here would not deliver those benefits relative to cost, and the overall effectiveness of other freeway and local street improvements in this area would also diminish. The performance of Alternative 7 would be substantially reduced. For these reasons, Avoidance Concept M1 is not considered viable.
- **M2:** Termination of the truck ramp at 12th St./Harbor Ave. instead of Anaheim St. was evaluated as a concept that would avoid the relocation of the MSC. In this concept, an access break would effectively occur between Anaheim St. and the truck ramps. Intersections at the ramp terminus and at Anaheim St. would be signalized and synchronized. Virtually all truck traffic exiting the freight corridor at this location would continue westbound on Anaheim St., and virtually all truck traffic entering the freight corridor originates from eastbound Anaheim St., a designated truck route. Long queues would be expected on the access ramps and on eastbound Anaheim St.

Because the Harbor Ave./Anaheim St. intersection requires a long four-phase signal cycle, trucks will stack up between Anaheim St. and 12th St. and on the exit ramp. The short distance (approximately 250 feet) between 12th St. and Anaheim St. and lack of storage will serve to frequently block the intersection and disrupt operations for all users and cause greater congestion. Additionally, the access break between these high volume entrance and exit ramps is a non-standard design feature and does not conform to access policy standards established by Caltrans and FHWA. As there is not a reasonable justification for this exception to policy and standard, and the resultant condition would not be consistent with the project's purpose and need, this concept is not considered viable.

- **M3:** The termination of the truck ramp at Anaheim St. and Caspian Ave. (another local existing intersection approximately two blocks west of the Anaheim St./Harbor Ave. intersection) would avoid the relocation of the MSC. Additionally, other locations of termination of the truck ramps could occur as far west as Santa Fe Ave./9th St. Although these ramp realignments would avoid the MSC, substantial new impacts would occur and would be larger in area and in number within this dense industrial area. Further coordination with the Port of Long Beach is warranted as to determine current and future uses south of Anaheim St. within the Harbor District, as these uses may change with the development of the On-Dock Rail facility at the Pier B Rail Yard. However, at this point, the proposed M3 avoidance concept is not considered viable.

ALONDRA BLVD. The avoidance objective in this area is to avoid residential impacts to the El Rancho Mobile Home Park and continue to avoid impacts to the Seasons Senior Apartments. Three avoidance concepts were proposed that would achieve the objective and are summarized as follows.

- **E1:** Elimination of the southbound braided roadway configuration on I-710 approaching SR-91 would avoid the residential impacts at El Rancho Mobile Home Park. The resulting configuration would be similar to existing conditions. This concept would not improve operations or existing freeway deficiencies, and the reconfiguration of the Alondra Blvd. local interchange may actually exacerbate inadequate freeway operations in this area as well. Freeway operations are substantially affected due to the relatively short weaving area between the Alondra Blvd. entrance ramp and the SR-91 connector, and this bottleneck condition remains unresolved by the addition of more through-lanes. A longer entrance ramp shortens the weaving distance further and adds to congestion. This design concept is comparable to existing conditions (Alternative 1, No Build, remains a viable alternative) but is not a viable concept as part of Alternative 7.

- **E2:** Shifting the freeway, truck lanes, and Alondra Blvd. local interchange easterly would eliminate direct impacts to the El Rancho Mobile Home Park. This realignment of the roadway would not introduce adverse effects on the safety and operation of the freeway and would not require additional property acquisitions as the shift would occur in the area between the freeway and the Los Angeles River. Constructability and staging considerations are also comparable to Alternative 7 and do not introduce significant design challenges. This concept is considered viable.
- **E3:** Elimination of the southbound entrance ramp. As this ramp is the design element that directly affects the El Rancho Mobile Home Park, removal of it would avoid impacts to the resource. However, the Cities of Compton and Paramount depend on full access to the freeway at this location. The businesses and residents of those cities rely on convenient and reliable access to and from I-710. The nearest alternate access points to the southbound I-710 are at Artesia Blvd. and Rosecrans Ave. Each of these are a distance of one mile from Alondra Blvd. From Alondra Blvd.; motorists would use Atlantic Ave. or Hunsaker Ave. and Atlantic Pl. to reach Artesia Blvd. Motorists are less likely to backtrack to Rosecrans Ave. The diverted traffic would increase congestion at multiple intersections along these routes and diminish the safety and mobility performance of the local street network, which would be inconsistent with the I-710 Corridor Project's purpose. Additionally, partial interchanges do not comply with Caltrans standards and FHWA interstate access policy. Less than full access interchanges require substantial justification prior to approval. Because the traffic diversion and congestion issues outlined above associated with the removal of access would have an adverse effect on local street operation, the design concept is not considered viable.

SLAUSON AVE. The avoidance objective in this area is to avoid relocation of or significant modifications to the Salvation Army Bell Shelter and the S. Mark Taper Foundation Resource Bank. Two avoidance concepts were proposed as outlined below.

- **S1:** Shifting all of the roadway alignments westerly, while still retaining the functionality of the freight corridor and freight corridor interchange at Slauson Ave. would eliminate direct impacts to the shelter. However, this realignment would necessitate relocation of the Los Angeles Department of Water and Power (LADWP) transmission corridor west of I-710 as well as require major encroachments within the Los Angeles River. Similar alignments were considered as part of Alternatives 6A, 6B, and 6C and dropped from further consideration due to the substantial increased in environmental and right of way impacts. Therefore, this concept is not considered viable.
- **S2:** Elimination of the truck interchange at Slauson Ave. Several design elements affect the shelter facilities. The freight corridor ramps at Slauson Ave. require the alignment of the freight corridor to be situation adjacent to the northbound freeway lanes. The freight corridor lanes and northbound collector-distributor road directly affect the shelter

facilities, and the realignment of the Los Angeles Junction (LAJ) railroad adjacent to the freight corridor further impacts the shelter facilities as well. Elimination of the freight corridor ramps at Slauson Ave. from the current design would reduce impacts and avoid relocation of the shelter facilities. Because there would be no ramps at Slauson Ave. in this concept, the freight corridor would be positioned in the median of the freeway, supported by a single-column viaduct structure spanning Slauson Ave. This alignment strategy is employed south of Slauson Ave. in the current configuration of Alternative 7. The connectors between the freight corridor and the freeway, north of Slauson Ave., are adjusted to accommodate the new freight corridor alignment. The northbound freeway lanes and northbound collector-distributor road must be shifted east, closer to the shelter facilities, and the LAJ railroad would be relocated adjacent to the northbound lanes. This scenario would not necessitate relocations associated with the shelter facilities.

However, the truck traffic that would have used the freight corridor and Slauson Ave. would be diverted to other roadways. It is anticipated that virtually all of the diverted traffic would use the mixed-flow freeway lanes instead and access the local area using interchanges at Bandini Blvd. and Florence Ave. As the success of the freight corridor, and justification of its cost expenditures, depends on its ability to remove diesel trucks from the freeway lanes. The projected number of truck traffic expected to use the freight corridor at Slauson Ave. is approximately 9,200 per day. As a direct result of this diversion, utilization of the full length of the freight corridor would decrease and utilization of the adjacent freeway segments would increase. During peak periods, the percentage of trucks in these segments of the freight corridor would be expected to decrease as much as 15 to 17 percent, meaning that as much as 53 percent of all trucks would be using the mixed flow freeway lanes. This reduces the distribution below the threshold criteria needed for successful use of the freight corridor for all segments during most peak periods. Because the freight corridor is underutilized, the overall effectiveness of other freeway and local street improvements in this area will diminish markedly. The loss of access is inconsistent with the purpose of the freight corridor and would substantially reduce the performance of Alternative 7; therefore, this concept is not considered viable.

WASHINGTON BLVD. The avoidance objective in this area is to avoid residential relocations in the Ayers neighborhood in the City of Commerce. Three avoidance concepts are outlined below.

- **A1:** The element of the Alternative 7 design directly affecting the Ayers neighborhood is the southbound exit ramp to Washington Blvd. The elimination of the Washington Blvd. exit ramp would avoid most of the residential impacts to the neighborhood. However, the City of Commerce depends upon full access to the freeway at Washington Blvd. The City's businesses and residents rely on convenient and reliable access to and from I-710. Without the exit ramp, vehicles would use alternate routes to reach destinations in Commerce, the nearest being the Bandini Blvd. exit ramp located 0.5 mile south of

Washington Blvd. Vehicles would then backtrack on Atlantic Blvd. to reach Washington Blvd. This diverted traffic would increase congestion at multiple intersections on Bandini Blvd., Atlantic Blvd., and Washington Blvd. The volumes of vehicles exiting at Bandini Blvd. would increase from 1,700 to as much as 2,400 during peak periods, which exceeds the capacity of the ramp intersection. The resultant congestion would diminish the safety and mobility performance of the nearby streets, and is inconsistent with the purpose of the project. Additionally, partial interchanges do not comply with Caltrans standards and FHWA's interstate access policy, and less than full access interchanges require substantial justification prior to approval. Because this traffic diversion has an adverse effect on highway operations, it cannot be justified, and this is not a viable concept.

- **A2:** By retaining the basic ramp configuration of the interchange and shifting the freeway alignment easterly, direct impacts to the Ayers neighborhood would be eliminated. In this configuration, the freeway centerline would be moved 120 feet to the east. However, in doing so, new impacts are introduced. The freeway alignment would encroach on the Bandini neighborhood and Bandini Park. Also, the northbound ramp termini for the freeway entrance and exit would need to be realigned to ensure safe acceleration and deceleration speeds. The local streets of Hepworth Ave. and Noble St. would be realigned and modified to minimize impacts to remaining residents of the neighborhood, and additional businesses fronting Washington Blvd. are impacted as well. Although this shift would eliminate 1.2 acres impacted and 14 relocations from the Ayers neighborhood, it would add 1.0 acre impacted and 15 relocations from the Bandini neighborhood, 0.2 acre impacted at Bandini Park, including the loss of the baseball diamond and basketball court, and 2.1 acres of impacts (five parcel acquisitions) of the business uses east of the freeway. As item O of Motion 22.1 also instructs that the impacts to parks be minimized, and the right of way and relocation impacts are greater under this avoidance concept, it is not considered viable.
- **A3:** Realignment of the southbound exit ramp that directly impacts the Ayers neighborhood would serve to avoid most of the residential impacts in this area, the new alignment would encroach on businesses opposite the neighborhood, between Washington Blvd. and Sheila St. Although this would eliminate 1.2 acres impacted and 14 relocations from the Ayers neighborhood, it would introduce 4.2 acres impacted and seven parcel acquisitions to the business uses south of Washington Blvd. More than three times the area of property acquisition is required to avoid the residential uses in the Ayers neighborhood, and it is expected that the property and relocation costs would be substantially greater as compared to Alternative 7. To limit the business impacts, the new ramp would terminate at the intersection of Ayers Ave. and Washington Blvd. Ayers Ave. is the primary access to the Ayers neighborhood, and this access opposite the ramp termini is a non-standard highway feature. There is a potential for vehicles exiting the neighborhood to enter the ramp going in the wrong direction. Because the approval

justification of this non-standard feature is insufficient, and also due to the increased right of way impacts associated with it, this avoidance concept is not considered viable.

I-5. The avoidance objective in this area is to avoid residential and business relocations along Sydney Dr. Two avoidance concepts were evaluated and outlined below.

- **W1:** To retain the basic functionality of the southbound braided roadway configuration near I-5 and avoid impacts to Sydney Dr., the freeway alignment would be shifted easterly. The centerline would move approximately 120 feet to the east. This new alignment would encroach on residential property along Duncan Ave., and the northbound freeway and I-5 connector alignments impact homes directly. As a direct result of the shift, Duncan Ave. would be acquired, along with four acres of residential uses on 27 parcels, displacing 41 households, and 0.2 acre of vacant property on three parcels. Property from UP Railroad would be acquired on one side of the freeway, as well as acquisitions of property and the relocation of residents within the Ayers neighborhood (please see the discussion above of the Washington Blvd. area for more information on avoiding the Ayers neighborhood). More residential acreage and household displacements would occur under the avoidance concept, although property acquisition and relocation costs would be similar to that under Alternative 7. Compared to Alternative 7, this avoidance concept does not avoid or provide a meaningful reduction in property impacts, and therefore is considered not viable.
- **W2:** Again, the southbound braided roadway configuration near I-5 is the specific design element that impacts the residents and businesses along Sydney Dr. The elimination of the braid from the Alternative 7 design would avoid impacts to Sydney Dr., and the resultant configuration would be similar to existing conditions. However, existing freeway deficiencies would be exacerbated, and new traffic impacts would occur. Freeway operations are substantially affected due to the relatively short weaving area between the I-5 connector and the exit ramp to Washington Blvd. and Bandini Blvd. The bottleneck condition is not resolved by adding additional through-lanes. More vehicles must negotiate this weaving area, as the exit ramp carries the combined volume of both Bandini Blvd. and Washington Blvd. exits, and is vital to the operation of the freeway and freight corridor south of this location. This concept is fundamentally flawed because traffic and safety conditions are actually made worse than the existing condition at this location under this avoidance concept. Therefore, it is not considered viable.

3.3.2.4 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to community impacts, including relocations, is located in Section 3.24.3.3.

PERMANENT IMPACTS.

BUILD ALTERNATIVES.

RELOCATIONS. The build alternatives would result in the relocation of residential and nonresidential properties. Estimated totals of relocations are tabulated in Table 3.3-11 (also refer to Appendix L[5] for a detailed table and maps of impacted parcels under each proposed build alternative), and total relocations by city are shown in Table 3.3-12. The build alternatives will not result in any relocations in the cities/communities of Boyle Heights, Cudahy, Downey, Lakewood, Maywood, Paramount, Signal Hill, Huntington Park, Wilmington, or San Pedro.

The types of businesses relocated by the build alternatives are provided in Table 3.3-13, and the number of employees to be relocated within the affected cities in the Study Area is provided in Table 3.3-14.

According to the *Relocation Impact Report* (2017), within the I-710 Corridor Project Study Area, Alternative 5C would result in a total of 158 nonresidential relocations and 109 residential relocations. Based on an average of four persons per residential unit, Alternatives 5C (not including design options), 5C (Option 1A), and 5C (Option 2A) would each result in the relocation of approximately 436 residents. Alternative 5C, Option 1A, would result in a total of 157 nonresidential relocations and 109 residential relocations. Alternative 5C, Option 2A, would result in 161 nonresidential relocations and 109 residential relocations, and Alternative 5C, Option 3A, would result in 165 nonresidential relocations and 128 residential relocations, resulting in the relocation of approximately 512 residents. Overall, Alternative 5C, Option 3A, impacts a greater number of both residential and nonresidential parcels.

Alternative 7 (not including design options) would result in a total of 206 nonresidential relocations and 121 residential relocations, resulting in the relocation of approximately 484 residents. Alternative 7, Option 1B, would result in a total of 206 nonresidential relocations and 136 residential relocations, resulting in the relocation of approximately 544 residents. Alternative 7, Option 3B, would result in a total of 213 nonresidential relocations and 140 residential relocations, resulting in the relocation of approximately 560 residents.

[5] The number of parcels listed in Appendix L may differ from those listed in Section 3.3.2.3. The difference in the number of properties affected may be a result of some parcels being either vacant, or the same business occupies multiple parcels (i.e., only one business would require relocation even though multiple parcels would be acquired for the project).

Table 3.3-11: Relocations by Build Alternatives

Relocations	Alternative 5C Only	Alternative 5C (Option 1A)	Alternative 5C (Option 2A)	Alternative 5C (Option 3A)	Alternative 7 Only	Alternative 7 (Option 1B)	Alternative 7 (Option 3B)
Residential	109	109	109	128	121	136	140
Nonresidential	158	157	161	165	206	206	213
Total Residential and Nonresidential Relocations	267	266	270	293	327	342	353
Total Estimated Residents Relocated[1]	**436**	**436**	**436**	**512**	**484**	**544**	**560**

Source: Epic Land Solutions, Inc. *Relocation Impact Report* (March 2017).

[1] The estimated number of relocated residents is based on the average of 4 persons per residential unit.

Table 3.3-12: Relocations by City

City/Community	Type of Relocation	Alternative 5C	Alternative 5C (Option 1A)	Alternative 5C (Option 2A)	Alternative 5C (Option 3A)	Alternative 7	Alternative 7 (Option 1B)	Alternative 7 (Option 3B)
Bell	Residential	0	0	0	0	0	0	0
	Nonresidential	28	28	28	28	29	29	29
Bell Gardens	Residential	8	8	8	8	4	4	4
	Nonresidential	0	0	0	0	0	0	0
Carson	Residential	0	0	0	0	0	0	0
	Nonresidential	16	16	16	16	16	16	16
Commerce	Residential	58	58	58	58	58	73	58
	Nonresidential	40	39	40	40	44	44	44
Compton	Residential	11	11	11	11	11	11	11
	Nonresidential	27	27	27	27	32	32	32
Long Beach	Residential	26	26	26	26	42	42	42
	Nonresidential	31	31	34	31	62	62	62
Los Angeles County-East Los Angeles	Residential	0	0	0	19	0	0	19
	Nonresidential	0	0	0	7	0	0	7
Los Angeles County-Rancho Dominguez	Residential	0	0	0	0	0	0	0
	Nonresidential	1	1	1	1	2	2	2
Lynwood	Residential	0	0	0	0	0	0	0
	Nonresidential	2	2	2	2	2	2	2
South Gate	Residential	6	6	6	6	6	6	6
	Nonresidential	6	6	6	6	11	11	11
Vernon	Residential	0	0	0	0	0	0	0
	Nonresidential	7	7	7	7	8	8	8
Total Residential		**109**	**109**	**109**	**128**	**121**	**136**	**140**
Total Nonresidential		**158**	**157**	**161**	**165**	**206**	**206**	**213**
Total Relocations by Alternative/Option		**267**	**266**	**270**	**293**	**327**	**342**	**353**

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
Please note the difference between the total number of residents displaced listed in Table 3.3-11 and the total number of residential relocations listed in this table. Some relocations are parcels that contain multifamily or multiple unit residences and would require multiple displacements.
Please note that billboard and cell tower relocations are counted as relocations, where applicable. A superscript ([1]) is used to denote if billboards and/or cell towers are included in the number of relocations for a given city.
There are no relocations in the Cities of Cudahy, Lakewood, Maywood, Paramount, and Signal Hill or in the communities of Boyle Heights, Wilmington or San Pedro.

Table 3.3-13: Types of Businesses Relocated by the Build Alternatives

Business Type	Alternative 5C	Option 1A	Option 2A	Option 3A	Alternative 7	Option 1B	Option 3B
Construction	0	0	0	0	1	0	0
Manufacturing	8	0	3	0	14	1	0
Retail	73	22	1	4	80	22	4
Government	1	1	0	0	1	1	0
Non-profit	5	0	0	0	7	1	0
Service	19	5	0	1	23	5	1
Agriculture	0	0	0	0	1	0	0
Public	4	3	2	1	7	3	1
Unknown or other	48	27	3	1	72	27	1
Total	**158**	**58**	**9**	**7**	**206**	**60**	**7**

Source: Epic Land Solutions, Inc. *Relocation Impact Report* (Estimated Displacements by Alternatives)(March 2017).

Table 3.3-14: Employees Relocated by the Build Alternatives

City	Alternative 5C	Alternative 5C (Option 1A)	Alternative 5C (Option 2A)	Alternative 5C (Option 3A)	Alternative 7	Alternative 7 (Option 1B)	Alternative 7 (Option 3B)
Bell	170	170	170	–	175	175	175
Bell Gardens	-	-	–	–	-	–	–
Carson	85	85	85	85	85	85	85
Commerce	325	320	325	325	400	400	400
Compton	110	110	110	110	125	125	125
Cudahy	-	-	–	–	-	–	–
Long Beach	270	270	305	270	431	431	431
East Los Angeles	–	–	20	–	–	–	20
Lynwood	10	10	10	10	15	15	15
Paramount	-	–	–	–	-	–	–
Rancho Dominguez	5	5	5	5	15	15	15
South Gate	20	20	20	20	30	30	30
Vernon	55	55	55	55	70	70	70
Total[1]	**1,050**	**1,045**	**1,105**	**1,050**	**1,346**	**1,346**	**1,366**

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
[1] Total includes the total number of employees for each potential alternative scenario.

Relocations under both Alternatives 5C and 7, and each of their respective design options would result in the displacement of existing residents, businesses, and employees.

The City of Commerce would experience the most residential relocations under both build alternatives. Alternative 5C (including each of the design options) would result in a total of 58 residential relocations. Alternative 7 and Alternative 7, Option 3B, would each result in 58 residential relocations. Alternative 7, Option 1B, would result in 73 residential relocations.

The City of Commerce would experience the most nonresidential relocations under Alternative 5C (including each of the design options) and would result in a total of 39 to 40 nonresidential relocations. The City of Long Beach would experience the most nonresidential relocations under Alternative 7 (including each of the design options), and would result in a total of 62 nonresidential relocations.

Alternative 7 would result in the greatest number of residential and nonresidential relocations. The build alternatives would result in the greatest impact to retail businesses (refer to Table 3.3-13).

In addition, as shown in Table 3.3-14, Alternative 5C could result in a total of between 1,045 and 1,050 employee relocations (depending on the design option), and Alternative 7 could result in a total of between 1,346 and 1,366 employee relocations (depending on the design option) in the Study Area.

All property acquisition and relocation would be handled in accordance with the Uniform Act of 1970 (Public Law 91-646, 84 Stat. 1894). The Uniform Act mandates that certain relocation services and payments by Caltrans be made available to eligible residents, businesses, and nonprofit organizations displaced by its projects. The Uniform Act provides for uniform and equitable treatment by Federal or Federally assisted programs of persons displaced from their homes, businesses, or farms, and establishes uniform and equitable land acquisition policies. Design refinements to avoid or minimize impacts to existing land uses related to the temporary use and/or permanent acquisition of property would be incorporated in the final design of the selected alternative.

Amongst the nonresidential relocations, the RIR identifies several types of business land uses that may be difficult to relocate as a result of the I-710 Corridor Project. These difficulties range from lack of properly zoned replacement land available in a specific market area to specialized architecture required for businesses, such as gas stations, fast food restaurants, liquor stores, churches, oil pumps, industrial storage facilities, car dealerships, and auto-related businesses.

As discussed in the RIR, for the majority of the Study Area, residential displacements, given the present market conditions, do not indicate a need for the construction of replacement housing. However, as stated above in the discussion of Public Health Considerations, Housing of Last Resort[1] may have to be considered for relocating the affected residential properties such as mobile homes. For example, five mobile homes at the El Rancho Mobile Home Park in the City of Compton would be proposed to be relocated under both build alternatives. However, adequate relocation resources for mobile homes in particular do not currently exist within the Study Area. This would represent an adverse impact to those displaced residents in the City of Compton, (assuming they preferred to remain in a mobile home). For the majority of the residential property impacts, adequate resources appear to exist at the present time to relocate existing residential occupants to comparable replacement housing, with the exceptions noted in the previous sentence. Specific locations for relocations will be determined during the right-of-way acquisition phase as Caltrans' right-of-way agents work with each displacee (refer to Appendix D for additional detail on the relocation benefits).

SALES TAX. This analysis estimates the annual sales tax revenue losses to city, county, and State governments as a result of the acquisition of nonresidential parcels for the build alternatives.

The State Board of Equalization (State Board) tabulates sales tax revenues by business and jurisdiction quarterly and annually. The average sales tax rate in the Study Area cities in 2014 was between 9 and 10 percent, of which 6.5 percent was distributed to the State, 1.0 to 1.5 percent was distributed to the local jurisdiction, and 1.5 percent was used for transportation projects in the jurisdiction of Metro. In the Taxable Sales in California (Sales and Use Tax) Report, the State Board tabulates sales tax revenues by business and jurisdictions on a quarterly basis. Due to privacy laws, the State Board does not disclose sales tax revenues generated by individual businesses; therefore, the taxable sales for the individual businesses that would be acquired for each build alternative is not available.

[1] The Urban Redevelopment Authority (URA) requires that comparable decent, safe, and sanitary replacement housing within a person's financial means be made available before that person may be displaced. When such housing cannot be provided by using replacement housing payments, the URA provides for “housing of last resort.” Housing of last resort may involve the use of replacement housing payments that exceed the URA maximum amounts. Housing of last resort may also involve the use of other methods of providing comparable decent, safe, and sanitary housing within a person’s financial means. Refer to §49 CFR 24.404 and Chapter 3 of the U.S. Housing and Urban Development (HUD) Handbook 1378 for more information. (Website: https://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing/training/web/relocation/lastresort, accessed February 20, 2017.)

The potential losses in sales tax revenues were estimated using total taxable sales in county unincorporated areas and the affected cities in the Study Area. Table 3.3-15 summarizes the loss of sales taxes revenue for the affected cities in the Study Area for each of the build alternatives. Based on the estimates provided in Table 3.3-15, the total estimated annual sales tax revenue losses to the affected cities by Alternative 5C would be between $918,800 and $1,016,510, and Alternative 7 would be between $1,119,461 and $1,121,603, depending on the design option.

The estimates of sales tax revenue loss represent a worst-case estimate in that it is assumed that all businesses either relocate outside of their existing local jurisdiction or do not relocate at all. One goal of the relocation program for the I-710 Corridor Project is that relocations would occur within the affected communities.

No nonresidential acquisitions would be required in the Cities of Cudahy, Lakewood, Maywood, Paramount, and Signal Hill, or in the communities of Boyle Heights, Wilmington, and San Pedro as a result of the build alternatives. Therefore, no sales tax revenues would be lost for these cities as a result of the build alternatives.

PROPERTY TAX. Property taxes in the Study Area are collected by the County of Los Angeles and apportioned to the incorporated cities in Los Angeles County, including the affected cities in the Study Area. Property taxes are levied on the assessed value of privately owned property (the amount levied is approximately 1 percent of the assessed property value).

The data was provided by the Office of the Los Angeles County Tax Assessor for the property tax paid in fiscal year 2013–2014 for each parcel that may be potentially acquired and relocated in the Study Area cities. For this analysis, the property tax revenue is the total property tax amount collected by the Los Angeles County Tax Collector for each city before it is distributed to the City and other agencies.

For full property acquisitions, the total amount paid in property tax was used for this analysis. For partial property acquisitions, only the percentage of the parcel that would be acquired was used to calculate the loss in property tax revenues. For example, if one of the partial acquisitions that require relocation would acquire 2 percent of the parcel, the calculated loss of property tax revenues for that parcel would be 2 percent of the total amount paid for the property tax. Table 3.3-16 provides the estimated annual property tax loss for the build alternatives in the affected cities. Based on the estimates provided in Table 3.3-16, the total estimated property tax losses to the affected cities by Alternative 5C would be between $130,052 and $153,546 and, for Alternative 7, the total estimated property tax losses would be between $212,644 and $223,034, depending on the design option.

Table 3.3-15: Estimated Loss of Annual Sales Tax Revenue in the Study Area

Jurisdiction	Tax Rate	Taxable Sales	Total Sales Tax Revenues	Average Sales Tax/ Business[1]	Alternative 5C	Option 1A	Option 2A	Option 3A	Alternative 7	Option 1B	Option 3B
City of Bell	1.0%	$176,124,000	$1,761,240	$3,084	$83,281	$83,281	–	–	$86,352	$86,352	–
City of Carson	1.0%	$1,929,459,000	$19,294,590	$8,575	$137,200	–	–	–	$137,200	–	–
City of Commerce	1.0%	$1,834,605,000	$18,346,050	$13,237	$489,769	$476,532	–	–	$542,717	$542,717	–
City of Compton	1.0%	$663,705,000	$6,637,050	$3,953	$106,731	–	–	–	$126,496	–	–
City of Long Beach	1.0%	$5,142,777,000	$51,427,770	$5,155	$135,030	–	$139,185	–	$237,130	–	–
Los Angeles County- East Los Angeles	1.0%	$147,446,927,000	$1,474,469,270	$5,406	–	–	–	$2,142	–	–	$2,142
Los Angeles County- Rancho Dominguez	1.0%	$147,446,927,000	$1,474,469,270	$5,406	$347	–	–	–	$694	–	–
City of Lynwood	1.0%	$319,933,000	$3,199,330	$3,064	$6,128	–	–	–	$6,128	–	–
City of South Gate	2.0%	$723,155,000	$14,463,100	$9,441	$37,764	–	–	–	$47,205	–	–
City of Vernon	1.0%	$448,913,000	$4,489,130	$4,052	$20,260	$20,260	–	–	$24,312	$24,312	–
Total for Alternative and Design Option only					$1,016,510	$580,073	$139,185	$2,142	$1,208,234	$653,381	$2,142
Total for Alternatives, Option, and Affected Cities					$1,016,510	$918,800	$936,192	$934,179	$1,208,234	$1,119,461	$1,121,603

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).

Table 3.3-16 Estimated Loss of Property Tax in the Study Area

Alternative or Option	Rancho Dominguez		Bell		Bell Gardens		Carson		Commerce		Compton		Long Beach	
	Property Tax Loss	Total Annual County Property Tax Revenues[1]	Property Tax Loss	Total Annual City Property Tax Revenues	Property Tax Loss	Total Annual City Property Tax Revenues	Property Tax Loss	Total Annual City Property Tax Revenues	Property Tax Loss	Total Annual City Property Tax Revenues	Property Tax Loss	Total Annual City Property Tax Revenues	Property Tax Loss	Total Annual City Property Tax Revenues
Alternative 5C	$35,619	$5,100,000,000	$16,835	$8,389,636	$1,074	$1,057,205	$6,289	$17,381,673	$18,507	$2,511,686	$11,737	$3,441,635	$45,431	$180,989,000
Alternative 5C, Option 1A	–		$16,835		–		–		$16,114		–		–	
Alternative 5C, Option 2A	–		–		–		–		–		–		$52,090	
Alternative 5C, Option 3A	–		–		–		–		–		–		–	
Alternative 7	$67,335		$25,208		$557		$6,100		$19,473		$13,203		$95,827	
Alternative 7, Option 1B	–		$25,602		–		–		$22,690		–		–	
Alternative 7, Option 3B	–		–		–		–		–		–		–	

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
Notes: The total annual City property tax revenue was obtained from the revenue reported in the annual CAFR or financial report, for Fiscal Year 2013–2014.
[1] Property tax data is provided for Los Angeles County; separate data for the Rancho Dominguez community is not available.
I-710 = Interstate 710

Table 3.3-16 Estimated Loss of Property Tax in the Study Area (cont.)

Alternative or Option	East Los Angeles		Lynwood		Maywood		Paramount		South Gate		Vernon		Total Property Tax Loss By Option	Total Property Tax Loss By Alternative
	Property Tax Loss	Total Annual County Property Tax Revenues[1]	Property Tax Loss	Total Annual City Property Tax Revenues	Property Tax Loss	Total Annual City Property Tax Revenues	Property Tax Loss	Total Annual City Property Tax Revenues	Property Tax Loss	Total Annual City Property Tax Revenues	Property Tax Loss	Total Annual City Property Tax Revenues		
Alternative 5C	$25	$5,100,000,000	$859	$13,318,023	–	$650,301	$2	$1,882,437	$2,116	$12,800,000	$8,393	$3,220,402	-	$130,052
Alternative 5C, Option 1A	–		–		–		–		–		$8,393		$41,342	$144,494
Alternative 5C, Option 2A	–		–		–		–		–		–		$68,925	$153,546
Alternative 5C, Option 3A	$10,755		–		–		–		–		–		$10,755	$140,782
Alternative 7	$25		$3,352		$10		$2		$3,487		$9,827		-	$212,644
Alternative 7, Option 1B	–		–		–		–		–		$9,827		$58,119	$216,255
Alternative 7, Option 3B	$10,415		–		–		–		–		–		$10,415	$223,034

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
Notes: The total annual City property tax revenue was obtained from the Los Angeles County Tax Assessor's Office; tax revenues were collected in fiscal year 2013–2014.
Property tax revenue data based on each cities' Comprehensive Annual Financial Report or other financial report records for Fiscal Year 2014.
[1] Property tax data is provided for Los Angeles County; separate data for the Rancho Dominguez community is not available.
I-710 = Interstate 710

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The above estimates of property tax loss represent a worst-case estimate in that it is assumed that all properties either relocate outside of their existing local jurisdiction or do not relocate at all. One goal of the relocation program for the I-710 Corridor Project is that relocations would occur within the affected communities.

NO BUILD ALTERNATIVE. Under Alternative 1, the property acquisitions and relocations discussed above for the build alternatives would not occur as a result of the I-710 Corridor Project.

PUBLIC HEALTH CONSIDERATIONS. Please refer to Section 3.3.1.5 for a discussion of public health considerations related to social cohesion above, which includes a discussion of anxiety and other mental health symptoms that result from housing displacements and relocations.

3.3.2.5 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The build alternatives require acquisition of residential and nonresidential parcels, and relocation would be required prior to construction. One goal of the relocation program for the I-710 Corridor Project is that relocations occur within the affected communities. Measures are provided below.

C-1 The Uniform Relocation Assistance and Real Property Acquisitions Policies Act (Uniform Act) of 1970 (Public Law 91-646, 84 Stat. 1894) mandates that certain relocation services and payments by the California Department of Transportation (Caltrans) be made available to eligible residents, businesses, and nonprofit organizations displaced by its projects (please refer to Appendix D, Summary of Relocation Benefits, for more detail). The Uniform Act provides for uniform and equitable treatment by Federal or Federally assisted programs of persons displaced from their homes, businesses, or farms, and establishes uniform and equitable land acquisition policies. If an Interstate 710 (I-710) Corridor Project build alternative is selected, design refinements to avoid or minimize impacts to existing land uses related to the temporary use and/or permanent acquisition of property would be incorporated in the final design of the selected alternative.

Where acquisition and relocation are unavoidable, Caltrans will follow the provisions of the Uniform Act and the 1987 Amendments as implemented by the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs adopted by Caltrans, dated March 2, 1989. An independent appraisal of the affected property will be obtained, and Caltrans will offer the full amount for the property (not less than the approved appraisal).

While adequate comparable replacement housing appears to exist presently in neighboring cities, new replacement dwellings under Last Resort Housing may be considered for these cities as a method of providing comparable replacement housing to displaced persons who reside in areas where the replacement housing is low.

Commercial and industrial land uses subject to partial acquisitions shall be evaluated to determine if they can be reconfigured on site in such a manner as to enable them to remain in operation. Caltrans shall work directly with property owners and the local jurisdiction to evaluate the feasibility of any such site reconfiguration plans. If a commercial or industrial partial acquisition cannot be reconfigured to allow for continued operation, acquisition of the full property may be required.

Caltrans shall cooperate with the affected jurisdictions in relocating business and residential uses to land designated for the given land use, preferably within the boundaries of the affected communities.

C-2 All build alternatives include improvements to the existing Bandini Blvd./Atlantic Ave. interchange, and as a result of widening and realignment of the existing southbound I-710 off-ramp to Bandini Blvd., acquisition and relocation of the City of Vernon Fire Station No. 4 will be required. While a potential site for relocation has not been identified at this time, Caltrans will coordinate with the City of Vernon in identifying a new site for relocation within the general vicinity of the existing station so as to maintain the existing response times and service area. In addition, the existing fire station would not be demolished until the new fire station is operational.

C-3 During final design, and consistent with the requirements of the Uniform Act, Caltrans shall negotiate with the City of Long Beach to determine appropriate action and/or identify an alternative location for the Multi-Service Center within the general vicinity of the existing facility so as to maintain the service area and mitigate for the acquisition of this center. The existing center shall not be demolished until the facility has been relocated and is operational.

C-4 During final design, and consistent with the requirements of the Uniform Act, Caltrans shall negotiate with the City of Bell to determine appropriate action and/or identify an alternative location for the Bell Shelter/Resource Bank within the general vicinity of the existing facility so as to maintain the service area and its cooperative relationship with the Bell Shelter and mitigate for the acquisition of the center. The existing center shall not be demolished until the facility has been relocated and is operational.

C-5 Prior to construction, appropriate signage will be developed and displayed by Caltrans to direct both pedestrian and vehicular traffic to businesses via alternate routes.

3.3.3 ENVIRONMENTAL JUSTICE

3.3.3.1 REGULATORY SETTING

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2016, this was $24,300 for a family of four.[7]

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

3.3.3.2 ANALYSIS METHODS

The FHWA Guidance on Environmental Justice and NEPA, dated December 16, 2011, states: "As per FHWA Order 6640.23, a disproportionately high and adverse effect on a minority or low income population means the adverse effect is predominantly borne by such population or is appreciably more severe or greater in magnitude on the minority or low-income population than the adverse effect suffered by the non-minority or non-low-income population."

The White House Council on Environmental Quality (CEQ) Environmental Justice Guidance under the National Environmental Policy Act, dated December 10, 1997, states that "Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis."

While Los Angeles County residents may benefit from the I-710 Corridor Project, residents of the Study Area could experience adverse project impacts in addition to project benefits simply due to their proximity to the improvements. As further discussed in Section 3.3.3.3, Affected

[7] U.S. Department of Health & Human Services. Office of The Assistant Secretary for Planning and Evaluation (ASPE). Website: https://aspe.hhs.gov/poverty-guidelines.

Environment, the areas around the I-710 Corridor Project are home to a large population of minority and low-income residents. This means the project impacts, as identified through this environmental document, will fall predominantly on these populations. The environmental justice populations analyzed include minority (i.e., all races and ethnicities other than non-Hispanic White, as defined in Federal policy) and low-income (i.e., persons living in households that are below the Federal poverty level).

In this analysis, environmental justice populations were first identified. Census tracts in which minority populations exist in percentages that exceed the Los Angeles County average of 72.2 percent are considered to contain environmental justice populations. This definition is known as the "meaningfully greater" analysis, wherein meaningfully greater is conservatively defined as simply "greater" than the Reference Community (Los Angeles County). To identify low-income populations, census tracts that contain populations wherein the average income falls below the Federal poverty level at a greater percentage than that of the Reference Community (also Los Angeles County) were considered to contain environmental justice populations.

Information from other technical studies prepared in support of the I-710 Corridor Project has been utilized to determine the potential construction and operational impacts to environmental justice communities. Resource areas in which adverse impacts have been identified, as determined by comparison to the 2035 No Build condition, has been discussed in this environmental justice analysis. The impacts to environmental justice populations have been determined based on a comparison of the impacts of each build alternative to the No Build Alternative.

For most resource areas, a spatial analysis has been performed to determine the general proportion of impacts that fall within locations identified as containing environmental justice populations or that are predominantly borne by environmental justice populations, after mitigation, and balanced with any beneficial effects of the project.

A qualitative discussion of public health risk, much like discussions contained in each technical study for each resource area, determined if the identified risk pathways are more predominantly borne by environmental justice communities.

Section 3.3.3.3 below describes the affected environment for the purposes of environmental justice analysis. The demographic characteristics of the Study Area are described and compared with those of the reference population, Los Angeles County. Section 3.3.4.1 presents the analysis of environmental consequences of the I-710 Corridor Project build alternatives with respect to environmental justice, as described above, and Section 3.3.6 presents a summary and conclusions.

3.3.3.3 AFFECTED ENVIRONMENT

The I-710 Corridor is home to a large proportion of minority[8] and low-income populations. As of the 2010 Census, the I-710 Corridor Project Study Area was 85.6 percent non-White (i.e., composed of individuals other than non-Hispanic Whites). Los Angeles County was 72.2 percent non-White in 2010. The State of California, by contrast, was 59.9 percent non-White according to the 2010 Census. In the I-710 Corridor Project Study Area, according to the 2010-2014 American Community Survey, 22.8 percent of persons live in households that fall below the Federal poverty threshold. Within Los Angeles County, that share is 18.7 percent, and in California as a whole, the share is 15.3 percent.

Residents along the I-710 Corridor are affected by operation of the freeway. The route carries thousands of heavy trucks daily to and from the Ports of Los Angeles (POLA) and Long Beach (POLB), along with other truck and passenger vehicle traffic. The existing traffic congestion, air pollution, and traffic incidents on I-710 directly affect all residents of the area, including the minority and low-income populations that are prevalent in the corridor.

3.3.3.4 DEMOGRAPHIC CHARACTERISTICS OF THE I-710 CORRIDOR PROJECT STUDY AREA

Figure 3.3-2 shows the locations of minority populations in the Study Area, while Figure 3.3-3 shows the locations of low-income populations. In each figure, those tracts exceeding the Los Angeles County average are indicated. Minority populations are concentrated along the corridor and in the northern parts of the Study Area, with particular concentrations in the northwestern parts of the Study Area, in unincorporated East Los Angeles and in the Cities of Commerce, Maywood, Bell, Bell Gardens, Cudahy, South Gate, Lynwood, and Paramount. Tracts with concentrations of low-income residents are distributed in a similar pattern through the Study Area, with a majority of the tracts being located in the northwest and west of the Study Area. Figures 3.3-2 and 3.3-3 include minority and low-income population data, respectively.

3.3.3.5 ENVIRONMENTAL CONSEQUENCES

As described in Section 3.3.3.1, the environmental justice analyses presented in this section discuss the potential adverse impacts of the project alternatives.

In each section, the specific assumptions are explained regarding which impacts were considered in the analysis.

[8] The FHWA and DOT orders define “minority” to mean Black, Hispanic, Asian American, or American Indian/Alaskan Native.

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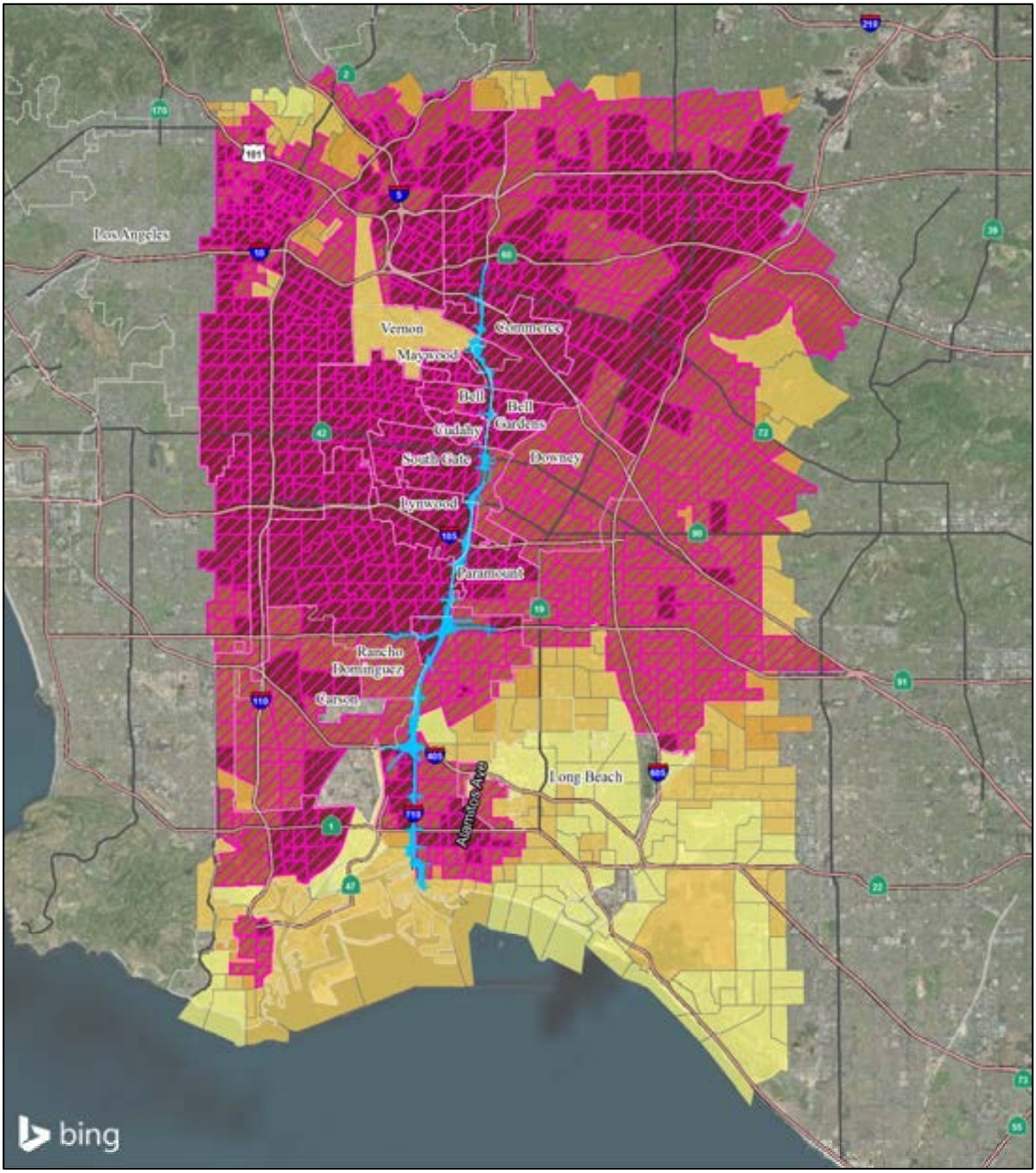

LEGEND

I-710 Footprint - All Alts

Percent Minority

0.0 - 40.5%

40.5 - 63.8%

63.8 - 72.2%

72.2 - 93.0%

93.0 - 100%

Census Blocks Exceeding County Average for Minority Population

Los Angeles County average 72.2%

N

0 2 4

MILES

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010)

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FIGURE 3.3-2

I-710 Corridor Project
RDEIR/SDEIS

Percent Minority Population for 2010 Census Data

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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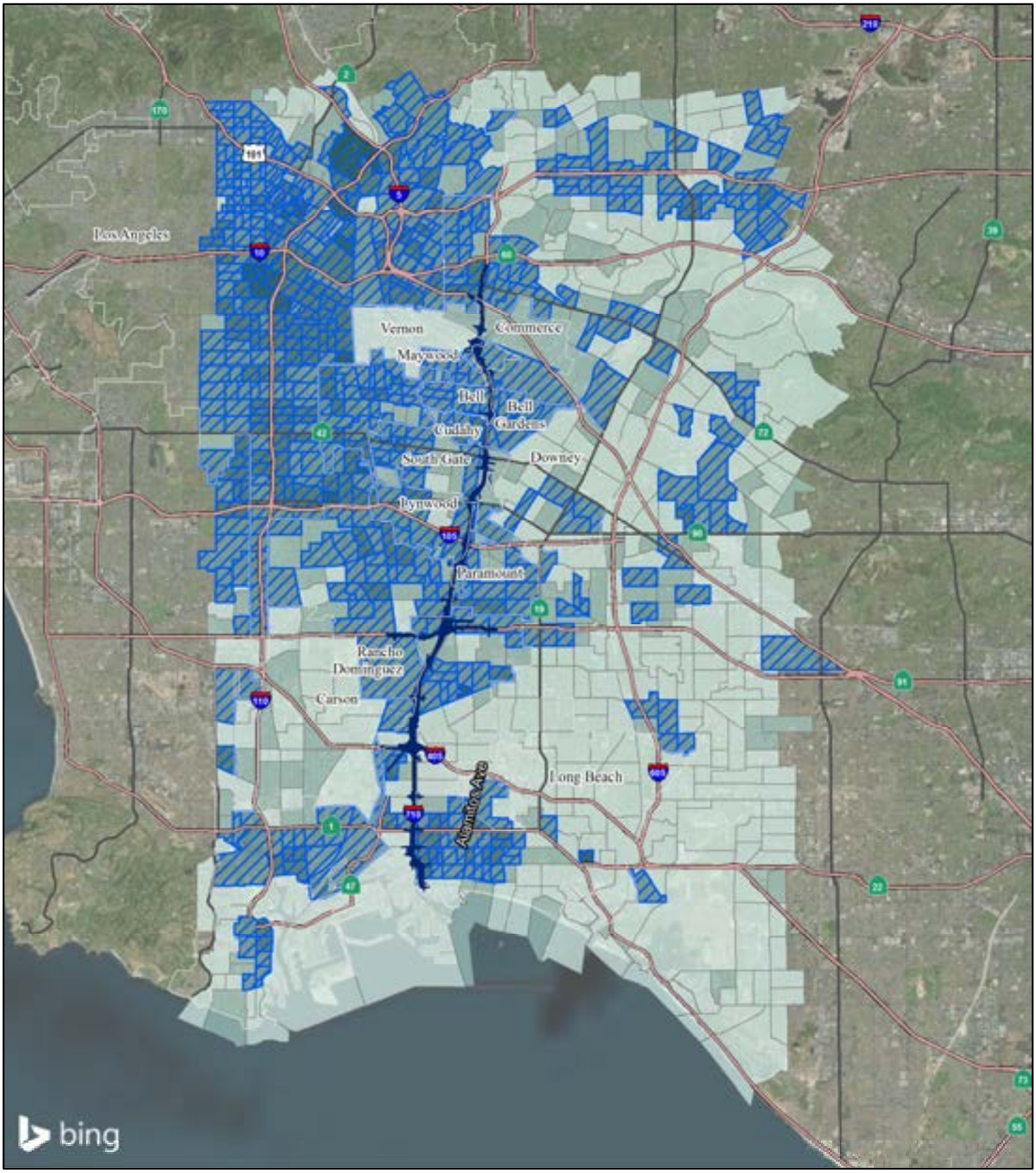

LEGEND

I-710 Footprint - All Alts

Percent Poverty

0.0 - 12.7%

12.7 - 18.7%

18.7 - 36.3%

36.3 - 55.7%

55.7 - 100%

Census Blocks Exceeding County Average for Poverty

Los Angeles County average 18.7%

N

0 2 4

MILES

SOURCE: Bing (2014); TBM (2008); 2010-2014 American Community Survey

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FIGURE 3.3-3

I-710 Corridor Project
RDEIR/SDEIS

Percent Poverty Population for 2010-2014 American Community Survey Data

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to community impacts, including environmental justice populations, is located in Section 3.24.3.3.

AIR QUALITY/HEALTH RISK ASSESSMENT. The information contained in this section is from the *Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (AQ/GHG/HRA) (2017).[9] Figures 3.3-4 through 3.3-9 illustrate the change in air pollutant concentrations of both build alternatives as compared to the 2035 No Build Alternative for particulate matter less than 10 microns in size (PM_{10}), particulate matter less than 2.5 microns in size ($PM_{2.5}$), and cancer risk.

24-HOUR PM_{10} CONCENTRATIONS. Figure 3.3-4 illustrates the change in maximum incremental PM_{10} concentrations, both 24-hour and annual, that would result from implementation of Alternative 5C, and the spatial relationship of those impacts to environmental justice communities. As can be seen in this figure, many of the impacts would occur directly within the footprint of the facility, where human exposure to these pollutants would be short-lived and transitory.

Within Figure 3.3-4, it can be seen that areas of maximum incremental 24-hour PM_{10} impact mostly occur within the Cities and Communities of Long Beach, Rancho Dominguez, Bell, Bell Gardens, Cudahy, South Gate, and Commerce. Notably, within the City of Long Beach, impacts occur along the east side of the I-710 mainline, both within and outside of the proposed Alternative 5C footprint, from approximately Anaheim St. to I-405 interchange. Along the mainline within these boundaries, areas of maximum incremental 24-hour PM_{10} impact occur in areas of minority populations that exceed that of the County, and low-income populations that exceed that of the County in the southern portion of this segment.

Between I-405 and SR-91, areas of 24-hour PM_{10} impact occur east of I-710 at I-405, east of I-710 just south of Del Amo Blvd., west of I-710 in the vicinity of Susana Rd., west of I-710 at the Long Beach Blvd. interchange, and east of I-710 between the freeway mainline and the Los Angeles River. Specifically, areas of 24-hour PM_{10} impact would occur within the Community of Rancho Dominguez to the west of I-710, and occur in areas with both minority and low-income populations that exceed that of the County. Areas of 24-hour PM_{10} impact that occur west of the mainline are generally south of Victoria St. and along portions of Susana Rd. Between SR-91 and the northern terminus, areas of 24-hour PM_{10} impact occur along the east side of I-710

[9] Ramboll-Environ. 2017. *Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study*. June.

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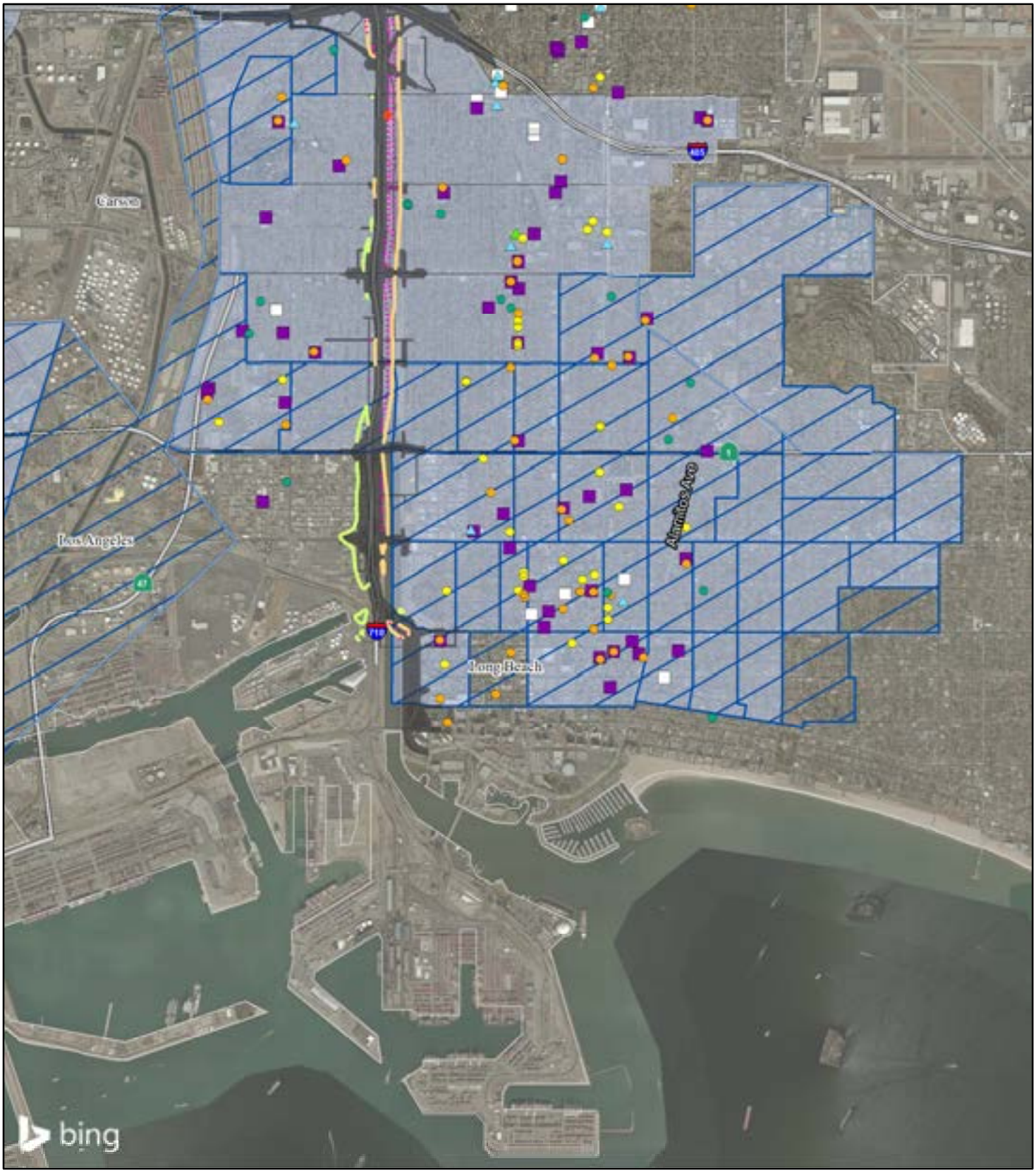

LEGEND

- Alternative 5C/DV 1A, 2A, and 3A Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population
- Maximum Incremental 24-Hour PM_{10} Impact ($\mu g/m^3$)
- Maximum Incremental Annual PM_{10} Impact ($\mu g/m^3$)
  - -1
  - 1
  - 5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-4
Sheet 1 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C PM_{10}
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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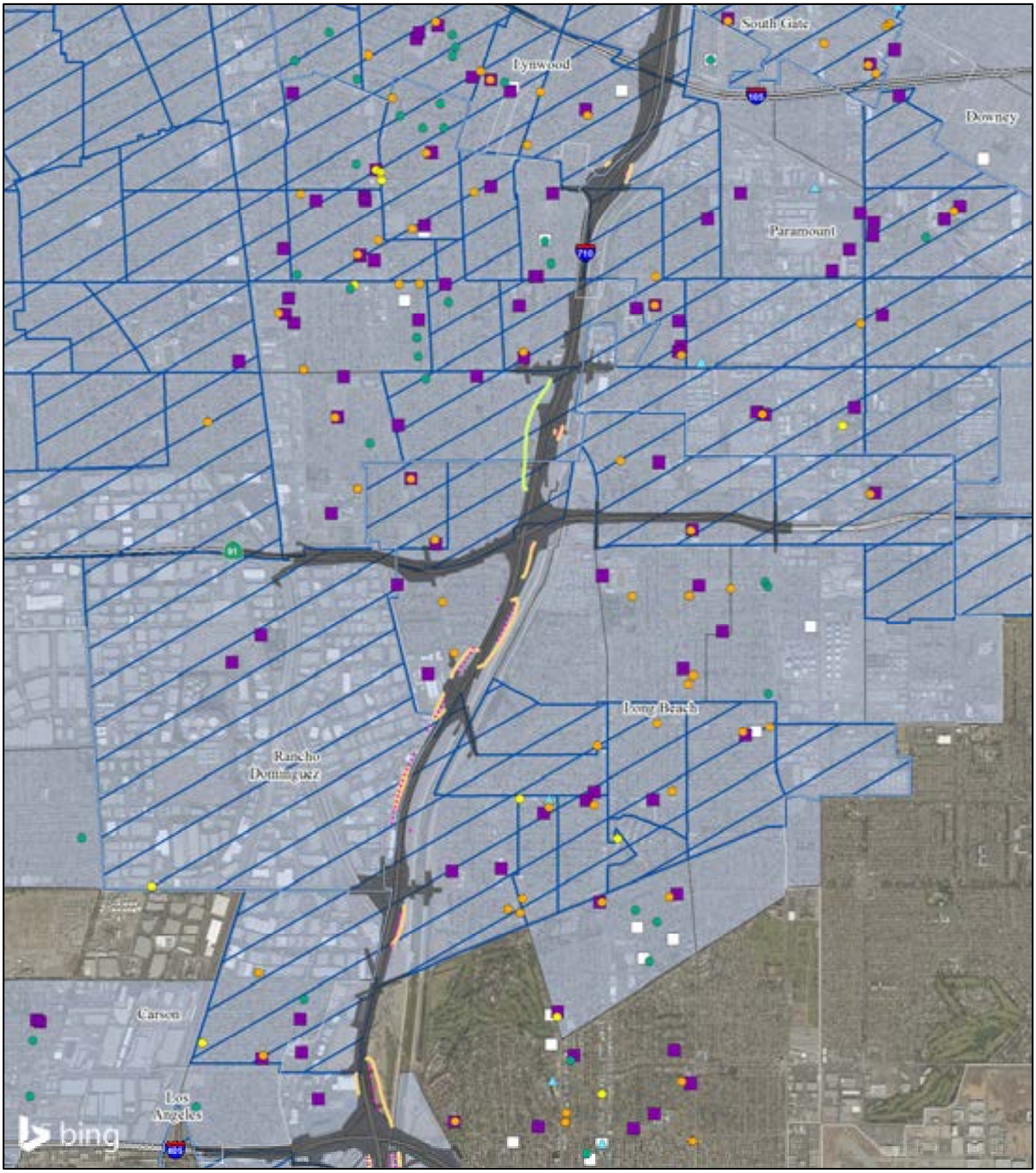

LEGEND

- Alternative 5C/DV 1A, 2A, and 3A Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population
- Maximum Incremental 24-Hour PM_{10} Impact ($\mu g/m^3$)
- Maximum Incremental Annual PM_{10} Impact ($\mu g/m^3$)
  - -1
  - 1
  - 5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-4
Sheet 2 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C PM_{10}
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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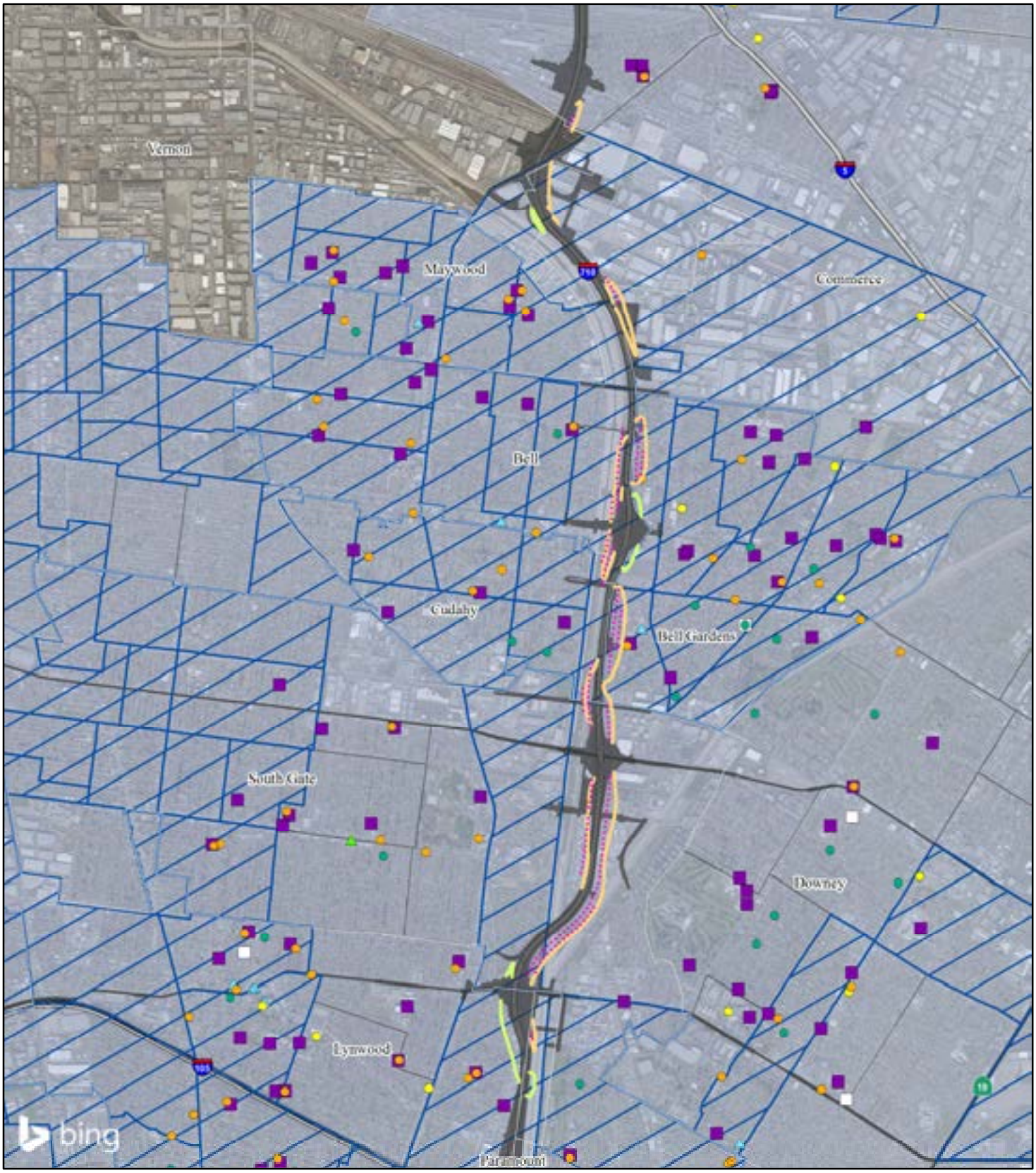

LEGEND

- Alternative 5C/DV 1A, 2A, and 3A Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population
- Maximum Incremental 24-Hour PM_{10} Impact ($\mu g/m^3$)
- Maximum Incremental Annual PM_{10} Impact ($\mu g/m^3$)
  - -1
  - 1
  - 5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-4
Sheet 3 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C PM_{10}
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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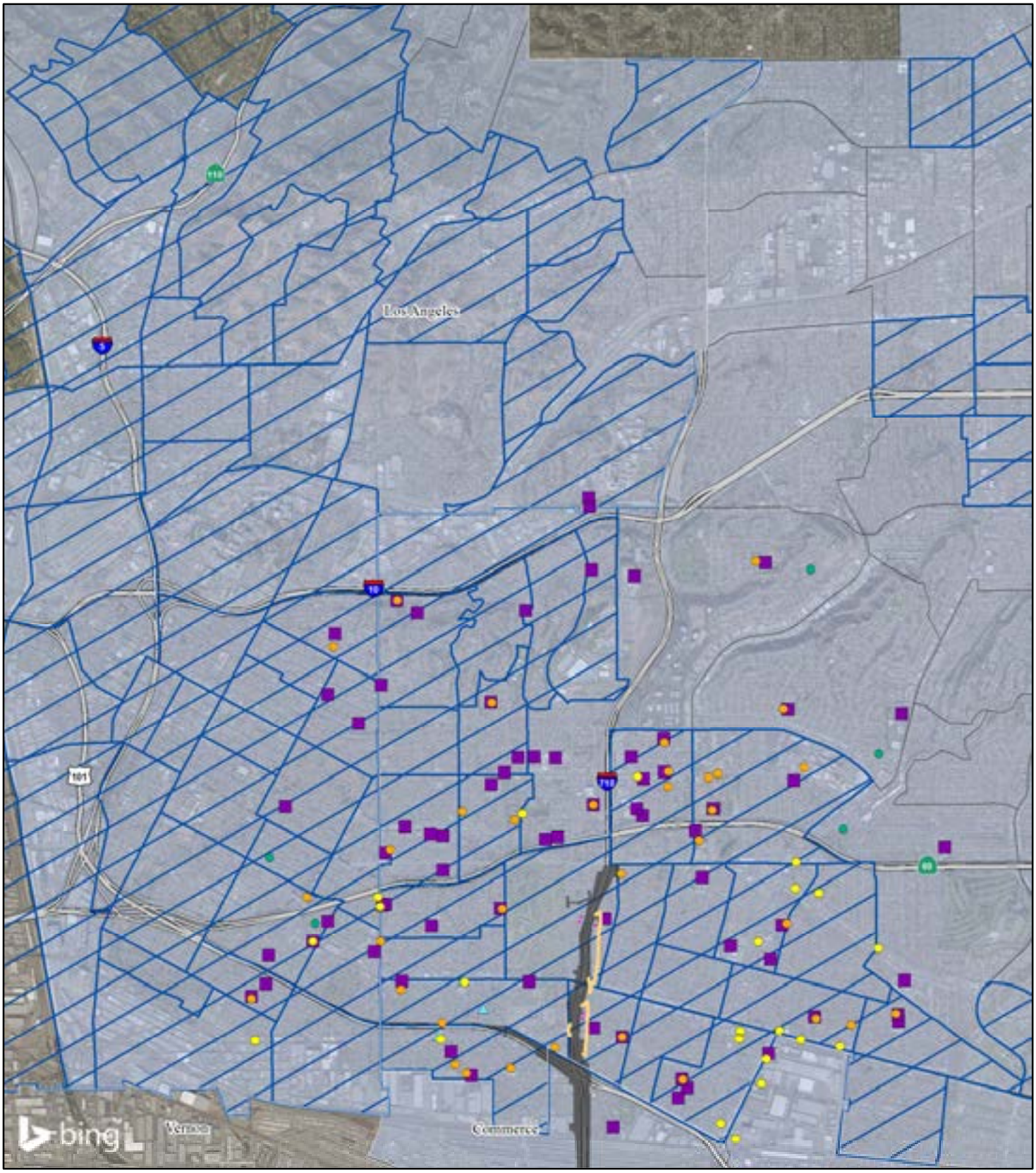

LEGEND

- Alternative 5C/DV 1A, 2A, and 3A Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population
- Maximum Incremental 24-Hour PM_{10} Impact ($\mu g/m^3$)
- Maximum Incremental Annual PM_{10} Impact ($\mu g/m^3$)
  - -1
  - 1
  - 5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-4
Sheet 4 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C PM_{10}
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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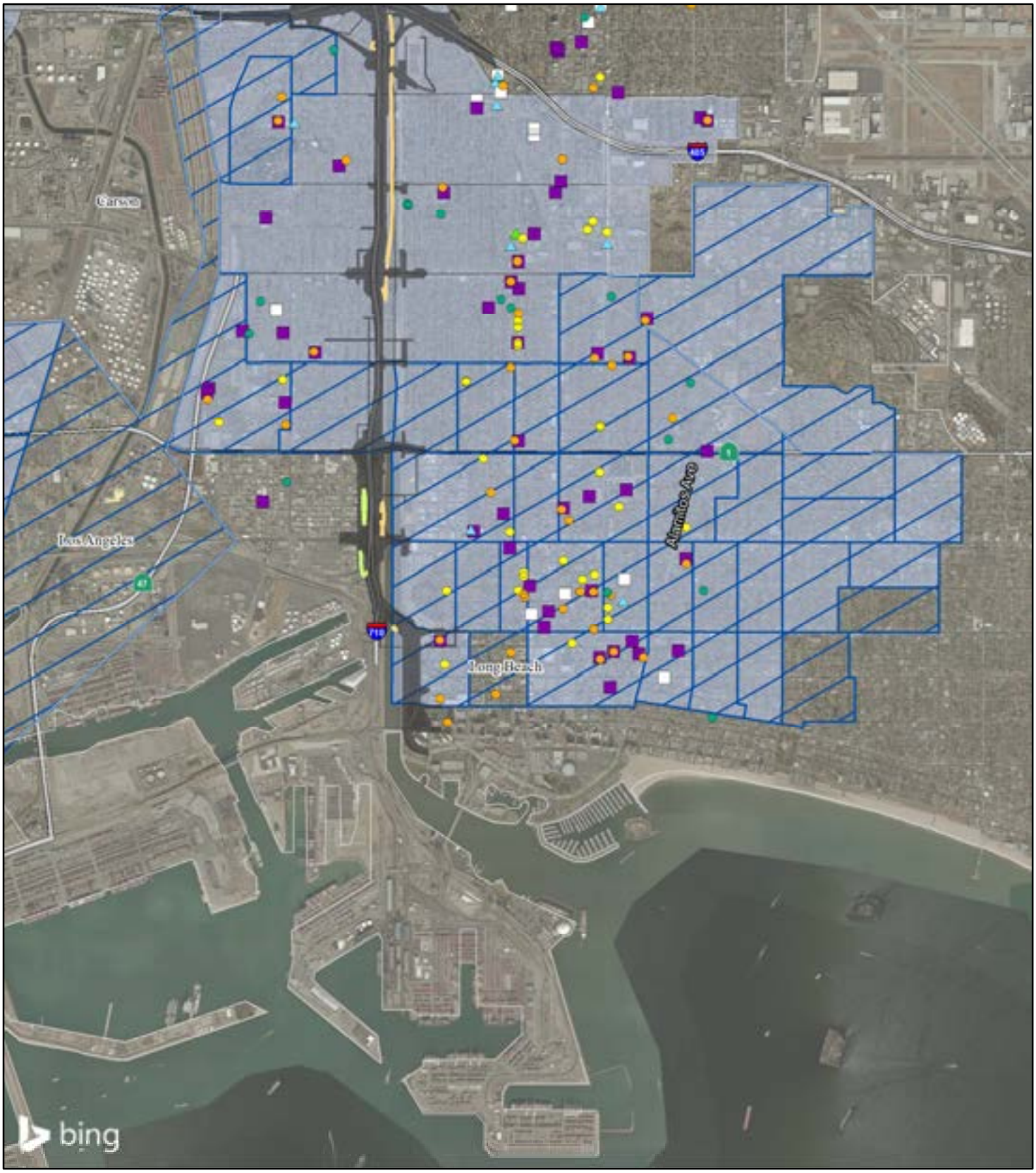

LEGEND

- Alternative 5C/DV 1A, 2A, and 3A Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Maximum Incremental Annual $PM_{2.5}$ Impact ($\mu g/m^3$)

- -1
- -0.5
- 0.5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000

FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-5
Sheet 1 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C $PM_{2.5}$
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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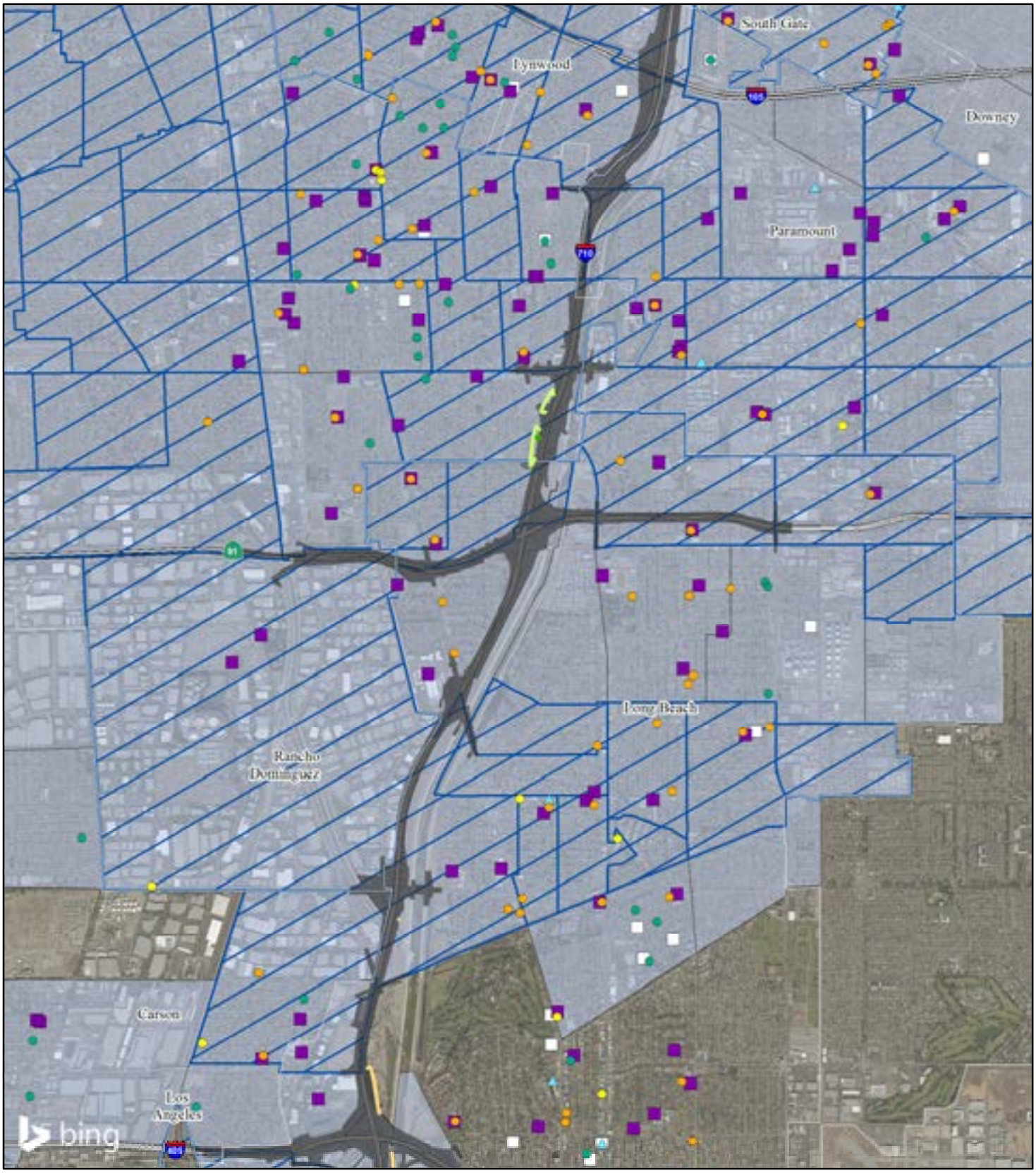

LEGEND

- Alternative 5C/DV 1A, 2A, and 3A Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Maximum Incremental Annual $PM_{2.5}$ Impact ($\mu g/m^3$)

- -1
- -0.5
- 0.5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000

FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-5
Sheet 2 of 4

I-710 Corridor Project
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Alternative 5C $PM_{2.5}$
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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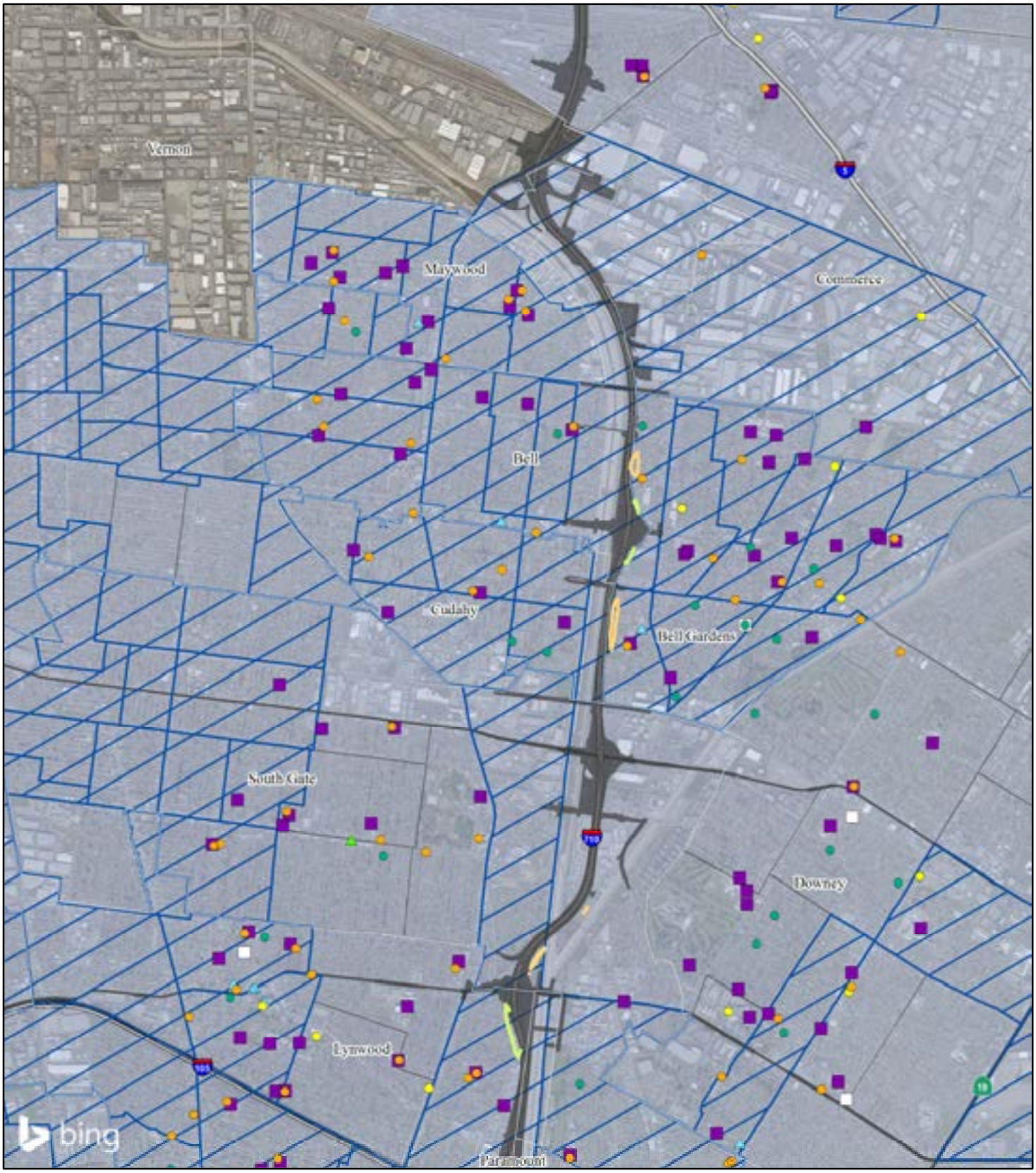

LEGEND

- Alternative 5C/DV 1A, 2A, and 3A Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Maximum Incremental Annual $PM_{2.5}$ Impact ($\mu g/m^3$)

- -1
- -0.5
- 0.5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000

FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-5
Sheet 3 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C $PM_{2.5}$
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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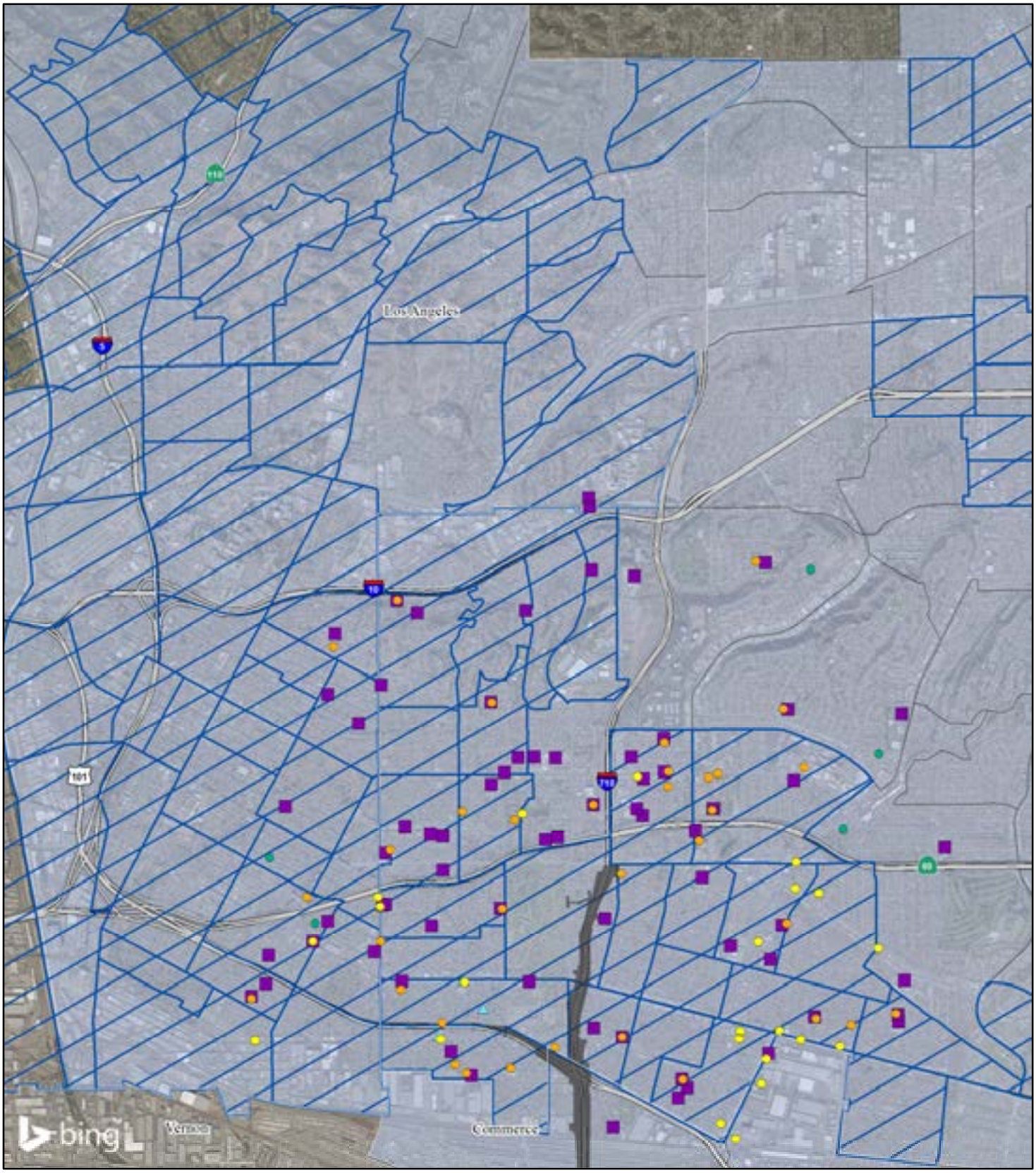

LEGEND

- Alternative 5C/DV 1A, 2A, and 3A Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Maximum Incremental Annual $PM_{2.5}$ Impact ($\mu g/m^3$)

- -1
- -0.5
- 0.5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000

FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-5
Sheet 4 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C $PM_{2.5}$
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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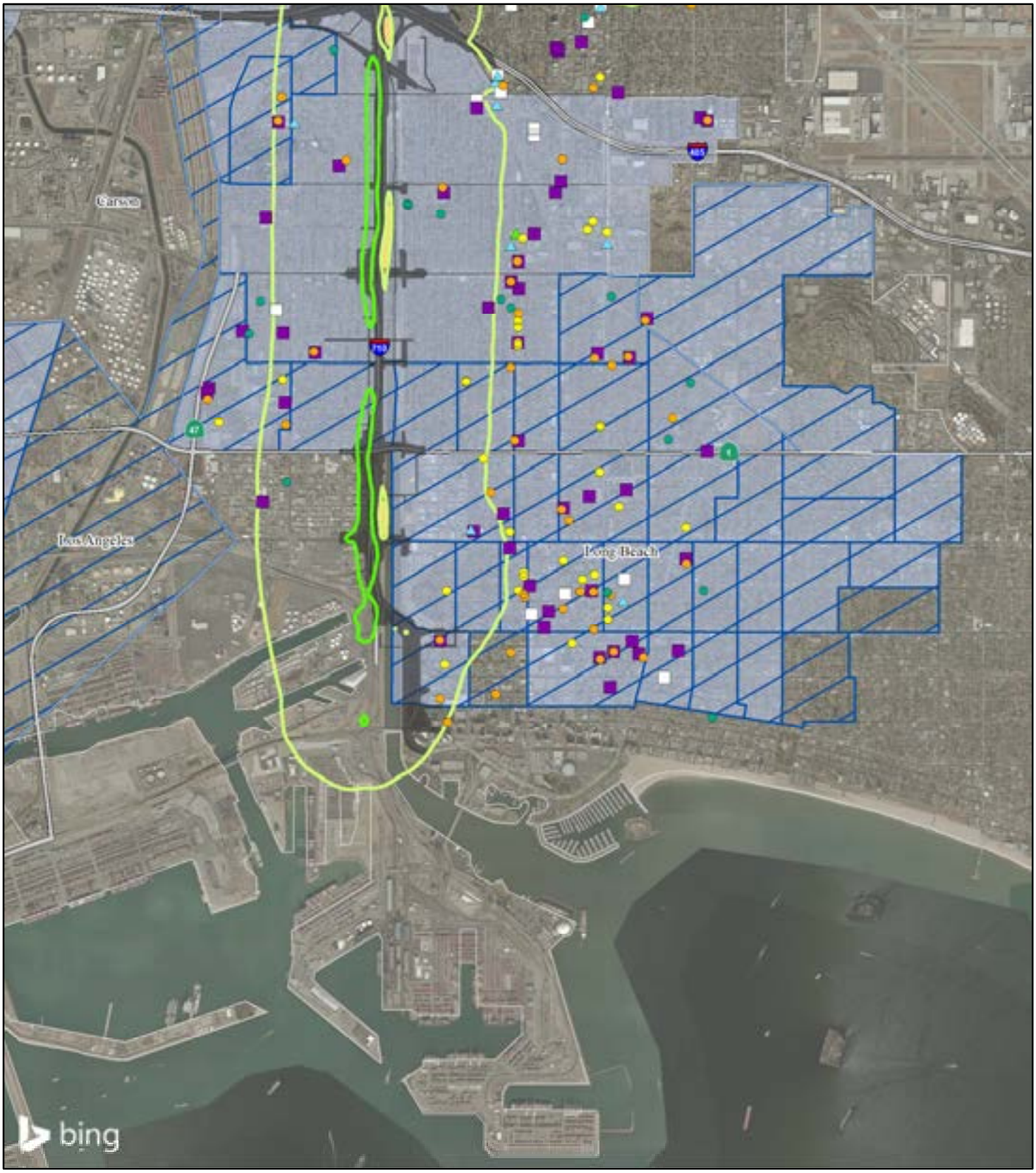

LEGEND

Alternative 5C/DV 1A, 2A, and 3A Footprints

Census Tracts Exceeding County Average for Poverty

Census Tracts Exceeding County Average for Minority Population

Incremental Cancer Risk in a Million

-10.0

-1.0

1

Sensitive Receptors

Adult Residential

Daycare

Healthcare

Mental Healthcare

Nursing Home

School

Senior Center

N

0 2000 4000

FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-6

Sheet 1 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C Cancer Risk

07-LA-710- PM 5.4/24.5

EA 249900; EFIS 0700000443

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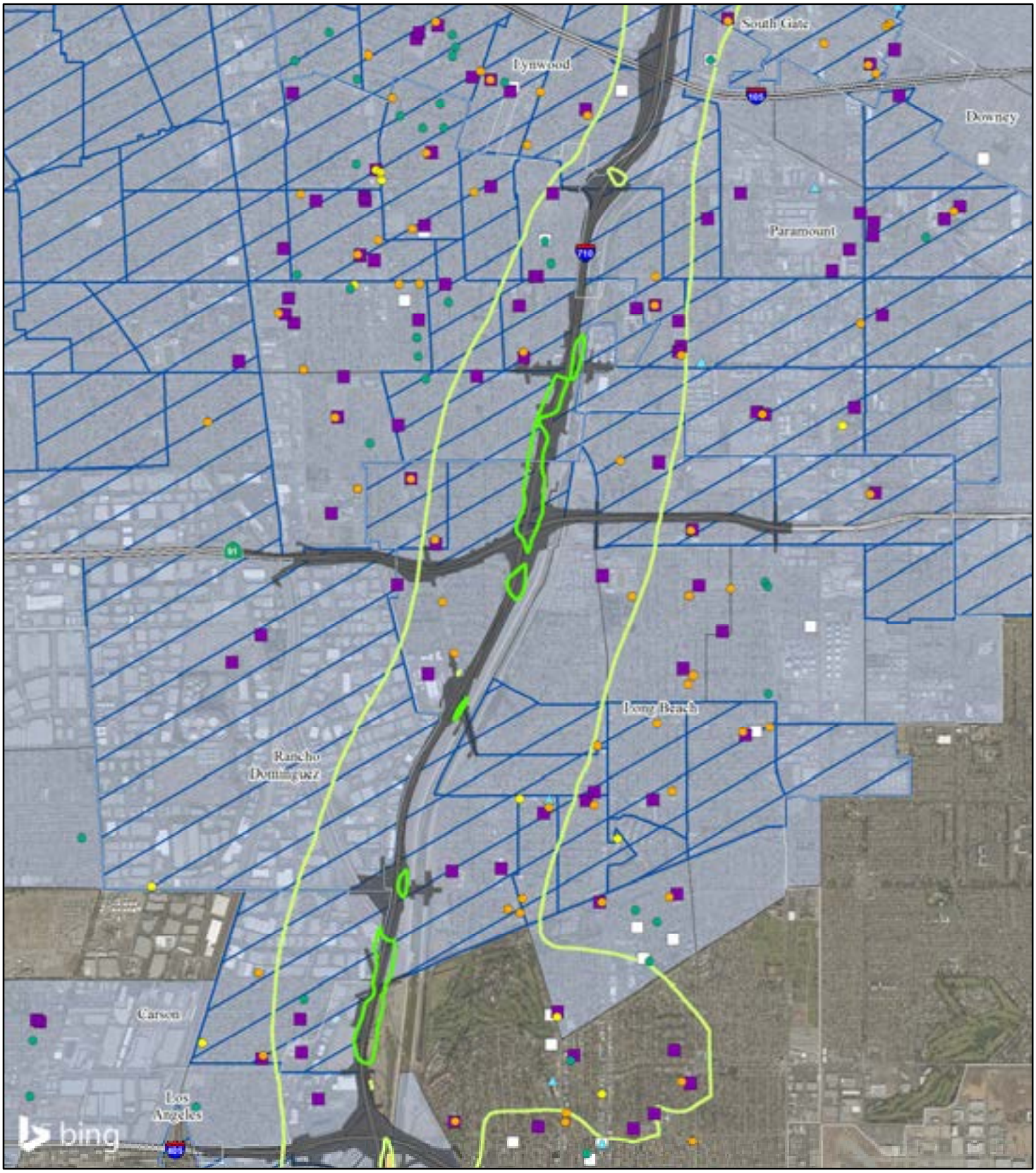

LEGEND

Alternative 5C/DV 1A, 2A, and 3A Footprints

Census Tracts Exceeding County Average for Poverty

Census Tracts Exceeding County Average for Minority Population

Incremental Cancer Risk in a Million
- -10.0
- -1.0
- 1

Sensitive Receptors
- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-6
Sheet 2 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C Cancer Risk
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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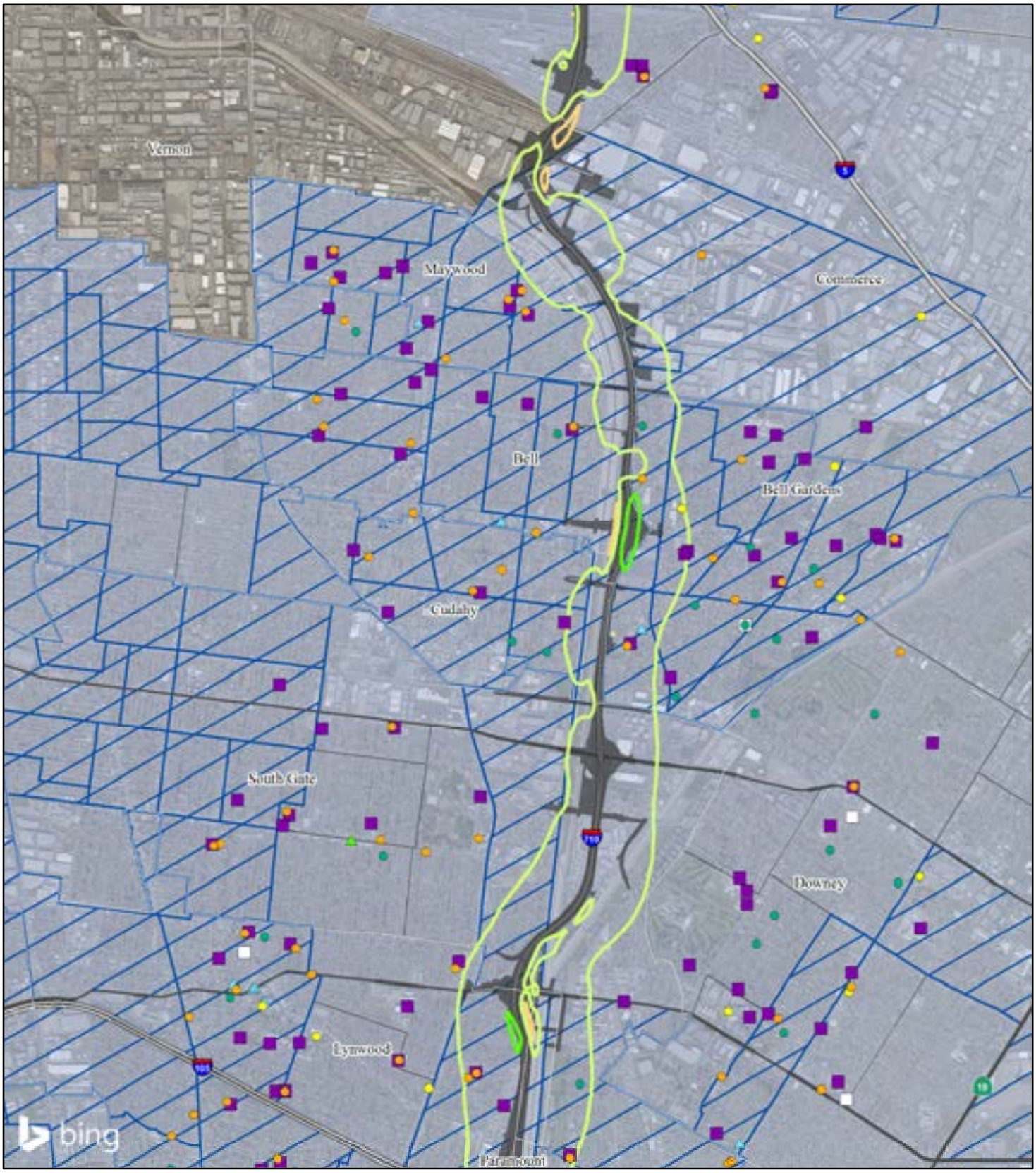

LEGEND

- Alternative 5C/DV 1A, 2A, and 3A Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Incremental Cancer Risk in a Million
- -10.0
- -1.0
- 1

Sensitive Receptors
- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-6
Sheet 3 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C Cancer Risk
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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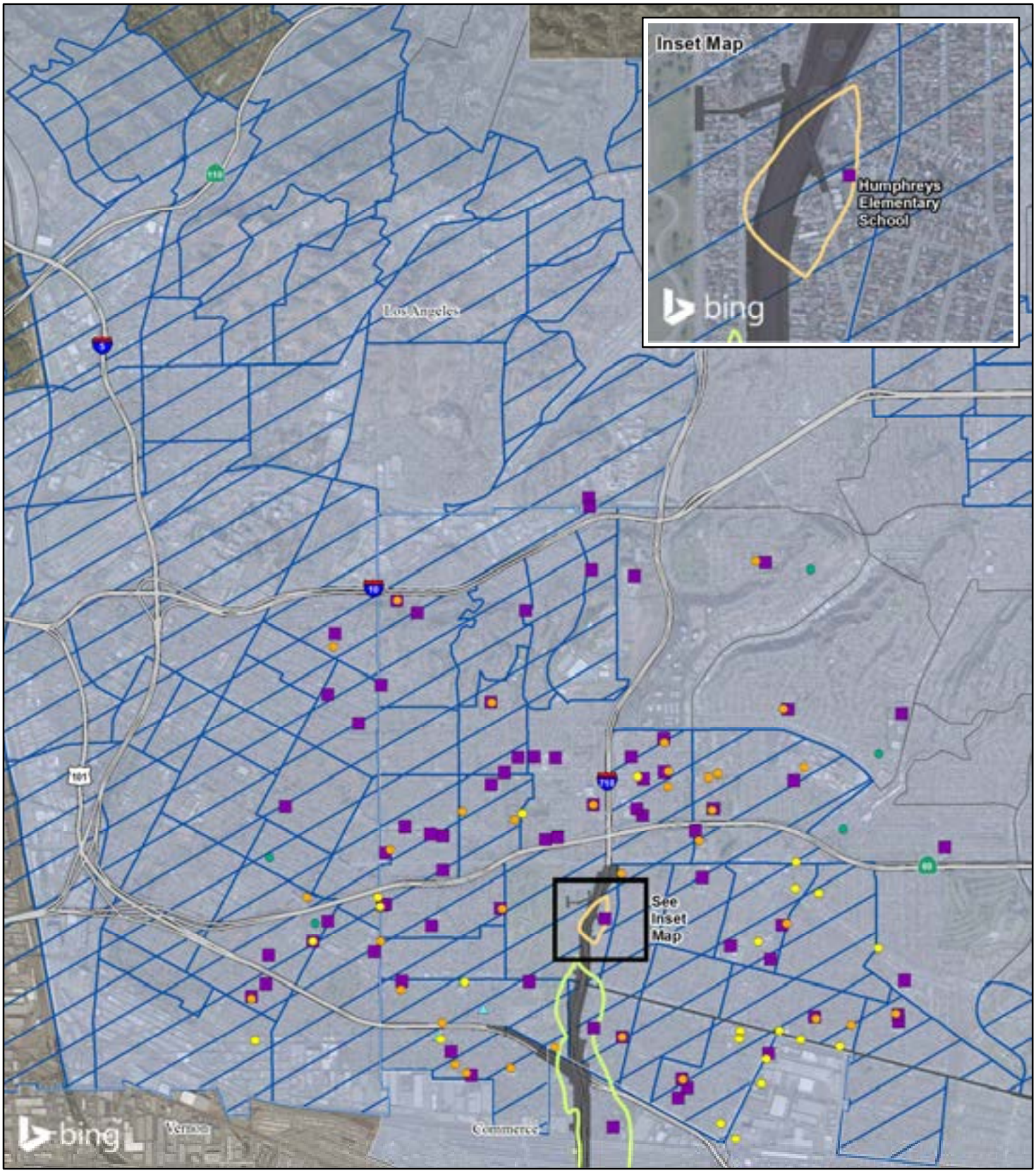

LEGEND

Alternative 5C/DV 1A, 2A, and 3A Footprints

Census Tracts Exceeding County Average for Poverty

Census Tracts Exceeding County Average for Minority Population

Incremental Cancer Risk in a Million

-10.0

-1.0

1

Sensitive Receptors

Adult Residential

Daycare

Healthcare

Mental Healthcare

Nursing Home

School

Senior Center

N

0 2000 4000

FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-6

Sheet 4 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 5C Cancer Risk

07-LA-710- PM 5.4/24.5

EA 249900; EFIS 0700000443

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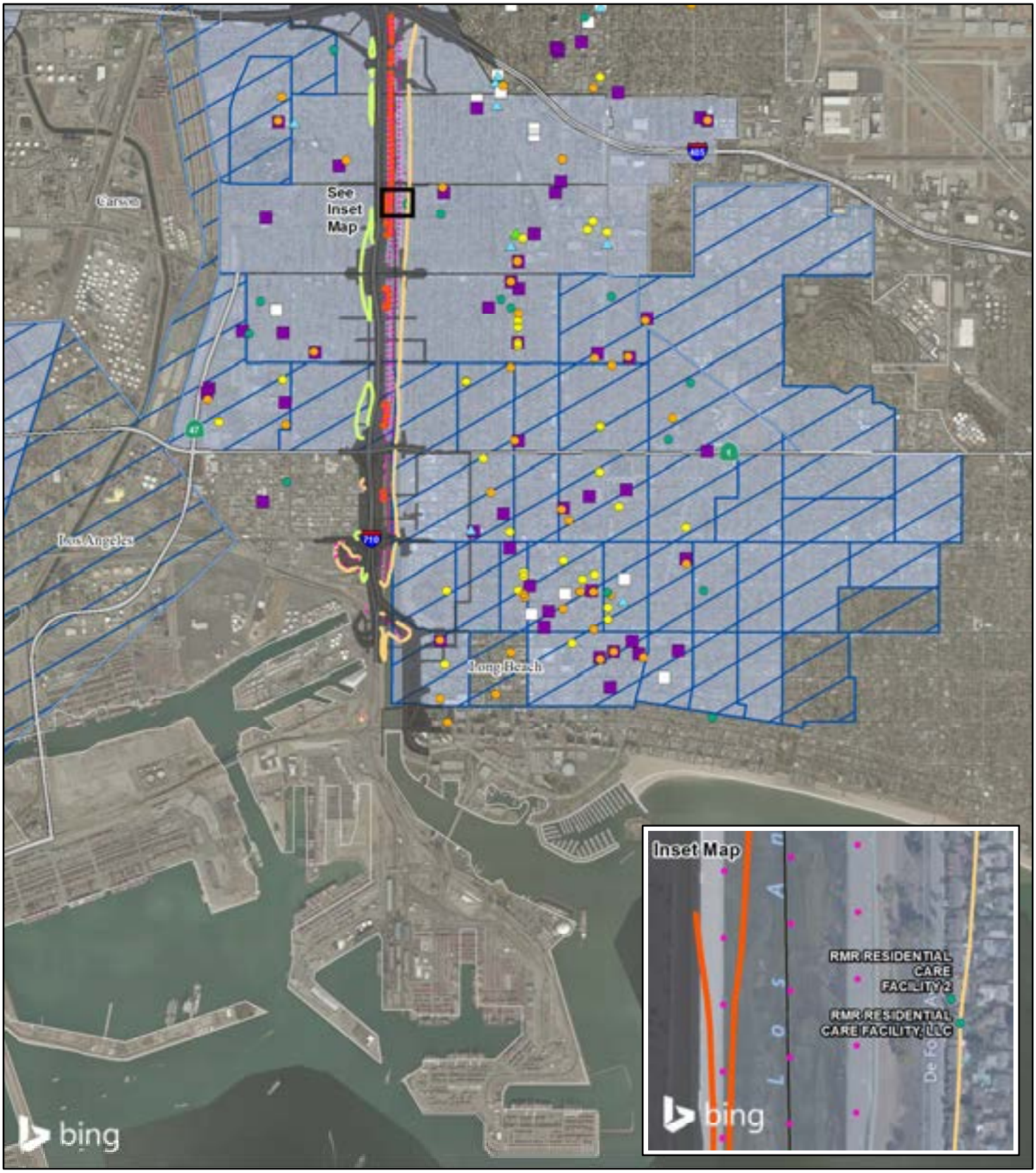

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Maximum Incremental 24-Hour PM_{10} Impact ($\mu g/m^3$)

Maximum Incremental Annual PM_{10} Impact ($\mu g/m^3$)

- -5
- -1
- 1
- 5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-7
Sheet 1 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 PM_{10}
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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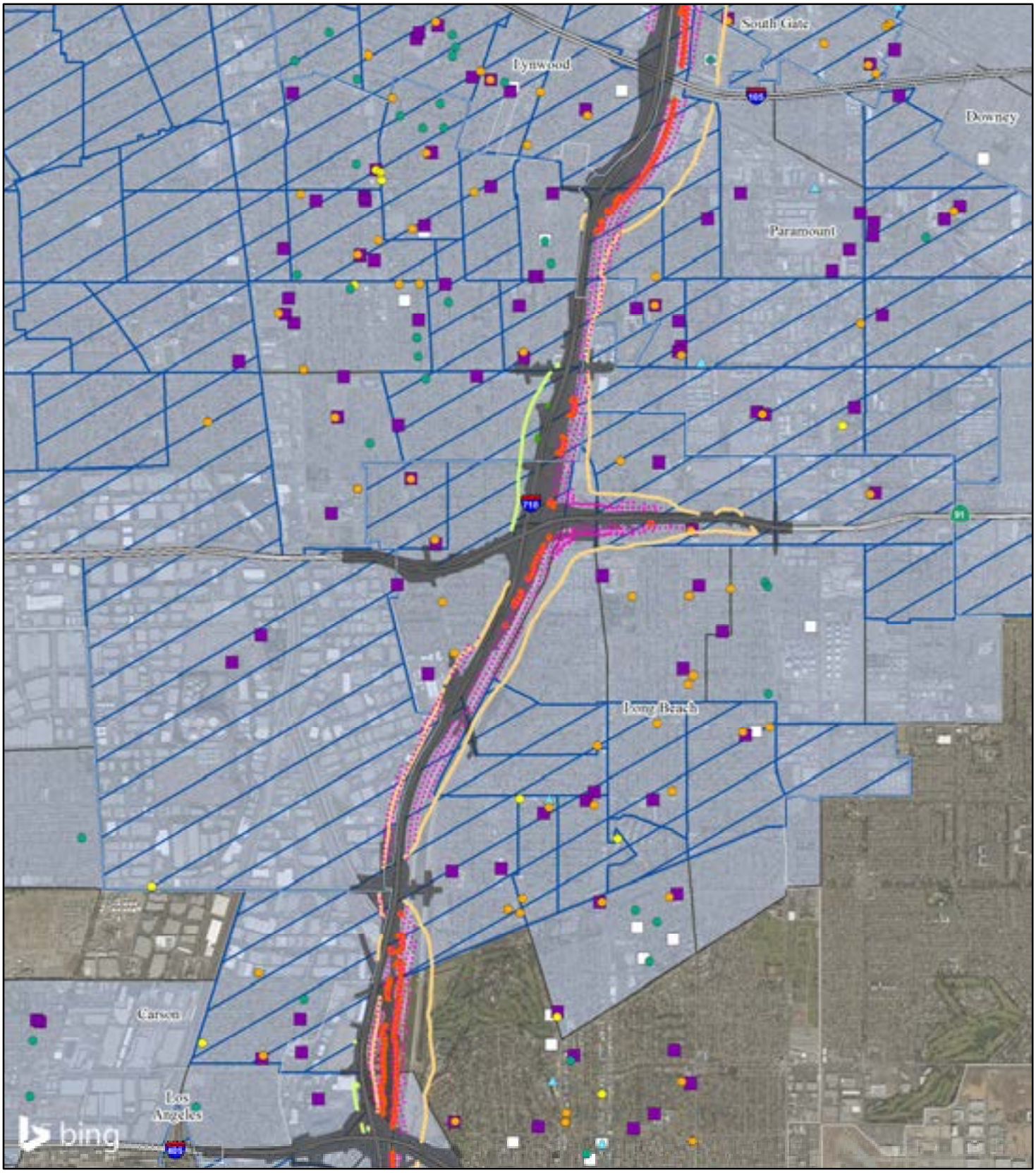

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population
- Maximum Incremental 24-Hour PM_{10} Impact ($\mu g/m^3$)

Maximum Incremental Annual PM_{10} Impact ($\mu g/m^3$)

- -5
- -1
- 1
- 5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-7
Sheet 2 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 PM_{10}
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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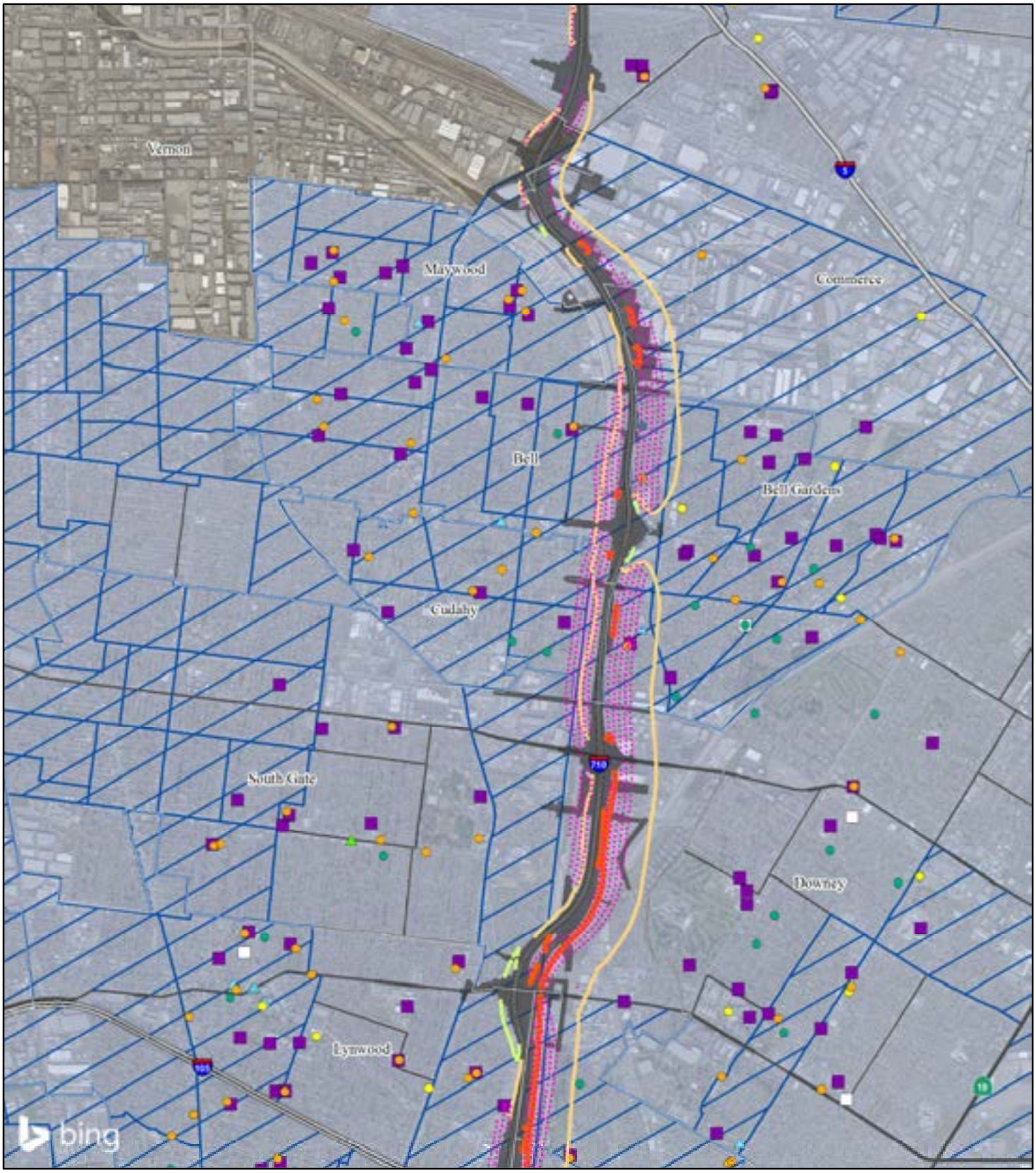

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population
- Maximum Incremental 24-Hour PM_{10} Impact ($\mu g/m^3$)

Maximum Incremental Annual PM_{10} Impact ($\mu g/m^3$)

- -5
- -1
- 1
- 5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-7
Sheet 3 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 PM_{10}
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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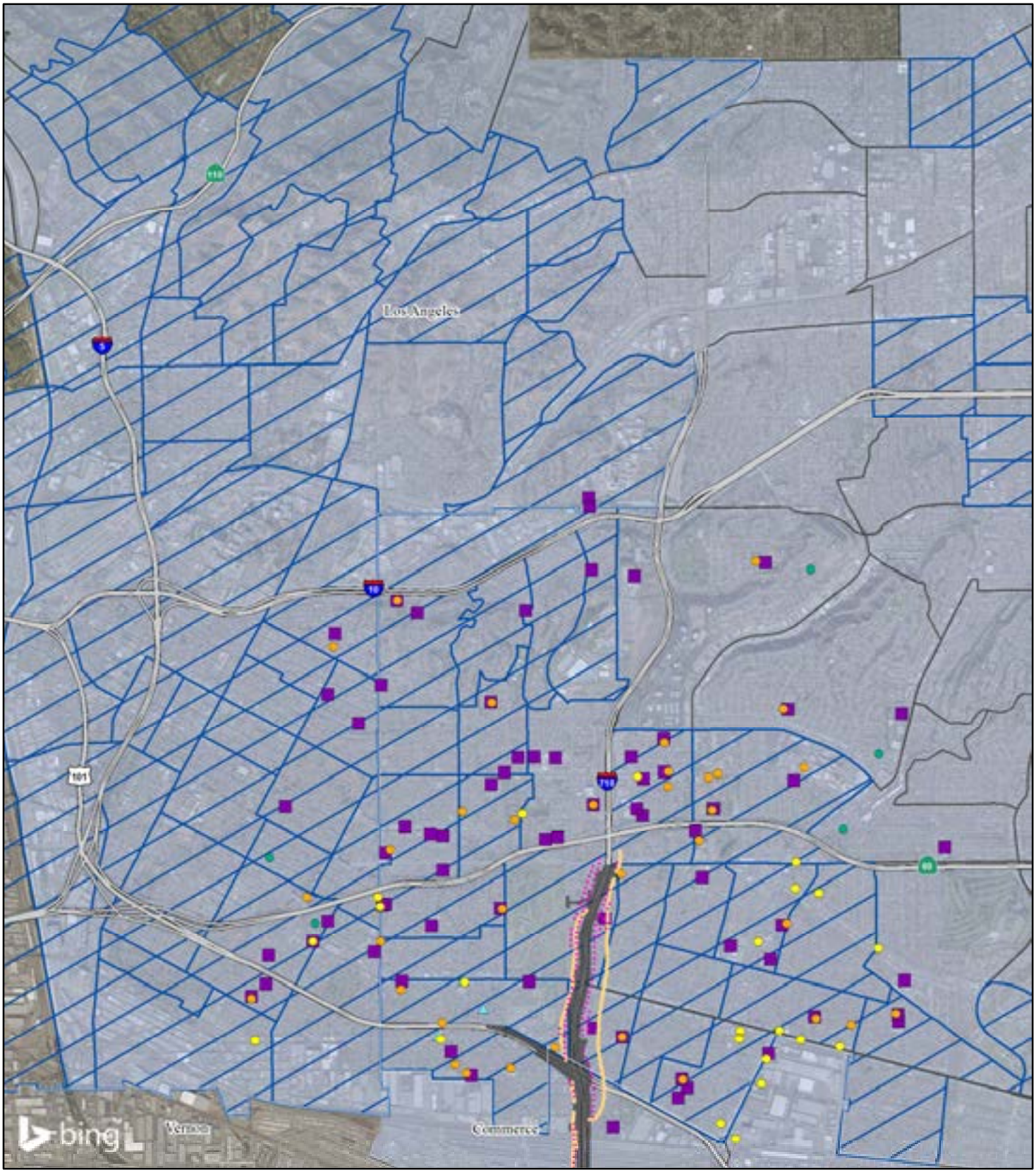

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population
- Maximum Incremental 24-Hour PM_{10} Impact ($\mu g/m^3$)

Maximum Incremental Annual PM_{10} Impact ($\mu g/m^3$)

- -5
- -1
- 1
- 5

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-7
Sheet 4 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 PM_{10}
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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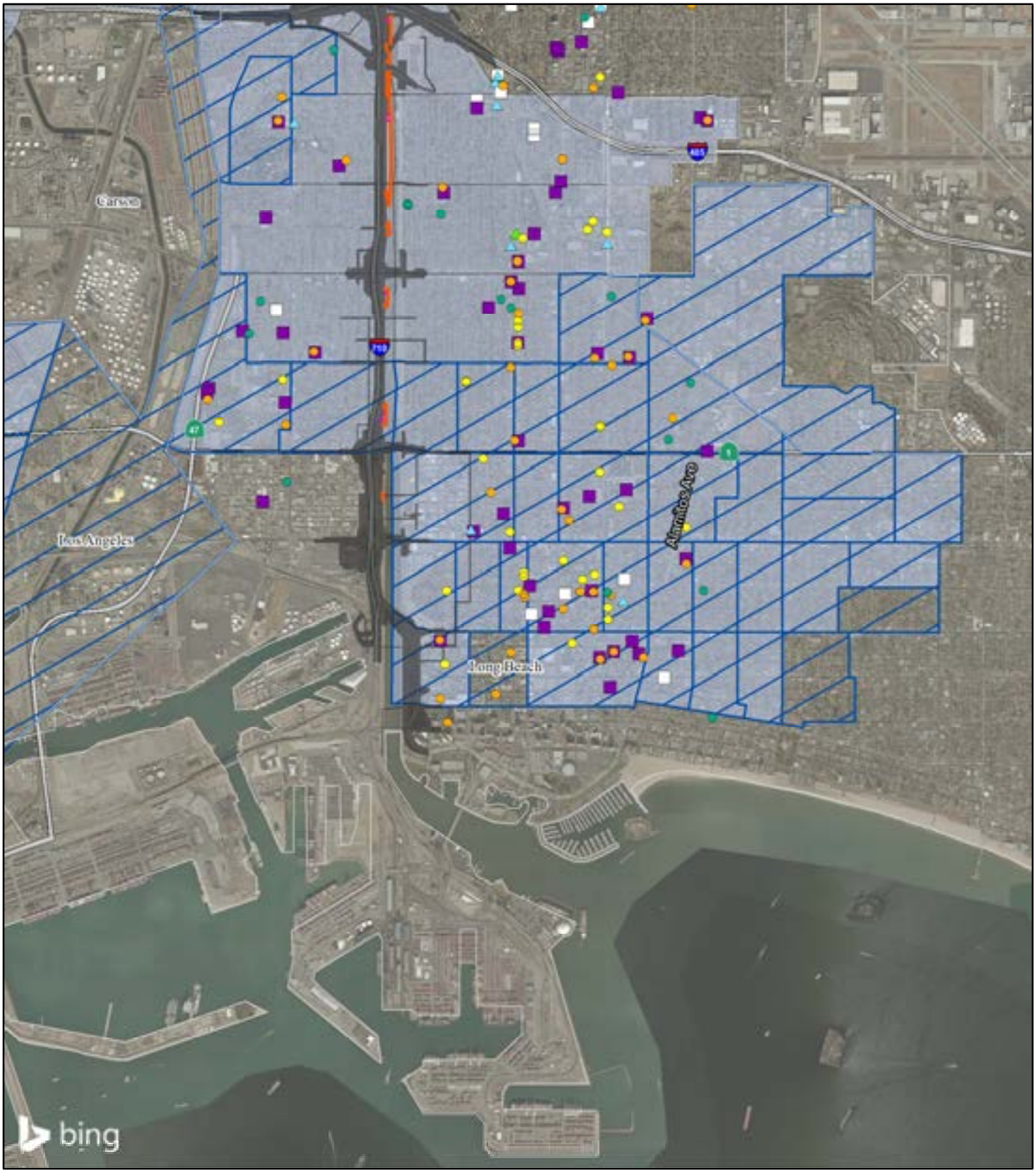

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Maximum Incremental 24-Hour $PM_{2.5}$ Impact ($\mu g/m^3$)

Maximum Incremental Annual $PM_{2.5}$ Impact ($\mu g/m^3$)

- -1
- 1

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-8
Sheet 1 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 $PM_{2.5}$
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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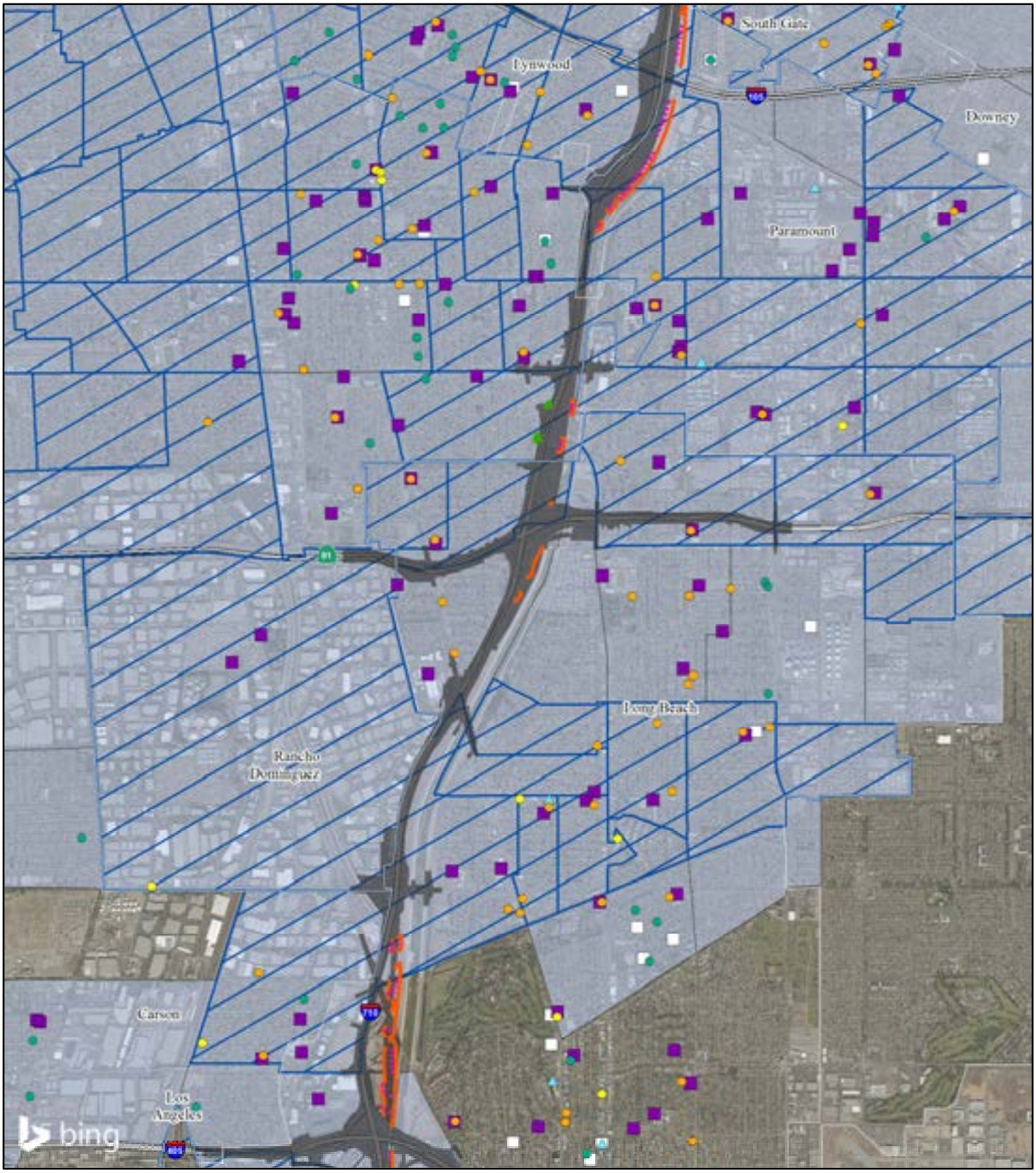

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Maximum Incremental 24-Hour $PM_{2.5}$ Impact ($\mu g/m^3$)

Maximum Incremental Annual $PM_{2.5}$ Impact ($\mu g/m^3$)

- -1
- 1

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-8
Sheet 2 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 $PM_{2.5}$
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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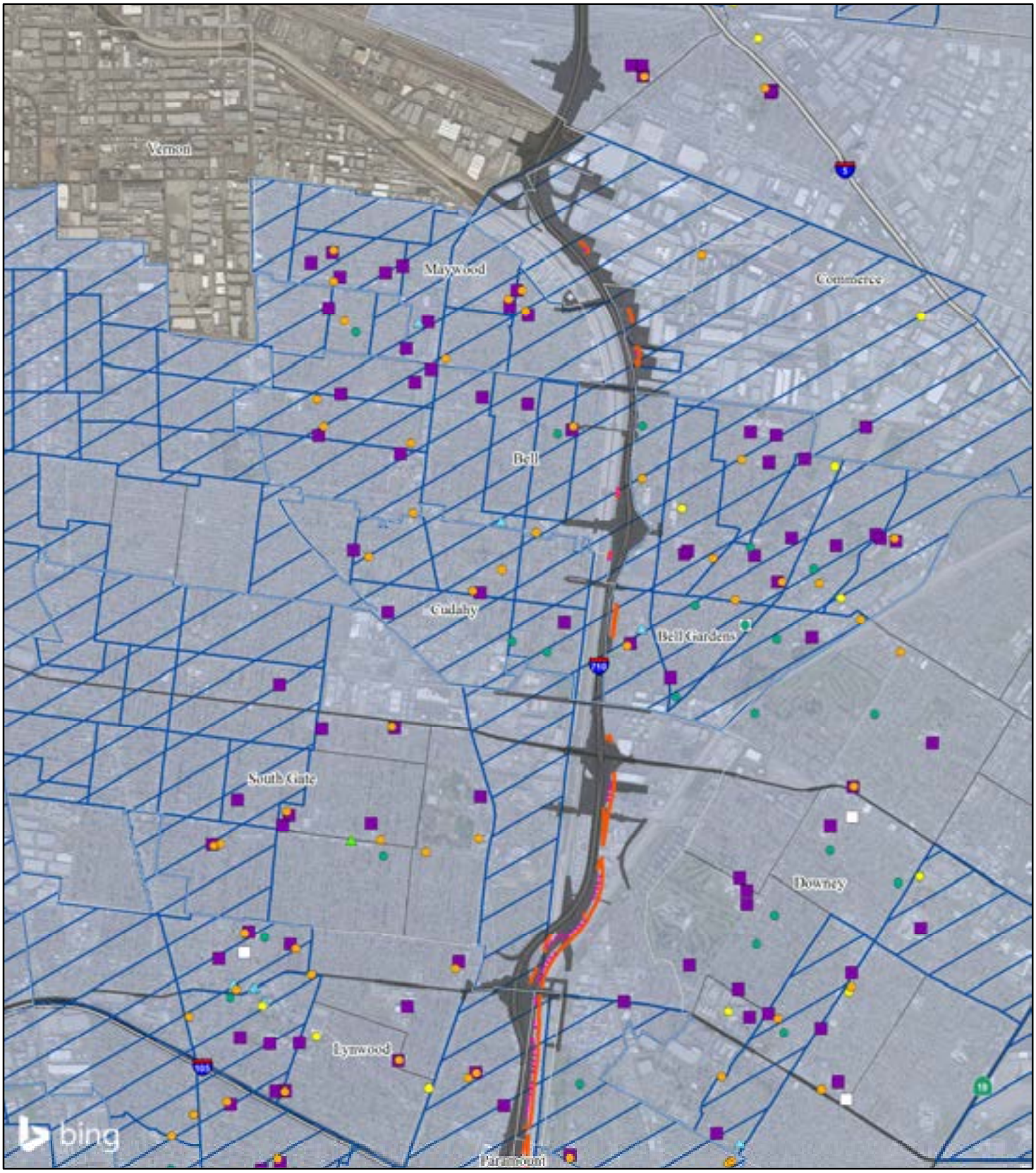

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Maximum Incremental 24-Hour $PM_{2.5}$ Impact ($\mu g/m^3$)

Maximum Incremental Annual $PM_{2.5}$ Impact ($\mu g/m^3$)

- -1
- 1

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-8
Sheet 3 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 $PM_{2.5}$
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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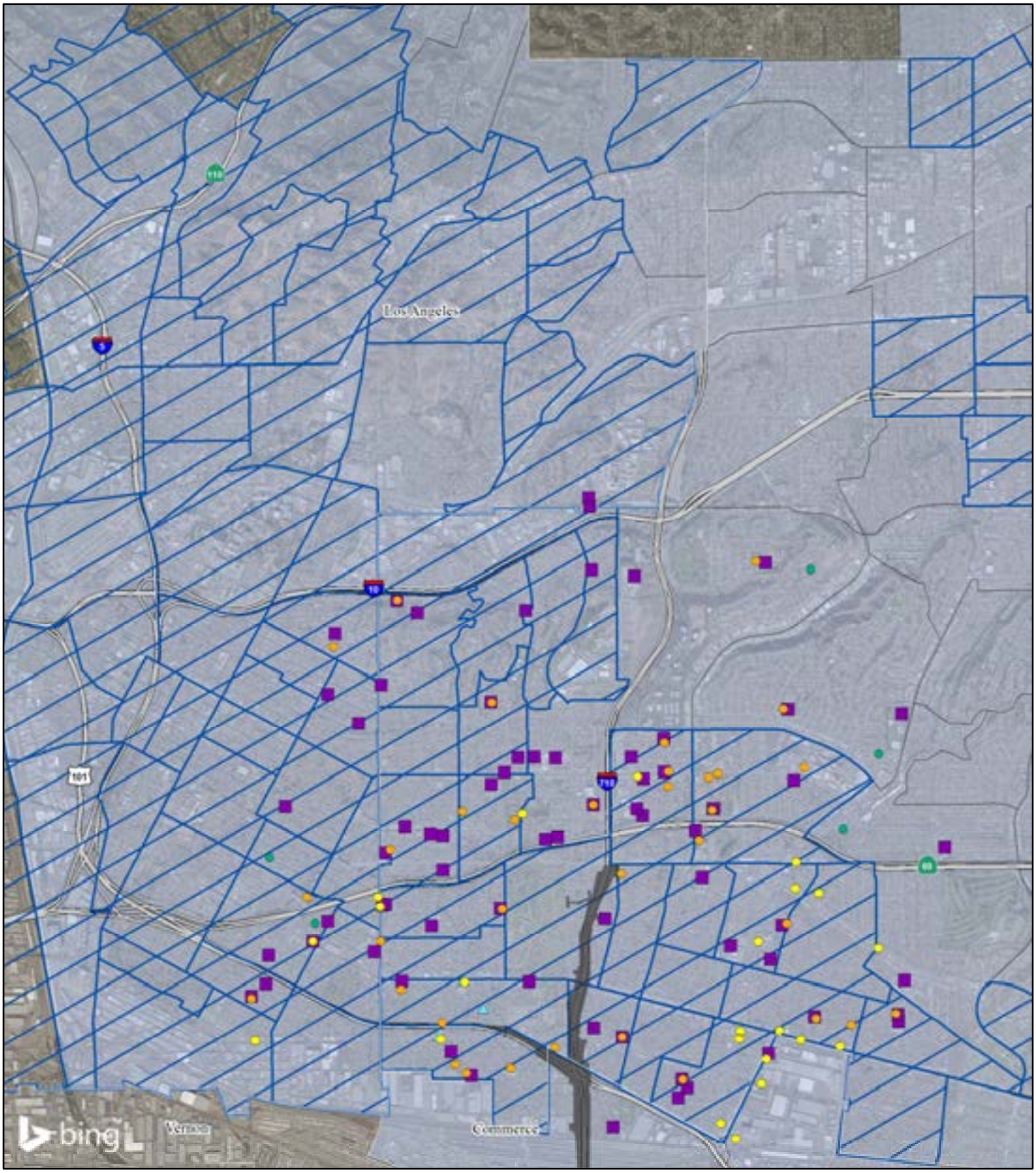

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Maximum Incremental 24-Hour $PM_{2.5}$ Impact ($\mu g/m^3$)

Maximum Incremental Annual $PM_{2.5}$ Impact ($\mu g/m^3$)

- -1
- 1

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-8
Sheet 4 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 $PM_{2.5}$
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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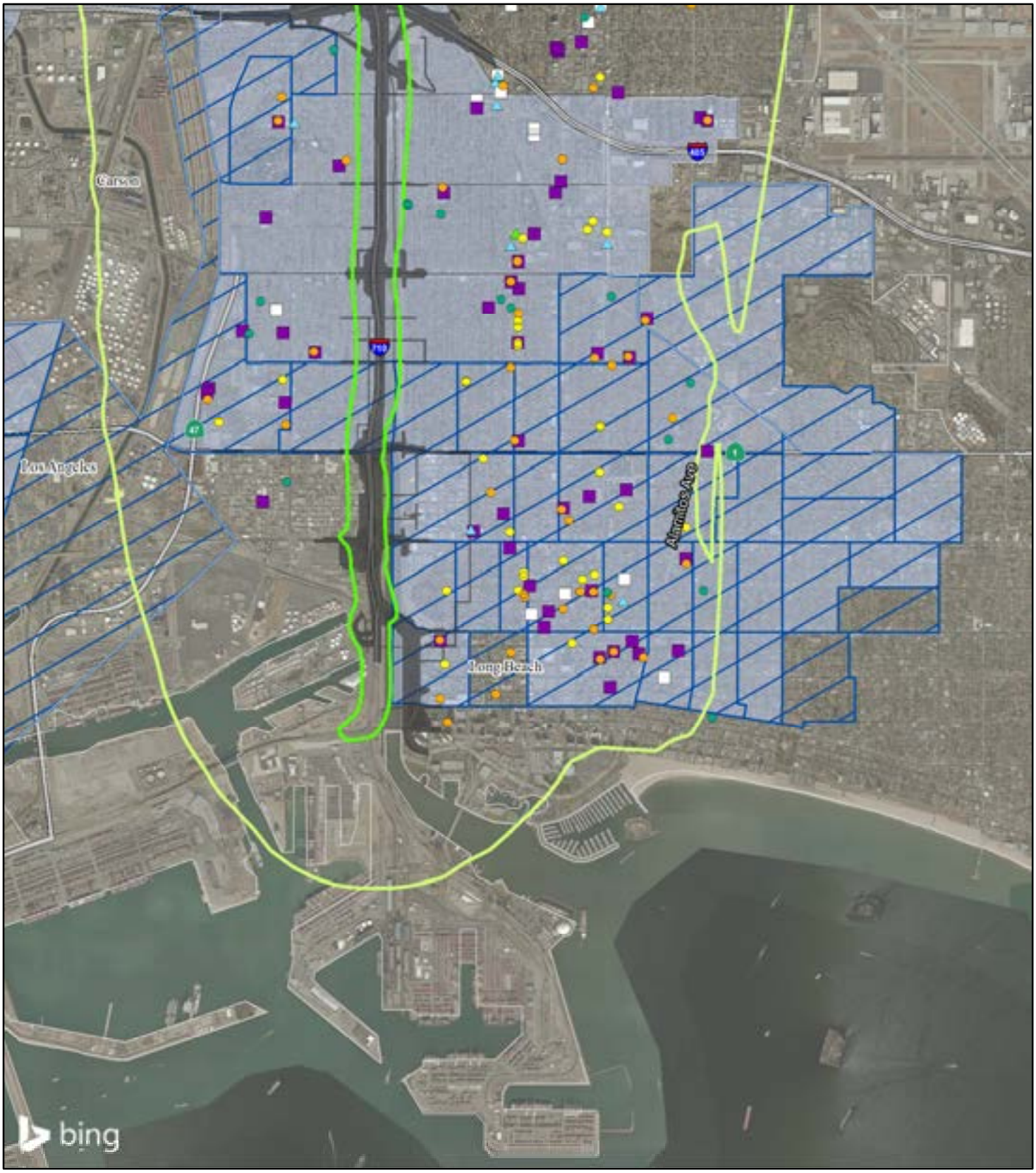

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Incremental Cancer Risk in a Million
- -10.0
- -1.0

Sensitive Receptors
- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-9
Sheet 1 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 Cancer Risk
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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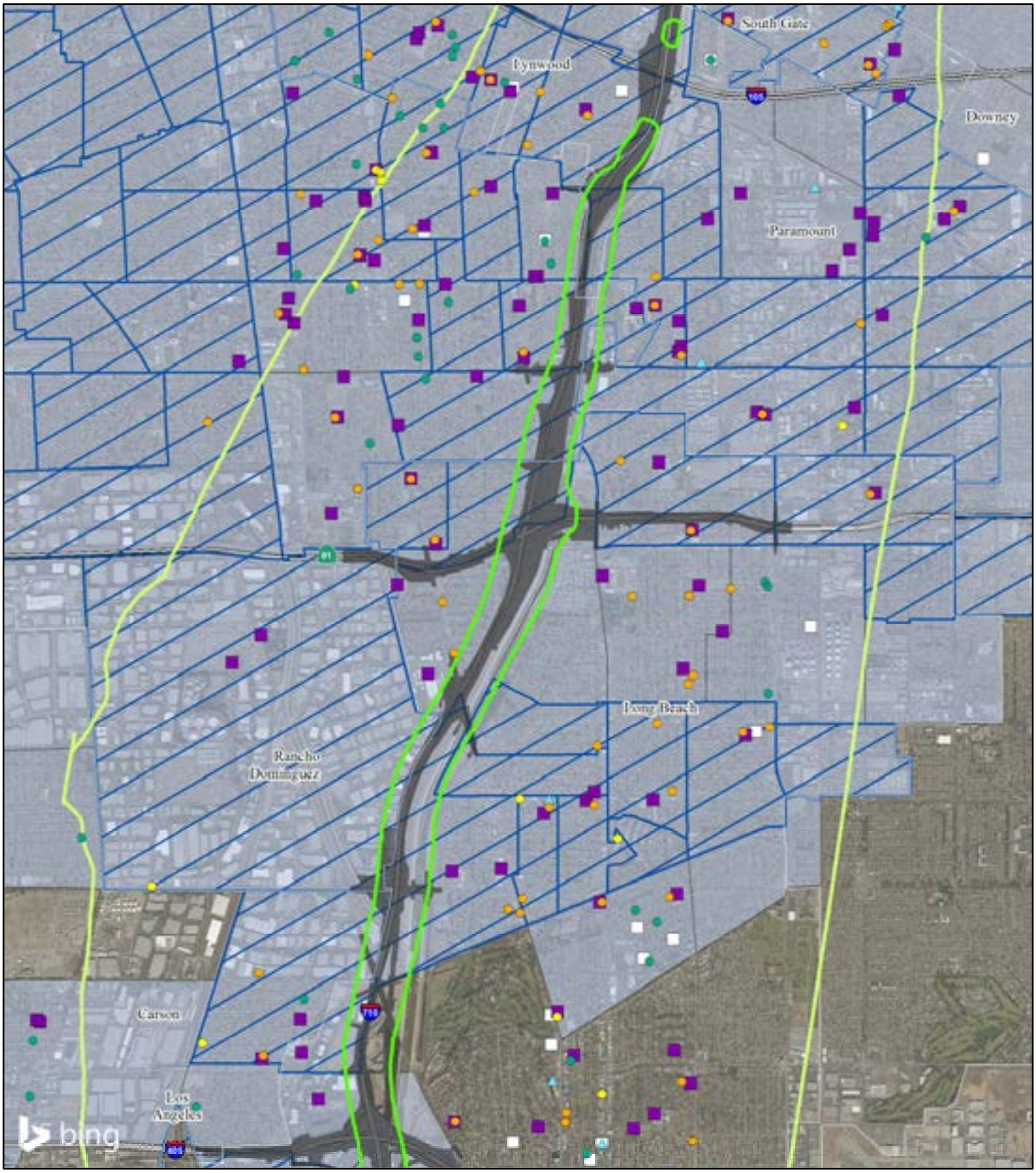

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Incremental Cancer Risk in a Million

- -10.0
- -1.0

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-9
Sheet 2 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 Cancer Risk
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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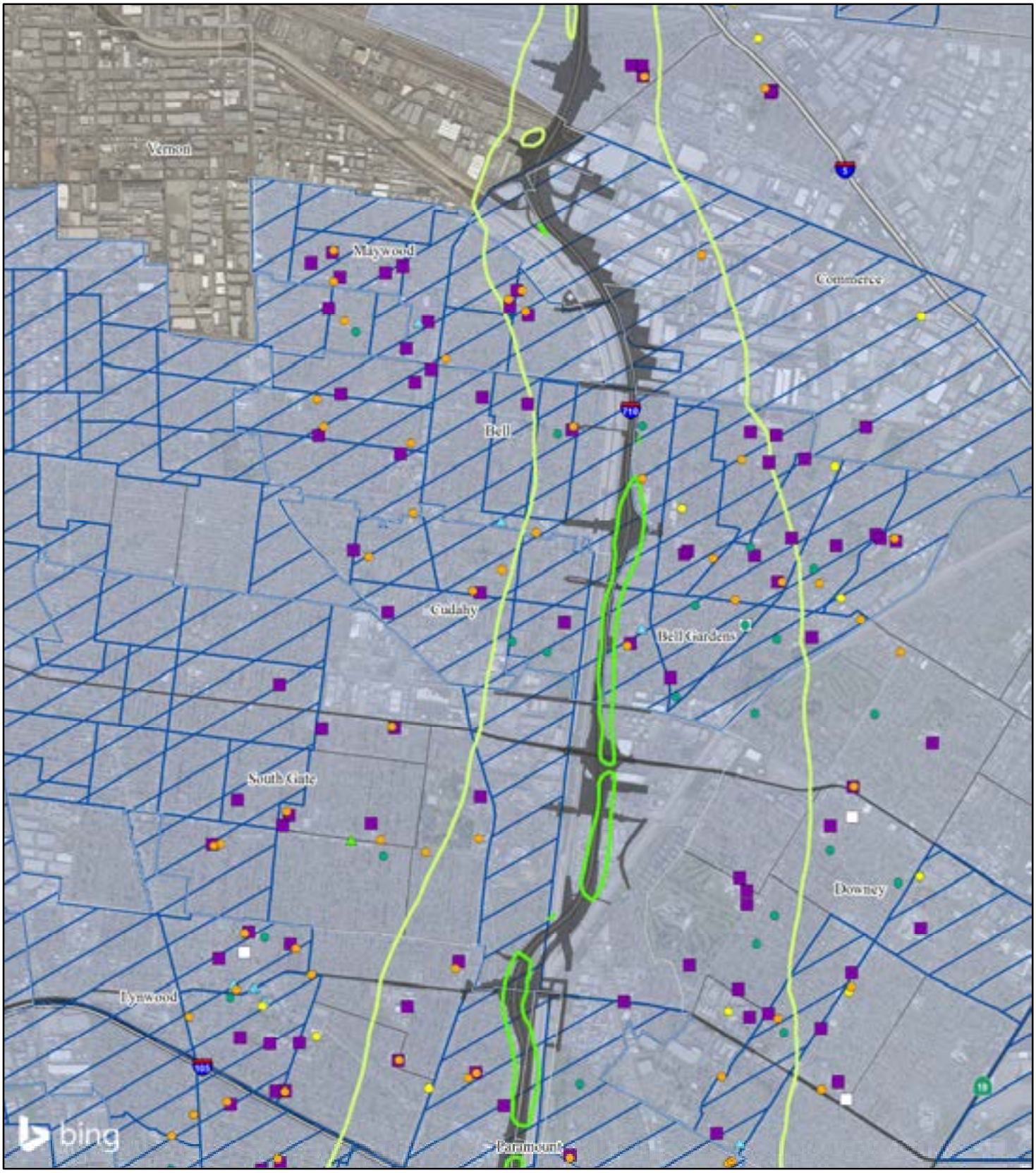

LEGEND

- Alternative 7/DV 1B and 3B Footprints
- Census Tracts Exceeding County Average for Poverty
- Census Tracts Exceeding County Average for Minority Population

Incremental Cancer Risk in a Million

- -10.0
- -1.0

Sensitive Receptors

- Adult Residential
- Daycare
- Healthcare
- Mental Healthcare
- Nursing Home
- School
- Senior Center

N

0 2000 4000
FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

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FIGURE 3.3-9
Sheet 3 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 Cancer Risk
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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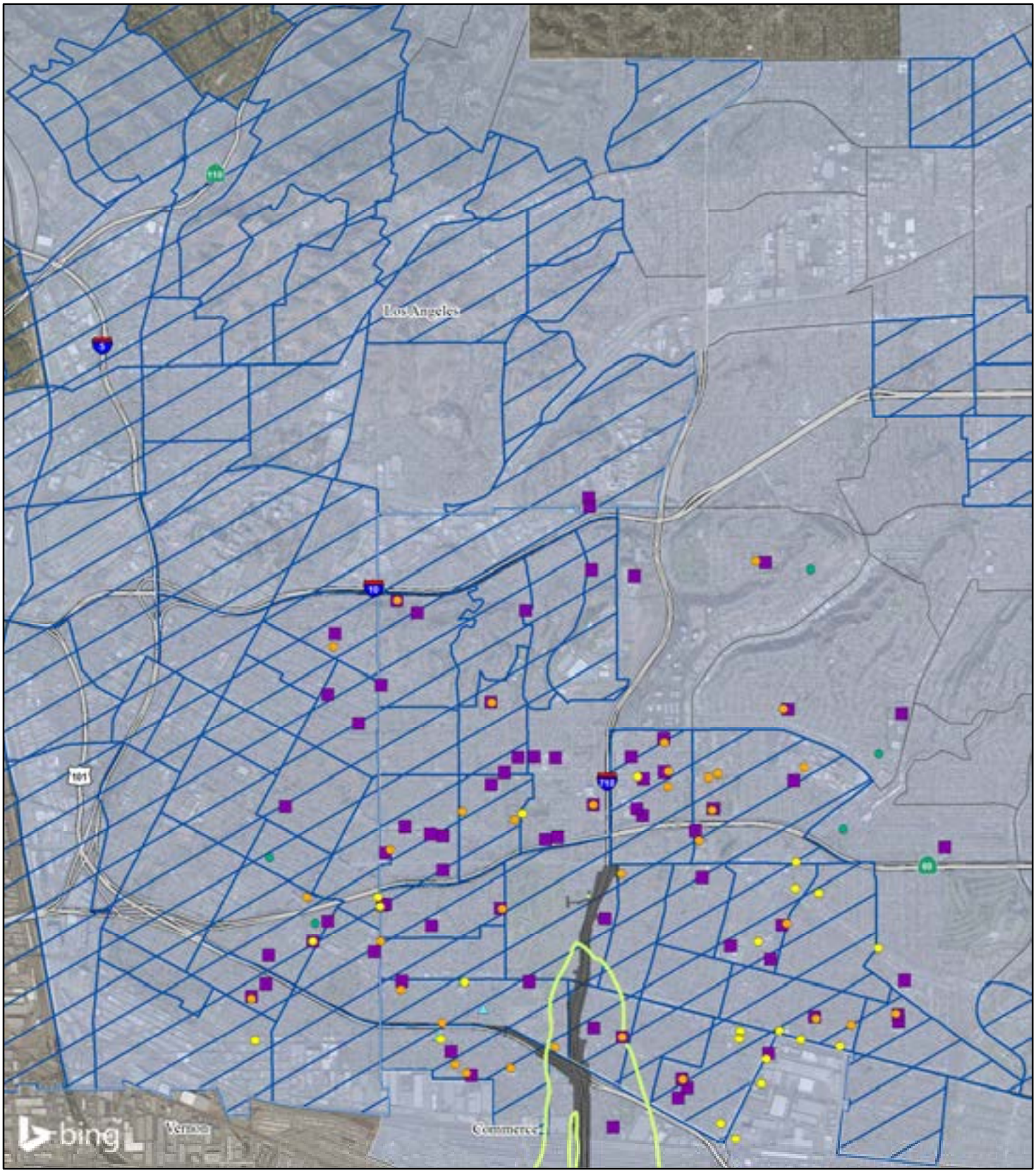

LEGEND

Alternative 7/DV 1B and 3B Footprints

Census Tracts Exceeding County Average for Poverty

Census Tracts Exceeding County Average for Minority Population

Incremental Cancer Risk in a Million

-10.0

-1.0

Sensitive Receptors

Adult Residential

Daycare

Healthcare

Mental Healthcare

Nursing Home

School

Senior Center

N

0 2000 4000

FEET

SOURCE: Bing (2014); TBM (2008); U.S. Census (2010); 2010-2014 American Community Survey; Ramboll-Environ (2017)

I:\URS0801\GIS _MOD\MXD\EIR_EIS\Chapter3\EJ_AirEmissions_Alt7_Cancer.mxd (4/13/2017)

FIGURE 3.3-9

Sheet 4 of 4

I-710 Corridor Project
RDEIR/SDEIS

Alternative 7 Cancer Risk

07-LA-710- PM 5.4/24.5

EA 249900; EFIS 0700000443

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between Imperial Hwy. and Firestone Blvd., along the west side of I-710 north and south of the Firestone Blvd. interchange, along the west side of I-710 between Clara St. and Gage Ave., and along the east side of I-710 in the vicinity of Gage Ave. Additionally, isolated areas of 24-hour PM_{10} impact occur on the east side of the I-710 near the crossing for Atlantic Ave., as well as near Gage St. in the City of Bell Gardens, where at least one adult residential facility has been identified (Inclusion Specialized Programs LLC on Agra St. between I-710 and Specht Ave.), and would be impacted.

As can be seen on Figure 3.3-4, all of these locations (with the exception of east of I-710, directly north of I-405) fall within areas of minority and/or low-income populations that exceed that of the County.

Figure 3.3-7 illustrates the incremental changes in 24-hour PM_{10} impacts that would occur during operation of Alternative 7. Due to an increase in throughput and associated vehicle miles traveled (VMT), and because the model assumes the silt reservoir is infinite, particulate matter (PM) impacts may be overstated. Nevertheless, the model indicates that incremental 24-hour PM_{10} concentrations increase substantially over what is demonstrated for Alternative 5C. The incremental 24-hour PM_{10} impacts that would occur under Alternative 7 are more prevalent on the east side of the I-710 mainline and extend further east in many cases. These expanded increase areas are notable in areas of environmental justice populations along I-710 between Del Amo Blvd. and SR-91, and particularly along both sides of I-710 between I-105 and the project's northern terminus, within the Cities of South Gate, Cudahy, Bell Gardens, Bell, and Commerce, all of which contain minority and low-income populations at higher percentages than that of the County. This impact area encompasses eight sensitive receptors within the Cities of Long Beach, Lynwood, and Bell Gardens and within the community of East Los Angeles. Specifically, these sensitive receptors that would experience maximum incremental 24-hour PM_{10} impacts include the YMCA GLB First Friendships State Preschool in the City of Long Beach; Vista High School in the City of Lynwood; Bell Gardens Elementary School, Briarcrest Nursing Center Nursing Home, Bell Gardens Elementary School, Marlow Park Child Development Center, and Inclusion Specialized Programs LLC Residential Facility, all in the City of Bell Gardens; as well as Humphreys Elementary School, in the community of East Los Angeles.

ANNUAL PM_{10} CONCENTRATIONS

Also identified on Figure 3.3-4 are the areas in which the operation of Alternative 5C is expected to have an incremental annual PM_{10} impact. The majority of the identified increases fall within areas very close to, if not the same as, the Alternative 5C 24-hour PM_{10} impact locations identified in the previous discussion. There is also one location identified along I-710 south of Wardlow Rd. at which annual PM_{10} concentrations incrementally increase up to five micrograms per cubic meter ($\mu g/m^3$), a greater increase than any other identified for annual PM_{10} concentrations under Alternative 5C. This location is within a census tract that has been

identified as having a greater proportion of minority residents than that of the County; however, the specific location of the identified increase lies within the proposed Alternative 5C footprint where it is adjacent to the Los Angeles River. The increase is not within an area of residences, schools, or other sensitive receptors, or other frequent human use. However, two sensitive receptors have been identified as being within areas of up to one $\mu g/m^3$ increase; those are the Inclusion Specialized Programs LLC Residential Facility and the Marlow Park Child Development Center, both in the City of Bell Gardens.

Additionally, there are also areas in which annual PM_{10} concentrations under Alternative 5C decrease compared to the 2035 No Build condition. These areas include west of I-710 from the southern terminus to north of Pacific Coast Hwy., west of I-710 in the vicinity of Willow St., east and west of I-710 in the vicinity of Imperial Hwy., east of I-710 at the Florence Ave. interchange, and west of I-710 just south of Atlantic Blvd. With the exception of the area west of I-710 and south of Pacific Coast Hwy., all of these areas wherein a decrease in annual PM_{10} concentrations occur compared to the 2035 No Build scenario fall within identified areas of environmental justice populations. No sensitive receptors fall within these areas of decrease.

Figure 3.3-7 also illustrates the locations of changes in annual PM_{10} concentrations under the operation of Alternative 7 as compared to the 2035 No Build condition. The same reasons that are noted in the discussion above regarding 24-hour PM_{10} concentration (increased throughput and modeled VMT coupled with an infinite silt reservoir) are also applicable to the increases in annual PM_{10} concentrations, which appear in generally the same areas in which the Alternative 7 24-hour PM_{10} incremental impacts occur. However, in many areas, the increases are not only larger in size but also more severe due to the greater increase in capacity and VMT for Alternative 7. In several near or on-roadway locations, generally concentrated along the east side of the I-710 Corridor and in the vicinity of major interchange locations, incremental annual impacts of up to five $\mu g/m^3$ have been identified. These impacts occur at several locations along the length of the project Study Area. Under Alternative 7, several sensitive receptors fall within areas of increased incremental PM_{10} annual impacts of up to one $\mu g/m^3$. These include the RMR Care Facility on De Forest Ave. in the City of Long Beach; St. John's School and YMCA First Friendships State Preschool, both near Orange Ave. in the City of Long Beach; Bell Gardens Elementary School, Briarcrest Nursing Center Nursing Home, Bell Gardens Elementary School, Marlow Park Child Development Center, and Inclusion Specialized Programs LLC Residential Facility, all in the City of Bell Gardens; and Humphreys Elementary School in the community of East Los Angeles, near the northern terminus of the project area.

Decreases in annual PM_{10} concentrations do occur at some locations within the I-710 corridor; these areas are generally smaller than those of the modeled increases, and are generally located west of I-710 between Pacific Coast Hwy. and I-405, and west of I-710 in the vicinity of Imperial Hwy. In nearly all instances, these decreases do fall within areas of identified

environmental justice populations. No sensitive receptors have been identified within these areas of decrease.

24-HOUR $PM_{2.5}$ CONCENTRATIONS

Figure 3.3-5 illustrates changes in incremental $PM_{2.5}$ concentrations under Alternative 5C as compared to the 2035 No Build condition. Please note that there is no appreciable change in incremental 24-hour $PM_{2.5}$ concentrations under Alternative 5C.

Under Alternative 7, a few areas of incremental increases in 24-hour $PM_{2.5}$ concentrations occur. These areas can be seen on Figure 3.3-8 and are predominantly east of I-710 between Rosecrans Ave. and Firestone Blvd., within areas of identified environmental justice populations. The increases tend to occur almost entirely within, or directly adjacent to, the Alternative 7 proposed footprint and, therefore, are not located within areas of frequent human use, residences, or other sensitive receptors.

ANNUAL $PM_{2.5}$ CONCENTRATIONS

There are some areas of slight incremental annual changes in $PM_{2.5}$ under Alternative 5C. As shown on Figure 3.3-5, increases (up to 0.5 $\mu g/m^3$) are concentrated east of I-710 generally between Willow St. and Carson St. in Long Beach and clustered near the Florence Ave. interchange near the Cities of Bell, Bell Gardens, and Cudahy. The areas in which $PM_{2.5}$ concentrations of up to 0.5 $\mu g/m^3$ occur within the City of Bell Gardens do occur within areas of identified environmental justice populations near Marlow Ave., though no sensitive receptors occur in the impact area. Decreases in incremental annual $PM_{2.5}$ concentrations of up to 0.5 $\mu g/m^3$ also occur within or close to the prism of the proposed roadway, at the Florence Ave. interchange, west of the I-710 mainline just south of Imperial Hwy., and west of I-710 north and south of Anaheim St. No sensitive receptors are located within these areas of decrease.

Figure 3.3-8 also illustrates the changes in incremental annual $PM_{2.5}$ concentrations under Alternative 7. These areas of increase are greater in number than those projected to occur under Alternative 5C, although they do track closely to the proposed footprint. Generally, areas in which changes in incremental annual $PM_{2.5}$ concentrations of up to one $\mu g/m^3$ are located within census tracts in which environmental justice communities reside (with minor exceptions, including a small segment north of I-405). No sensitive receptors have been identified within the incremental annual $PM_{2.5}$ impact areas. Generally, these locations are along the east side of I-710 between Rosecrans Ave. and Firestone Blvd., and between Willow St. and Del Amo Blvd. Additionally, there are two very small locations of incremental annual $PM_{2.5}$ concentration decreases, within environmental justice populations, that can likely be attributed to shifting of the roadway alignment.

CANCER RISK

Figures 3.3-6 and 3.3-9 illustrate the changes in cancer risk that would occur under Alternatives 5C and 7, respectively. Under Alternative 5C, much of the area surrounding the I-710 Corridor would experience a decrease in incremental cancer risk of up to one in one million; however, this decrease becomes smaller in size as one travels further north up the corridor. Small areas in which decreases in incremental cancer risk of up to ten in one million occur at various areas within or very close to the roadway, but do include small parts of neighborhoods in the City of Long Beach along the west side of I-710 between Willow St. and I-405 where minority populations at percentages greater than that of the County occur. Nearer to the northern terminus of the project in East Los Angeles, there are some small areas in which incremental cancer risk increases up to one in one million; many of these areas are within the limits of the proposed roadway, and human exposure would be short-lived and transitory. One sensitive receptor in the community of East Los Angeles, Humphreys Elementary School, near S. Ford Blvd. and S. Humphreys Ave., would be subject to an increase in cancer risk of up to one in one million under Alternative 5C. However, several sensitive receptors are located within areas of decreased cancer risk of up to one in one million; sensitive receptors experiencing this beneficial effect occur in greatest numbers within the Cities of Bell Gardens, Paramount, and Long Beach. In general, some of these areas of increases and decreases are a result of the shifting of the roadway alignment. However, most of these areas of increase and decrease do occur within locations of environmental justice populations.

Under Alternative 7, no appreciable increase in cancer risk is modeled for the Study Area. In fact, the areas wherein incremental decreases in cancer risk occur are far larger than what is anticipated under Alternative 5C. An incremental decrease in cancer risk of up to ten in one million generally dissipates in the area of the Florence Ave. interchange, and the larger area (in which the decreases of up to one in one million occur) becomes gradually smaller until it, too, dissipates just south of the northern terminus. However, the substantial environmental justice populations in the Study Area would generally benefit from this overall reduced cancer risk.

When compared to the 2012 baseline (also referred to as existing conditions), both build alternatives show an incremental decrease in cancer risk, and the greatest decreases occur under Alternative 7, mainly due to the decrease in diesel-related mobile source air toxics (MSAT) emissions (specifically diesel particulate matter [DPM], a main driver of cancer risk). All seven priority MSAT emissions show decreases in all of the air quality study areas for both build alternatives when compared to existing conditions. Decreases in DPM were approximately 97 percent in the South Coast Air Basin (Basin), 97 to 98 percent in the Area of Interest (AOI), and 96 to 98 percent along the I-710 freeway. This is due to a larger number of zero emission/near zero emission (ZE/NZE) trucks traveling on the freeway under Alternative 7 that would be funded by the project's programmatic ZE/NZE truck element.

CONCLUSIONS

Overall, air toxics generally decrease for the build alternatives as compared to the 2035 No Build Alternative. In the South Coast Air Basin, the incremental emissions of the build alternatives compared to the 2035 No Build scenario are essentially zero for all pollutants with the exception of oxides of nitrogen (NO_X), which decrease under the build alternatives. Along the I-710 freeway, with the exception of NO_X and diesel-related MSAT emissions, exhaust emissions for the build alternatives generally increase compared to the 2035 No Build scenario. The increases in PM_{10} and $PM_{2.5}$ can be attributed to entrained road dust, rather than exhaust emissions (and the modeled analyses included herein are conservative). Cancer risk is lower overall, with the exceptions of some near-roadway areas that fall within the locations of environmental justice populations. Under Alternative 5C, the maximum increase in risk is approximately three in one million. Under Alternative 7, that maximum increase in risk is less than one in one million.

When compared to existing conditions, tire wear, brake wear, and entrained road dust PM_{10} and $PM_{2.5}$ emissions increase under all of the build alternatives. These emissions are proportional to VMT, which increases with the rise in vehicle activity in 2035 as compared to existing conditions. However, when compared to existing conditions, exhaust emissions decrease for all build alternatives with the exception of a slight increase in SO_2 on I-710 under Alternative 7. Cancer risk also decreases under both build alternatives (more so under Alternative 7) as compared to existing conditions, with focused decreases occurring in the AOI and along the I-710 freeway, where environmental justice populations are concentrated.

Although there are air quality benefits associated with the build alternatives (including those associated with the Community Health Benefit Program, a programmatic component of both build alternatives), and these benefits would be experienced by the environmental justice populations that predominantly reside near the I-710 freeway, there are also near-roadway adverse impacts that would disproportionately burden these populations. Mitigation Measures AQ-2 and AQ-3 described in Section 3.13, Air Quality, of this RDEIR/SDEIS would reduce exposure of environmental justice to populations to increases in air pollutant concentrations. However, even when considering these mitigation measures in addition to the beneficial effects of the project on air quality and public health, both I-710 Corridor Project build alternatives could potentially have an adverse and disproportionate air quality impact to environmental justice populations in localized areas within the I-710 Corridor. Based upon the analysis presented above, Alternative 7 would have a greater impact than Alternative 5C.

Sensitive receptors that have been identified as located within an area of increased pollutants under Alternative 5C include Marlow Park Child Development Center and Inclusion Specialized Programs LLC in the City of Bell Gardens for PM_{10}, and Humphreys Elementary School in the community of East Los Angeles for increased cancer risk. Under Alternative 7, sensitive receptors that have been identified within areas of increase for both annual and 24-hour PM_{10}

include the RMR Care Facility, St. John's School, and YMCA First Friendships State Preschool all in the City of Long Beach; Bell Gardens Elementary School, Briarcrest Nursing Center Nursing Home, Bell Gardens Elementary School, Marlow Park Child Development Center, and Inclusion Specialized Programs LLC Residential Facility, all in the City of Bell Gardens, and Humphreys Elementary School in the community of East Los Angeles. These sensitive receptors have been proposed for mitigation measures. Specifically, provision of new or upgraded air filtration and/or heating, ventilation, and air conditioning (HVAC) systems would be funded by the project as mitigation to reduce exposure to pollutants at these sensitive receptors. Please see Section 3.3.3.7.

CONSTRUCTION EMISSIONS. As part of the AQ/GHG/HRA, a construction emissions analysis was performed (Appendix B of the AQ/GHG/HRA report). The I-710 Construction Emissions Model (CEM) is a modified version of the Sacramento Metropolitan Air Quality Management District (SMAQMD) Road Construction Emissions Model and estimates daily and total criteria air pollutant and greenhouse gas emissions from four categories of construction activity: grubbing/land clearing, grading/excavation, drainage/utilities/sub-grade, and paving. Three major sources of emissions that were evaluated by the I-710 CEM include on-road vehicles, off-road equipment, and fugitive dust.

To assess the full breadth of potential construction-related impacts of the build alternatives, two sets of model runs were performed for the project: one with "No Mitigation" and referred to as the Baseline Compliance Scenario, and one taking into account "Tier 4 Equipment" and referred to as the All Best Available Control Technology (BACT) scenario. The Baseline scenario assumes that all construction equipment is assumed to be in compliance with California Air Resources Board's (ARB) In-Use Off-Road Diesel-Fueled Fleets Regulation. The BACT scenario is assuming all construction equipment meets ARB's Tier 4 Final engine standards for off-road equipment. The I-710 CEM outputs criteria air pollutant emissions in pounds per day per period and tons per period.

For purposes of the construction emissions analysis, emissions from construction activities were analyzed in seven sections that were developed for preliminary engineering of the project as follows:

- Section 1: Ocean Blvd. to Willow St.
- Section 2: Wardlow Rd. to Del Amo Blvd.
- Section 3: Long Beach Blvd. to Alondra Blvd.
- Section 4: Rosecrans Ave. to Firestone Blvd.
- Section 5: Florence Ave. to Slauson Ave.
- Section 6: Atlantic Blvd. to Washington Blvd.
- Section 7: I-5 to south of SR-60

The construction staging concept is a hypothetical plan that was developed assuming all funding has been programmed and is available to construct the full project at the start of construction. It is only intended to prove that the proposed alternatives can physically be constructed, that the freeway facility can continue to operate during construction, and that a logical order of construction can be defined, thereby minimizing the throw-away of built elements. It does not represent a realistic or example emissions scenario and should not characterize impacts as such. However, a qualitative analysis is included here for informational purposes only.

Both emissions scenarios (Baseline and BACT) are presented for purposes of comparison. See Table 3.3-17, below, for Alternative 5C emissions, and Table 3.3-18 for Alternative 7 emissions. South Coast Air Quality Management District (SCAQMD) significance criteria are also presented. It is important to note that the California Department of Transportation (Caltrans) has not adopted any of SCAQMD's significance thresholds; this information is provided for reference only.

Table 3.3-17: Peak Daily Criteria Air Pollutant Mass Emissions for the Construction of Alternative 5C

Pollutant	Peak Daily Emission Estimates across All Freeway Sections (lbs/day)		Peak Daily Emission Estimates for a Single Freeway Section (lbs/day)		SCAQMD CEQA Significance Criteria[1] (lbs/day)
	Baseline Compliance Scenario	All BACT Scenario	Baseline Compliance Scenario	All BACT Scenario	
NO_X	1,200	180	280	30	100
CO	1,100	1,400	330	360	550
PM_{10} (Total)	680	640	190	190	150
$PM_{2.5}$ (Total)	180	140	42	39	55
VOC	120	80	27	14	75
SO_X	2.9	2.9	0.50	0.50	150

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
[1] Presented for informational purposes only.
BACT = Best Available Control Technology
CEQA = California Environmental Quality Act
CO = carbon monoxide
lbs/day = pounds per day
NO_X= nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = oxides of sulfur
VOC = volatile organic compounds

Table 3.3-18: Peak Daily Criteria Air Pollutant Mass Emissions for the Construction of Alternative 7

Pollutant	Peak Daily Emission Estimates across all freeway sections (lbs/day)		Peak Daily Emission Estimates for a single freeway section (lbs/day)		SCAQMD CEQA Significance Criteria[1] (lbs/day)
	Baseline Compliance Scenario	All BACT Scenario	Baseline Compliance Scenario	All BACT Scenario	
NO_X	1,200	180	240	30	100
CO	1,100	1,500	200	250	550
PM_{10} (Total)	800	760	240	240	150
$PM_{2.5}$ (Total)	200	160	53	50	55
VOC	130	85	25	14	75
SO_X	2.9	2.9	0.49	0.49	150

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
[1] Presented for informational purposes only.
BACT = Best Available Control Technology
CEQA = California Environmental Quality Act
CO = carbon monoxide
lbs/day = pounds per day
NO_X= nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = oxides of sulfur
VOC = volatile organic compounds

Depending on the start date and duration of construction activities, construction periods may overlap. The hypothetical construction schedule was used to estimate the maximum daily criteria air pollutant emissions associated with a single freeway section and across the entire project (all freeway sections). These data are summarized for the Baseline Compliance scenario and the all-BACT scenario for both alternatives. NO_X and PM exhaust emissions estimates are substantially lower for the all-BACT scenario as compared to the Baseline scenario. It is also noteworthy that in all cases, total PM emissions (both PM_{10} and $PM_{2.5}$) are substantially composed of fugitive dust rather than vehicle exhaust.

Although the specific locations of construction emissions impacts cannot be identified at this point, it can be reasonably assumed that construction emissions will be generally localized and the communities and businesses closest to the location of construction would experience the greatest construction-related air quality impacts. As it has been established that the vast majority of census tracts adjacent to the proposed improvements do contain percentages of minority and/or low-income populations at percentages exceeding that of the Reference Community (and have, therefore, been identified as environmental justice communities), it is anticipated that the construction of either of the I-710 Corridor Project build alternatives would have disproportionately high and adverse air-quality related construction emissions impacts on environmental justice communities.

NOISE. Increases in future (2035) worst-hour noise levels, compared to existing levels, were estimated in a *Traffic Noise Study Report* (2016)[10] at over 200 locations for the I-710 Corridor Project build alternatives.

The need for noise abatement is determined according to which areas may experience noise that approaches or exceeds the Federal Noise Abatement Criteria (NAC). The NAC varies depending on the land use activities being evaluated. The *Traffic Noise Study Report* (2016) found that most parts of the Study Area will exceed the NAC. As a result, soundwalls are proposed at locations throughout the I-710 Corridor.

For purposes of this analysis, those sound measurement or monitoring locations (receptors) were identified where either build alternative would result in a noise increase that approached or exceeded the NAC, or if a predicted noise level in the design year substantially exceeds the existing noise level (exceeding the existing worst-hour noise level by 12 A-weighted decibels [dBA] or more). The *Traffic Noise Study Report* (2016) identified and recommended acoustically feasible soundwalls. In most cases, the recommended soundwalls would provide adequate noise abatement (defined as five dBA in the Caltrans 2011 *Traffic Noise Analysis Protocol*). Please note that some soundwalls are assumed to be constructed under the Early Action Soundwall Project.

The exceptions are at locations where soundwalls are not considered acoustically feasible because they do not provide the minimum required five dBA noise abatement are listed as follows:

- Under both Alternatives 5C and 7, along westbound Wardlow Rd. from I-710 to Delta Ave. in the City of Long Beach (designated MSB16A-C), noise abatement in the form of a soundwall (SW-502D) was considered but found to be infeasible as it only provided a two-to-three dBA noise reduction to the residential area. This area falls within a census tract that exceeds the County percentage for minority residents. At this location, the NAC is 67 dBA. The worst-hour noise level under Alternative 5C ranges from 65.8–73.6 dBA. The increases in noise level under Alternative 5C range from 7.7–9.2 dBA compared to the existing condition, and 3.5–8.4 dBA compared to Alternative 1. Under Alternative 7, the future worst-hour noise level at this location ranges from 65.8–69.8 dBA. The increases in noise level under Alternative 7 as compared to the existing condition range from 5.4–8.6 dBA, and the increases in noise level as compared to Alternative 1 range from 3.5–4.6 dBA.
- Under Alternative 5C, along the edge of shoulder at the southbound I-710 off-ramp at Eastern Ave. in East Los Angeles, noise abatement in the form of a soundwall (SW-519) was considered but found to be infeasible as it did not provide the minimum five dBA

[10] Caltrans. 2016. *Traffic Noise Study Report, I-710 South (Corridor Project/Truck Lane Project)*.

noise reduction. This area falls within a census tract that exceeds the County percentages for both minority and low-income residents. The impacted location, labeled SB-71M1 in the NSR, has an NAC of 67 dBA and experiences a worst-hour noise level of 68.8 dBA. The noise increase as compared to the existing condition is approximately 5.4 dBA at this location, and a 2.4 dBA increase under Alternative 5C, as compared to Alternative 1, would occur.

- Under Alternative 7, along the northbound freight corridor from SR-91 to Rosecrans Ave. (designated receivers NB-25 through NB-30), noise abatement in the form of a soundwall (SW-708TLN) was considered but found to be infeasible as it only provided a three dBA noise reduction to the residential area east of the Los Angeles River within the City of Paramount. This residential area falls within census tracts that exceed the County percentages for both minority and low-income residents. At these locations, the NAC is 67 dBA, and the worst-hour noise level under Alternative 7 ranges from 63.2–69.0 dBA. The noise increases under Alternative 7, as compared to the existing condition, range from 6.0–14.3 dBA. When compared to Alternative 1, the increase in noise levels range from 4.7–11.1 dBA.

As these impacts are all located in census tracts identified as containing minority and/or low-income populations, it can be concluded that with respect to noise, and after consideration of abatement, both I-710 Corridor Project build alternatives have a disproportionately high and adverse impact to environmental justice populations.

TRAFFIC IMPACTS. This environmental justice analysis is focused on the findings with regard to intersection impacts.

Information on the impacts of the project alternatives on arterial intersections is included in the *Intersection Traffic Impact Analysis Report* (2017).[11] According to Table 7-12, "Summary of Impacted Intersections," impacts are projected to occur at 42 intersections throughout the Study Area. Of these 42, all but four would be lessened if recommended improvements are implemented. At four intersections, improvements are not recommended to be implemented due to right-of-way constraints (i.e., intersection improvements would result in adverse impacts due to displacements of homes, businesses, or other structures). For purposes of this analysis, it is assumed that an unmitigated adverse impact will remain at four intersections in the Study Area. These impacts are detailed below:

- **Pacific Coast Hwy. and Long Beach Blvd. (Alternative 7):** This intersection, in the City of Long Beach, falls in an area that exceeds the Los Angeles County average minority and low-income percentages.

[11] AECOM. 2017. *Intersection Traffic Impact Analysis Report.* March.

- **Willow St. and Atlantic Ave. (Alternative 7):** This intersection, in the City of Long Beach, falls in an area that exceeds the Los Angeles County average minority and low-income percentages.
- **37th St. and Santa Fe Ave. (Alternatives 5C and 7):** This intersection, in the City of Vernon, falls in an area that does not exceed the Los Angeles County average minority or low-income percentage.
- **Pacific Coast Hwy. and Harbor Ave. (Alternatives 5C, 5C Option 2A, and 7):** This intersection, in the City of Long Beach, falls in an area that exceeds the Los Angeles County average minority and low-income percentages.

Three of four of these intersections are located in census tracts where minority and/or low-income populations have been identified. Therefore, these traffic intersection impacts would be considered to represent a disproportionately high and adverse impact to environmental justice communities under one or more of the build alternatives.

COMMUNITY COHESION AND RELOCATIONS

Community cohesion and relocations are discussed together, as they are highly interrelated. Impacts to community cohesion could occur as a result of relocations. The *Relocation Impact Report* (RIR) (2017)[12] and the *Right-of-Way Study* (2017)[13] identified parcels that would be subject to acquisition and relocation under the I-710 Corridor Project build alternatives. Specific displaced properties are identified in Appendix B of the RIR.

Given the demographic makeup of the area immediately surrounding the freeway right-of-way, the vast majority of parcel acquisitions and associated relocations would occur in census tracts that exceed the Los Angeles County percentage of minority and low-income residents. The preliminary conclusion of the RIR is that adequate relocation resources exist for all alternatives and design options, except for residents of five mobile homes in the Alondra sub-area, and in general for renters given the limited supply of affordable rental housing. Housing of Last Resort will be considered where necessary.

A spatial comparison between full parcel acquisitions and census tracts that exceed the Los Angeles County percentage of minority and low-income residents indicates that for each alternative and design option, the majority of full parcel acquisitions would occur in areas of environmental justice populations. Alternative 5C would displace and require relocations for 109 residential units and 158 nonresidential properties. Alternative 7 would impact 121 residential units and 206 nonresidential properties. The design options have additional impacts to both residents and businesses. Most acquisitions would occur in areas wherein the percentage of

[12] Epic Land Solutions, Inc. 2017. *Relocation Impact Report.* March.

[13] AECOM. 2017. *Right-of-Way Study.* February.

minority and low-income residents exceeds that of the County. Many parcel acquisitions would not directly impact environmental justice communities; vacant land and industrial facility uses are included in these tallies in addition to homes, businesses, and community facilities. However, the demographics of the populations in the immediate vicinity of the I-710 freeway are predominantly minority and low-income. With the application of standard mitigation via the Uniform Act, relocated persons and businesses would be compensated fairly and provided relocation assistance, and therefore, these relocations would not represent a disproportionate adverse impact to environmental justice populations. However, the localized impacts to community cohesion would represent a disproportionate adverse impact to environmental justice populations.

Two social-service locations would be adversely affected by one or both of the project alternatives: the Bell Shelter, the S. Mark Taper Foundation Shelter Resource Bank, and the Long Beach Multi-Service Center. Under Alternative 5C, the Bell Shelter facility would be avoided, but the Mark Taper Foundation Shelter Resource Bank (a nearby facility at the same street address that is owned by the Shelter Partnership and whose operations are interrelated with those of the Bell Shelter) would be partially acquired. Alternative 7 would require a partial acquisition of the Bell Shelter, and a full acquisition and relocation of both the Resource Bank and the Long Beach Multi-Service Center. In addition, the relocation or disruption of operations at the Resource Bank would also have indirect impacts to the operations of the Bell Shelter. The RIR recognizes that relocation of any of the above facilities would be difficult and does not identify specific locations for the relocation of these facilities. The Bell Shelter and Resource Center are located in a census tract that exceeds the Los Angeles County average percentage for both minority and low-income, and while the Long Beach Multi-Service Center is not, both facilities serve minority and low-income residents, as well as other vulnerable and disadvantaged populations. Although these impacts would be predominantly borne by environmental justice populations, with application of standard mitigation via the Uniform Act, these impacts would not represent a disproportionate adverse impact to environmental justice communities.

VISUAL IMPACTS

According to the *Visual Impact Assessment* (2017),[14] under both build alternatives, long-term visual impacts would occur that would result from the permanent alteration of the visual environment through the reconstruction of the freeway and associated bridges, interchange structures, retaining walls, and soundwalls. Generally, the freight corridor component of Alternative 7 would result in more impacts than those that would occur under Alternative 5C.

At all 25 Key View locations along the corridor, the visual impacts of the proposed build alternatives have been assessed and quantified. In nearly all cases, both build alternatives

[14] Tatsumi and Partners, Inc. 2017. *Visual Impact Assessment.*

would result in a visual impact classified as “low” or “moderately low.” The locations at which Alternative 7 would result in a slightly higher visual impact than Alternative 5C are at Key Views 6, 7, 9, and 13. Additionally, at Key View 24 (located at the intersection of Whittier Blvd. and Burger Ave. in East Los Angeles, immediately east of the I-710 mainline), Design Options 3A and 3B would result in a “moderate” visual impact. This Key View is located in a census tract in which both minority and low-income populations have been identified in percentages higher than the County average.

Although measures intended to avoid, minimize, and mitigate visual impacts have been identified (and some are incorporated into the design features of the build alternatives), the I-710 Corridor Project build alternatives would represent a change in the existing viewshed for residents, motorists, and other populations within the I-710 Corridor Project area. As the corridor consists of predominantly environmental justice populations, and the area of the greatest visual impact is also within a census tract identified as an environmental justice population, it can be reasonably concluded that the I-710 Corridor Project build alternatives would have a disproportionate and adverse visual impact to environmental justice communities.

HAZARDOUS WASTE

During the development of the *Initial Site Assessment* (ISA, March 2017),[15] a number of parcels to be acquired in full or in part for construction of either of the two build alternatives, or adjacent to those identified for acquisition, were identified as those of “potential environmental concern” based on a review of online maps, photographs, online databases, windshield surveys, and government records. A number of hazardous materials are expected to be encountered within the Study Area, including (but not limited to) aerially deposited lead, asbestos, lead-based paint, polychlorinated biphenyls, thermoplastic paint, utility lines, potentially contaminated soils and/or groundwater, landfills, railroads, and treated wood waste.

Generally, operation and maintenance of the proposed facility under either build alternative would not introduce new sources of hazardous materials or waste. Routine maintenance activities would be required to follow applicable regulations with respect to the handling and disposal of potentially hazardous materials. Vehicles traveling on I-710 would continue to transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources. However, one of the purposes of the I-710 Corridor Project is to improve traffic safety, which could reduce traffic incidents that could result in hazardous waste spills. Additionally, the transport of hazardous materials is subject to strict regulations. Caltrans, the California Highway Patrol, and local police and fire departments are trained in emergency response procedures for safely responding to accidental spills of hazardous substances on public roads, further reducing any impacts.

[15] AECOM. 2017. *Initial Site Assessment.* March.

Temporary hazardous waste risks associated with the build alternatives are related to property acquisitions and project construction. Parcels that would be potentially impacted by the proposed right-of-way requirements associated with the build alternatives have been identified in the ISA, and of those, properties with hazardous waste concerns are also identified. To ensure that no risk is posed to project construction workers and the general public during construction, any property acquired will require testing and, if necessary, a site-specific remediation plan and closure plan, if required, will be prepared to ensure the property is free of hazardous wastes prior to the start of any construction activities.

Under Alternative 5C, potentially affected parcels were preliminarily assessed and a risk level was assigned. General areas in which high-risk parcels are located include:

- East and west of I-710 between Anaheim St. and 17th St.
- East of I-710 between Wardlow Rd. and Carson St.
- North of I-405 between the Los Angeles River and the Metro Blue Line
- East of I-710 between W. Carson St. and the UP Railroad Overhead
- West of I-710 at Long Beach Blvd.
- East and west of I-710 along Southern Ave.
- East of I-710 at LAJ Railroad
- East of I-710 at Atlantic Blvd./Bandini Blvd.
- East and west of I-710 at Washington Blvd.
- West of I-710 at Eastern Ave. and Noakes St.

Under Alternative 7, potentially affected parcels were preliminarily assessed and a risk level was assigned. General areas in which high-risk parcels are located include:

- East and west of I-710 between Pier B St. and 17th St.
- East of I-710 at I-405
- North of I-405 between the Los Angeles River and the Metro Blue Line
- East of I-710 between W. Carson St. and the UP Railroad Overhead
- West of I-710 at Long Beach Blvd.
- East of I-710 at the intersection of Alondra Blvd. and Atlantic Pl.
- East of I-710 at Imperial Hwy.
- East and west of I-710 along Southern Ave.
- East of I-710 at Atlantic Blvd./Bandini Blvd.

- East and west of I-710 at Washington Blvd. (more high-risk parcels are captured under Alternative 7, Option 1B, than under Alternative 7 due to a shift in right of way)
- West of I-710 at Eastern Ave. and Noakes St.

Generally, in all of these areas with very few exceptions (such as west of I-710 between Anaheim St. and 17th St.), all of these high-risk parcels are located in areas where environmental justice populations, both minority and low-income, have been identified. In the areas at Washington Blvd. and Noakes St./Eastern Ave., only minority populations exceeding that of the County have been identified.

In addition, a list of all associated parcels for which insufficient information currently exists or is inaccessible for each build alternative is supplied in the ISA. A comparison of the listed locations to the maps of environmental justice communities previously identified indicates that every identified location at which insufficient information is available falls within a census tract that contains minority and/or low-income populations.

However, although many (if not all) of these potential locations of hazardous materials are located within areas of environmental justice populations, standard avoidance and minimization measures will be incorporated into the project that would ensure that the possibility of human exposure or disturbance of hazardous materials would be minimized or avoided to the greatest extent possible, prior to construction activities (refer to Section 3.12.4 for Measures HW-1 through HW-7). In addition, if a build alternative is not selected for construction, there would be no further research into potential contamination at these parcels and no remediation efforts would be undertaken. Therefore, with regards to environmental justice populations, neither of the I-710 Corridor Project build alternatives would have a disproportionate adverse impact after mitigation.

LAND USE

Impacts to land use (specifically, the conversion of various types of land use to transportation use) would occur at various locations up and down the corridor. Due to the addition of a four-lane freight corridor, Alternative 7 would have a greater impact to land use conversion than Alternative 5C. Generally, the largest areas of land use conversion would occur in the Cities of Bell, Commerce, Long Beach, and South Gate. With the exception of a few areas in Long Beach, each of these cities has substantial minority and/or low-income populations near the I-710 freeway.

PARKS AND RECREATION

The I-710 Corridor Project build alternatives would directly impact some parks, which may result in a net loss in recreational resources. These public parks in which direct impacts would occur are listed as follows.

- Cesar E. Chavez Park, 401 Golden Ave., City of Long Beach: Both I-710 Corridor Project build alternatives would result in direct impacts to this park; however, the reconfiguration/reconstruction of Shoreline Dr. would result in the unification of existing discontinuous parcels that would allow the public to access some parts of the park that are currently inaccessible. Due to the removal and consolidation of the existing Shoreline Dr. lanes, the park would experience a net increase in size of approximately three acres, and the increased access would allow for a functional park size of approximately 28 acres. Some impacts would occur during project construction; however, the project effects at Cesar E. Chavez Park would have a benefit to the nearby neighborhoods (which include minority and low-income environmental justice communities).
- Parque Dos Rios, Imperial Hwy. and I-710, City of South Gate: This is a planned park that is not yet under construction. Under Alternative 5C, 1.68 acres from the west side of this planned park would be permanently used. The impacts under Alternative 7 would render the park inaccessible and not functional and, therefore, permanently use the entire 8.6 acres of planned park space. This park is located in an area wherein the proportion of minority population exceeds that of the County. Mitigation measures are proposed that would relocate the park, but a suitable site has not yet been identified, and it is possible that a replacement site would not be located within the vicinity, resulting in a net loss of park space within this area of environmental justice populations.

Due to the land use conversion and park and recreational resource impacts described above, it can be concluded that with regards to land use and after mitigation, the I-710 Corridor Project build alternatives would have a disproportionately high and adverse impact to environmental justice populations. Alternative 7 would have a greater impact than Alternative 5C.

SUMMARY AND CONCLUSIONS

Overall, the I-710 Corridor Project would have many beneficial effects on the surrounding communities and I-710 corridor users when compared with current conditions, including reductions in emissions levels and associated health risk; abatement of freeway noise in most locations; and improved level of service at most intersections. In addition, programmatic elements of the project, such as the Community Health Benefit Program, would be of particular benefit to environmental justice communities although the effects cannot be quantified at this time due to the nature of the program (to provide funding for future improvements and/or health-related projects on a case-by-case basis). However, even with the application of these benefits, the environmental justice analysis for the I-710 Corridor Project has identified potential disproportionately high and adverse impacts on minority and low-income populations in the Study Area, after consideration of mitigation. These disproportionately high and adverse impacts have been identified for air quality (construction and operation), noise, traffic, community cohesion, visual resources, and land use.

Due to the potential for disproportionately high and adverse impacts, further mitigation is proposed to help alleviate project-related impacts to environmental justice communities. This mitigation would take the form of additional funding for the Community Health Benefit Program to fund projects that would improve air quality, public health, and other issues faced by environmental justice populations within the corridor. Funding preference would be given to projects benefitting environmental justice populations nearest the I-710 freeway facility.

NO BUILD ALTERNATIVE

Under Alternative 1, the I-710 Corridor Project benefits and impacts associated with environmental justice considerations discussed above for the build alternatives would not occur as a result of the I-710 Corridor Project. However, some beneficial effects would also not occur, including improvements to air quality after construction is complete, and the provision of the "Community Health Benefit Program" that is included within each build alternative, and is intended to fund projects that will have a beneficial effect on air quality and public health for communities within the I-710 Corridor.

3.3.3.6 PUBLIC HEALTH CONSIDERATIONS

Please refer to section 3.3.1.5 for a discussion of public health considerations related to environmental justice.

3.3.3.7 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The environmental justice analysis for the I-710 Corridor Project has identified potential disproportionate adverse impacts on minority and low-income populations in the Study Area under both build alternatives. Measures C-6 and C-7 provided below would address those impacts, and Measure C-8 would address impacts to sensitive receptors. Also, refer to Sections 3.13, Air Quality, and 3.14, Noise, for the discussion on measures that address impacts related to those topics.

C-6 To address disproportionate adverse noise impacts to environmental justice populations, interior noise abatement or other similar noise abatement/ attenuation measures will be provided for impacted receptors located in areas of environmental justice populations where noise barriers have been deemed acoustically not feasible. The design goal for these abatement measures is to reduce interior noise levels below 52 A-weighted decibels (dBA).

If Alternative 5C is selected as the preferred alternative, the impacted receptors within the following targeted areas would receive interior noise abatement:

- Along westbound Wardlow Rd. from I-710 to Delta Ave.; and
- Along the edge of shoulder along the southbound I-710 off-ramp at Eastern Ave.

If Alternative 7 is selected as the preferred alternative, the following targeted areas would receive interior noise abatement:

- Along westbound Wardlow Rd. from I-710 to Delta Ave.; and
- East of the Los Angeles River, along the northbound freight corridor between State Route 91 (SR-91) to Rosecrans Ave.

C-7 To address disproportionate impacts to environmental justice populations with regards to air quality, traffic, visual impacts, and land use/parks and recreation, funding will be provided to local jurisdictions for targeted improvements that would improve air quality and public health, reduce traffic congestion, provide aesthetic/visual enhancements, and improve parks and recreation. These improvements must be made within the United States Census Bureau census tracts adjacent to the I-710 freeway that have been identified as having a high percentage of minority and/or low income populations compared to the County of Los Angeles. These targeted improvements may include, but are not limited to, air filtration systems installation or upgrade, urban art installations and community events, landscaping, traffic calming measures, pedestrian/bicycle enhancement measures, and development of pocket parks or other park space. Funding for these targeted improvements will be made in the amount of up to 1 percent of the capital construction cost for either of the build alternatives. This funding will be provided through a funding agreement between the Los Angeles County Metropolitan Transportation Authority (Metro), Caltrans, and the affected local jurisdiction upon the commencement of construction within the limits of that local jurisdiction (in the event of staged construction).

C-8 In order to minimize human exposure to pollutants, upgraded or new filtration or heating, ventilation, and air conditioning (HVAC) systems will be provided for the following sensitive receptors that have been identified as falling within an area of pollutant increase under either of the build alternatives.

If Alternative 5C is selected as the preferred alternative, the following facilities would receive upgraded or new filtration or HVAC systems:

- Inclusion Specialized Programs LLC, Agra Ave., Bell Gardens
- Marlow Park Child Development Center, Bell Gardens
- Humphreys Elementary School, East Los Angeles

If Alternative 7 is selected as the preferred alternative, the following facilities would receive upgraded or new filtration or HVAC systems:

- YMCA GLB First Friendships State Preschool, Long Beach
- St. John's School, Long Beach
- RMR Residential Care Facilities, DeForest Ave., Long Beach
- Vista High School, Wright Rd., Lynwood
- Bell Gardens Elementary School, Bell Gardens
- Briarcrest Nursing Center Nursing Home, Bell Gardens
- Marlow Park Child Development Center, Bell Gardens
- Inclusion Specialized Programs LLC, Agra Ave., Bell Gardens
- Humphreys Elementary School, East Los Angeles

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3.4 UTILITY/EMERGENCY SERVICES

The information in this section is based on the following documents:

- *North Utility Study Final Draft Preliminary Strategies Report* (September 2016)
- *Utility Relocation Strategies Report, Central Segment* (June 2016)
- *South End Utility Study* (November 2016)
- *Community Impact Assessment* (CIA) (July 2017)

3.4.1 AFFECTED ENVIRONMENT

The physical impacts of the build alternatives related to emergency services and utilities would be largely limited to the proposed right of way for the Interstate 710 (I-710) Corridor Project build alternatives, the areas adjacent to the proposed improvements, and areas outside the right of way to where utilities may be relocated. As a result, discussion of the affected environment focuses on services within 0.5 mile of the proposed improvements and for utilities within the right of way or close enough to the right of way to be impacted by the build alternatives. The specific locations of public services and utilities were identified based on information provided by the respective providers. Because services and utilities are generally provided in fairly large geographic areas (a city or service area, for example), this section includes discussion of the larger service areas, as appropriate, to provide an appropriate context for the service providers or utilities, their facilities, and their services.

3.4.1.1 EMERGENCY SERVICES

FIRE PROTECTION. The following fire departments provide fire protection services in the Study Area.

LOS ANGELES COUNTY FIRE DEPARTMENT. The Los Angeles County Fire Department (LACFD) provides fire protection and suppression service for several cities within the Study Area. These cities include Bell, Bell Gardens, Carson, Commerce, Cudahy, Huntington Park, Lakewood, Lynwood, Maywood, Paramount, Signal Hill, and South Gate. Also, the LACFD provides its services within the Study Area, to the communities of Boyle Heights, East Los Angeles, San Pedro, and Wilmington. These cities and communities are part of LACFD's Consolidated Fire Protection District (CFPD), Battalions 3, 7, 9, 13, and 19.

The CFPD has the primary responsibility for emergency medical service and fire service in a total of 58 cities and the unincorporated areas of the County. Specialized services, such as hazardous materials, air rescue helicopter, air ambulance helicopter, and fire suppression helicopter are provided centrally by the CFPD. The following is a list of LACFD stations within 0.5 mile of the I-710 Corridor Project improvements.

- Fire Station 3, located at 930 S. Eastern Ave., Los Angeles
- Fire Station 54, located at 4867 Southern Ave., South Gate
- Fire Station 57, located at 5720 Gardendale St., South Gate

CITY OF COMPTON FIRE DEPARTMENT. The City of Compton Fire Department provides fire protection and emergency response services to residents and business within the limits of the City of Compton. The fire department ranks among the five busiest fire departments in California, responding to an average of 10,000 emergency calls per year. Within the City of Compton, there are four fire stations. None of these fire stations is located within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF DOWNEY FIRE DEPARTMENT. The City of Downey Fire Department is responsible for fire suppression services, emergency medical service response and basic life support, joint fire communications, fire prevention/arson, and emergency preparedness for the City of Downey. There are four fire stations located within the City of Downey, with approximately 100 staff members. None of these fire stations are located within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF LONG BEACH FIRE DEPARTMENT. The Long Beach Fire Department (LBFD) provides fire and emergency medical response, marine safety and lifeguards, fire prevention, hazardous materials spill response, and hazardous materials regulatory enforcement services within the City of Long Beach. The average citywide emergency response time from dispatch to arrival is less than five minutes. The LBFD's goal for emergency response times is to have the first engine arrive within four minutes of dispatch and the first paramedic rescue team arrive within eight minutes. The following fire stations are located within 0.5 mile of the I-710 Corridor Project improvements:

- **Station 1:** Located at 100 Magnolia Ave.
- **Station 3:** Located at 1222 Daisy Ave.
- **Station 11:** Located at 160 E. Market St.
- **Station 12:** Located at 1199 E. Artesia Blvd.
- **Station 13:** Located at 2475 Adriatic Ave.

CITY OF LOS ANGELES FIRE DEPARTMENT. The Los Angeles Fire Department (LAFD) has a total of 106 fire stations citywide. Services include fire prevention, firefighting, emergency medical care, technical rescue, hazardous materials mitigation, disaster response, public education, and community service. Within the Study Area, the LAFD provides services to the communities of Boyle Heights, Wilmington, and San Pedro; there are no are stations located within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF VERNON FIRE DEPARTMENT. The City of Vernon has a Class I Fire Department that provides fire protection and suppression services in the City of Vernon, as well as emergency response. The Vernon Fire Department also has two specialty programs: Urban Search and Rescue and Hazardous Materials Teams. The Vernon Fire Department maintains four fire stations in the city (Fire Station Nos. 1–4). Fire Station No. 4, located at 4530 Bandini Blvd., is the only station located within 0.5 mile of the I-710 Corridor Project improvements.

LAW ENFORCEMENT. The following police departments provide law enforcement and patrol services in the Study Area.

CITY OF BELL POLICE DEPARTMENT. The City of Bell provides its own law enforcement and patrol services through the Bell Police Department. The police station is located at 6326 Pine Ave. and is not within 0.5 mile of the proposed I-710 Corridor Project improvements.

CITY OF BELL GARDENS POLICE DEPARTMENT. The City of Bell Gardens Police Department provides law enforcement services within the City of Bell Gardens. The station is located at 7100 S. Garfield Ave. and is not within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF DOWNEY POLICE DEPARTMENT. The Downey Police Department provides law enforcement services within the City of Downey. The Police Department is located at 11111 Brookshire Ave. and is not located within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF HUNTINGTON PARK POLICE DEPARTMENT. The Huntington Park Police Department provides law enforcement services within the City of Huntington Park. The station is located at 6550 Miles Ave. and is not located within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF LONG BEACH POLICE DEPARTMENT. The City of Long Beach is served by the Long Beach Police Department (LBPD), which is made up of five bureaus: the Investigation Bureau, the Financial Bureau, the Support Bureau, the Patrol Bureau, and the Administration Bureau. There are four stations within the city; the LBPD Public Safety Building, located at 400 W. Broadway St., and the LBPD West Division, located at 1835 Santa Fe Ave., are the only stations located within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF LOS ANGELES POLICE DEPARTMENT. The City of Los Angeles Police Department provides law enforcements services in the communities of Boyle Heights, Wilmington, and San Pedro within the Study Area. There is one station in Boyle Heights and eight stations in Wilmington and San Pedro; none of these stations are located within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF SIGNAL HILL POLICE DEPARTMENT. The Signal Hill Police Department provides law enforcement within the City of Signal Hill. There is one station located at 2745 Walnut Ave., and it is not located within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF SOUTH GATE POLICE DEPARTMENT. The City of South Gate has its own police department that provides law enforcement services within the City of South Gate. The City of South Gate Police Station is located at 8620 California Ave., and is not located within 0.5 mile of the I-710 Corridor Project improvements.

CITY OF VERNON POLICE DEPARTMENT. The Vernon Police Department provides law enforcement services within the City of Vernon. The Vernon Police Department is located at 4305 Santa Fe Ave. and is not located within 0.5 mile of the I-710 Corridor Project improvements.

LOS ANGELES COUNTY SHERIFF'S DEPARTMENT. The Los Angeles County Sheriff's Department is the largest sheriff's department in the world. Within the Study Area, the Los Angeles County Sheriff Department serves the Cities of Carson, Commerce, Compton, East Los Angeles, Lakewood, Lynwood, Maywood, Cudahy, and Paramount. There are no stations located within 0.5 mile of the I-710 Corridor Project improvements.

3.4.1.2 UTILITY COMPANIES AND TYPES OF FACILITIES

Within the Study Area, local utility facilities are critical to municipalities and include power distribution systems, gas transmission pipelines, telephone systems, cable television (CATV) systems, water distribution mains, sanitary sewer mains, and city telecommunication systems. Regional facilities are critical to national and regional interests and include power transmission systems, gas transmission pipelines, petroleum pipelines, water aqueducts, and sewer interceptors. Descriptions and locations of the following utilities have been identified based on collected record data, field reconnaissance, and limited coordination with utility owners. Identification methods, such as potholing or surveying, were not used to verify the location of facilities at this stage of the I-710 Corridor Project improvements.

There are a total of 68 service providers in the Study Area, and they are listed below.

- American Telephone and Telegraph Company (AT&T) – Telephone
- Beta Offshore – Oil
- BP Pipelines, Inc. (BP) – Oil
- California Resources Corporation (CRC) – Oil
- California Water Service Company - Water
- Central Basin Municipal Water District – Water
- Century Link – Fiber Optic
- Charter Communications – Fiber Optic
- Chemoil Refining Corporation – Oil
- Chevron Pipeline Co. – Oil
- City of Bell – Sewer

- City of Carson – Water
- City of Commerce – Sewer
- City of Compton – Sewer
- City of Long Beach – Water, Sewer
- City of Lynwood – Sewer
- City of South Gate – Water, Sewer
- City of Vernon – Gas, Power
- Clear Channel Outdoor – Fiber Optic
- Conoco Phillips – Oil
- Crimson Pipeline – Oil
- Crown Castle – Fiber Optic
- Defense Logistics Agency (DLA) - Oil
- Equilon Enterprises – Oil
- Exxon Mobile – Oil
- Golden State Water – Water
- Kinder Morgan – Oil
- Level 3 – Fiber Optic
- Long Beach Gas & Oil – Gas, Oil
- Los Angeles County Public Works – Sewer Maintenance Dept. – Sewer
- Los Angeles County Public Works Storm Drain - Sewer
- Los Angeles County Sanitation District (LACSD) – Sewer
- Los Angeles Department of Water and Power (LADWP) – Power
- Los Angeles County Flood Control District (LACFCD) – Water
- Maywood Mutual Water Company – Water
- Metropolitan Water District of Southern California (MWDSC) – Water
- Mobile Pacific Pipeline – Oil
- Oil Operators, Inc. – Oil
- Pacific Energy – Oil
- Pacific Pipeline System – Oil
- Pacific Terminals – Oil
- Paramount Petroleum – Oil
- Park Water Company – Water
- Petro Diamond – Oil
- Plains All American Pipelines – Oil
- Praxair – Oil
- Qwest – Telecom
- Shell Oil Pipeline – Oil
- Southern California Edison (SCE) – Power
- Southern California Gas Company (SCG) – Gas
- Sprint – Fiber Optic
- Sunesys Fiber Systems – Fiber Optic
- Tesoro Logistics – Oil
- Texaco – Oil
- Texaco, Humble, Unocal, Mobile, Shell (THUMS) – Oil
- Tidelands – Oil
- Time Warner Cable – CATV
- Tract 180 Mutual Water Company – Water
- Ultramar Refining – Oil
- United Cable – CATV
- Valero – Oil
- Verizon Business – Fiber Optic
- Verizon Local – Fiber Optic
- Verizon Wireless – Fiber Optic
- World Oil Marketing Company – Oil
- XO Communications – Fiber Optic
- Zayo Fiber Solutions – Fiber Optic

3.4.2 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to Utilities and Emergency Services are located in Section 3.24.3.4.

3.4.2.1 EMERGENCY SERVICES

PERMANENT IMPACTS.

ALTERNATIVE 5C. Both beneficial and adverse effects on fire protection and law enforcement protection service providers within the Study Area would occur under Alternative 5C. Beneficial effects include improved emergency response times, as the ability to move fire protection, law enforcement, and emergency service resources from one area to another would be enhanced by the improved transportation network. There are no hospitals or law enforcement facilities located within 0.5 mile of the I-710 Corridor Project improvements under Alternative 5C that would be directly or indirectly impacted as a result of the build alternatives. However, Alternative 5C would result in a direct impact to the Vernon Fire Station No. 4, located at 4530 Bandini Blvd. The proposed improvements for the on- and off-ramps at the Atlantic Blvd./Bandini Blvd. local interchange would require additional right of way, including the parcel occupied by the fire station, requiring the relocation of the station. In addition, the following changes in access would reduce access options and could increase response times on emergency calls that would otherwise have used these ramps as part of the response route.

- Under all build alternatives, the two ramps and collector distributor roads at the I-710/ Wardlow Rd. partial interchange would be removed. Traffic would be redirected one mile east to the Long Beach Blvd. interchange, which provides the closest circulation between Wardlow Rd. and I-710.
- The Pacific Pl. interchange is a partial interchange providing connectivity to both Interstate 405 (I-405) and I-710. Under all build alternatives, direct circulation between I-710 and Pacific Pl. would be eliminated. Traffic would be diverted to adjacent interchanges. Located 0.5 mile south of Pacific Pl., the Long Beach Blvd. interchange provides the closest circulation between Pacific Pl. and I-710.
- Under all build alternatives, access from 9th St. and 10th St. to I-710 in the City of Long Beach would be removed. Traffic would be redirected approximately 1,000 feet north to Anaheim St, which provides the closest circulation.

Alternative 5C, Option 1A, would generally retain the interchange and access configurations that are proposed under Alternative 5C within the Cities of Bell, Commerce, and Vernon and would therefore, not result in additional impacts to emergency services.

Alternative 5C, Option 2A, would also generally retain the interchange and access configurations within the City of Long Beach that are proposed under Alternative 5C and would therefore, not result in additional impacts to emergency services.

Alternative 5C, Option 3A, would reconfigure the interchange and access configurations within the City of Commerce and Community of East Los Angeles. Southbound exit and entrance ramps at Eastern Ave. would be removed and replaced with ramps terminating at Whittier Blvd., and the intersection of Whittier Ave. and Sydney Dr. would be removed. Therefore, the implementation of Option 3A would have additional impacts to emergency services associated with changes in access that reduce access options and potentially increase response times on emergency calls.

ALTERNATIVE 7. The same impacts to emergency services that would occur under Alternative 5C would occur under Alternative 7.

Alternative 7, Option 1B, would generally retain the interchange and access configurations that are proposed under Alternative 7 within the Cities of Bell, Commerce, and Vernon and would therefore, not result in additional impacts to emergency services.

Alternative 7, Option 3B, would reconfigure the interchange and access configurations within the City of Commerce and Community of East Los Angeles in a manner similar to what is described above under Alternative 5C, Option 3A. Therefore, the implementation of Option 3B would have additional impacts to emergency services associated with changes in access that reduce access options and potentially increase response times on emergency calls.

Alternative 7, Option 7ZE, is operational in nature and does not represent a difference in geometric design or access points than what is proposed under Alternative 7, and would therefore, not result in additional impacts to emergency services.

NO BUILD ALTERNATIVE. Alternative 1 would not result in the permanent impacts to emergency services described above as a result of the I-710 Corridor Project. Under Alternative 1, emergency services (police, fire and emergency vehicle services) may be delayed as traffic congestion worsens and the level of service (LOS) in the Study Area declines, resulting in adverse impacts to emergency services compared to conditions that would exist under Alternatives 5C and 7.

3.4.2.2 UTILITIES

Utilities in conflict with the build alternatives would either be relocated or protected in place. Further coordination is required with each owner to confirm the conflict and disposition strategy (i.e., whether they can be protected in place or relocated). Generally, all utility relocations are expected to occupy new or existing fee owned or easement rights of way or public rights of way. Listed below are the criteria that was established to generally define "major utilities", meaning utilities requiring significant effort to relocate in the field or those that need substantial coordination efforts with the utility companies.

- Communication lines containing 12 ducts or more
- Oil pipelines 16 inches or greater
- Water mains 30 inches or greater
- Sewer lines 42 inches or greater
- Power lines with voltages of 50 kilovolts or greater
- Gas pipelines 16 inches or greater

As described in Chapter 2.0 of this Recirculated Draft Environmental Impact Report/ Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS), as well as the technical studies listed above, several strategies have been considered for utilities impacted as a result of the project. These strategies include (1) protect in place, (2) continuous aboveground relocation, and (3) continuous underground relocation. Further coordination with each service owner would be required during final design to confirm the impacts and strategy for relocation.

PERMANENT IMPACTS.

ALTERNATIVE 5C. Impacts to major regional facilities as a result of Alternative 5C are discussed below. Please note that the utility reference numbers (generally a four-digit number preceded by the letter N, C, or S, indicating north, central, or south, respectively) cited throughout this section correspond to those used in the various utility studies referenced in Section 3.4, above.

AT&T. Alternative 5C would result in impacts to several twelve-duct sets of underground AT&T lines that are located at the following locations: along Clara St. at the I-710 crossing, along Florence Ave. at the I-710/Los Angeles River crossing, along Gage Ave. at the I-710 crossing, and an underground duct bank containing 20 inactive ducts along Slauson Ave. at the I-710 crossing. The demolition and reconstruction of these structures would necessitate relocation of these utility lines, and each are proposed to be rerouted underground through a combination of open trenching and directional boring. Relocation of these facilities could result in the installation of permanent vault

structures to be constructed east and west of the freeway and/or river to install the new lines within the bored segment. No additional right of way would be acquired, but a permanent easement would be needed at the Thunderbird Villa Mobile Home Park community for construction of new lines along Florence Ave. within the property, as well as underground easements from the United States Army Corps of Engineers (USACE) and/or the LACFCD and the LADWP for the segments of the relocated lines within the limits of the Los Angeles River.

Two four-inch polyvinyl chloride (PVC) fiber ducts (C2704) currently cross I-710 at the north side of Artesia Blvd., which is proposed to be replaced under Alternative 5C. To relocate these facilities with no down time, a two-stage strategy is proposed that would construct the south side of the structure first, then relocate the lines to the south side. The existing north conduit would be connected to the east and cross the south side of Alondra Blvd., at which point it would cross I-710 and the Los Angeles River and connect back to the existing conduit on the north side of Alondra Blvd. Various new underground easements and/or encroachment permits would be necessary.

Eighteen four-inch duct trunk lines (C2701) crossing I-710 at Alondra Blvd. within the Cities of Paramount and Compton would be impacted by the proposed reconstruction of the Alondra Blvd. structure under Alternative 5C. The utility would be relocated within the new structure via a two-stage construction strategy. The lines would remain in place on the north side of the structure, and upon the construction of the south side of the structure, would be relocated. The existing north conduit would be connected to the east and cross the south side of Alondra Blvd., where it would cross I-710 and the Los Angeles River and connect back to the existing conduit on the north side of Alondra Blvd. at Atlantic Place.

LACSD. Two major existing LACSD facilities within the City of South Gate would be impacted by Alternative 5C. A 45-inch line crossing the California Department of Transportation (Caltrans) right of way south of Southern Ave. and a 45-inch line running along Southern Ave. west of I-710 would both be protected in place.

Utility conflicts C4101, C4102, C4103, and C4104 would all have similar impacts and relocation strategies. The LACSD facility being impacted is a 63-inch reinforced concrete pipe (RCP) crossing I-710 south of Long Beach Blvd. In order to avoid conflicts between the proposed on- and off-ramp locations, the existing pipeline would be relocated to the north, where the proposed profile climbs and a greater amount of cover would be provided. A new easement would be necessary. Additionally, conflict C4105 would impact the 63-inch RCP to the west of I-710, crossing Long Beach Blvd., and the proposed on- and off-ramp location profiles directly impact the facility here as well. Therefore, prior to construction, the sewer would be trenched and buried along the

proposed alignment and profile that would not conflict with the proposed geometry at this location. A new easement at this location would be required as well.

There is an LACSD pumping plant/pump station on Gaylord St. Under Alternative 5C, an existing 36-inch overflow pipe to the Los Angeles River would be impacted by the location of proposed ramps, and an existing manhole serving the outflow would require relocation. However, under Alternative 5C, Design Option 2A, the right of way line extends further to the west and would require the existing surge tank, manifold structure, and in-flow junction structures to be relocated and reconnected to new and existing facilities. The wet well is proposed to be eight feet from the southbound Anaheim St. off-ramp. The pump station must be kept operational as a standby facility.

SCE TRANSMISSION. A summary of the conflicts and impacts to SCE transmission lines under Alternative 5C is provided as follows:

A 66-kilovolt aerial transmission system (S2005) running along the west side of the Los Angeles River from the Pico Substation, south of Ocean Blvd., to Willow St. Conflicts between the transmission lines and the proposed Alternative 5C design would occur at Shoemaker Bridge, from the south side of Anaheim St. through the Tidelands property to Gaylord St., and from 20th St. to Willow St. The relocation strategy proposes that the system follow the same alignment as the existing system. It would be relocated underground in a casing underneath Shoemaker Bridge, and rise up aerially on new poles between the widened I-710 mainline and the Los Angeles River access road. It would continue aerially to cross I-710 at 25th St., and then go west of the proposed southbound ramp to transition back to Willow St. and tie back into the existing system. This relocation would require engineered steel pole replacements of the existing poles.

Conflict S2008A consists of a 12-kilovolt overhead system north of Pier C St. crossing the Los Angeles River, south of the existing Shoemaker Bridge. The system would be in conflict with the realignment of Shoemaker Bridge. The relocation strategy consists of intercepting the line between I-710 and the Los Angeles River and undergrounding it southerly to the existing utility bridge, wherein it would tie into the bridge and cross the Los Angeles River. On the south side of the river, it would remain underground where it would cross under Shoreline Dr. via directional bore, then turn north to tie into the existing overhead lines just north of 6th St.

S2010 consists of a 12-kilovolt aerial system crossing I-710 between 10th St. and 11th St. that would be impacted by the expanded freeway footprint at this location. This system would be removed and back fed from the south.

S2011A is a 12-kilovolt aerial system paralleling Fashion Ave. spanning over Anaheim St., which would be impacted by the widening of Anaheim St. under Alternative 5C.

Therefore, an in-line aerial relocation would be necessary in order to span the widened roadway.

Utility conflict S2012 consists of a four-kilovolt and 12-kilovolt underground system in the Anaheim St. bridge structure that crosses I-710 and the Los Angeles River. As the Anaheim St. overcrossing is proposed to be replaced under Alternative 5C, the system would be impacted at this location. It is proposed that the system would be relocated to an aerial crossing over I-710 and the river at Cowles St., approximately 700 feet to the north. East of the Los Angeles River, the system would be relocated to San Francisco Ave., which runs north-south paralleling the river, and proceed south to tie into the existing system at Anaheim St. This relocation would require new poles from Fashion Ave. to San Francisco Ave., with a new pole between I-710 and the Los Angeles River access road. This system would also share poles with utility conflict number S2014 and S2015 (see below). In addition, this system could be moved on an interim basis and then permanently placed in the Anaheim St. overcrossing structure once complete.

Conflicts S2014 and S2015 are 66-kilovolt aerial systems crossing I-710 and the Los Angeles River at Cowles St. As the proposed I-710 mainline widening and northbound on-ramp from Anaheim St. would be in conflict with these systems, they would be adjusted in the same general alignment. New engineered steel poles would be needed from Fashion Ave. on the west to San Francisco Ave. on the east, and a new pole would be necessary between I-710 and the Los Angeles River access road.

A 12-kilovolt aerial system crosses I-710 and the Los Angeles River at 15th St. (S2017). Under Alternative 5C, the mainline widening and ramps at Pacific Coast Hwy. and Anaheim St. would impact this system. To relocate this system, it would be rerouted north along Fashion Ave. to Gaylord St., where it would then turn east and cross I-710 on a new pole east of the freeway, then cross the Los Angeles River to connect with an existing north-south system on the east side of the river to tie into the existing facility.

The Pacific Coast Hwy. overcrossing widening proposed under Alternative 5C would be in conflict with a 66-kilovolt aerial system (S2021B) that runs parallel to and just north of Pacific Coast Hwy. across I-710 and the Los Angeles River. In order to avoid multiple costly relocations of the system, the south half of the Pacific Coast Hwy. overcrossing structure would be constructed first to allow for an underground relocation in the south half of the bridge, between Harbor Ave. west of the Los Angeles River and Golden Ave. to the east. On joint poles with S2021A is a 12-kilovolt system (S2022A) that would be impacted and relocated in a similar fashion, but would require an independent bridge cell than that of S2021A within the Pacific Coast Hwy. overcrossing structure. The bridge cell containing S2022A would also contain the relocation of conflict S2022B, a 12-kilovolt underground system that would be impacted and relocated similarly to S2022A.

An aerial service drop (S2024) feeding the LACSD pump station would be impacted by the relocation of the station (see above for further details) and be relocated to tie into the revised location of the pump station. In addition, conflicts S2025 and S2031 are both 12-kilovolt underground systems feeding the pump stations east of 19th St. and east of 27th St., respectively. The pump stations would be removed and/or relocated due to the improvements under Alternative 5C, thereby necessitating the removal of these facilities and the associated conflict.

A 66-kilovolt aerial system crossing I-710 and the Los Angeles River at Spring St. (S2033) would be impacted by the proposed truck bypass lanes under Alternative 5C. The existing pole at the east end of Spring St. would be within the proposed right of way. The relocation strategy for this conflict requires a new pole on Spring St. east of Gale Ave. and new conductors between the existing pole west of Gale Ave. and the existing pole east of I-710. On joint poles with this system are two other 66-kilovolt systems (S2034 and S2035) that share the same impacts and would also share the relocation strategy.

A four-kilovolt aerial system (S2036) crosses I-710 to feed the Gage Station facility at the Los Angeles River. This system would be impacted by the proposed mainline widening under Alternative 5C and truck bypass lanes. The proposed relocation strategy would require a new pole at the end of 33rd St., as well as a new pole on the east side of I-710 within LACFCD right of way.

A 12-kilovolt aerial system (S2037) crosses I-710 and the Los Angeles River at 34th St. and would be impacted by the proposed mainline widening under Alternative 5C. The aerial relocation strategy would be generally in line with the existing alignment and would require two new poles on 34th St. along with a new pole between I-710 and the Los Angeles River.

A 12-kilovolt system (S2040) on joint poles with a dual-circuit 66-kilovolt aerial system (S2042) runs on the north side of Wardlow Rd. just west of I-710. S2040 would need to be relocated away from the edges of the I-710 mainline widening proposed under Alternative 5C, and would require one additional pole from just west of Delta St. to just east of Caspian Ave. S2042 would require four additional poles to relocate.

The 66-kilovolt overhead lines (N2002) crossing I-710 at Southern Ave. would be impacted by Alternative 5C as they would be in direct conflict with the new Southern Ave. overcrossing and the adjacent elevated roadway segments on either side of the bridge. These existing lines would be relocated underground across I-710, the existing LADWP transmission corridor, and the Los Angeles River. The existing lines and their supports would be removed along Southern Ave., from the existing pole on Burtis St. on the west to the existing pole located 250 feet west of Garfield Ave. on the east. A

ten-foot easement would be needed from USACE and/or LACFCD for the portion of the line under the Los Angeles River and a 20-foot easement would be needed for the portion of the line under the LADWP transmission corridor. A utility easement or right of way corridor between the existing LADWP transmission corridor and the freeway right of way would be needed; the vacant land in this area is currently owned by the City of South Gate.

Two 66-kilovolt overhead lines (N2003) crossing I-710 south of the existing Union Pacific Railroad (UP Railroad) West Santa Ana Branch crossing north of Firestone would be impacted by Alternative 5C. The existing lines would be too close to the new railroad bridge structure over I-710 to meet appropriate SCE and UP Railroad horizontal clearance requirements. Therefore, the existing lines would be rerouted over to the north side of the existing tracks and relocated underground along the north side of the existing railroad corridor, using a directional bore under I-710, the LADWP transmission corridor, and the Los Angeles River. The existing overhead lines and their supports would be removed between the existing pole located at the Rayo Ave. cul-de-sac on the west to the second existing pole east of I-710 on the east. Permanent vault structures and riser poles would serve to transition the lines back overhead. Additional right of way requirements are similar to what is discussed above for the 66-kilovolt overhead lines at Southern Ave., with the addition of a permanent 20-foot-wide easement and a permanent access easement that are needed from the Armstrong World Industries parcel adjacent to the railroad right of way, and utility license agreements from the UP Railroad.

The 66-kilovolt overhead lines (N2006) crossing I-710 north of the Florence Ave. overcrossing would be in direct conflict with the proposed Florence Ave. interchange ramps. These lines would be undergrounded in a similar manner to what is described above, and the supports and lines would be removed along Florence Ave. from the existing riser pole located between Chanslor Ave. and River Dr., on the west, to the existing riser pole located just east of the existing northbound I-710 off-ramp terminus, on the east. Right of way requirements would be similar to those described above, with the addition of a permanent fee take or easement within the existing IHOP parcel on the northwest corner of Florence Ave./Eastern Ave. to accommodate the proposed vault structure. The vault would be located within the existing parking lot and would not impact the existing building or the business operation.

The circuit 66-kilovolt overhead line (C2014) crossing I-710 at 208th St. would need to be raised over the existing railroad tracks and I-710 in order to provide appropriate clearance for the new railroad bridge structure and freeway alterations. The existing lines would remain in their current alignment with taller poles being installed, replacing the existing poles. No additional right of way is required.

Two circuit 66-kilovolt overhead lines (C2015 and C2016) crossing I-710 at Long Beach Blvd. and paralleling the northbound I-710 to Artesia Blvd. and State Route 91 (SR-91) ramp would be in direct conflict with the proposed widening under Alternative 5C. They are proposed to be relocated underground across the freeway right of way and within the SCE Transmission Fee parcels via trenching and boring. The existing overhead lines and supports would be removed and undergrounded, including the construction of temporary bore pits, permanent vault structures, and riser poles both west of the I-710 north of Long Beach Blvd. and east of I-710 north of SR-91. Overhead relocation of the lines would not be possible due to the area restriction caused by the I-710 footprint expansion and other existing aerial 220-kilovolt circuits. No additional right of way would be required.

The two circuit 66-kilovolt overhead lines (C2017) crossing I-710 north of SR-91 would be in direct conflict with the proposed widened freeway footprint under Alternative 5C. These lines currently connect to the existing overhead lines within the SCE fee parcels north of SR-91 and east of I-710. New, taller steel poles east and west of I-710 within the existing circuit alignment would be installed. No additional right of way is required.

Two circuit 220-kilovolt overhead lines (C2018 and C2019) crossing I-710 north of SR-91 would be in direct conflict with the freeway expansion proposed under Alternative 5C. New foundations, poles, and conductors would be installed, and no additional right of way would be required.

Poles (C2020) supporting the two circuit 66-kilovolt overhead lines crossing I-710 north of SR-91 would be in direct conflict with the expansion proposed under Alternative 5C. New foundations, poles and conductors would be installed, and no additional right of way would be required.

Two circuit 66-kilovolt overhead lines (C2021) crossing I-710 south of Alondra Blvd. would be in direct conflict with the proposed freeway footprint under Alternative 5C. New, taller steel poles would be installed in the same alignment as the existing poles, and new conductors would be installed. No additional right of way would be required.

Two circuit 66-kilovolt overhead lines (C2022) crossing I-710 at Carson St. would be in direct conflict with the new overcrossing and adjacent elevated roadway segments on either side of the bridge. The lines would be raised across I-710 and installed along the same alignment, not necessitating additional right of way.

LONG BEACH GAS & OIL. Alternative 5C would impact various Long Beach Gas and Oil facilities as follows:

An eight-inch and 12-inch high pressure gas line (C1112) crossing I-710 and running across Long Beach Blvd. would be impacted by the structure replacement proposed under Alternative 5C. Therefore, a two-stage relocation strategy is proposed that would install the eight-inch and 12-inch lines on the north side of the structure once constructed, then tied into the existing lines. A new easement would be required for the relocation of the lines. Another similar conflict (C1113) of an eight-inch and ten-inch line crossing I-710 and running along Artesia Blvd. would be impacted and relocated in the same manner

VERIZON. Some of the facilities that follow were formerly owned by Verizon and are now owned by Frontier Communications, who provides service within parts of the Study Area.

A copper and fiber underground communications system (S2400) on the north of the Anaheim St. overcrossing and bridge over the Los Angeles River would be impacted by the replacement of the Anaheim St. structure under Alternative 5C. The system would be relocated to the south side of the structure between Harbor Ave. and east of San Francisco Ave., utilizing a two-phased construction method.

A small aerial copper line (S2401) currently runs parallel to Anaheim St. and the southbound I-710 on-ramp between Fashion Ave. and Harbor Ave. The existing poles would conflict with the reconfiguration of the interchange and new poles are, therefore, required. The existing copper line can likely be transferred to the new poles.

A copper and fiber aerial communication system (S2402) runs just outside the western edge of the I-710 in the backyards of homes adjacent to the I-710 right of way between 19th St. and Burnett St. A short stretch of this line, between 23rd St. and Burnett St., is in conflict with the improvements proposed under Alternative 5C, and would need to be realigned or adjusted accordingly, with one to two poles being relocated just west of their present location.

A copper and fiber system (S2404) on the south half of the Willow St. overcrossing over I-710 and the Los Angeles River would be impacted by the reconstruction of the Willow St. structures and, therefore, relocated to the north side of the structure, utilizing a two-phased construction strategy wherein the north half of the Willow St. structure would be constructed first in order to avoid interim relocations.

A small copper line (S2405) on poles with the S2036 aerial system (see SCE section) crossing the I-710 to feed a facility at the Los Angeles River would be impacted by this alternative. The system would be in conflict with the proposed footprint under Alternative 5C. The relocation would require a new pole at the end of 33rd St. to the west and a new pole on the east side of I-710 opposite 33rd St., generally in line with the existing system.

A large underground communication system (S2410) currently exists in the middle of Wardlow Rd., which would be impacted by the proposed reconstruction of the Wardlow Rd. structure under Alternative 5C. The system is proposed to be relocated into the north half of Wardlow Rd. utilizing a two-phased construction strategy wherein the north side of the structure would be built first. The design and construction of this relocation are highly complex and require significant lead times for both phases, as well as for the placing and splicing of new communication lines.

An aerial service line (S2411) is located on joint poles with S2040 (see SCE discussion) and would be relocated further north between Delta St. and Caspian Ave., as well as pulled back one pole at the northwest quadrant of Wardlow Rd. and I-710 to avoid the proposed Alternative 5C footprint.

A four 4,000-strand fiber-optic cable (C2401) is currently located in the bridge structure at Long Beach Blvd. and I-710. The structure is proposed to be replaced under Alternative 5C; therefore, the lines must be relocated. Construction would be staged so that half of the bridge would be replaced at a given time, and the existing lines would be relocated to the other side of the bridge temporarily so that service is not interrupted. The conduit and fiber-optics can be set in place and connected when the second stage of construction begins. New easements may be needed. Utility conflict number C2402, a four-inch duct with a 480-strand fiber-optic cable located at Del Amo Blvd. and I-710 would be impacted and relocated in a similar fashion.

CHARTER COMMUNICATIONS. Impacts to Charter Communications facilities under Alternative 5C are as follows:

A copper CATV aerial system (S2500) runs just outside the westerly edge of the I-710 right of way between 19th St. and Burnett St. A short stretch of this system (between 23rd St. and Burnett St.) is in conflict with proposed improvements under Alternative 5C and would, therefore, relocate one to two poles just west of their present locations.

An aerial fiber line (S2504) located on SCE poles along Wardlow Rd. would be relocated to avoid conflicts with the proposed geometry under Alternative 5C. When that relocation occurs, Charter would need to de- and re-flash their cable to attach to the new poles.

A fiber system (S2505) in the south half of the Willow St. overcrossing and bridge structure crossing I-710 and the Los Angeles River would be impacted due to the reconstruction of the Willow St. structures and interchange under Alternative 5C. The system would ultimately be relocated to the north half of the Willow St. structures utilizing a two-phased construction strategy that would construct the bridge one half at a time and the north half first, thereby avoiding interim relocations.

SOUTHERN CALIFORNIA GAS COMPANY. A 26-inch steel high pressure gas line (C1101) crossing both I-405 and I-710 would be impacted by the proposed connection between southbound I-710 to southbound I-405. Therefore, a new 26-inch encased pipe, perpendicular across I-405 and I-710 would be bored and designed in a sweep configuration to avoid the proposed connector. Easements from Caltrans and private property in the vicinity would be required.

A 26-inch steel high pressure gas line (C1104 and C1106) crossing Del Amo Blvd. east of I-710 and south of Del Amo Blvd. would conflict with the proposed Del Amo Blvd. northbound I-710 on-ramp and widened Del Amo Blvd. at this location. The existing gas line would require the casing extended below the proposed roadway limits. Therefore, the casing to the south would be extended and the alignment would be straightened under the proposed road work on the north side of Del Amo Blvd. No additional right of way would be required.

A 26-inch steel high pressure gas line (C1105) crossing under I-710 at the Long Beach Blvd. northbound off-ramp and northbound loop on-ramp would be impacted by the proposed Long Beach Blvd. northbound off-ramp. Therefore, the existing line would be relocated and encased to remove angle points from within Caltrans right of way, protecting the line and making it serviceable in the future. New easements would be required at some locations.

A 30-inch steel high pressure gas line (C1109) on the south side of the Del Amo Blvd. undercrossing at I-710 may be impacted by the replacement of the structure over Del Amo Blvd. If the locations of the columns for this structure cannot avoid impacting the line, the line would be relocated to the south, parallel to the existing alignment. Any existing easement would then need to be replaced.

A regulator station for gas facilities (C1110) currently located outside of the roadway, near the back of the sidewalk at Del Amo Blvd. and Susana Rd. would be within the footprint of the improvements proposed by Alternative 5C. The regulator facility would be relocated outside of the proposed project footprint. A specific location has not yet been determined, and any existing easement would need to be replaced.

A 30-inch underground high-pressure gas line (N1101) crosses I-710 at Quinn St. and is encased within a 36-inch casing within the limits of the freeway right of way. Under Alternative 5C, I-710 would be reconstructed and widened at the location of this pipe crossing, and the depth of the existing gas line is assumed to be sufficient to accommodate the freeway reconstruction without impacting the pipe, thereby protecting the facility in place. If the existing pipe is not deep enough to pass under proposed retaining wall footings on either side of the proposed freeway, special wall/footing designs may be required to avoid the pipe.

A 26-inch underground high-pressure gas line (N1102) crosses I-710 at Sheila St., under the proposed I-710 mainline and connector bridges spanning over Hobart Yard. This pipe would be protected in place and proposed column footings adjacent to the pipe would be designed to avoid any physical conflicts with the existing pipe, and the top of the footing elevation would be below the existing pipe to avoid transfer of any bridge loading from column to pipe.

LADWP TRANSMISSION. No major LADWP facilities would be impacted under Alternative 5C. However, the LADWP's transmission line rights-of-way are integral components of its transmission line system, which provides electric power to the City of Los Angeles and other local communities. The use of those rights-of-way is under the jurisdiction of the Federal North American Electric Reliability Corporation (NERC). The safety and protection of the critical transmission facilities are the primary factors used to evaluate secondary land use proposals in the same rights-of-way. The rights-of-way are used by the LADWP for access, construction, maintenance, facility expansion, and emergency operations. As a result, it is possible that I-710 Corridor Project improvements within or immediately adjacent to LADWP transmission line rights-of-way could be subject to temporary disruption in the event LADWP needs to access its rights-of-way.

MWDSC. Conflict S3200B is an MWDSC facility north of Wardlow Rd. and south of the I-710/I-405 interchange. An existing 30-inch MWDSC line crosses under the Los Angeles River, continuing in the east-west direction where the discharge structure and air-vac assembly[1] are located both within existing and future Caltrans right of way. Under Alternative 5C, the valve would be relocated north of the existing MWDSC line and provide a new outlet to the Los Angeles River. The existing air-vac assembly would be relocated to Gale Ave.

An MWDSC 79-inch water line located within the existing electrical transmission corridor, that crosses I-710 south of Firestone Ave. within the City of South Gate, is located under the proposed Alternative 5C footprint. It is not within direct physical conflict with the proposed improvements, and is to be protected in place.

T-MOBILE. A cell tower site (S2600) is located just south of Willow St. and is in conflict with the ramp realignment proposed under Alternative 5C. In addition to the tower structure, the site typically includes electronic switching equipment for numerous carriers and mobile telephone companies. T-Mobile plans indicate that both Nextel and Sprint have facilities within this site location. The site is normally connected to cables for one or more providers which must also be taken into account when relocating the site and

[1] Air-Vacs, or Air-Vacuum release valves, are devices installed at high points in water pipelines that release accumulated air trapped in the pipeline, to prevent corrosion.

structure to the new location. Because of the complexities of this relocation, no specific relocation site has been yet identified based upon the 30 percent level of engineering that has been completed to date. A specific relocation site will be defined in the Specific Utility Relocation Plans to be prepared under Mitigation Measure U&ES-2 described at the end of this section.

XO COMMUNICATION. One XO Communication facility (C2901) would be impacted under Alternative 5C. An overhead fiber-optic 48- and 144-strand facility along the south side of Alondra Blvd. would be in direct conflict with the freeway widening at this area. The facility would be relocated as a part of the SCE pole line relocation at this location. No additional right of way would be required under this strategy.

KINDER MORGAN. An active 24-inch refined petroleum product pipeline (C6601) located in a 30-inch underground casing crossing I-710 next to the Del Amo Blvd. interchange, and extending southeast across the Los Angeles River, would be impacted under Alternative 5C. The proposed widening of I-710 at this location necessitates the relocation of the pipeline and block valve located on the west side of the I-710. A new 1,058-foot section of 16-inch pipeline and 921-foot casing would be installed, and the existing pipeline and casing would be removed or abandoned in place. The 24-inch block valve and enclosure to the west would be relocated westerly. A temporary construction easement, encroachment permit, and permanent utility easement would be necessary.

PLAINS ALL-AMERICAN PIPELINE LP. A 16-inch oil line, Plains Line 93 in crude oil service (C6801), runs underground and crosses I-710 south of Del Amo Blvd. on the south side of Compton Creek, within the Cities of Long Beach and Carson. Due to the addition of the Del Amo Blvd. northbound exit and the northbound truck bypass exit at Del Amo Blvd., the pipeline casing must be extended to match up to the proposed right of way limits under Alternative 5C. Modification of the pipeline is not physically practical, and so a new pipeline and casing under the I-710 must be installed. Therefore, a new bypass pipeline would be installed measuring 520 feet, encased in 498-foot 20-inch casing and tied into the existing pipeline as close to the freeway right of way as possible. Temporary construction and revised utility easements would be needed.

An active 16-inch steel hot oil fuel line (S6800) running in the east-west direction along 28th St., crossing I-710 and the Los Angeles River via an existing utility bridge with vaults located on either side of the river, would be impacted by this alternative. Two vaults are located on the west side, one of which is owned by Plains. This vault would be relocated to within LACFCD right of way.

A vault box (S6801), located within BP property on the westerly side of I-710 at the terminus of Burnett St., would also be impacted by this alternative. Incoming and

outgoing pipelines may be impacted by the Alternative 5C geometrics, but the vault would remain in place.

CHEVRON. Conflicts S7201 and S7202 are active six-inch welded steel lines running east-west along 28th St. There are a number of utility lines crossing I-710 and the Los Angeles River, running through an existing utility trestle, with vaults located on both the east and west side of the river. Twelve lines exist within the vault owned by five companies. Valves are assigned to each line within the vault on each side of the river at 28th St. The vault on the west side of the river would be relocated to LACFCD right of way towards the existing LACFCD maintenance road running along the western bank of the river.

Utility conflict C7202 is located at the intersection of I-710 and Imperial Hwy. There is one six-inch and one eight-inch underground pipeline that share a trench near the west side of the Los Angeles River that are impacted by the proposed northbound off-ramp to Imperial Hwy. In order to avoid the conflict within this restricted area, the pipelines would be extended north onto private property to Imperial Hwy., where they would be encased and installed in the new Imperial Hwy. overcrossing structure, then reconnected to the existing pipelines north of Imperial Hwy. Two new block valves and a related block valve box would be installed west of the Los Angeles River and north of Imperial Hwy. to complete the connection. An estimated 1,580 feet of additional private right of way would be required, along with various construction and utility easements.

CHEMOIL. An idle four-inch pipeline (S6105) runs in the east-west direction along Burnett St., perpendicular to I-710 and the Los Angeles River. An existing valve is located on the east and west sides of the river, part of a shared utility vault consisting of 12 oil lines owned by four different oil companies. Under Alternative 5C, the line on the west of the Los Angeles River would be in conflict with the proposed geometrics and therefore, relocated to LACFCD right of way.

An idle eight-inch line (S6106), six-inch line (S6107) and another eight-inch line (S6108) running in the east-west direction along 28th St. perpendicular to I-710 and the Los Angeles River. Each line also contains a valve on both sides of the river and are part of the shared utility vault consisting of 12 lines owned by five different companies. All existing lines on the west side of the river are in conflict with the Alternative 5C improvements and are proposed to be moved to within LACFCD right of way.

CRIMSON PIPELINE CO. An active four-inch line (S6203) running on the east side of I-710 and along the westerly bank of the Los Angeles River through the OXY facility would be impacted by the proposed column locations of the Shoemaker Bridge under Alternative 5C. The relocation must be coordinated with the OXY facility currently occupying the property.

An idle eight-inch line (S6204) running along Anaheim St. would be impacted by the replacement of the Anaheim St. structures proposed under Alternative 5C. The line would be relocated within the bridge limits.

An active ten-inch line (S6206), an idle six-inch line (S6207), and an idle six-inch line (S6208) running in the east-west direction within a utility vault containing 12 oil lines owned by five different companies, with valves accompanying the utility vault on both sides of the Los Angeles River at 28th St. The vault on the west side of the river is proposed to be relocated to LACFCD right of way due to conflicts with the proposed Alternative 5C geometrics.

An idle six-inch line (S6209) and an idle ten-inch line (S6210) runs in the east-west direction north of Wardlow Rd. An existing utility bridge would be demolished due to a conflict between it and the proposed I-710/I-405 interchange improvements under Alternative 5C. Three options for rerouting the pipelines have been developed that would avoid this conflict: Option 1 would relocate to Wardlow Rd. (via the Wardlow Bridge), Golden Ave., and Baker St. Option 2 would relocate to Wardlow Rd. (via the Wardlow Bridge), 500 feet west of Golden Ave. to Baker St. Option 3 would involve a 1,500-foot – long directional bore under I-710 and the Los Angeles River along Baker St. New utility easements would be necessary for whichever option is selected.

An existing utility vault (S6211) is located at the terminus of 28th St. on the east side of I-710. It is currently shared between 12 lines and five utility owners. Under the proposed Alternative 5C geometrics, this vault would be relocated.

TIDELANDS FACILITY. Conflict S7025 describes the Tidelands Facility, located west of I-710 between West Cowles St. and West Gaylord St. This facility consists of a total of 21 oil wells that are to be abandoned and relocated from the east side to the west side of I-710, between Cowels St. and Gaylord St. A Tidelands Well Bore Analysis was performed for the site in 2013 that contained a subsurface evaluation, feasibility, and cost analysis for the relocation. Several active production water and water injection lines service the existing facility and any within the proposed right of way under Alternative 5C would be removed or abandoned, and services provided from the west would be rerouted to the new Tidelands facility west of I-710, including conflict numbers S7021 (an active 12-inch steel produce water line), S7021A (an active four-inch line), S7022 (a water injection line), S7033 (an active production water line) and S7024 (an active steel oil line).

Associated with the Tidelands Facility are several lines within the facility owned and operated by the City of Lomita. Upon the relocation of the facility, all Lomita connections would be either abandoned or reestablished at the new Tidelands site under Alternative

5C or Alternative 5C, Design Option 2A, as the specific relocation would vary for each alternative but the general connection to the proposed site would be similarly configured.

OIL OPERATORS. An active ten-inch steel water line (S6500D) running in the east-west direction along Burnett St. perpendicular to I-710 and the Los Angeles River would be impacted at the west side of the river by the improvements proposed by Alternative 5C and would be relocated to LACFCD right of way, along with a vault containing existing valves.

An active 12-inch high density polyethylene (HDPE) water line (S6500B), an active eight-inch water line (S6500C), an active six-inch oil line (S6701), and an active eight-inch oil line (S6702) would be in conflict with the ramps to and from Pico Ave. and relocations would be coordinated with the Port of Long Beach so as to not conflict with other area improvements.

PARAMOUNT PETROLEUM. An active six-inch steel oil line (S6702A), running along Harbor Ave. and Fashion St. and turning 90 degrees west at Willow St., was relocated south of Willow St. into the adjacent alley, avoiding a partial longitudinal encroachment into future Caltrans right of way.

An active eight-inch steel oil line (S6703) running longitudinally to I-405 within Wardlow Rd., west of I-710, would require the relocation of a portion of the line within the southwest corner of the proposed I-710/I-405 interchange. The line is proposed to be re-routed further east along Wardlow Rd. and Delta Ave., connecting with the existing alignment before the I-405 approach. Encasement of the line within Caltrans right of way would also be extended further south.

SHELL OIL. An active 12-inch steel line (S6900) running east-west along 28th St. is one of several utility lines crossing I-710 and the Los Angeles River through an existing utility trestle, with vaults located on both sides of the river, and is one of 12 lines within the vault owned by five different companies. Valves are assigned to each line within the vault on each side of the river at 28th St. The vault on the west side of the river would be relocated to LACFCD right of way. Additionally, a Shell vault (S6901) located at 28th St. would also be relocated to LACFCD right of way and a shared ownership vault is proposed.

OCCIDENTAL PETROLEUM. Oxy's standard lease facility within LACFCD's boundary (S6600) is located along the west bank of the Los Angeles River between Ocean Blvd. and Anaheim St. The facility would be impacted by the proposed alignment of the replaced Shoemaker Bridge under Alternative 5C and four existing oil wells would be impacted and require relocation.

TESORO. The existing Tesoro Manifold meter is located within the vicinity of Burnett St. in Long Beach and, therefore, most of the Tesoro conflicts are located in this area. These conflicts include S7507, an active nine-inch welded steel pipe (WSP), S7508, an idle six-inch WSP, S7509, an idle 13-inch WSP, S7513, an idle eight-inch WSP, S7514, an active ten-inch WSP, and S7522, an active 12.75-inch steel line. These all cross the Los Angeles River through the utility trestle located at Burnett St. and utility vaults are located on both sides of the river. The west side vault is in conflict with the Alternative 5C improvements proposed and would be relocated to LACFCD right of way.

Idle eight-inch (S7511) and ten-inch (S7512) WSP lines currently run east of I-710 from 11th St. to Burnett St. Under Alternative 5C, the lines would both need to be relocated outside of the proposed Caltrans right of way. This relocation is proposed to be located along Fashion Ave. and Gale Ave., connecting to Burnett St.

Two idle 8.625-inch WSP lines (S7516 and S7517) are located on the west side of I-710 and additional casings for the lines may be required with the proposed right of way line under Alternative 5C.

ALTERNATIVE 7. Below is a focused discussion of the impacts to major regional facilities and utilities, including LADWP, SCE, Oxy Oil, Long Beach Gas & Oil, and SCG as a result of Alternative 7.

AT&T. Alternative 7 would result in the same impacts to facilities discussed under Alternative 5C; please refer to the previous discussion.

LACSD. The impacts to and relocation strategy of the pump station at Gaylord St. within the City of Long Beach would be similar to what is described above under Alternative 5C, Design Option 2A.

Alternative 7 would result in the same impacts to facilities discussed under Alternative 5C; please refer to the previous discussion. In addition, Alternative 7 would require the relocation of a 45-inch line running along Frontage Rd. East, also located within the City of South Gate, approximately ten feet to the east to avoid conflicts with the proposed freight corridor structure foundations. The relocation would be within the right of way of Frontage Rd. East, and no additional right of way would be required.

SCE. Alternative 7 would result in impacts to various SCE overhead lines within the Study Area. The following is a description of impacts associated with Alternative 7:

The impacts to facilities S2008A, S2010, S2011A, S2021B, S2022A, S2022B, S2025, S2040, S2042 are the same as under Alternative 5C, outlined above.

An aerial 66-kilovolt system (S2000) runs along the north side of Pico Ave. and is impacted by the proposed Alternative 7 improvements at the ramp to the Gerald Desmond Bridge and ramps to and from Pier B St. At the Gerald Desmond Bridge crossing, two new poles would need to be installed (one on each side of the ramp) to avoid the conflict, in generally the same alignment. The conflict near Pier B St. would require at least three new engineered steel poles, and possibly up to five, placed in line with the existing system. Conflict S2003 is another aerial 66-kilovolt system on joint poles with S2000 that would be impacted and adjusted in the same manner as described above for conflict S2000.

A 66-kilovolt aerial system (S2005) along the west side of the Los Angeles River running from the Pico Substation, south of Ocean Blvd., to Willow St. would be in conflict with the improvements proposed under Alternative 7 in several locations, including the northbound on-ramp from Pier B St., the freight corridor at Shoemaker Bridge, and the freight corridor from the Oxy Oil facility to Willow St. The relocation strategy proposed under Alternative 7 would be to relocate this system currently along the west edge of the Los Angeles River to the east side of the river, and underground from the Harbor Ave./ Pacific Coast Hwy. intersection and within the Pacific Coast Hwy. overcrossing/bridge structure across the Los Angeles River east to Magnolia Ave. At Magnolia Ave., the system would return overhead and continue south to 9th St. or Cypress Way, where it would underground again and turn west to Crystal Ct. or Daisy St. and proceed south again to 5th St. or 6th St. where it would connect to a new pole east of Shoreline Dr. and then span to connect to the Seabright Substation from the north. The system would then use existing poles from the Seabright Substation to cross the Los Angeles River to the Pico Substation west of the river. Engineered steel poles would be required of this relocation and new utility easements would be necessary.

An aerial 12-kilovolt system (S2011B) feeds the pump station between Gaylord St. and 16th St., which would be removed under the Alternative 7 improvements. Therefore, the aerial system would be removed as well.

A four-kilovolt and 12-kilovolt underground system within the Anaheim St. overcrossing/bridge over the I-710 and the Los Angeles River would be impacted by the replacement of Anaheim St. under Alternative 7. Therefore, the system would be relocated underground across I-710 and the river at Cowles St. via directional bore. West of the river, the system would run underground along Harbor Ave. from Anaheim St. to 14th St., and then east to Fashion Ave. also via directional bore starting at Cowles St. East of the river, the system would be relocated within San Francisco Ave. south to Anaheim St. This system would share the underground crossing with conflicts S2014 (a 66-kilovolt aerial system crossing I-710 and the Los Angeles River at Cowles St.), S2015 (a 66-kilovolt aerial system also crossing I-710 and the Los Angeles River at

Cowles St.), and S2017 (a 12-kilovolt aerial system crossing I-710 and the Los Angeles River at 15th St.)

A 66-kilovolt system (S2026) crossing I-710 and the Los Angeles River at Hill St. would be impacted by the proposed footprint under Alternative 7. The existing H-frame pole between I-710 and the Los Angeles River access road is impacted by the new right of way. West of the river, the system would be undergrounded at Hill St./Fashion Ave. and then cross I-710 and the Los Angeles River via directional bore. East of the river, the system would rise back up on an engineered steel pole at Hill St./San Francisco Ave. to tie back into the existing system. A four-kilovolt system (S2027) on joint poles with S2026 would be similarly impacted, and on the west, would be undergrounded at Hill St. just west of Gale Ave., and use a directional bore with S2028 (see below) to cross I-710 and the Los Angeles River. East of the river, the system would rise back up to a pole on DeForest Ave. just north of Hill St., and tie back into the existing system. S2028 is a 12-kilovolt system also on joint poles with S2027 and S2026 that crosses I-710 and the Los Angeles River at Hill St. West of the river, the system would be undergrounded at Hill St. just west of Gayle Ave., use a directional bore under the I-710 and Los Angeles River with S2027, and rise back up on an engineered steel pole on DeForest Ave. just north of Hill St. to tie back into the existing system.

A 66-kilovolt system (S2029) also crossing I-710 and the Los Angeles River at Hill St. jointly with S2026 would be impacted in a similar fashion as is described above. The strategy is as follows: to the west, the system would be undergrounded at Hill St./ Fashion Ave. and use a directional bore to cross I-710 and the Los Angeles River. East of the river, the system would rise back on an engineered steel pole at Hill St., just east of DeForest Ave., to tie into the existing system.

Two 66-kilovolt aerial systems (S2033 and S2035) cross I-710 and the Los Angeles River at Spring St. The existing pole at the east end of Spring St. is in conflict with the proposed freight corridor under Alternative 7. The avoidance strategy is to relocate the system underground at Spring St. and cross under the I-710 and the Los Angeles River via directional bore. West of the river, a new pole west of Gale Ave. would be required. East of the river, a new pole between DeForest Ave. and San Francisco Ave. would be required as well. A 12-kilovolt aerial system (S2034) crossing I-710 and the Los Angeles River at the same location as S2033 would be impacted and relocated in a similar manner, but the new pole would be required between San Francisco Ave. and Golden Ave.

A four-kilovolt aerial system (S2036) crossing I-710 to feed the Gage Station facility at the Los Angeles River would be in conflict with the proposed I-710 footprint and freight corridor under Alternative 7. The Gage Station would be relocated to the east side of the

Los Angeles River and a new underground four-kilovolt or 12-kilovolt system would be extended from 34th St. south along DeForest Ave. to the new Gage Station site. A new pole on 34th St. would be required.

A 12-kilovolt aerial system (S2037) crossing I-710 and the Los Angeles River at 34th St. would be directly impacted by the proposed freight corridor under Alternative 7. In order to avoid this conflict, the relocation would require a directional bore to underground the system beneath the I-710 and Los Angeles River. West of the river, a new vault at 34th St. and new pole on 34th St. west of Gale Ave. would be required. East of the river, a new vault and pole at the east edge of the greenbelt would be required. New utility easements would be necessary here.

Two 220-kilovolt circuits (C2003) paralleling the east side of I-710 from Long Beach Blvd. to north of SR-91 would be too close to the new freight corridor structure and the expanded mainline footprint proposed under Alternative 7 to meet appropriate SCE horizontal clearance requirements. The lines would be relocated in order to eliminate overhead encumbrances and facilitate the construction of the new freeway and freight corridor structures. The lines would be relocated easterly within the SCE Fee Parcels, and taller poles would be installed, replacing the existing poles. No additional right of way would be required.

Seven 66-kilovolt circuits (C2004) supported on H-frame towers paralleling the east side of the I-710 crossing Artesia Blvd. and SR-91 would be in conflict with the freeway expansion and freight corridor proposed under Alternative 7. Therefore, the existing lines would be undergrounded and support structures removed. The 220-kilovolt closest to the I-710 (see C2208 below) would be relocated to the east to avoid impacting the proposed widening and use the existing H-frame area to accommodate the proposed relocations. Underground agreements with Caltrans within the state right of way crossing SR-91 would be required.

Two 220-kilovolt circuits (C2007) paralleling the east side of the I-710 from Long Beach Blvd. to north of SR-91 would be in conflict with the proposed freight corridor and freeway footprint under Alternative 7, and the lines would be relocated in order to eliminate overhead encumbrances to facilitate the construction of the structures. The lines would be relocated easterly of I-710 within the SCE Fee Parcels, with taller poles replacing the existing poles. No additional right of way would be required.

Two 220-kilovolt circuits (C2008) paralleling the east side of the I-710 from Long Beach Blvd. to north of SR-91 would be too close to the proposed freight corridor and expanded freeway footprint to meet appropriate SCE horizontal clearance requirements. The lines would be relocated easterly in order to eliminate any overhead encumbrances to facilitate the construction of the new structures. The existing poles would be replaced

with taller poles. Additional right of way would be required of Caltrans at SR-91 to accommodate the proposed steel pole foundation locations. The H-frame (see [C2006] above) would need to be undergrounded prior to this relocation.

Seven 66-kilovolt circuits (C2011 and C2012) supported on H-frame towers paralleling the east side of I-710 crossing Artesia Blvd. and SR-91 would be in conflict with the proposed freight corridor and expanded freeway footprint. The existing 66-kilovolt lines on H-frame towers would be undergrounded and the existing support structures removed. The 220-kilovolt closest to the freeway would be relocated easterly to avoid impacting the proposed freeway widening and would use the existing H-frame area to accommodate the proposed relocations. Underground agreements with Caltrans within State right of way crossing SR-91 would be required.

Two 220-kilovolt circuits (C2013) paralleling the east side of I-710 from Long Beach Blvd. to north of SR-91 would be too close to the proposed freight corridor and expanded freeway footprint under Alternative 7 to meet appropriate SCE horizontal clearance requirements, and would be relocated to eliminate overhead encumbrances to facilitate the construction of the new structures. The lines would be relocated easterly in the SCE Fee Parcels, and the existing poles would be replaced with taller poles. No additional right of way would be required.

A 16-inch high pressure gas line (C1111) crossing I-710 north of Long Beach Blvd. may be impacted by freeway widening and a sound wall proposed under Alternative 5C at the west side of the southbound off-ramp. The existing major distribution facility crossing Long Beach Blvd. parallel to Victoria St. would require a casing extension at the location of the I-710 widening, and the sound wall footing should be designed to avoid conflict. The pipe would be protected in place.

The 66-kilovolt overhead lines (N2001) crossing I-710 south of Miller Way would be in both direct and indirect conflict with Alternative 7 improvements. The existing lines would be relocated underground under I-710, and the existing lattice tower located on the east side of I-710 and the overhead lines to the two adjacent towers would be removed. On either end, the underground lines would extend to a set of vaults, and beyond the vaults, riser poles would be installed to transition the lines back overhead and reconnect with the existing lines outside the limits of the relocation. Both east and west of I-710, new right of way would be needed in fee or via easement outside the current 25-foot wide SCE-owned corridor to accommodate the new vault and underground line to be located within the existing private property in the area.

The 66-kilovolt overhead lines (N2002) crossing I-710 at Southern Ave. would be impacted by Alternative 7 as they would be in direct conflict with the new Southern Ave. overcrossing and the adjacent elevated roadway segments on either side of the bridge,

and would indirectly conflict with the California Public Utilities Commission (CPUC)-mandated minimum vertical clearance requirement at the crossing of the freight corridor viaduct. The proposed relocation would be identical to that proposed under Alternative 5C; please refer to the previous discussion.

Two 66-kilovolt overhead lines (N2003) crossing I-710 south of existing UP Railroad West Santa Ana Branch crossing north of Firestone Blvd. would be impacted by Alternative 5C. The existing lines would be too close to the new railroad bridge structure over I-710 to meet appropriate SCE and UP Railroad horizontal clearance requirements and would indirectly conflict with the CPUC-mandated minimum vertical clearance requirement at the crossing of the freight corridor viaduct. The proposed relocation would be identical to that proposed under Alternative 5C; please refer to the previous discussion.

The 66-kilovolt, 12-kilovolt, and four-kilovolt overhead lines (N2004 and N2005) crossing I-710 south of the proposed Clara St. overcrossing would be in conflict with the CPUC-mandated minimum vertical clearance requirement of 30 feet between the proposed structure deck and existing lines at the crossing of the freight corridor viaduct. The existing lines would be relocated underground within the freeway right of way, the LADWP transmission corridor, and the Los Angeles River. The existing overhead lines and their supports would be removed along Clara St. from the existing pole located on the west side of the River Rd. intersection, on the west, to the existing pole located just east of the residential street intersection, to the east. Permanent vault structure and riser poles would be installed on either side of the freeway. West of the river, the bore pit and vault would be located within River Rd. south of Clara St. A riser pole would be located between River Rd. and Clara St., just west of the new vault, to transition the underground lines back overhead. New overhead lines would be installed along the north side of River Rd. between the new riser pole and the existing pole, located east of the Clara St./River Rd. intersection. East of the freeway, the bore pit and vault would be located within the dead-end residential street located just south of Clara St. A riser pole would be installed along the north side of the street, just west of its intersection with Clara St., to transition the underground lines back overhead. New overhead lines would be installed between the riser pole and the existing pole, north of Clara St., east of the intersection. Additional right-of-way requirements associated with the impacts to this facility include a new ten-foot wide underground easement from the USACE and/or LACFCD for the portion under the Los Angeles River and a new 20-foot-wide underground easement for the segment passing under the LADWP transmission corridor.

The 66-kilovolt overhead lines (N2006) crossing I-710 north of the Florence Ave. overcrossing would be in direct conflict with the proposed Florence Ave. interchange

ramps. The impacts and proposed relocation would be identical to what is discussed under Alternative 5C; please refer to that discussion above.

The 66-kilovolt overhead lines (N2007) crossing I-710 south of the existing UP Railroad overcrossing at Randolph St. would be indirectly impacted by the freight corridor viaduct associated with Alternative 7, and the CPUC-mandated minimum vertical clearance requirement of 30 feet between the proposed structure deck and the existing lines cannot be met at the crossing area. Therefore, the existing lines would be relocated underground across the freeway right of way, the LADWP transmission corridor, and the Los Angeles River. The existing overhead lines and their supports would be removed between the existing pole located on the south side of Randolph St. just west of Casitas Ave., to the existing lattice tower located within the SCE corridor approximately 560 feet west of Eastern Ave. This would include the removal of three existing lattice towers. On either end, the new underground lines would extend beyond the temporary bore pits to a set of permanent vault structures. West of I-710, the underground line, bore pit, and adjacent vault would be located within Randolph St.; west of the vault, along Randolph St., a riser pole would be constructed within the southerly sidewalk, to transition the lines overhead to reconnect to the existing overhead system. East of I-710, the new underground line, bore pit, and adjacent vault would be located within the existing SCE corridor, and a new riser pole would be installed just east of the vault to transition the lines to reconnect to the existing overhead system. New underground easements (10 feet from USACE and/or LACFCD under the Los Angeles River, and variable widths from LADWP under the transmission corridor) would be needed as well as a new permanent encroachment permit from Caltrans.

Two 66-kilovolt overhead lines (N2008) running along the east levee road of the Los Angeles River, that provide electrical service to the City of Vernon, connect to the 66-kilovolt overhead lines that cross I-710 and the river south of the existing UP Railroad crossing as described above. The undergrounding process of those lines as explained in more detail in the previous paragraph would disrupt this connection and would require restoration. A separate set of ducts and vaults is involved in this reconnection, and these lines would require extension from the existing connection point on the east side of I-710 through the construction of a separate bored tunnel, located adjacent to the tunnel constructed to house the previous line. From the westerly bore pit, the underground line would be extended to the west to a new vault located within the LADWP transmission corridor and a new riser pole along the river levee in line with the existing overhead system. From the new riser pole, the lines would transition overhead and extend north, to connect back to the existing system. For the reestablishment of the connection, the poles supporting the existing lines south of the UP Railroad bridge would be removed, and new overhead lines would be strung between the new riser pole, on the south to the nearest existing pole to the north. A new 20-foot-wide underground easement from

LADWP would be needed within the transmission corridor, as well as a permanent encroachment permit from Caltrans as described above.

The 66-kilovolt overhead lines (N2009) crossing I-710, along the south side of Randolph St., adjacent to the existing UP Railroad corridor within the Cities of Commerce and Maywood, would be indirectly impacted by the freight corridor viaduct, and the CPUC-mandated minimum vertical clearance requirement of 30 feet between the proposed structure deck and the existing lines cannot be met at this crossing. The lines would be relocated underground under the freeway right of way, LADWP transmission corridor, and Los Angeles River. The existing overhead lines and their supports would be removed from the existing pole along the south side of Randolph St. North, in line with the project of Home Ave. on the west, to the pole along the south side of Randolph St., located approximately 350 feet east of the cul-de-sac, on the east. Temporary bore pits and permanent vault structures and riser poles would be constructed west of the river and east of I-710. West of I-710, the bore pits and adjacent vaults would be located within Randolph St. North, and west of the vault, along Randolph St., a riser pole would be constructed along the south side of the street within the UP Railroad right of way to transition the lines overhead to reconnect to the existing overhead system. East of I-710, the bore pit and vault would be located within the south side of Randolph St. A new riser pole would be installed east of the vault to transition the lines to reconnect to the existing overhead system, within UP Railroad right of way. Twenty-foot underground easements would be required from USACE and/or LACFCD for the portion of the line under the Los Angeles River and from LADWP for the portion of the line under the transmission corridor.

The 66-kilovolt overhead lines (N2010) crossing I-710 along the north side of Randolph St. adjacent to the existing UP Railroad corridor would be impacted in the same manner as described above for the overhead lines along the south side of Randolph St., and would be undergrounded in the same way. Please refer to the discussion in the previous paragraph. The two sets of lines would share the undergrounding easements from USACE and/or LACFCD and LADWP as described above.

The 66-kilovolt overhead lines (N2011) located along the east side of I-710 which connect the lines along the north side of Randolph St., as described above, to the customer substation serving the Newark Pacific Paperboard Cooperation property, would be impacted both directly by the freeway mainline and freight corridor supports and indirectly by the undergrounding of the previously discussed lines along the north side of Randolph St. The existing overhead lines would be maintained along the north side of Randolph St. to the existing cul-de-sac to preserve the connection to the substation, and a new pole would be installed at the roadway terminus outside of the new freeway right of way. New overhead lines along the east side of the new freeway

right of way under Alternative 7 to route the lines to a new substation location, which would require new right of way to be acquired or dedicated along the north side of 61st St. for accommodation. A potential location for the substation has been preliminarily identified between the freeway right of way and the relocated Los Angeles Junction (LAJ) tracks. The area needed for in-kind replacement is approximately 60 feet by 100 feet.

The 66-kilovolt overhead lines (N2012) crossing I-710 along the south side of the Slauson Ave. overcrossing would be directly impacted by the proposed freeway mainline and indirectly impacted due to the CPUC-mandated minimum vertical clearance requirement of 30 feet between the proposed structure deck and existing lines which cannot be met at the crossing of the freight corridor viaduct. Therefore, the existing lines would be relocated underground, under the proposed freight corridor structure. Undergrounding would include construction of temporary bore pits, permanent vault structures, and riser poles both west of the Los Angeles River and east of I-710. West of I-710, the bore pit and adjacent vault would be located within Slauson Ave., on the north side. West of the vault, along Slauson Ave., the line would cross to the south side of the street and a riser pole would be constructed to transition the lines overhead to reconnect to the existing overhead system. East of I-710, the bore pit would be located on private property, north of Slauson Ave., and the adjacent vault would be located within the north side of Slauson Ave. The line would extend from the new vault across to the south side of Slauson Ave., and a new riser pole would be installed along the south side of the road, east of the vault, to transition the lines to reconnect to the existing overhead system. A new ten-foot wide underground easement from USACE and/or LACFCD and a new 20-foot underground easement from LADWP would be needed for the portions of the bored line under the Los Angeles River and transmission corridors, respectively, as well as a new permanent encroachment permit from Caltrans.

The impacts to SCE utility numbers C2014, C2017, C2018, C2019. C2020, and C2021 are the same as described above under Alternative 5C.

SCG. The impacts to utility numbers C1101, C1104, C1105, C1109, C1110 and C1111 are the same under Alternative 7 as they are described above under Alternative 5C.

A 26-inch steel high pressure gas line (C1102) crossing I-710 north of SR-91 would be impacted by the columns and footings of the proposed freight corridor. Avoidance of the impact is proposed; if relocation is necessary, two bore locations would be required, one on each side of the freeway. The line would be bored across I-710 and open trenched down Coachella Ave., then tie back in with the existing alignment. New easements would be required at proposed locations from Caltrans and from private property owners.

A 26-inch steel high pressure gas line (C1103) crosses 208th St. and the Los Angeles County Metropolitan Transportation Authority (Metro) Blue Line, east of I-710. Under Alternative 7, the freight corridor would be below grade at this location and in direct conflict with this gas line. Therefore, the line would be relocated to the north, and casing would be added to the proposed line where the freight corridor crosses it, and the relocation of the line would be deep enough to avoid any potential impact to the freight corridor here. The proposed relocation would be within SCE and Metro right of way and require coordination with those agencies.

The 30-inch underground high-pressure gas line (N1101) crossing I-710 at Quinn St. would be impacted under Alternative 7 in the same manner as it is under Alternative 5C (see previous discussion). In addition, the proposed freight corridor, at this crossing location, is proposed to be located within the freeway median, which would be used to accommodate a series of single-column supports. Depending on where these columns are spaced/located along the median, the pipe could be impacted. Therefore, the freight corridor supports should be located and spaced as such that the foundations avoid this existing gas line and allow it to be protected in place. Should Alternative 7 be selected as the preferred alternative, this avoidance requirement would be addressed in the Specific Utility Relocation Plans to be prepared under Mitigation Measure U&ES-2 described at the end of this section.

The 26-inch underground high-pressure gas line (N1102) crossing I-710 at Sheila St. would be impacted and protected in place the same way as is described under Alternative 5C (see previous discussion).

LONG BEACH GAS & OIL. Impacts to Long Beach Gas and Oil facilities would be the same as what is described above under Alternative 5C.

VERIZON. The Verizon utility impacts and relocation strategies for conflicts S2400, S2404, S2410, S2411, and C4202 as outlined above under Alternative 5C would remain the same under Alternative 7.

CHARTER COMMUNICATIONS. Many of the impacts to Charter Communications facilities under Alternative 7 are the same as what is described above under Alternative 5C, including for facilities S2504 and S2505. Impacts to Charter Communications facilities that would occur solely under Alternative 7 are as follows:

An active aerial copper line (S2502) crosses I-710 and the Los Angeles River at 34th St. The avoidance strategy under Alternative 7 has been to underground the facilities at this crossing location in order to avoid conflict with the proposed footprint and freight corridor.

CROWN CASTLE (FORMERLY NEXT G). A fiber system (S2200) on joint poles with SCE conflict S2026 (see discussion above) that crosses I-710 and the Los Angeles River would be impacted by the proposed right of way under Alternative 7. This system would be relocated underground via a directional bore crossing of I-710 and the river, but cannot be in the same casing as the SCE transmission facilities that are proposed to be undergrounded at this location.

T-MOBILE. The cell tower site (S2600) located just south of Willow St. conflicts with Alternative 7 improvements in the same manner as that of Alternative 5C. Please refer to the discussion above.

LADWP TRANSMISSION. The 230-kilovolt overhead lines (N2101) crossing the I-710 parallel to the Los Angeles River where the I-710 crosses the river, near the Miller Ave. undercrossing, a set of two circuit 287.5-kilovolt overhead lines (N2102) crossing I-710 just south of Firestone Ave., on the south set of steel lattice towers, and a single circuit 230-kilovolt overhead line (N2103) crossing I-710 south of Firestone Ave., on the north set of steel lattice towers, would be in conflict with the proposed elevated freight corridor. The lines would all be relocated in place on taller tower structures to provide the required clearance, in a manner in which would avoid or minimize interruptions in service. The relocation of these structures would require continued coordination between SCE and LADWP. No new permanent right of way or easements would be required for the reconstruction of these facilities.

MWDSC. Conflict S3200B is an MWDSC facility north of Wardlow Rd. and south of the I-710/I-405 interchange. The impacts to this facility are similar to what is described above under Alternative 5C, but the proposed geometry under Alternative 7 would not provide sufficient room to relocate the discharge valve into LACFCD right of way. Therefore, under Alternative 7, the discharge valve would be relocated to the east side of the Los Angeles River, with an outlet to the river and power provided from Baker St. The existing air-vac assembly would be relocated to Gale Ave. in the same manner as under Alternative 5C.

An MWDSC 79-inch water line (N3201) located within the existing electrical transmission corridor, that crosses I-710 south of Firestone Ave., within the City of South Gate, is located under the proposed Alternative 7 footprint. It is not within direct physical conflict with the proposed improvements, and is to be protected in place as it is under Alternative 5C. However, under Alternative 7, the concrete encasement would be extended by 110 feet to the east and 20 feet to the west of current limits. No additional permanent right of way requirements would be needed for the encasement extension.

XO COMMUNICATION. An active aerial fiber system (S2900) on joint poles with S2026 (see SCE discussion above) would be impacted under the improvements proposed as part of Alternative 7. This facility would need to be relocated underground via directional bore crossing I-710 and the Los Angeles River. This system would not be allowed in the same casing as the SCE transmission facilities proposed to be undergrounded at this location, but would be able to be included in the same trench/casing as the Crown Castle/Next G system at this location (S2200, see above).

The utility conflict and relocation strategy described above for conflict C2901 under Alternative 5C would be the same under Alternative 7.

PARAMOUNT PETROLEUM. An idle eight-inch oil line (S6700), an active six-inch oil line (S6701), and an active eight-inch oil line (S6702) would all be in conflict with Alternative 7 improvements at the ramps to and from Pico Ave., and the relocations would be coordinated with the Port of Long Beach so as to not conflict with other planned improvements in the vicinity. Conflicts S6702A and S6703 would be impacted and relocated similarly to what is described above under Alternative 5C.

One Paramount Petroleum facility (C6701) would be impacted under Alternative 7. There is an eight-inch underground crude oil line crossing the existing Metro Blue Line/208th street, near the Metro maintenance yard. The freight corridor facility proposed under Alternative 7 would be trenched at this location at a depth of approximately five feet below the existing oil line. The line is to be protected via boring/trenching to an appropriate depth and new pipeline would need to be added at either end to connect to the existing pipeline. A new underground easement/permit would be required of Metro and/or Caltrans.

KINDER MORGAN. Utility facility C6601 would be impacted under Alternative 7 the same way as is described above under Alternative 5C. Additionally, utility conflict C6603 consists of a 16-inch refined petroleum pipeline within a 30-inch casing that crosses I-710 near Gordon St., north of Long Beach Blvd., and continues east across the Los Angeles River. The proposed freight corridor under Alternative 7 would effectively extend the State right of way line 40 feet to the east, necessitating the extension of the existing 30-inch casing 24 feet to the east. The existing right of way agreement between Kinder Morgan and Caltrans would need to be modified to reflect this reconfiguration.

PLAINS ALL-AMERICAN PIPELINE LP. Plains conflict S6800 as described above under Alternative 5C would be impacted by Alternative 7 and relocated in a different configuration. Under Alternative 7, the vault (S6803) would be relocated west of I-710 to the West 28th St. terminus.

Utility conflict C6801 as described above under Alternative 5C would be the same under Alternative 7. In addition, Plains Line 63 (C6802), a 14-inch oil line crossing I-710 adjacent to the Metro Blue Line/208th St., would be impacted in two ways by the I-710 mainline and freight corridor proposed under Alternative 7. The relocation of 208th St. at the Metro Blue Line impacts the right of way for the pipeline as it passes under I-710. In addition, the proposed freight corridor would pose a conflict for this pipeline as well. In order to relocate the pipeline to account for the relocation of 208th St., the pipeline would be realigned on the west side of I-710 and run parallel to the freeway outside the freeway right of way for approximately 300 feet. A new 20-inch 421-foot-long casing would be installed across the freeway at a 90-degree angle between the edges of the right of way. The pipeline would be realigned on the east side of the freeway to connect to the existing line. A pipeline valve and valve box on the east side of the freeway would be repositioned. To address the impacts of the proposed freight corridor on this pipeline, an estimated 100-foot section of the pipeline would be realigned to run parallel to the west side of the proposed freight corridor and lowered by an estimated 20 feet. A 120-foot section of casing would be installed to the segment of pipeline under the freight corridor. East of the freight corridor, the pipeline would be brought to original grade and reconnected to the existing pipeline. Temporary construction and revised utility easements would be necessary.

CHEVRON. Conflicts S7201 and S7202 described above under Alternative 5C have slightly different configurations under the Alternative 7 geometrics. The utility vault would be relocated west of I-710 to the West 28th St. terminus, rather than within LACFCD right of way.

Utility conflict C7202 as described above under Alternative 5C would have the same impacts and relocation strategy under Alternative 7.

CRIMSON PIPELINE CO. Conflicts S6203 and S6204 as described above under Alternative 5C would be similarly impacted and relocated under Alternative 7. However, the vault at 28th St. that contains conflicts S6206, S6207, and S6208 would be configured differently under Alternative 7 and be relocated into City of Long Beach right of way to 28th St.

A ten-inch active oil line with an 18-inch RCP casing (C6201) runs underground, parallel and to the north of the Rosecrans Blvd. crossing perpendicular to I-710, within a joint trench shared by Crimson and Chevron, and continues to the east, crossing the Los Angeles River via an existing utility bridge within the City of Paramount. The pipelines within the joint trench would be protected in place, as there is no direct conflict with the freight corridor, but a one-foot-thick 20- by 200-foot concrete slab would be constructed that would protect the pipelines from any falling debris or surface traffic working under

the elevated freight corridor in this location. A temporary Caltrans easement may be needed.

CHEMOIL. An idle four-inch pipeline (S6105) runs in the east-west direction along Burnett St., perpendicular to I-710 and the Los Angeles River. Since the available space under Alternative 7 is more confined than it would be under Alternative 5C, this necessitates the relocations of the vaults at Burnett St. and 28th St. A directional bore is proposed at Burnett St. to relocate S6105. The existing utility bridge would be protected in place (containing lines S6106, S6107, and S6108).

TIDELANDS FACILITY. Conflict S7025 describes the Tidelands Facility, located west of I-710 between West Cowles St. and West Gaylord St. This facility and the associated pipelines would be impacted similarly to what is described above under Alternative 5C, including conflict numbers S7021A, S7022, S7033, and S7024. In addition, conflict numbers 7004A includes two wells conflicting with proposed improvements under Alternative 7 and would require relocations. Conflicts S7006, S7007, S7008, S7009, S7010, S7011, S7012, S7013 are all lines of various diameters that would be impacted by proposed improvements within the Pico on- and off-ramp area south of Anaheim St. and would require relocation.

Associated with the Tidelands Facility are several lines within the facility owned and operated by the City of Lomita. Upon the relocation of the facility, all Lomita connections would be either abandoned or reestablished at the new Tidelands site under Alternative 7.

OIL OPERATORS. An active ten-inch steel water line (S6500D) running in the east-west direction along Burnett St. perpendicular to I-710 and the Los Angeles River would be impacted at the west side of the river by the improvements proposed by Alternative 7 and the affected vault would be relocated to the west side of I-710 at the terminus of Burnett St. A directional bore would connect the west and east termini of Burnett St. with the vaults located on both sides.

SHELL OIL. As described above under Alternative 5C, conflicts 6900 and S6901 would be impacted similarly by the improvements under Alternative 7, but the relocation configurations would be different. The utility vault (S6901) would be relocated west of I-710 to the West 28th St. terminus.

OCCIDENTAL PETROLEUM. Oxy's standard lease facility within LACFCD's boundary (S6600) is located along the west bank of the Los Angeles River between Ocean Blvd. and Anaheim St. The facility would be impacted by Alternative 7 in the same way as is described under Alternative 5C, above.

TESORO. Conflicts S7507, S7508, S7509, S7513, S7514, and S7512 described above under Alternative 5C would have similar impacts but the utility vault would be relocated west of I-710 to the West 28th St. terminus. Conflicts S7511 and S7512 would have the same impacts under Alternative 7 as they would under Alternative 5C. Finally, conflict S7515 is a line requiring relocation within the Pico on-ramp/Pier B St. area. Relocation would need to be coordinated with the Port of Long Beach to avoid planned improvements in the area.

NO BUILD ALTERNATIVE. Alternative 1 does not require construction; therefore, there would be no permanent impacts to utilities.

3.4.2.3 PUBLIC HEALTH CONSIDERATIONS

Electric and magnetic fields (EMFs) are invisible force fields created by both natural and human-made sources. A natural source is the earth's magnetic field. Human-made sources include household or building wiring, electrical appliances, and electric power transmission and distribution facilities.

The following information regarding EMFs was accessed through several resources on the SCE website.[2]

> "Three decades of research has not established that a human health hazard exists from long-term EMF exposures. Questions remain about whether EMF exposure at home or work is linked to some diseases such as childhood leukemia. While scientific research is continuing, a quick resolution of the remaining scientific uncertainties is not expected. Coordinated international research has resolved many questions about specific diseases. While some health authorities have identified magnetic field exposure as a possible human carcinogen, they acknowledge that additional research would be necessary before a more definitive conclusion can be made.
>
> In its 1999 Report to Congress, the National Institute of Environmental and Health Sciences (NIEHS) stated: "the conclusion of this report is insufficient to warrant aggressive regulatory concern." Instead, it recommended that: "The power industry should continue its current practice of siting power lines to reduce exposures and continue emphasis on educating both the public and providers of electricity about ways to reduce exposure."

[2] Southern California Edison. Website: https://www.sce.com/emf (accessed January 5, 2017).

> Recognizing both public concern and scientific uncertainty over possible health effects from EMF exposure, the CPUC adopted a precautionary approach to reduce EMF exposures in 1993 (updated in 2006). While keeping electrical safety and good engineering practice as first priority, investor-owned electric utilities in California utilize designs to reduce magnetic fields created by new and rebuilt electric facilities."

The relocation of electrical transmission and distribution lines for the I-710 Corridor Project would utilize designs to reduce EMFs consistent with the CPUC guidance described above.

3.4.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The build alternatives would result in an adverse impact to Fire Station No. 4 in the City of Vernon, as well as temporary impacts to fire, law enforcement, and emergency service response times as a result of construction. Measure U&ES-1 is provided below to reduce these impacts.

Utilities impacted as a result of the build alternatives would be relocated in accordance with specific Utility Relocation Plans described below in Measure U&ES-2.

U&ES-1 **FIRE SERVICES.** During final design, and consistent with the requirements of the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), the California Department of Transportation (Caltrans) shall negotiate with the City of Vernon to determine a suitable location for the relocation of Fire Station No. 4. The new location shall be in the general vicinity of the existing fire station location, in order to maintain response times with Fire Station No. 4's service area. The existing Fire Station No. 4 shall not be closed until the new fire station has been constructed and is operational.

U&ES-2 **UTILITIES.** Utility relocations (classified as both major and minor) would be subject to preparation of Specific Utility Relocation Plans. The Specific Utility Relocation Plans would include the following:

- Description of existing facilities, including facility type, capacity, height, and function, in addition to existing easements and maintenance access.
- Description of proposed changes/demolition of existing facilities.
- Identification of potential conflicts that need to be resolved with the relocation plan, including crossings of flood control, rail, and roadway/ freeway infrastructure, existing access tunnels, potential flooding, existing utilities and load distribution, Federal Aviation Administration

requirements, drainage and stormwater quality requirements, and temporary roads and staged construction.

- A description of how the potential conflicts were resolved, including how the proposed relocated aboveground facilities are within the disturbance limits established for the project, whether new overhead facilities provide adequate aerial clearances in locations where cranes would be working and near existing and proposed elevated transportation facilities, and whether all aboveground facilities and access points to underground facilities are located outside controlled access lines.
- A description of the proposed facilities, including easements and maintenance access, and a description of vertical and/or horizontal clearance from other utility and public infrastructure.
- A work plan that describes the nature of the construction activity, haul routes, a construction traffic management plan if warranted, hours of construction, construction duration and schedule, planned service interruptions, if any, types of construction activities, and anticipated noise levels.
- A summary of existing and planned Utility Team Coordination Meetings that would include all utility companies and local jurisdictions' Departments of Public Works affected by the project. The meetings should occur during the final design phase (beginning at the 30 percent design stage) and include final design and construction staging. The meeting participants would discuss and plan a workable sequence of utility alterations so that the utility work can be coordinated and, where possible, completed in advance of highway work. Topics to be addressed include sensitive environmental areas, hazardous material sites, erosion controls during construction, and any community events that would be occurring during construction and need to be accommodated.
- A determination whether a community meeting would be held prior to the issuance of demolition and grading permits. Community meetings will be held for major utility relocations that are (1) within 500 feet of residences or schools, and (2) that would require construction duration of 30 days or more. Caltrans shall hold a community preconstruction meeting, in concert with the construction contractor, to provide information regarding the construction schedule and activities. The construction information shall include the location and duration of each construction activity, whether or not and, if applicable, the specific location, days, frequency, and duration of the pile driving that would occur, construction traffic management plans, and any accommodation of community events that

would be occurring during the construction period. Notification of this meeting shall be provided to owners and occupants within 500 feet of the utility relocation site.

- The Specific Utility Relocation Plans will also include other applicable mitigation measures described in this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS), for impacts related to cultural resources, visual resources, hazardous wastes, water quality, and traffic and transportation.

3.5 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

The information in this section is based on the following documents:

- *Traffic Operations Analysis Report* (March 2017)
- *Intersection Traffic Impact Analysis Report* (March 2017)
- *I-710 Corridor Project EIR/EIS Travel Demand Modeling Methodology* (June 2017)
- Appendix D of the *Community Impact Assessment* (July 2017*)*

3.5.1 REGULATORY SETTING

Caltrans, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 Code of Federal Regulations [CFR] 652). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in Federally-assisted programs is governed by the USDOT regulations (49 CFR part 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to Federal-aid projects, including Transportation Enhancement Activities.

3.5.2 AFFECTED ENVIRONMENT

The *Traffic Operations Analysis Report* (2017) and the *Intersection Traffic Impact Analysis Report* (2017) evaluated the effects of the Interstate 710 (I-710) Corridor Project alternatives on freeway segments, freeway ramps, and local intersections within the Study Area. As part of the traffic analysis, portions of the crossing freeways on I-710 within the Study Area were also examined to analyze any potential traffic impact of design changes at the major freeway-to-freeway interchanges associated with the build alternatives.

Traffic operations within the Study Area were evaluated and defined in terms of level of service (LOS), which ranges from LOS A to LOS F. LOS describes the efficiency of traffic flow and how such conditions are perceived by persons traveling in the traffic stream, and accounts for variables such as speed and travel time, freedom to maneuver, traffic interruptions, traveler

comfort and convenience, and safety. LOS A indicates free traffic flow with low volumes and high speeds, resulting in low densities, while LOS F indicates traffic volumes that exceed capacity and result in forced-flow operations at low speeds, resulting in high densities. LOS is categorized for uninterrupted and interrupted traffic flow facilities. Uninterrupted flow facilities (e.g., freeways) do not have fixed elements such as traffic signals that cause interruptions in traffic flow. Interrupted flow facilities (e.g., intersections and arterial roadways) have fixed elements that cause an interruption in the flow of traffic, such as cross streets, stop signs, and traffic signals. Graphical demonstrations of LOS for uninterrupted flow facilities (freeway facilities) and interrupted flow facilities (signalized intersections) are provided on Figures 3.5-1 and 3.5-2, respectively.

To maintain consistency with the date of the socioeconomic data used in the Southern California Association of Governments' (SCAG) 2012–2035 Regional Transportation Plan Sustainable Communities Strategy (RTP/SCS), 2035 is used as the horizon year for analysis of future conditions. The rationale for this is that the geometric design for the project was prepared and completed between 2013 and 2015, and as such, the SCAG 2012 RTP and associated traffic forecasting model were used, which have a travel forecasting horizon year of 2035. Based on a comparative review of the key model inputs (i.e., demographics, and cargo forecasts), it was determined that the 2012 model and the recently updated 2016 model would not yield substantially different traffic forecasts, nor would they result in substantially different geometric designs. Additionally, utilizing a 20-year horizon from a projected opening year of 2033 would target a 2053 horizon year, which would be both impractical and speculative from an analytical standpoint.[1]

3.5.2.1 TRAFFIC ACCIDENT DATA

Traffic accident data was collected from the California Department of Transportation (Caltrans) Traffic Accident Surveillance and Analysis System – Transportation System Network (TASAS - TSN) database for a 36-month period (January 1, 2009, to December 31, 2011). The detailed accident data is provided in the *Traffic Operations Analysis Report* (2017). Based on the TASAS - TSN data, the following conclusions can be made regarding safety within the I-710 Corridor:

I-710 NORTHBOUND

- Of the five mainline study segments, one segment (Interstate 105 (I-105) to Interstate 5 (I-5)) has a higher total accident rate than the State average and three segments have higher fatal accident rates than the State average.

[1] On June 9, 2017, FHWA and Caltrans Headquarters approved the use of 2035 as the horizon year for the project.

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		70	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability. **No delays**
B		70	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted. **No delays**
C		67	Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes. **Minimal delays**
D		62	Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited. **Minimal delays**
E		53	Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor. **Significant delays**
F		<53	Very congested traffic with traffic jams, especially in areas where vehicles have to merge. **Considerable delays**

FIGURE 3.5-1

I-710 Corridor Project RDEIR/SDEIS

Level of Service Illustration for Freeway Facilities

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

SOURCE: California Department of Transportation

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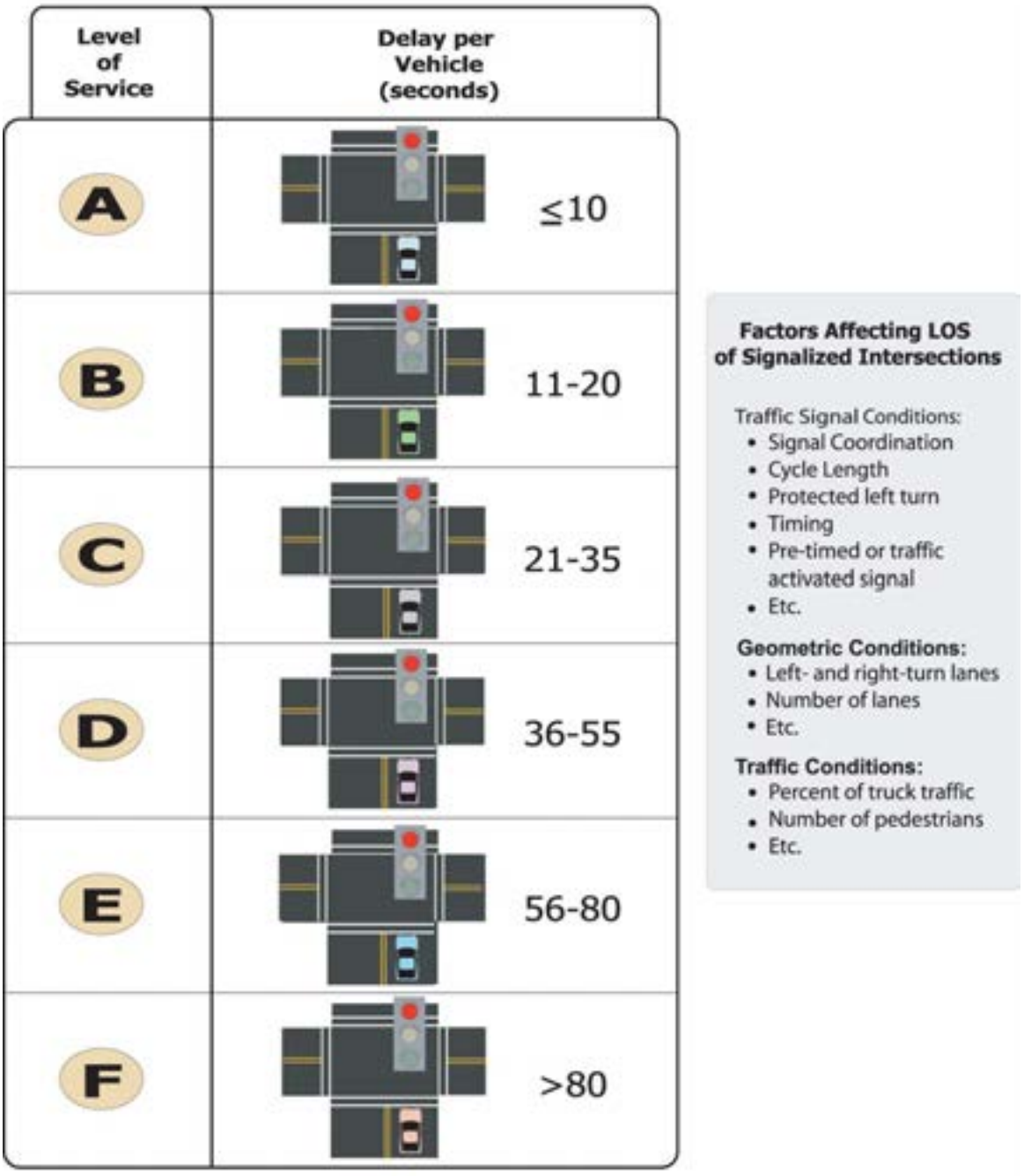

FIGURE 3.5-2

I-710 Corridor Project RDEIR/SDEIS

Level of Service Illustration for Signalized Intersections

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

SOURCE: California Department of Transportation

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- Of the 56 northbound Study Area ramp locations, only two ramps experienced fatal accidents during the 36-month study period. Overall, however, more than half of the ramps (37 out of 56) had accident rates higher than the state average of comparable facilities.
- From I-105 to I-5, the total accident rate is 1.07 (actual), 10 percent higher than the average rate of 0.97. The fatal accident rates are 0.007 (actual) compared to 0.004 (average), which is 75 percent higher.

I-710 SOUTHBOUND

- Of the five mainline study segments, one segment (I-5 to State Route 60 (SR-60)) has a higher accident rate than the State average. The same segment also had a higher fatal accident rate than the State average.
- Of the 58 southbound Study Area ramp locations, about half of the ramps (28 out of 58) had accident rates higher than the state average of comparable facilities.
- From I-5 to SR-60, the total accident rate is 1.61 (actual), 69 percent higher than the average rate of 0.95. The fatal actual accident rate is 0.014, 180 percent higher than the average rate of 0.005.

3.5.2.2 EXISTING AND FUTURE NO BUILD TRAFFIC CONDITIONS

Traffic conditions for existing 2012/2013 Baseline conditions and future 2035 conditions under Alternative 1 (No Build) were evaluated to determine LOS without the proposed project. The forecasts for Alternative 1 include those transportation projects that are already programmed and/or committed to be constructed by or before 2035. The projects included in this alternative are based on SCAG's 2012–2035 RTP/SCS "Future 2035 Baseline Scenario" and 2011 Federal Transportation Improvement Program (FTIP) project list, including freeway, arterial, and transit improvements within the SCAG region. Also see Appendix U for a list of the future transportation projects assumed in the 2035 travel demand forecasting for Alternative 1 that is specific to the I-710 Study Area. This alternative also assumes that goods movement to and from the ports make maximum utilization of existing and planned railroad capacity within the I-710 Corridor. For the purpose of the NEPA analysis, Alternative 1 conditions are the basis against which the build alternatives proposed for the I-710 Corridor Project were assessed.

The existing I-710 mainline generally consists of eight general purpose lanes north of Interstate 405 (I-405) and six general purpose lanes south of I-405. Existing 2012/2013 and 2035 Alternative 1 (No Build) conditions for the Study Area are depicted in Figures 3.5-3 and 3.5-4, respectively, and described below. Please note that the depictions of LOS on figures contained within Section 3.5 show LOS for major geographic stretches (generally, those segments measuring approximately 0.5 mile or more between major interchanges). However, the tables that are included within this section show LOS in more detail, including spot segments where each individual ramp meets the mainline within the interchanges.

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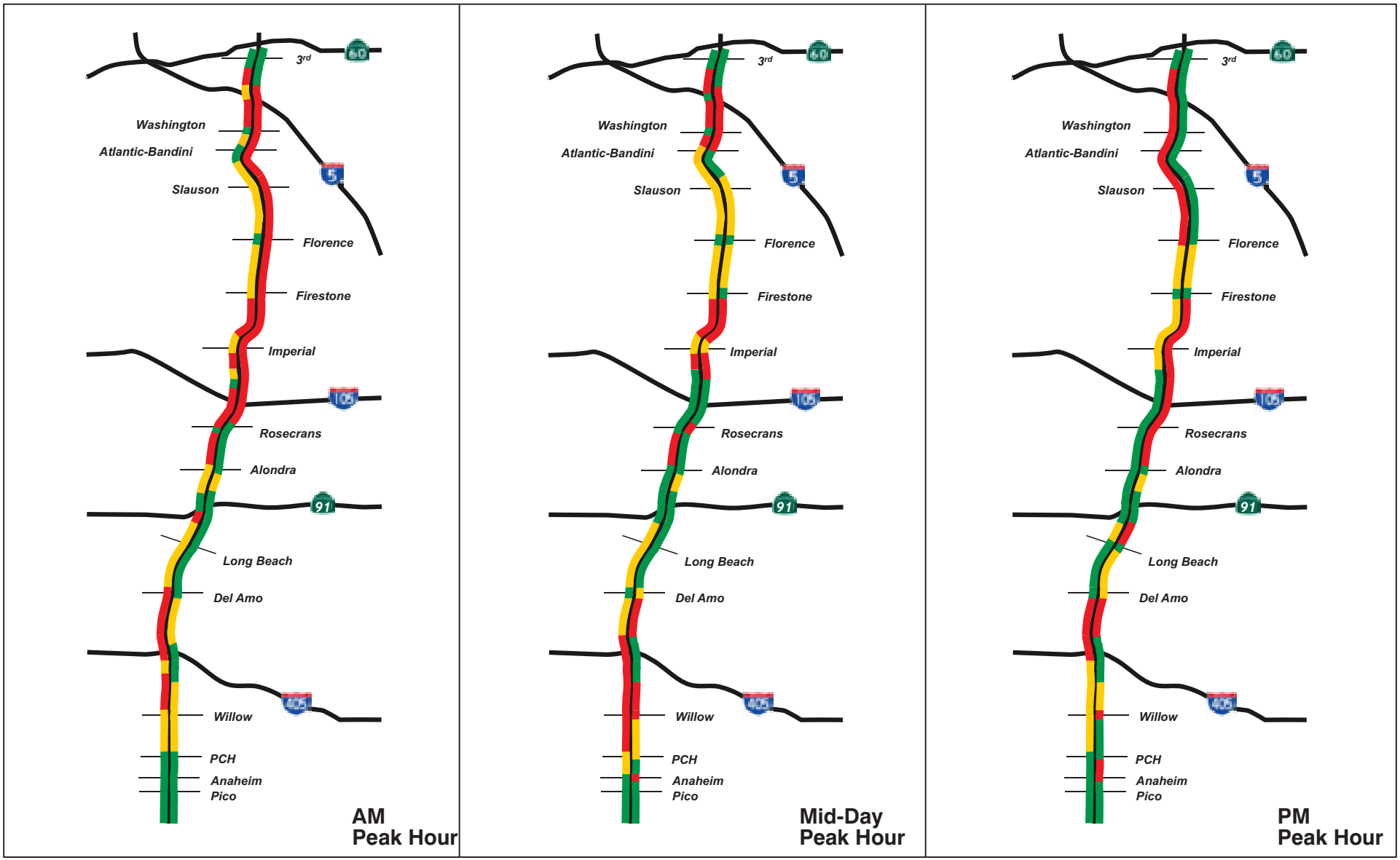

I-710 General Purpose Lanes

Peak Hour LOS (Level of Service)

HCS (Highway Capacity Software) Analysis/Observed Speeds

Level of Service

LOS D or Better

LOS E

LOS F

FIGURE 3.5-3

I-710 Corridor Project RDEIR/SDEIS

I-710 Existing Levels of Service

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

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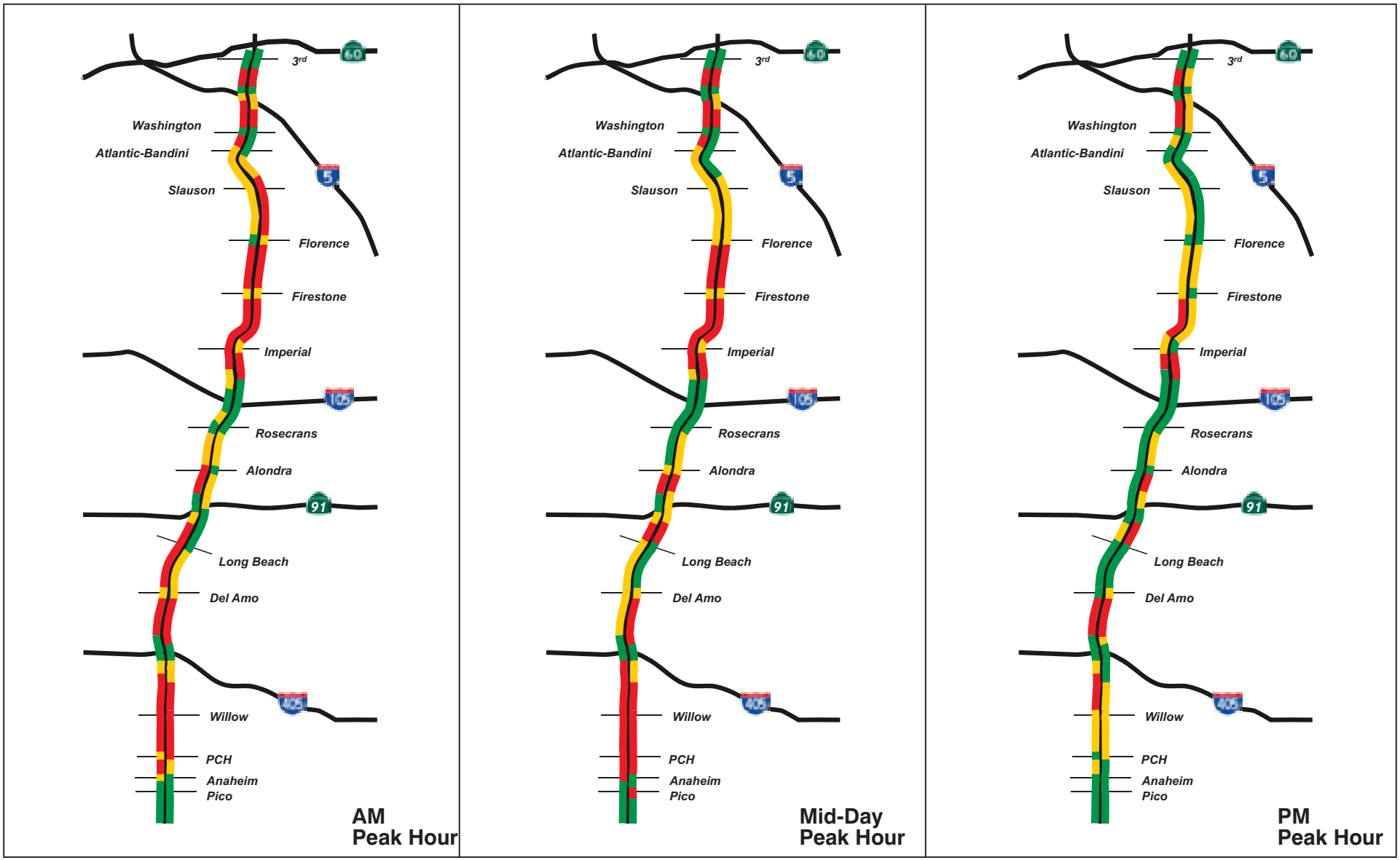

I-710 General Purpose Lanes

Peak Hour LOS (Level of Service)

HCS (Highway Capacity Software) Analysis

Level of Service

LOS D or Better

LOS E

LOS F

FIGURE 3.5-4

I-710 Corridor Project RDEIR/SDEIS

I-710 Alternative 1 Levels of Service

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

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FREEWAY SEGMENTS

I-710 MAINLINE SEGMENTS. Existing 2012/2013 and 2035 No Build LOS for I-710 northbound and southbound mainline (basic and weaving[2]) segments and ramp merge/diverge areas are shown in Tables 3.5-1 through 3.5-2. The following summary describes the I-710 mainline operations.

In the existing condition:

- **Northbound Direction**
  - The number of basic freeway segments with poor operating conditions are highest during the morning peak hour with nearly half of the segments (19 out of 41) operating at poor LOS (E or F);
  - The majority of the merge and diverge areas analyzed operate at acceptable LOS with the exception of 4 (out of 24) merge and diverge areas that operate at poor LOS (E or F) during midday and evening peak hours; and
  - Approximately 70 percent of the weave areas (10 out of 14) currently operate at poor LOS (E or F) during the evening peak hour.
- **Southbound Direction**
  - Nearly 60 percent (26 out of 45) of the basic freeway segments operate at poor LOS (E or F) during the morning peak hour;
  - Poor operating performances (LOS E or F) are currently observed on 21-35 percent of the merge and diverge areas during the three study peak hours; and
  - Throughout the analyzed peak hours, at least 70 percent (7 out of 10) of the weaving areas operate at poor LOS (E or worse).

[2] A "weaving" section is where vehicles are entering the freeway in an area where other vehicles are attempting to exit the freeway at the next off-ramp, requiring vehicles to "weave" across each other's paths.

Table 3.5-1: I-710 Northbound Ramp Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
I-710 Northbound Mainline													
North of Ford Blvd. On	Basic	24.5	C	23.0	C	28.9	D	32.2	D	29.4	D	33.7	D
Ford Blvd. On	On	20.5	C	18.7	B	24.1	C	26.9	C	24.1	C	28.5	D
Ford Blvd. Off / Ford Blvd. On	Basic	22.6	C	22.3	C	26.4	D	29.1	D	27.8	D	29.3	D
Ford Blvd. Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SR-60 Off / Ford Blvd. Off	Basic	17.6	B	17.1	B	22.3	C	22.6	C	21.3	C	24.6	C
SR-60 Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Olympic Blvd. On / SR-60 Off	Weave	28.9	D	28.0	D	32.4	D	--*	**F**	--*	**F**	37.2	**E**
Olympic Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-5 NB On / Olympic Blvd. On	Basic	28.4	D	27.2	D	31.7	D	34.5	D	32.3	D	34.1	D
I-5 NB On	On[4]	N/A	N/A	N/A	N/A	--*	**F**	--*	**F**	N/A	N/A	--*	**F**
Olympic Blvd. Off / I-5 NB On	Basic	27.1	D	26.3	D	28.8	D	33.1	D	32.5	D	31.8	D
Olympic Blvd. Off	Off	31.2	D	29.7	D	33.0	D	35.1	**E**	34.0	D	35.1	**E**
I-5 NB Off / Olympic Blvd. Off	Basic	--[6]	**F**	--[6]	**F**	32.8	D	37.1	**E**	35.2	**E**	36.5	**E**
I-5 NB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Washington Blvd. On / I-5 NB Off	Weave	--[5]	**F**	--[5]	**F**	34.2	D	--*	**F**	--*	**F**	38.0	**E**
Washington Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Washington Blvd. Off / Washington Blvd. On	Basic	--[6]	**F**	--[6]	**F**	25.2	C	31.1	D	29.7	D	26.3	D
Washington Blvd. Off	Off	30.2	D	29.0	D	27.3	C	34.2	D	33.5	D	30.3	D
Atlantic Blvd. On / Washington Blvd. Off	Basic	--[6]	**F**	--[6]	**F**	26.8	D	33.8	D	32.6	D	28.9	D
Atlantic Blvd. On	On	23.5	C	23.6	C	23.9	C	27.3	C	28.4	D	27.5	C
Atlantic Blvd. SB Off / Atlantic Blvd. On	Basic	--[6]	**F**	--[6]	**F**	22.0	C	28.7	D	26.8	D	22.3	C
Atlantic Blvd. SB Off	Off	34.2	D	27.8	C	25.9	C	36.6	**E**	29.9	D	26.2	C
Atlantic Blvd. NB Off / Atlantic Blvd. SB Off	Basic	--[6]	**F**	26.6	D	23.7	C	33.4	D	29.0	D	23.9	C
Atlantic Blvd. NB Off	Major Off[3]	31.4	D	27.3	C	24.5	C	34.2	D	30.1	D	25.6	C
Lane Add	Basic	--[5]	**F**	28.3	D	25.5	C	36.0	**E**	31.2	D	26.6	D
Florence Ave. On / Lane Add	Basic	--[6]	**F**	35.8	**E**	31.8	D	54.7	**F**	41.3	**E**	33.3	D
Florence Ave. On	On	--*	**F**	29.3	D	26.7	C	--*	**F**	32.2	D	27.6	C
Florence Ave. Off / Florence Ave. On	Basic	--[6]	**F**	31.8	D	28.4	D	41.9	**E**	35.4	**E**	29.7	D
Florence Ave. Off	Off	41.8	**E**	40.2	**E**	39.7	**E**	--*	**F**	--*	**F**	41.3	**E**
Firestone Blvd. On / Florence Ave. Off	Basic	--[6]	**F**	38.9	**E**	35.8	**E**	55.4	**F**	46.1	**F**	38.1	**E**
Firestone Blvd. On	On	34.3	D	31.0	D	29.3	D	--*	**F**	--*	**F**	30.4	D
Firestone Blvd. Off / Firestone Blvd. On	Basic	--[6]	**F**	32.9	D	31.0	D	40.8	**E**	37.0	**E**	32.6	D
Firestone Blvd. Off	Off	39.0	**E**	40.3	**E**	38.2	**E**	--*	**F**	--*	**F**	39.9	**E**
Imperial Hwy. On / Firestone Blvd. Off	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	49.8	**F**	47.7	**F**	39.2	**E**
Imperial Hwy. On	On	31.3	D	30.0	D	29.5	D	--*	**F**	--*	**F**	31.1	D
Imperial Hwy. Off / Imperial Hwy. On	Basic	--[6]	**F**	36.2	**E**	--[6]	**F**	39.0	**E**	40.6	**E**	33.7	D
Imperial Hwy. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-105 On / Imperial Hwy. Off	Weave	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**
I-105 On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.5-1: I-710 Northbound Ramp Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
Rosecrans Ave. On / I-105 On	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	31.1	D	32.3	D	30.1	D
Rosecrans Ave. On	On	20.2	C	21.4	C	21.0	C	23.1	C	23.7	C	22.8	C
I-105 Off / Rosecrans Ave. On	Basic	--[6]	**F**	26.8	D	--[6]	**F**	29.1	D	30.1	D	27.2	D
I-105 Off	Major Off[3]	19.3	B	21.0	C	20.3	C	22.8	C	24.6	C	22.5	C
Rosecrans Ave. Off / I-105 Off	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	27.6	D	29.8	D	27.2	D
Rosecrans Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alondra Blvd. On / Rosecrans Ave. Off	Weave	31.0	D	34.6	D	--[6]	**F**	37.0	**E**	41.2	**E**	41.3	**E**
Alondra Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alondra Blvd. Off / Alondra Blvd. On	Basic	27.4	D	30.9	D	30.8	D	32.5	D	36.4	**E**	34.1	D
Alondra Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SR-91 WB On / Alondra Blvd. Off	Weave	36.0	**E**	42.8	**E**	46.0	**E**	43.8	**E**	--*	**F**	--*	**F**
SR-91 WB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SR-91 EB On / SR-91 WB On	Basic	23.9	C	27.2	D	28.5	D	29.2	D	32.5	D	31.5	D
SR-91 EB On	On[4]	N/A	N/A	--*	**F**	--*	**F**	N/A	N/A	--*	**F**	--*	**F**
SR-91 WB Off / SR-91 EB On	Basic	30.2	D	32.3	D	32.4	D	40.5	**E**	43.8	**E**	37.5	**E**
SR-91 WB Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Artesia Blvd. & SR-91 EB Off / SR-91 WB Off	Basic	26.9	D	28.9	D	28.2	D	33.5	D	35.1	**E**	31.3	D
Artesia Blvd. & SR-91 EB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. On / Artesia Blvd. & SR-91 EB Off	Weave	27.5	C	28.9	D	--[6]	**F**	34.8	D	--*	**F**	--*	**F**
Long Beach Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. Off / Long Beach Blvd. On	Basic	23.9	C	26.5	D	27.4	D	30.0	D	32.1	D	30.4	D
Long Beach Blvd. Off	Off	N/A	N/A	27.2	C	N/A	N/A	N/A	N/A	31.9	D	30.9	D
Del Amo Blvd. WB On / Long Beach Blvd. Off	Weave	29.6	D	27.7	D	35.2	**E**	39.0	**E**	33.2	D	31.6	D
Del Amo Blvd. WB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	--*	**F**	30.5	D
Del Amo Blvd. WB Off / Del Amo Blvd. WB On	Basic	29.4	D	33.2	D	34.4	D	38.5	**E**	43.7	**E**	39.4	**E**
Del Amo Blvd. WB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Del Amo Blvd. EB On / Del Amo Blvd. WB Off	Weave	32.0	D	36.3	**E**	37.2	**E**	--*	**F**	--*	**F**	44.9	**E**
Del Amo Blvd. EB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Del Amo Blvd. EB Off / Del Amo Blvd. EB On	Basic	28.7	D	31.3	D	31.1	D	38.1	**E**	39.3	**E**	35.4	**E**
Del Amo Blvd. EB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-405 SB On / Del Amo Blvd. EB Off	Weave	36.7	**E**	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**
I-405 SB On	On	N/A	N/A	--*	N/A	--*	N/A	--*	N/A	--*	N/A	--*	N/A
I-405 NB & Pacific Pl. On / I-405 SB On	Basic	31.9	D	33.7	D	33.0	D	50.9	**F**	49.3	**F**	41.1	**E**
I-405 NB & Pacific Pl. On	On	30.4	D	31.7	D	31.6	D	--*	**F**	--*	**F**	36.8	**E**
I-405 Off / I-405 NB & Pacific Pl. On	Basic	21.4	C	23.8	C	21.6	C	30.5	D	30.4	D	26.2	D
I-405 Off	Major Off[3]	28.0	C	29.6	D	25.7	C	34.4	D	34.0	D	28.4	D
Lane Add	Basic	29.1	D	30.7	D	26.7	D	36.2	**E**	35.6	**E**	29.5	D
Willow St. WB On / Lane Add	Basic	40.7	**E**	45.2	**F**	35.9	**E**	68.5	**F**	65.2	**F**	41.9	**E**

Table 3.5-1: I-710 Northbound Ramp Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
Willow St. WB On	On	30.6	D	31.7	D	28.2	D	--*	**F**	--*	**F**	30.7	D
Willow St. WB Off / Willow St. WB On	Basic	37.0	**E**	--[6]	**F**	--[6]	**F**	56.9	**F**	57.4	**F**	38.4	**E**
Willow St. WB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. EB On / Willow St. WB Off	Weave	35.2	**E**	36.0	**E**	--[6]	**F**	--*	**F**	--*	**F**	34.9	D
Willow St. EB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. EB Off / Willow St. EB On	Basic	34.1	D	38.3	**E**	--[6]	**F**	49.7	**F**	50.7	**F**	35.0	**E**
Willow St. EB Off	Off	33.8	D	35.6	**E**	31.7	D	--*	**F**	--*	**F**	34.8	D
Pacific Coast Hwy. NB On / Willow St. EB Off	Basic	35.3	**E**	39.4	**E**	32.0	D	53.6	**F**	53.8	**F**	37.2	**E**
Pacific Coast Hwy. NB On	On	29.8	D	31.9	D	27.5	C	--*	**F**	--*	**F**	30.4	D
Pacific Coast Hwy. NB Off / Pacific Coast Hwy. NB On	Basic	31.6	D	35.4	**E**	29.5	D	44.6	**E**	46.0	**F**	33.9	D
Pacific Coast Hwy. NB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Coast Hwy. SB On / Pacific Coast Hwy. NB Off	Weave	32.1	D	--*	**F**	30.2	D	--*	**F**	--*	**F**	40.6	**E**
Pacific Coast Hwy. SB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Coast Hwy. SB Off / Pacific Coast Hwy. SB On	Basic	29.1	D	32.8	D	26.3	D	41.0	**E**	41.8	**E**	30.6	D
Pacific Coast Hwy. SB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anaheim St. WB On / Pacific Coast Hwy. SB Off	Weave	27.0	C	30.1	D	--[6]	**F**	37.5	**E**	--*	**F**	29.1	D
Anaheim St. WB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anaheim St. WB Off / Anaheim St. WB On	Basic	19.7	C	--[6]	**F**	--[6]	**F**	27.0	D	28.2	D	22.4	C
Anaheim St. WB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anaheim St. EB On / Anaheim St. WB Off	Weave	20.4	C	--[6]	**F**	--[6]	**F**	29.8	D	32.5	D	24.9	C
Anaheim St. EB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7th St. & 3rd St. & Shoreline Dr. On / Anaheim St. EB On	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	26.5	D	27.7	D	21.1	C
7th St. & 3rd St. & Shoreline Dr. On	Major On[2]	0.47	N/A	0.6	N/A	0.43	N/A	0.65	N/A	0.7	N/A	0.51	N/A
Anaheim St. EB Off / 7th St. & 3rd St. & Shoreline Dr. On	Basic	8.3	A	28.5	D	13.3	B	22.4	C	34.9	D	16.9	B
Anaheim St. EB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9th St. & Pier B St. & Pico Ave. On / Anaheim St. EB Off	Weave	6.7	A	22.7	C	11.1	B	18.2	B	--*	**F**	14.1	B
9th St. & Pier B St. & Pico Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Harbor Scenic Dr. On / 9th St. & Pier B St. & Pico Ave. On	Basic	6.1	A	19.3	C	9.0	A	13.4	B	20.9	C	9.8	A
Harbor Scenic Dr. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
South of Harbor Scenic Dr. On	Basic	4.1	A	17.6	B	5.0	A	9.5	A	17.5	B	5.6	A

Table 3.5-1: I-710 Northbound Ramp Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
I-710 NB Collector/Distributor Road at Florence Ave.													
To I-710 NB	Basic	8.6	A	7.7	A	6.7	A	9.0	A	7.3	A	6.3	A
Florence WB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Florence WB Off / Florence EB On	Weave[5]	10.3	A	12.4	B	15.1	B	10.3	A	11.5	A	14.3	B
Florence EB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
From I-710 NB	Basic	8.2	A	12.1	B	16.7	B	7.8	A	11.3	B	16.1	B
I-710 NB Collector/Distributor Road at Imperial Hwy.													
To I-710 NB	Basic	8.0	A	5.7	A	8.0	A	9.0	A	5.2	A	8.4	A
Imperial WB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Imperial WB Off / Imperial EB On	Weave[5]	11.0	A	13.0	B	20.7	B	13.6	B	12.4	B	22.9	B
Imperial EB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
From I-710 NB	Basic	9.4	A	14.4	B	21.6	C	11.9	B	14.2	B	23.9	C
I-710 NB Collector/Distributor Road from Wardlow to I-405													
To I-710 NB	Basic	31.4	D	30.2	D	34.0	D	40.3	**E**	37.1	**E**	39.6	**E**
I-405 NB & Pacific Pl. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-405 NB & Pacific Pl. On / I-405 NB Off	Basic	1.7	A	0.8	A	1.1	A	2.9	A	1.7	A	2.5	A
I-405 NB Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-405 NB Off / I-405 SB Off	Basic	15.2	B	14.4	B	11.8	B	15.8	B	14.5	B	12.2	B
I-405 SB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-405 SB Off / Wardlow Rd. On	Weave[5]	24.1	C	23.3	B	18.1	B	24.8	C	23.0	B	17.9	B
Wardlow Rd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
From I-710 NB	Basic	25.9	C	25.7	C	20.7	C	25.9	C	25.0	C	19.9	C

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.
1 Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
2 Major merge area; HCM methodology applied for analysis.
3 Major diverge area; HCM methodology applied for analysis.
4 Single-lane addition/drop; HCM methodology applied for analysis.
5 Weave operation occurs on freeway collector/distributor.
6 Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-2: I-710 Southbound Ramp Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
I-710 Southbound Mainline													
North of Third St. On	Basic	30.9	D	25.1	C	20.3	C	34.1	D	31.6	D	21.9	C
Third St. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Third St. On / Eagle St. Off	Weave	27.6	C	22	C	17.6	B	30.8	D	27.9	C	19.1	B
Eagle St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Eagle St. Off / SR-60 On	Basic	30.3	D	24.3	C	19.2	C	32.5	D	30.8	D	19.8	C
SR-60 On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SR-60 On / Eastern Ave. Off	Weave	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**
Eastern Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Eastern Ave. Off / I-5 SB Off	Basic	35.5	**E**	28.7	D	--[6]	**F**	34.1	D	28.8	D	27.5	D
I-5 SB Off	Off[4]	--*	**F**	N/A	N/A	--*	**F**	N/A	N/A	N/A	N/A	N/A	N/A
I-5 SB Off / Eastern Ave. On	Basic	34.3	D	29	D	--[6]	**F**	33.5	D	30.1	D	24.4	C
Eastern Ave. On	On	29.6	D	25.5	C	20.9	C	29.3	D	25.5	C	21.1	C
Eastern Ave. On / I-5 SB On	Basic	38.3	**E**	--[6]	**F**	--[6]	**F**	37.3	**E**	32.1	D	26.1	D
I-5 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-5 SB On / Washington Blvd. Off	Weave	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**
Washington Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Washington Blvd. Off / Washington Blvd. On	Basic	29.5	D	26.9	D	--[6]	**F**	32.3	D	28.3	D	24.8	C
Washington Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Washington Blvd. On / Atlantic Blvd. Off	Weave	41.9	**E**	40.9	**E**	--[6]	**F**	--*	**F**	--*	**F**	39.1	**E**
Atlantic Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Atlantic Blvd. Off / Atlantic Blvd. SB On	Basic	30.8	D	6	**F**	--[6]	**F**	34.2	D	35.0	D	31.0	D
Atlantic Blvd. SB On	On	24.5	C	26.5	C	23.5	C	26.3	C	29.7	D	26.1	C
Atlantic Blvd. SB On / Atlantic Blvd. NB On	Basic	32.7	D	34.8	D	--[6]	**F**	36.4	**E**	39.5	**E**	33.8	D
Atlantic Blvd. NB On	On	25.3	C	26.9	C	26.4	C	27.2	C	29.1	D	28.3	D
Atlantic Blvd. NB On / Florence Ave. Off	Basic	35.7	**E**	38.8	**E**	--[6]	**F**	39.9	**E**	44.7	**E**	39.1	**E**
Florence Ave. Off	Off	35	**E**	38.4	**E**	36.5	**E**	38.3	**E**	42.4	**E**	40.4	**E**
Florence Ave. Off / Florence Ave. On	Basic	32.6	D	33.3	D	--[6]	**F**	34.9	D	35.6	**E**	32.0	D
Florence Ave. On	On	34.1	D	34.2	D	33.4	D	--*	**F**	--*	**F**	35.1	**E**
Florence Ave. On / Firestone Blvd. Off	Basic	41.1	**E**	42.4	**E**	39	**E**	46.5	**F**	47.1	**F**	41.5	**E**
Firestone Blvd. Off	Off	38.6	**E**	39.9	**E**	38.7	**E**	--*	**F**	--*	**F**	40.0	**E**
Firestone Blvd. Off / Firestone Blvd. On	Basic	36.1	**E**	36.2	**E**	33.3	D	39.8	**E**	39.4	**E**	35.0	**E**
Firestone Blvd. On	On	--*	**F**	--*	**F**	32.3	D	--*	**F**	--*	**F**	--*	**F**
Firestone Blvd. On / Wright Rd. Off	Basic	49.5	**F**	46.3	**F**	41.5	**E**	57.7	**F**	52.7	**F**	45.3	**F**
Wright Rd. Off	Off	--*	**F**	--*	**F**	36.8	**E**	--*	**F**	--*	**F**	--*	**F**
Wright Rd. Off / Imperial Hwy. EB Off	Basic	46	**F**	43.1	**E**	39.5	**E**	52.7	**F**	48.2	**F**	42.0	**E**
Imperial Hwy. EB Off	Off	--*	**F**	37.1	**E**	35.6	**E**	--*	**F**	--*	**F**	36.9	**E**
Imperial Hwy. EB Off / Imperial Hwy. On	Basic	43.3	**E**	41	**E**	37.2	**E**	50.0	**F**	46.1	**F**	39.8	**E**
Imperial Hwy. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Imperial Hwy. On / MLK Blvd. Off	Weave	--*	**F**	--*	**F**	42.6	**E**	--*	**F**	--*	**F**	--*	**F**
MLK Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MLK Blvd. Off / I-105 Off	Basic	38	**E**	34.7	D	32.2	D	41.9	**E**	37.4	**E**	33.5	D
I-105 Off	Major Off[3]	35.6	**E**	33.3	D	31	D	37.9	**E**	35.3	**E**	32.2	D

Table 3.5-2: I-710 Southbound Ramp Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
I-105 Off / Rosecrans Ave. Off	Basic	34.9	D	31.1	D	28.3	D	36.8	**E**	33.8	D	29.7	D
Rosecrans Ave. Off	Off	34.6	D	30.9	D	29.2	D	35.9	**E**	33.1	D	30.4	D
Rosecrans Ave. Off / MLK Blvd. On	Basic	--[6]	**F**	29	D	25.7	C	33.5	D	31.7	D	26.9	D
MLK Blvd. On	On	26.1	C	21.8	C	20.6	C	27.0	C	23.6	C	21.5	C
MLK Blvd. On / I-105 On	Basic	--[6]	**F**	30	D	27.6	D	36.5	**E**	32.8	D	28.7	D
I-105 On	Major On[2]	0.7	N/A	0.7	N/A	0.6	N/A	0.8	N/A	0.7	N/A	0.6	N/A
I-105 On / Rosecrans Ave. WB On	Basic	--[6]	**F**	27.2	D	24.1	C	32.5	D	30.0	D	25.5	C
Rosecrans Ave. WB On	On	21.3	C	18.1	B	16.7	B	23.6	C	19.9	B	18.8	B
Rosecrans Ave. WB On / Rosecrans Ave. EB On	Basic	--[6]	**F**	27.6	D	24.7	C	34.3	D	30.6	D	26.9	D
Rosecrans Ave. EB On	On	24.6	C	19.5	B	18.9	B	26.9	C	21.3	C	20.3	C
Rosecrans Ave. EB On / Alondra Blvd. WB Off	Basic	--[6]	**F**	--[6]	**F**	26.2	D	37.0	**E**	31.7	D	28.3	D
Alondra Blvd. WB Off	Off	33.7	D	28.7	D	26.3	C	35.7	**E**	31.2	D	28.2	D
Alondra Blvd. WB Off / Alondra Blvd. EB Off	Basic	40.6	**E**	32.9	D	30	D	46.2	**F**	37.2	**E**	32.4	D
Alondra Blvd. EB Off	Off	36.5	**E**	32	D	29.8	D	--*	**F**	35.0	**E**	32.3	D
Alondra Blvd. EB Off / Alondra Blvd. On	Basic	38.5	**E**	31.6	D	28.7	D	43.7	**E**	35.3	**E**	30.5	D
Alondra Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alondra Blvd. On / SR-91 EB Off	Weave	41.5	**E**	32.8	D	30.2	D	--*	**F**	--*	**F**	31.5	D
SR-91 EB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SR-91 EB Off / SR-91 WB Off	Basic	31.3	D	24.5	C	21.8	C	33.9	D	27.3	D	23.3	C
SR-91 WB Off	Major Off[3]	37.7	**E**	29.4	D	26.2	C	--*	**F**	32.9	D	28.1	D
SR-91 WB Off / SR-91 WB On	Basic	--[6]	**F**	28.6	D	25.5	C	34.1	D	32.6	D	26.6	D
SR-91 WB On	Major On[2]	0.9	N/A	0.8	N/A	0.7	N/A	1.0	N/A	0.9	N/A	0.7	N/A
SR-91 WB On / SR-91 EB & Artesia Blvd. On	Basic	35.2	**E**	32.8	D	28.1	D	41.7	**E**	38.3	**E**	29.6	D
SR-91 EB & Artesia Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SR-91 EB & Artesia Blvd. On / Long Beach Blvd. NB Off	Weave	48.8	**E**	41.6	**E**	36.2	**E**	--*	**F**	--*	**F**	37.8	**E**
Long Beach Blvd. NB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. NB Off / Long Beach Blvd. SB Off	Basic	30.7	D	28.9	D	25.2	C	34.2	D	32.8	D	26.5	D
Long Beach Blvd. SB Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. SB Off / Long Beach Blvd. On	Basic	37.1	**E**	35.2	**E**	30.8	D	45.1	**F**	41.8	**E**	32.5	D
Long Beach Blvd. On	On	28	C	26.2	C	24.5	C	--*	**F**	29.4	D	25.8	C
Long Beach Blvd. On / Susana Rd. Off	Basic	39.6	**E**	36.4	**E**	32.7	D	48.5	**F**	44.6	**E**	34.3	D
Susana Rd. Off	Off	32.8	D	29.6	D	26.2	C	--*	**F**	34.4	D	27.9	C
Susana Rd. Off / Del Amo Blvd. On	Basic	--[6]	**F**	32.8	D	30	D	39.2	**E**	37.6	**E**	31.5	D
Del Amo Blvd. On	On	N/A	N/A	28.4	D	N/A	N/A	N/A	N/A	32.7	D	N/A	N/A
Del Amo Blvd. On / I-405 & Wardlow Rd. Off	Weave	--*	**F**	35.6	**E**	--*	**F**	--*	**F**	43.5	**E**	--*	**F**
I-405 & Wardlow Rd. Off	Off	N/A	N/A	34	D	N/A	N/A	N/A	N/A	42.9	**E**	N/A	N/A
I-405 & Wardlow Rd. Off / I-405 SB On	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	29.8	D	34.7	D	24.2	C
I-405 SB On	On	32.3	D	31.8	D	30.8	D	--*	**F**	--*	**F**	32.9	D
I-405 SB On / I-405 NB On	Basic	34.1	D	35.6	**E**	32.5	D	46.1	**F**	49.3	**F**	35.2	**E**
I-405 NB On	On	--*	**F**	--*	**F**	33.4	D	--*	**F**	--*	**F**	--*	**F**
I-405 NB On / Willow St. WB Off	Basic	46.6	**F**	56.5	**F**	41.6	**E**	74.2	**F**	95.2	**F**	45.5	**F**

Table 3.5-2: I-710 Southbound Ramp Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
Willow St. WB Off	Off	--*	**F**	--*	**F**	36.7	**E**	--*	**F**	--*	**F**	--*	**F**
Willow St. WB Off / Willow St. WB On	Basic	40.9	**E**	48.7	**F**	37.7	**E**	60.0	**F**	75.7	**F**	39.7	**E**
Willow St. WB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. WB On / Willow St. EB Off	Weave	37	**E**	--*	**F**	35.6	**E**	--*	**F**	--*	**F**	37.1	**E**
Willow St. EB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. EB Off / Willow St. EB On	Basic	40.2	**E**	45.7	**F**	35	D	56.9	**F**	67.0	**F**	36.1	**E**
Willow St. EB On	On	32.1	D	--*	**F**	30	D	--*	**F**	--*	**F**	30.6	D
Willow St. EB On / Pacific Coast Hwy. Off	Basic	42.3	**E**	48.1	**F**	37	**E**	64.4	**F**	73.3	**F**	38.5	**E**
Pacific Coast Hwy. Off	Off	38.3	**E**	--*	**F**	35.8	**E**	--*	**F**	--*	**F**	36.7	**E**
Pacific Coast Hwy. Off / Pacific Coast Hwy. On	Basic	31.9	D	37.1	**E**	30.3	D	39.2	**E**	45.8	**F**	30.3	D
Pacific Coast Hwy. On	On	31.6	D	34.6	D	29.7	D	--*	**F**	--*	**F**	32.3	D
Pacific Coast Hwy. On / Anaheim St. WB Off	Basic	34.9	D	41.3	**E**	33.1	D	48.9	**F**	61.2	**F**	35.2	**E**
Anaheim St. WB Off	Off	34.1	D	36.7	**E**	32.9	D	--*	**F**	--*	**F**	34.2	D
Anaheim St. WB Off / Anaheim St. WB On	Basic	31.4	D	36.5	**E**	30.1	D	39.1	**E**	46.0	**F**	31.5	D
Anaheim St. WB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anaheim St. WB On / Anaheim St. EB Off	Weave	29.5	D	34.3	D	28.1	D	36.4	**E**	--*	**F**	29.8	D
Anaheim St. EB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anaheim St. EB Off / 6th St. & Broadway & Shoreline Dr. Off	Basic	17.4	B	20.4	C	16.4	B	21.3	C	23.6	C	17.3	B
6th St. & Broadway & Shoreline Dr. Off	Major Off[3]	16.7	B	19.6	B	15.8	B	20.5	C	22.7	C	16.7	B
6th St. & Broadway & Shoreline Dr. Off / Anaheim St. EB On	Basic	11.4	B	21.8	C	9.3	A	18.0	B	27.2	D	12.9	B
Anaheim St. EB On	On	13.4	B	21.3	C	11.9	B	18.9	B	25.0	C	14.2	B
Anaheim St. EB On / Pico Ave. & 9th St. & Pier B St. Off	Basic	13.4	B	24	C	11.4	B	20.5	C	28.8	D	14.7	B
Pico Ave. & 9th St. & Pier B St. Off	Off	17	B	26.1	C	14.9	B	23.7	C	30.4	D	18.2	B
Pico Ave. & 9th St. & Pier B St. Off / Harbor Scenic Dr. Off	Basic	11.4	B	21.5	C	10.3	A	16.5	B	24.0	C	12.4	B
Harbor Scenic Dr. Off	Major Off[3]	11	B	20.7	C	9.9	A	15.8	B	23.1	C	11.9	B
South of Harbor Scenic Dr. Off	Basic	13.9	B	28.1	D	13	B	15.3	B	28.2	D	16.1	B
I-710 SB Collector/Distributor Road at Florence Ave.													
From I-710 SB	Basic	5	A	9.2	A	11.1	B	6.1	A	11.9	B	13.4	B
Florence WB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Florence WB On / Florence EB Off	Weave[5]	9.8	A	12.7	B	16.3	B	11.5	A	16.5	B	19.4	B
Florence EB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
To I-710 SB	Basic	11.3	B	11.3	B	14.4	B	12.6	B	13.8	B	16.1	B
I-710 SB Collector/Distributor Road at Imperial Hwy.													
From I-710 SB	Basic	4.8	A	4	A	4.8	A	4.8	A	4.0	A	5.2	A
Imperial WB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Imperial WB On / Imperial EB Off	Weave[5]	9.2	A	7.8	A	9.2	A	10.1	A	8.7	A	10.4	A
Imperial EB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
To I-710 SB	Basic	10	A	8.8	A	10	A	11.1	B	10.0	A	11.1	B

Table 3.5-2: I-710 Southbound Ramp Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
I-710 SB Collector/Distributor Road at I-105													
From I-710 SB	Basic	11.3	B	8.6	A	10.7	A	11.3	B	8.6	A	10.9	A
MLK Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MLK Blvd. On / Rosecrans Ave. Off	Weave[5]	12.2	B	7.4	A	10.3	A	12.2	B	7.4	A	10.4	A
Rosecrans Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
To I-710 SB	Basic	10	A	4.6	A	7.3	A	10.0	A	4.6	A	7.3	A
I-710 SB Collector/Distributor Road at Pacific Coast Hwy.													
From I-710 SB	Basic	9.4	A	7.3	A	9.2	A	7.5	A	5.4	A	5.6	A
Pacific Coast Hwy. WB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Coast Hwy. WB On / Pacific Coast Hwy. EB Off	Weave[5]	7.3	A	5	A	6.2	A	6.9	A	4.4	A	4.3	A
Pacific Coast Hwy. EB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
To I-710 SB	Basic	2.9	A	1.5	A	1.3	A	4.2	A	2.5	A	2.1	A

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MLK = Martin Luther King Jr. Blvd.
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

In the 2035 No Build Alternative condition:

- **Northbound Direction**
    - Approximately half of the basic freeway segments are expected to operate at LOS E or F during the morning and midday peak hours, primarily due to the high volume of trucks during those time periods;
    - The LOS for the merge and diverge areas are also expected to be poor during the morning and midday peak hours, when approximately half of the merge and diverge areas are expected to operate at LOS E or F; and
    - Nearly all of the weaving areas are expected to operate poorly during all analyzed peak hours with the worst conditions occurring during the midday peak hour when 92 percent (12 out of 13) of the weaving areas are projected to operate at LOS E or worse.
- **Southbound Direction**
    - Approximately 60 percent (26 out of 45) of the basic freeway segments are expected to operate at LOS E or F during the morning peak hour, which is the most congested among the three peak hours analyzed;
    - The LOS for the merge and diverge areas is also expected to be poor during the morning peak hour when nearly 60 percent (20 out of 34) of the merge and diverge areas are expected to operate at LOS E or F; and
    - Nearly all (9 out of 10) of the weaving areas are expected to operate poorly (LOS E or F) during morning and midday peak hours.

In summary, congestion is prevalent throughout the entire I-710 corridor in both directions for all peak hours. Traffic is slightly worse in the northbound direction during the AM peak hour and in the southbound direction during the PM peak hour. A comparison of LOS results between existing conditions and 2035 No Build conditions demonstrates that operations on I-710 are projected to deteriorate if improvements are not implemented to address capacity deficiencies or to amend geometric deficiencies.

INTERSTATE 405 MAINLINE SEGMENTS. Table 3.5-3 shows the LOS for I-405 in the vicinity of the I-710/I-405 interchange. The following summary describes the existing and No Build Alternative I-405 mainline operations.

Table 3.5-3: I-405 Basic/Weaving Segments and Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
I-405 Northbound Mainline													
North of Alameda St. Off	Basic	--[6]	**F**	25.6	C	26.1	D	30.4	D	27.0	D	29.3	D
Alameda St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 & Santa Fe Ave. On / Alameda St. Off	Weave	--[6]	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**
I-710 & Santa Fe Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB & Santa Fe Ave. Off / I-710 & Santa Fe Ave. On	Basic	--[6]	**F**	24.5	C	24.0	C	31.3	D	27.1	D	28.4	D
I-710 SB & Santa Fe Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Pl. On / I-710 SB & Santa Fe Ave. Off	Weave	--[6]	**F**	34.9	D	34.0	D	41.1	**E**	37.2	**E**	36.0	**E**
Pacific Pl. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB Off / Pacific Pl. On	Basic	--[6]	**F**	32.8	D	30.4	D	41.6	**E**	35.8	**E**	34.6	D
I-710 NB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wardlow Rd. On / I-710 NB Off	Weave	--[6]	**F**	31.5	D	30.1	D	--*	**F**	--*	**F**	33.0	D
Wardlow Rd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
South of Wardlow Rd. On	Basic	--[6]	**F**	28.2	D	27.7	D	35.3	**E**	31.4	D	30.8	D
I-405 NB Collector/Distributor Road from I-710 to Santa Fe Ave.													
To I-405 NB	Basic	21.5	C	23.3	C	24.3	C	24.1	C	22.7	C	23.0	C
Santa Fe Ave. On	On	20.1	C	21.6	C	22.4	C	22.3	C	21.1	C	21.3	C
Santa Fe Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Santa Fe Ave. Off	Weave[5]	32.9	D	24.2	C	24.9	C	31.0	C	22.9	B	20.9	B
I-710 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lane Add	Basic	19.2	C	14.9	B	14.7	B	18.0	B	15.5	B	13.7	B
I-710 SB Off / Lane Add	Basic	40.2	**E**	29.7	D	29.3	D	36.4	**E**	31.0	D	27.4	D
I-710 SB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB On / I-710 SB Off	Weave[5]	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**
I-710 NB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
From I-405 NB	Basic	32.1	D	30.5	D	27.2	D	28.4	D	29.1	D	23.6	C
To I-405 NB	Basic	21.5	C	23.3	C	24.3	C	24.1	C	22.7	C	23.0	C
I-405 Southbound Mainline													
North of Alameda On	Basic	25.9	C	29.4	D	--[6]	**F**	27.5	D	33.3	D	31.4	D
Alameda St. (223rd St) On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alameda St. (223rd St) On / I-710 NB & Wardlow Rd. Off	Weave	34.0	D	38.2	**E**	40.8	**E**	35.8	**E**	--*	**F**	--*	**F**
I-710 NB & Wardlow Rd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB & Wardlow Rd. Off / I-710 SB Off	Basic	28.7	D	31.9	D	--[6]	**F**	30.9	D	36.6	**E**	36.8	**E**
I-710 SB Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB Off / Wardlow Rd. On	Basic	28.6	D	38.3	**E**	--[6]	**F**	31.4	D	45.6	**F**	40.6	**E**
Wardlow Rd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wardlow Rd. On / Pacific Pl. Off	Weave	27.4	C	31.5	D	--[6]	**F**	29.6	D	34.8	D	--*	**F**
Pacific Pl. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Pl. Off / I-710 On	Basic	24.0	C	27.7	D	--[6]	**F**	25.2	C	31.0	D	31.5	D
I-710 On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 On / Long Beach Blvd. (Crest St.) Off	Weave	--*	**F**	--*	**F**	--[6]	**F**	--*	**F**	--*	**F**	--*	**F**
Long Beach Blvd. (Crest St.) Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
South of Long Beach Blvd. Off	Basic	30.8	D	31.4	D	--[6]	**F**	31.3	D	35.0	D	37.1	**E**

Table 3.5-3: I-405 Basic/Weaving Segments and Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
I-405 SB Collector/Distributor Road from Santa Fe to I-710													
From I-405 SB	Basic	15.0	B	17.5	B	19.6	C	15.7	B	18.4	C	20.0	C
Wardlow Rd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wardlow Rd. On / Wardlow Rd. Off Weave[5]	Weave[5]	21.3	B	18.3	B	30.2	C	21.9	B	19.3	B	30.5	C
Wardlow Rd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wardlow Rd. Off / I-710 NB Off	Basic	20.6	C	20.7	C	30.1	D	21.4	C	21.1	C	30.3	D
I-710 NB Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
To I-405 SB	Basic	15.6	B	10.0	A	21.4	C	16.5	B	10.4	A	22.1	C
I-405 SB Collector/Distributor Road from I-710 to Pacific Pl.													
From I-710 SB	Basic	23.0	C	15.5	B	18.3	C	22.0	C	16.1	B	20.6	C
I-710 NB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB On / Pacific Pl. Off Weave[5]	Weave[5]	30.3	C	23.1	B	22.9	B	29.3	C	23.1	B	24.3	C
Pacific Pl. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
To I-405 SB	Basic	33.4	D	26.0	D	27.1	D	32.7	D	26.8	D	28.8	D

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.
[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

In the 2012/2013 existing condition:

- **Northbound Direction**
  - The number of basic freeway segments with poor operating conditions are highest during the morning peak hour with all of the analyzed segments operating at LOS E or F;
  - The weaving areas experience heavy densities and operate at poor LOS (E or F) during the morning peak hour; and
  - One weave area along the Collector/Distributor (CD) road from I-710 to Santa Fe Ave. currently operates at LOS F during all the three study peak hours.
- **Southbound Direction**
  - All of the basic freeway segments operate at poor LOS (E or F) during the evening peak hour; and
  - The weaving areas experience high vehicle densities during the evening peak hour with all of the weaving areas operating at poor LOS (E or F).

In the 2035 No Build Alternative condition:

- **Northbound Direction**
  - At least half of the freeway segments (two out of four) are forecast to operate at LOS E or worse during the morning peak hour; and
  - The weaving areas are expected to experience poor operating conditions during all three peak hours with the worst conditions occurring during the morning and midday peak.
- **Southbound Direction**
  - Conditions on the basic freeway segments are the worst during PM peak hour when 60 percent (three out of five) of the analyzed segments are projected to operate at LOS E or F;
  - The only merge and diverge area is forecast to operate at LOS D or better during all analyzed peak hours; and
  - Nearly all of the weaving areas are forecast to operate poorly (LOS E or F) during all analyzed peak hours, with the worst conditions occurring during the evening peak hour.

In summary, northbound I-405 shows heavy congestion during the morning peak hour while southbound I-405 shows heavy congestion during the evening peak hour. Similar to existing conditions, 2035 No Build conditions on northbound and southbound I-405 (weave segments) downstream of the I-710 on- and off-ramps are forecast to break down during all analyzed peak hours. This can be attributed to the high traffic volumes from I-710 and the short length of the weave segments.

SR-91 MAINLINE SEGMENTS. Table 3.5-4 shows the LOS for State Route 91 (SR-91) in the vicinity of the I-710/SR-91 interchange. The following summary describes the 2012/2013 existing and 2035 No Build SR-91 mainline operations.

In the 2012/2013 existing condition:

- **Eastbound Direction**
  - Approximately 80 percent (7 out of 9) of the basic freeway segments operate at poor LOS (E or F) during the midday peak hour. All of the nine basic freeway segments operate at poor LOS (E or F) during the evening peak hour;
  - All merge and diverge areas operate at an acceptable LOS (D or better), during the three peak analysis hours; and
  - All weaving areas operate at poor LOS (E or F) during the midday and evening peak hours.
- **Westbound Direction**
  - All of the basic freeway study segments operate at poor LOS (E or F) during the morning peak hour;
  - All merge and diverge areas operate at an acceptable LOS (D or better), during the three peak hours analyzed; and
  - The weaving areas experience maximum densities during the morning and midday peak hours with all the weaving areas operating at poor LOS (E or F).

In the 2035 No Build Alternative condition:

- **Eastbound Direction**
  - All but one (eight out of nine) basic freeway segments are projected to operate at LOS D or better during the analyzed peak hours;
  - One of the analyzed merge and diverge areas (one out of six) is projected to operate at LOS F during the morning and midday peak hours; and
  - All of the weaving areas are projected to perform at acceptable LOS (D or better) during the analyzed peak hours.

Table 3.5-4: SR-91 Basic/Weaving Segments and Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
SR-91 Eastbound Mainline													
West of Alameda St. On	Basic	26.4	D	31.9	D	--[6]	**F**	28.1	D	33.5	D	33.2	D
Alameda St. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alameda St. On / Santa Fe Ave. On	Basic	22.9	C	--[6]	**F**	--[6]	**F**	24.1	C	27.1	D	28.7	D
Santa Fe Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Santa Fe Ave. On / Long Beach Blvd. Off	Weave	25.8	C	--[6]	**F**	--[6]	**F**	28.0	D	30.8	D	34.0	D
Long Beach Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. Off / Long Beach Blvd. On	Basic	23.9	C	--[6]	**F**	--[6]	**F**	25.6	C	28.3	D	30.9	D
Long Beach Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. On / I-710 SB Off	Weave	28.4	D	--[6]	**F**	--[6]	**F**	30.4	D	32.0	D	34.6	D
I-710 SB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB Off / I-710 NB & Atlantic Ave. Off	Basic	23.1	C	--[6]	**F**	--[6]	**F**	25.0	C	26.2	D	29.0	D
I-710 NB & Atlantic Ave. Off	Major Off[3]	26.2	C	28.4	D	31.1	D	28.1	D	29.3	D	31.8	D
I-710 NB & Atlantic Ave. Off / I-710 NB On	Basic	31.1	D	--[6]	**F**	--[6]	**F**	32.8	D	32.1	D	33.3	D
I-710 NB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB On / I-710 SB On	Basic	25.4	C	--[6]	**F**	--[6]	**F**	27.6	D	28.9	D	29.0	D
I-710 SB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A	--*	**F**	--*	**F**	N/A	N/A
I-710 SB On / Atlantic Ave. On	Basic	26.4	D	--[6]	**F**	--[6]	**F**	29.3	D	31.8	D	29.4	D
Atlantic Ave. On	On	24.7	C	24.7	C	24.8	C	26.6	C	26.6	C	25.8	C
Atlantic Ave. On / Cherry Ave. Off	Basic	28.7	D	30.5	D	--[6]	**F**	32.0	D	33.5	D	31.5	D
Cherry Ave. Off	Off	33.0	D	34.2	D	34.3	D	N/A	N/A	N/A	N/A	N/A	N/A
East of Cherry Ave. Off	Basic	36.0	**E**	39.2	**E**	--[6]	**F**	41.8	**E**	44.8	**E**	40.1	**E**
SR-91 Westbound Mainline													
East of Cherry Ave. On	Basic	--[6]	**F**	26.5	D	27.0	D	32.6	D	31.0	D	27.7	D
Cherry Ave. On	On	27.7	C	25.7	C	25.9	C	28.8	D	29.1	D	26.5	C
Cherry Ave. On / Atlantic Ave. Off	Basic	--[6]	**F**	29.3	D	30.0	D	35.7	**E**	34.8	D	30.8	D
Atlantic Ave. Off	Off	20.8	C	18.3	B	18.7	B	21.8	C	21.3	C	19.2	B
Atlantic Ave. Off / I-710 Off	Basic	--[6]	**F**	27.9	D	27.4	D	33.3	D	33.0	D	28.2	D
I-710 Off	Major Off[3]	33.7	D	30.8	D	30.4	D	34.9	D	34.7	D	31.1	D
I-710 Off / I-710 NB & Atlantic Ave. On	Basic	--[6]	**F**	--[6]	**F**	28.6	D	31.6	D	31.3	D	28.6	D
I-710 NB & Atlantic Ave. On	Major On[2]	0.80	N/A	0.7	N/A	0.7	N/A	0.80	N/A	0.75	N/A	0.70	N/A
I-710 NB & Atlantic Ave. On / I-710 SB On	Basic	--[6]	**F**	24.2	C	25.6	C	30.2	D	27.8	D	25.5	C
I-710 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Long Beach Blvd. Off	Weave	--[6]	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**
Long Beach Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. Off / Lane Drop & HOV Access	Basic	--[6]	**F**	--[6]	**F**	20.3	C	28.1	D	22.2	C	20.5	C
Lane Drop & HOV Access	Basic	--[6]	**F**	--[6]	**F**	24.7	C	37.1	**E**	27.4	D	25.1	C

Table 3.5-4: SR-91 Basic/Weaving Segments and Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
Long Beach Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. On / Santa Fe Ave. Off	Weave	--[6]	**F**	--[6]	**F**	26.7	C	38.9	**E**	28.9	D	27.8	C
Santa Fe Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
West of Santa Fe Ave. Off	Basic	--[6]	**F**	--[6]	**F**	31.4	D	58.6	**F**	35.9	**E**	32.5	D

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.
[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

- **Westbound Direction**
    - Approximately 40 percent (three out of eight) of the basic freeway segments are projected to operate at poor LOS (E or F) during the morning peak hour;
    - All merge and diverge areas are projected to perform at acceptable LOS (D or better) during the analyzed peak hours; and
    - All weave areas are projected to operate at poor LOS (E or F) during the morning peak hour.

In summary, westbound SR-91 shows heavy congestion during the morning peak hour while eastbound SR-91 shows heavy congestion during the evening peak hour. The weaving segment along westbound SR-91, downstream of the ramp from southbound I-710, is projected to operate poorly during all three peak analysis hours under 2035 No Build conditions. This can be attributed to the high traffic volume merging from I-710. Congested conditions are anticipated during all three peak hours along eastbound SR-91 to the east of Cherry Ave. interchange, where the freeway narrows to four mainline lanes.

I-105 MAINLINE SEGMENTS. Table 3.5-5 shows the LOS for I-105 in the vicinity of the I-710/I-105 interchange. The following summary describes the 2012/2013 existing and 2035 No Build I-105 mainline operations.

In the 2012/2013 existing condition:

- **Eastbound Direction**
    - Over half (four out of seven) of the basic freeway segments currently operate at poor LOS (E or F) during all peak hours; and
    - All merge and diverge areas operate at an acceptable LOS (D or better) during all three peak hours.
- **Westbound Direction**
    - All of the basic freeway segments operate at poor LOS (E or F) during the morning peak hour, with 60 percent (three out of five) of the basic freeway segments experiencing poor operating conditions in the evening and midday peak hour; and
    - All merge and diverge areas operate at an acceptable LOS (D or better) during the three peak hours analyzed.

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Table 3.5-5: I-105 Basic/Weaving Segments and Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS	Density/V/C[1]	LOS
I-105 Eastbound Mainline													
East of Long Beach Blvd. On	Basic	37.3	**E**	43.3	**E**	35.5	**E**	38.3	**E**	44.4	**E**	40.2	**E**
I-710 Off	Off	15.9	B	18.7	B	16.4	B	18.1	B	19.8	B	18.8	B
I-710 Off / Garfield Ave. Off	Basic	22.4	C	24.2	C	20.1	C	20.9	C	23.8	C	21.7	C
Garfield Ave. Off	Off	12.7	B	14.4	B	10.5	B	11.3	B	14.0	B	12.0	B
Garfield Ave. Off / I-710 NB On	Basic	19.9	C	21.2	C	16.8	B	18.3	C	20.8	C	18.3	C
I-710 NB On	Major On[2]	0.4	N/A	0.5	N/A	0.4	N/A	0.44	N/A	0.53	N/A	0.47	N/A
I-710 NB On / I-710 SB On	Basic	15.8	B	17.8	B	--[5]	**F**	15.9	B	19.2	C	17.1	B
I-710 SB On	On	24.2	C	23.3	C	21.8	C	25.8	C	24.3	C	22.8	C
I-710 SB On / Lane Drop	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	20.7	C	22.5	C	20.4	C
Lane Drop	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	26.3	D	29.2	D	25.9	C
East of I-710 On	Basic	38.1	**E**	42.4	**E**	34.2	D	40.8	**E**	48.8	**F**	39.6	**E**
I-105 Westbound Mainline													
East of I-710 Off	Basic	--[6]	**F**	19.0	C	18.9	C	23.5	C	21.8	C	20.0	C
I-710 Off	Major Off[3]	24.7	C	21.6	C	21.5	C	26.7	C	24.8	C	22.7	C
I-710 Off / Garfield Ave. On	Basic	--[6]	**F**	21.1	C	23.2	C	26.5	D	23.8	C	23.2	C
Garfield Ave. On	On	23.9	C	20.6	C	22.4	C	25.1	C	23.0	C	22.4	C
Garfield Ave. On / I-710 SB On	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	31.3	D	28.0	D	27.2	D
I-710 SB On	On	33.9	D	33.9	D	34.4	D	36.0	**E**	36.0	**E**	34.4	D
I-710 SB On / I-710 NB On	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	41.5	**E**	39.7	**E**	36.8	**E**
I-710 NB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
West of I-710 NB On	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	58.0	**F**	51.2	**F**	48.8	**F**

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

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In the 2035 No Build Alternative condition:

- **Eastbound Direction**
    - 29 percent (two out of seven) of the basic freeway segments are projected to operate at poor LOS (E or F) during all three analyzed peak hours; and
    - All merge and diverge areas are projected to operate at acceptable LOS (D or better) during all three analyzed peak hours.
- **Westbound Direction**
    - 40 percent (two out of five) of the basic freeway segments are projected to operate at poor LOS (E or F) during all three analyzed peak hours; and
    - One out of four of the merge and diverge areas is projected to operate at poor LOS (E or worse) during the morning and midday peak hours.

Although the HCM analysis under future No Build conditions does not consider upstream or downstream activity as existing conditions have reflected, it is conservative to assume that existing downstream queuing or upstream metering effects would persist under future No Build conditions. A comparison of No Build segment density results to existing conditions indicate that operations on I-105 are projected to deteriorate under future No Build conditions due to increased traffic demand.

I-5 MAINLINE SEGMENTS. Table 3.5-6 shows the LOS for I-5 in the vicinity of the I-710/I-5 interchange. The following summary describes the 2012/2013 existing and 2035 No Build I-5 mainline operations.

In the 2012/2013 existing condition:

- **Northbound Direction**
    - All of the basic freeway segments experience poor operating conditions LOS (E or F) during the morning peak hour; and
    - Most of the merge and diverge areas operate at acceptable LOS (D or better) during the three peak hours analyzed.
- Southbound Direction
    - The number of basic freeway segments with poor operating conditions are highest during the midday and evening peak hours with all of the segments operating at poor LOS (E or F);

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Table 3.5-6: I-5 Basic/Weaving Segments and Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
I-5 Northbound Mainline													
North of Dennison St. On	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	31.7	D	43.2	**E**	30.0	D
Dennison St. On	On	24.0	C	25.0	C	18.2	B	24.4	C	28.5	D	20.5	C
Dennison St. Off / Dennison St. On	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	31.4	D	42.7	**E**	29.8	D
Dennison St. Off	Off	36.3	**E**	35.5	**E**	27.5	C	36.4	**E**	--*	**F**	32.5	D
Downey Rd. On / Dennison St. Off	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	34.4	D	47.8	**F**	32.1	D
Downey Rd. On	On	27.4	C	27.9	C	20.9	C	27.7	C	--*	**F**	23.6	C
I-710 NB On / Downey Rd. On	Basic	--[6]	**F**	--[6]	**F**	--[6]	**F**	31.9	D	43.7	**E**	30.5	D
I-710 NB On	On[4]	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**	--*	**F**
I-710 NB Off / I-710 NB On	Basic	--[6]	**F**	25.3	C	19.1	C	25.9	C	36.2	**E**	28.8	D
I-710 NB Off	Off[4]	N/A	N/A	N/A	N/A	--*	**F**	--*	**F**	N/A	N/A	--*	**F**
McBride Ave. Off / I-710 NB Off	Basic	--[6]	**F**	25.4	C	22.1	C	27.6	D	35.2	**E**	31.3	D
McBride Ave. Off	Off	28.7	D	29.9	D	26.8	C	33.0	D	36.2	**E**	33.6	D
Lane Add	Basic	--[6]	**F**	26.5	D	23.0	C	29.7	D	37.9	**E**	33.6	D
Woods Ave. On / Lane Add	Basic	--[6]	**F**	36.7	**E**	30.2	D	43.3	**E**	61.4	**F**	47.4	**F**
Woods Ave. On	On	31.0	D	32.4	D	29.2	D	33.6	D	--*	**F**	--*	**F**
Woods Ave. Off / Woods Ave. On	Basic	--[6]	**F**	30.1	D	25.2	C	36.9	**E**	46.5	**F**	38.6	**E**
Woods Ave. Off	Off	33.7	D	36.8	**E**	33.9	D	36.7	**E**	--*	**F**	40.4	**E**
Camfield Ave. On / Woods Ave. Off	Basic	--[6]	**F**	34.3	D	29.0	D	38.6	**E**	55.0	**F**	45.0	**E**
Camfield Ave. On	On	29.0	D	30.4	D	27.7	C	31.6	D	--*	**F**	33.2	D
Camfield Ave. Off / Camfield Ave. On	Basic	--[6]	**F**	29.6	D	--[6]	**F**	33.9	D	45.2	**F**	38.3	**E**
Camfield Ave. Off	Off	35.3	**E**	35.4	**E**	31.2	D	38.4	**E**	--*	**F**	37.7	**E**
South of Camfield Ave. Off	Basic	--[6]	**F**	--[6]	**F**	27.2	D	38.3	**E**	51.9	**F**	41.8	**E**
I-5 Southbound Mainline													
North of Ditman Off	Basic	28.2	D	--[6]	**F**	--[6]	**F**	43.5	**E**	55.5	**F**	36.4	**E**
Ditman Ave. Off	Off	28.5	D	31.2	D	25.7	C	36.1	**E**	--*	**F**	32.7	D
Ditman Ave. Off / Ditman Ave. On	Basic	28.2	D	--[6]	**F**	--[6]	**F**	41.9	**E**	53.3	**F**	35.2	**E**
Ditman Ave. On	On	27.7	C	30.1	D	26.5	C	--*	**F**	--*	**F**	31.1	D
Ditman Ave. On / Boswell Pl. (Downey Rd.) Off	Basic	31.9	D	--[6]	**F**	--[6]	**F**	48.1	**F**	64.3	**F**	40.4	**E**
Boswell Pl. (Downey Rd.) Off	Off	32.2	D	34.8	D	29.8	D	--*	**F**	--*	**F**	35.9	**E**
Boswell Pl. (Downey Rd.) Off / I-710 SB Off	Basic	31.7	D	--[6]	**F**	--[6]	**F**	47.0	**F**	59.3	**F**	39.0	**E**
I-710 SB Off	Major Off[3]	--*	**F**	--*	**F**	31.1	D	--*	**F**	--*	**F**	--*	**F**
I-710 SB Off / I-710 SB On	Basic	45.1	**F**	--[6]	**F**	--[6]	**F**	71.3	**F**	297.7	**F**	53.1	**F**
I-710 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Triggs St. Off	Weave	--*	**F**	--[6]	**F**	--[6]	**F**	--*	**F**	--*	**F**	--*	**F**
Triggs St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Triggs St. Off / Triggs St. On	Basic	41.7	**E**	42.9	**E**	--[6]	**F**	54.3	**F**	71.6	**F**	47.6	**F**
Triggs St. On	On	--*	**F**	--*	**F**	33.6	D	--*	**F**	--*	**F**	--*	**F**

Table 3.5-6: I-5 Basic/Weaving Segments and Merge/Diverge Areas Existing and No Build Alternative Levels of Service

Location Description	Freeway Type	Existing (2012/2013)						No Build (2035)					
		AM		MD		PM		AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Triggs St. On / Stevens Pl. & Eastern Ave. Off	Basic	46.6	**F**	--[6]	**F**	--[6]	**F**	67.1	**F**	100.0	**F**	57.9	**F**
Stevens Pl. & Eastern Ave. Off	Off	--*	**F**	--*	**F**	39.2	**E**	--*	**F**	--*	**F**	--*	**F**
South of Eastern Ave. Off	Basic	44.8	**E**	--[6]	**F**	--[6]	**F**	57.5	**F**	80.0	**F**	51.5	**F**

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

- At least half of the analyzed merge and diverge areas operate at LOS E or worse during the morning and midday peak hours; and
- The only weave segment operates at poor LOS (E or F) during all the peak hours analyzed.

In the 2035 No Build Alternative condition:

- **Northbound Direction**
  - All of the basic freeway segments are projected to operate at poor LOS (E or F) during the midday peak hour; and
  - The number of merge and diverge areas with poor operating conditions are projected to be the highest during midday peak hours with 80 percent (eight out of ten) of the analyzed areas projected to operate at LOS E or worse.
- **Southbound Direction**
  - All basic freeway segments (eight out of eight) are projected to operate at poor LOS (E or F) during all analyzed peak hours;
  - All merge and diverge areas (six out of six) are projected to operate at a poor LOS (E or F) during the morning and midday peak hours; and
  - The only weave segment (between the ramp from I-710 southbound and the ramp to Triggs St.) is projected to operate at LOS F during all three analyzed peak hours.

Compared to existing conditions, the analysis of 2035 No Build conditions indicate substantial growth in traffic demand on the I-5 mainline within the Study Area, particularly in the southbound direction. In summary, the northbound lanes are projected to operate poorly during midday peak hour while the southbound lanes show heavy congestion during all three peak analysis hours.

Additionally, existing data on the I-5 demonstrate a system wide capacity deficiency extending beyond the Study Area. It is conservative to assume that the same deficiencies would still be present under future No Build conditions unless additional improvements are implemented beyond those already accounted for in the future No Build network.

ROADWAY SEGMENTS. A total of 177 local arterial roadway segments were included in the Study Area. The analysis of the Study Area roadway segments is provided in the *Intersection Traffic Impact Analysis Report* (2017). The existing and No Build Alternative roadway segment operations are summarized below.

Approximately 15 percent (27 of 177) of the roadway segments currently experience volume-to-capacity (V/C) ratios approaching or exceeding the existing capacity. Approximately 21 percent (38 of 177) of the roadway segments are projected to experience V/C ratios approaching (0.90 less than or equal to V/C less than 1.0) or exceeding (V/C greater than or equal to 1.0) the planned future year capacity as depicted in the I-710 traffic model in the Alternative 1 (No Build) Condition.

The following summary notes the arterial roadway segments operating with a V/C ratio of 0.90 or greater (indicating LOS E or F) in both the 2012/2013 existing and 2035 No Build conditions (unless noted below).

- **North-South Segments:**
    - Alameda St. from Sepulveda Blvd./Willow St. to I-405, from Florence Ave. to Slauson Ave., and from Bandini Blvd. to I-10 (2012/2013 Existing Only);
    - Alameda St. from Anaheim St. to I-405, from I-105 to Firestone Blvd., from Florence Ave. to Slauson Ave., and from Bandini Blvd. to I-10 (2035 No Build only);
    - Atlantic Ave. between Firestone Blvd. and Florence Ave. (2035 No Build only);
    - Atlantic Blvd. between Slauson Ave. and Bandini Blvd.;
    - Eastern Ave. between Slauson Ave. and Bandini Blvd. (2035 No Build only);
    - Cherry Ave. between Anaheim St. and Pacific Coast Hwy. (2035 No Build only);
    - Garfield Ave. north of Washington Blvd. to Whittier Blvd. (2035 No Build only);
    - Garfield Ave. between Slauson Ave. and Bandini Blvd. (2012/2013 Existing Only); and
    - Wilmington Ave. between I-405 and Sepulveda Blvd./Willow St. (2035 No Build only).
- **East-West Segments:**
    - Anaheim St. between Alameda St. and Santa Fe Ave. (2012/2013 Existing only);
    - Anaheim St. west of Alameda St. (2035 No Build only);
    - Pacific Coast Hwy. between Santa Fe Ave. and I-710 (2012/2013 Existing Only);
    - Pacific Coast Hwy. between Alameda St. and I-710 (2035 No Build only);
    - Willow St. west of Alameda St. to I-710;
    - Wardlow Rd. between Alameda St. and Santa Fe Ave.;

- Del Amo Blvd. between Santa Fe Ave. and I-710 and between Cherry Ave. and Paramount Blvd.;
- Artesia Blvd. between Alameda St. and Long Beach Blvd. and between Cherry Ave. and Paramount Blvd.;
- Rosecrans Ave. west of Alameda St. (2012/2013 Existing only);
- Rosecrans Ave. from Atlantic Ave. to Garfield Ave. (2035 No Build only);
- Imperial Hwy. between Long Beach Blvd. and Atlantic Ave;
- Firestone Blvd. between Alameda St. and Long Beach Blvd. (2035 No Build only);
- Firestone Blvd. between Atlantic Ave. and Garfield Ave.;
- Florence Ave. between Alameda St. and Pacific Blvd.;
- Slauson Ave. between Garfield Ave. and Paramount Blvd.;
- Bandini Blvd. west of Alameda St.;
- Washington Blvd. west of Soto St. and between Garfield Ave. and Paramount Blvd.; and
- Whittier Blvd. west of Alameda St. and between Garfield Ave. and Paramount Blvd.

Under the 2035 No Build conditions, major north-south arterials are most congested in the area between I-105 and I-5, as well as between I-405 and Anaheim St. The east-west arterials are most congested near the I-710 interchanges and near the Alameda Corridor. Under 2035 No Build conditions, more arterial roadway segments are projected to operate near or over capacity than under existing conditions. The results are attributed to the overall ambient traffic growth within the Study Area. Increases in roadway volumes are most prominently observed in port truck volumes on all major north-south arterials and on east-west arterials south of Florence Ave. In general, without major improvements to the I-710, the traffic conditions on the arterial highway system will deteriorate further in the future.

INTERSECTIONS. An analysis of the Study Area intersections is provided in the *Intersection Traffic Impact Analysis Report* (2017). See Table 3.5-7 and Figure 3.5-5 for the locations of the intersections analyzed in the Study Area. These intersections were identified in cooperation with the I-710 Technical Advisory Committee and supplemented where needed to inform the conceptual design effort for the build alternatives. The following summary describes the 2012/2013 existing and 2035 No Build intersection operations for the AM, midday, and PM peak hours. It should be noted that not all Study Area intersections contain midday peak hour volumes since these locations were collected through recent projects that only provided AM and PM peak hour turning movement volumes.

Table 3.5-7: Study Intersections

ID	Main Street	Cross Street	City	Control
1	Shoreline Dr	Queens Way	Long Beach	Signalized
2	Ocean Blvd	Magnolia Ave	Long Beach	Signalized
3	Broadway	Main Ave	Long Beach	Signalized
4	Broadway	Magnolia Ave	Long Beach	Signalized
5	6th St	Daisy Ave	Long Beach	Signalized
6	6th St	Magnolia Ave	Long Beach	Signalized
7	7th St	Daisy Ave	Long Beach	Signalized
8	7th St	Magnolia Ave	Long Beach	Signalized
10	Pico Ave	9th St	Long Beach	Signalized
11	Anaheim St	Alameda St	Los Angeles	Signalized
12	Anaheim St	Santa Fe Ave	Long Beach	Signalized
13	Anaheim St	Magnolia Ave	Long Beach	Signalized
14	Anaheim St	Pacific Ave	Long Beach	Signalized
16	Anaheim St	Cherry Ave	Long Beach	Signalized
17	Pacific Coast Hwy	Alameda St (at O St)	Los Angeles	Signalized
18	Alameda St	O St	Los Angeles	Signalized
19	Pacific Coast Hwy	Santa Fe Ave	Long Beach	Signalized
20	Pacific Coast Hwy	Pacific Ave	Long Beach	Signalized
21	Pacific Coast Hwy	Long Beach Blvd	Long Beach	Signalized
22	Pacific Coast Hwy	Atlantic Ave	Long Beach	Signalized
23	Pacific Coast Hwy	Cherry Ave	Long Beach	Signalized
24	Alameda St	Sepulveda Blvd (Ramp)	Carson	Signalized
25	Sepulveda Blvd	Alameda St (Ramp)	Carson	Signalized
26	Willow St	Santa Fe Ave	Long Beach	Signalized
27	Willow St	Pacific Ave	Long Beach	Signalized
28	Willow St	Long Beach Blvd	Long Beach	Signalized
29	Willow St	Atlantic Ave	Long Beach	Signalized
30	Willow St	Cherry Ave	Signal Hill	Signalized
32	Alameda St	Del Amo Blvd (Ramp)	Carson	Signalized
33	Del Amo Blvd	Alameda St (Ramp)	Carson	Signalized
34	Del Amo Blvd	Santa Fe Ave	Carson	Signalized
35	Del Amo Blvd	Long Beach Blvd	Long Beach	Signalized
36	Del Amo Blvd	Atlantic Ave	Long Beach	Signalized
37	Del Amo Blvd	Cherry Ave	Long Beach	Signalized
39	Artesia Blvd	Long Beach Blvd	Long Beach	Signalized
41	Alondra Blvd	Santa Fe Ave	Compton	Signalized
42	Alondra Blvd	Long Beach Blvd	Compton	Signalized
43	Alondra Blvd	Atlantic Ave	Compton	Signalized
44	Alondra Blvd	Garfield Ave	Paramount	Signalized
45	Alondra Blvd	Paramount Blvd	Paramount	Signalized
48	Rosecrans Ave	Santa Fe Ave	Compton	Signalized
49	Rosecrans Ave	Long Beach Blvd	Compton	Signalized
50	Rosecrans Ave	Atlantic Ave	Compton	Signalized

Table 3.5-7: Study Intersections

ID	Main Street	Cross Street	City	Control
51	Rosecrans Ave	Garfield Ave	Paramount	Signalized
52	Rosecrans Ave	Paramount Blvd	Paramount	Signalized
54	Imperial Hwy	Long Beach Blvd	Lynwood	Signalized
55	Imperial Hwy	Atlantic Ave	Lynwood	Signalized
56	Imperial Hwy	Garfield Ave	South Gate	Signalized
57	Imperial Hwy	Paramount Blvd	Downey	Signalized
58	Firestone Blvd	Long Beach Blvd	South Gate	Signalized
59	Firestone Blvd	California Ave	South Gate	Signalized
60	Firestone Blvd	Atlantic Ave	South Gate	Signalized
61	Firestone Blvd	Garfield Ave	South Gate	Signalized
62	Firestone Blvd	Paramount Blvd	Downey	Signalized
63	Florence Ave	Alameda St (West Link)	Huntington Park	Signalized
631	Florence Ave	Alameda St (East Link)	Huntington Park	Unsignalized
64	Florence Ave	Atlantic Ave	Bell/Cudahy	Signalized
65	Florence Ave	Eastern Ave	Bell Gardens	Signalized
66	Florence Ave	Garfield Ave	Bell Gardens	Signalized
68	Slauson Ave	Alameda St (West Link)	Huntington Park/LA County/ City of LA	Signalized
681	Slauson Ave	Alameda St (East Link)	Huntington Park/LA County/ City of LA	Unsignalized
69	Slauson Ave	Soto St	Huntington Park	Signalized
70	Slauson Ave	Atlantic Blvd	Maywood	Signalized
71	Slauson Ave	Eastern Ave	Commerce	Signalized
73	Garfield Ave	Slauson Ave	Commerce	Signalized
74	Bandini Blvd	Atlantic Blvd	Vernon	Signalized
75	Bandini Blvd	Eastern Ave	Bell	Signalized
76	Alameda St	Washington Blvd	East LA (unincorp)	Signalized
78	Washington Blvd	Atlantic Blvd	Commerce	Signalized
79	Washington Blvd	Eastern Ave	Commerce	Signalized
83	Indiana St	Olympic Blvd	East LA (unincorp)	Signalized
84	Telegraph Rd	Olympic Blvd	East LA (unincorp)	Signalized
85	Olympic Blvd	Eastern Ave	East LA (unincorp)	Signalized
86	I-710 NB	Olympic Blvd (Off)	East LA (unincorp)	Signalized
87	Arizona Ave	Olympic Blvd	East LA (unincorp)	Signalized
93	Ford Blvd	Whittier Blvd	East LA (unincorp)	Signalized
94	Arizona Ave	Whittier Blvd	East LA (unincorp)	Signalized
96	Indiana St	3rd St	East LA (unincorp)	Signalized
97	Ford Blvd	3rd St	East LA (unincorp)	Signalized
98	Beverly Blvd	3rd St	East LA (unincorp)	Signalized
105	Eastern Ave	Cesar Chavez Ave	East LA (unincorp)	Signalized
106	Humphreys Ave	Cesar Chavez Ave	East LA (unincorp)	Signalized
109	I-710 SB	Golden Shore St (Off)	Long Beach	Unsignalized
110	I-710 NB	3rd St (On at Golden Ave)	Long Beach	Signalized

Table 3.5-7: Study Intersections

ID	Main Street	Cross Street	City	Control
111	I-710 SB	Del Amo Blvd (On/Off at Susana Rd)	Rancho Dominquez	Signalized
112	I-710 NB	Long Beach Blvd (On/Off)	Long Beach	Signalized
113	I-710 SB	Long Beach Blvd (On/Off)	Long Beach	Signalized
114	I-710 NB	Artesia Blvd (Off)	Long Beach	Signalized
115	I-710 SB	Artesia Blvd (On)	Long Beach	Unsignalized
116	I-710 NB	Alondra Blvd (On/Off)	Compton	Signalized
117	I-710 SB	Alondra Blvd (On)	Compton	Unsignalized
118	I-710 NB	Rosecrans Ave (Off)	Paramount	Signalized
119	I-710 SB	Rosecrans Ave (Off)	Paramount	Signalized
120	I-710 SB	Imperial Hwy (Off at Wright Rd)	South Gate	Signalized
121	I-710 NB	Firestone Blvd (Off)	South Gate	Signalized
122	I-710 SB	Firestone Blvd	South Gate	Signalized
124	I-710 SB	Bandini Blvd (Off)	Vernon	Signalized
125	I-710 NB	Washington Blvd (On/Off)	Commerce	Signalized
126	I-710 SB	Washington Blvd	Commerce	Signalized
127	I-710 NB	Olympic Blvd (On)	East LA (unincorp)	Signalized
128	I-710 SB	Olympic Blvd (On/Off at Eastern Ave)	East LA (unincorp)	Signalized
129	I-710 NB	Ford Blvd (On/Off)	East LA (unincorp)	Unsignalized
130	I-710 SB	3rd St (On)	East LA (unincorp)	Unsignalized
131	I-710 SB	Eagle St & Humphreys Ave (Off)	East LA (unincorp)	Unsignalized
132	I-710 NB	Cesar Chavez Ave (Off at Ford)	East LA (unincorp)	Signalized
135	I-710 SB	Floral Dr (Off)	East LA (unincorp)	Signalized
139	Shoreline Dr	Golden Shore St (On)	Long Beach	Unsignalized
140	Ocean Blvd	Golden Shore St	Long Beach	Signalized
141	3rd St	Magnolia Ave	Long Beach	Signalized
145	Alameda St	Gage Ave (West Link)	Huntington Park	Signalized
1451	Alameda St	Gage Ave (East Link)	Huntington Park	Unsignalized
146	Santa Fe Ave	223rd St	Long Beach	Signalized
147	Wardlow Rd	Magnolia Ave	Long Beach	Signalized
148	Wardlow Rd	Cherry Ave	Long Beach	Signalized
149	Pacific Ave	Florence Ave	Huntington Park	Signalized
151	Slauson Ave	Santa Fe Ave	Huntington Park	Signalized
152	Pacific Ave	Gage Ave	Huntington Park	Signalized
153	Santa Fe Ave	Gage Ave	Huntington Park	Signalized
154	Alameda St	223rd St (Ramp)	Carson	Signalized
155	Wilmington Ave	223rd St	Carson	Signalized
156	Alameda St Ramp	223rd St	Carson	Signalized
157	Garfield Ave	Gage Ave	Bell	Signalized

Table 3.5-7: Study Intersections

ID	Main Street	Cross Street	City	Control
			Gardens/Commerce	
158	37th St	Santa Fe Ave	Vernon	Signalized
159	38th St	Santa Fe Ave	Vernon	Signalized
160	Garfield Ave	Washington Blvd	Commerce	Signalized
161	Del Amo Blvd	Susana Rd	Carson	Signalized
162	Alameda St	Carson St (Ramp)	Carson	Signalized
163	Carson St	Alameda St (Ramp)	Carson	Signalized
164	Anaheim St	Canal Ave	Long Beach	Unsignalized
165	Anaheim St	Harbor Ave	Long Beach	Signalized
166	Del Amo Blvd	Paramount Blvd	Lakewood	Signalized
167	Alondra Blvd	Downey Ave	Paramount	Signalized
168	Rosecrans Ave	Downey Ave	Paramount	Signalized
169	Slauson Ave	Downey Rd	Vernon	Signalized
170	Slauson Ave	Boyle Ave	Vernon	Signalized
171	Atlantic Ave	Southern Ave	South Gate	Signalized
172	Atlantic Ave	District Blvd	Vernon	Signalized
173	Atlantic Ave	Artesia Blvd	Long Beach	Signalized
174	Firestone Blvd	Rayo Ave	South Gate	Signalized
175	Firestone Blvd	Otis St	South Gate	Signalized
176	Bandini Blvd	Soto St	Vernon	Signalized
177	Washington Blvd	Soto St	Vernon	Signalized
178	Bandini Blvd	Downey Rd	Vernon	Signalized
179	Washington Blvd	Downey Rd	Vernon	Signalized
180	3rd St	S Gage Ave	County	Signalized
181	3rd St	Downey Rd	East LA (unincorp)	Signalized
182	3rd St	Eastern Ave	East LA (unincorp)	Signalized
183	3rd St	Arizona Ave	East LA (unincorp)	Signalized
201	I-710 SB	Anaheim St	Long Beach	Signalized
203	I-710 NB	Anaheim St	Long Beach	Signalized
204	I-710 SB	Pacific Coast Hwy	Long Beach	Signalized
206	I-710 NB	Pacific Coast Hwy	Long Beach	Signalized
207	I-710 SB	Willow St	Long Beach	Signalized
209	I-710 NB	Willow St	Long Beach	Signalized
210	I-710 SB	Del Amo Blvd	Carson	Signalized
212	I-710 NB	Del Amo Blvd	Carson	Signalized
215	I-710 SB	Imperial Hwy	Lynwood	Signalized
217	I-710 NB	Imperial Hwy	Lynwood	Signalized
218	I-710 SB	Florence Ave	Bell	Signalized
220	I-710 NB	Florence Ave	Bell	Signalized
225	Shoreline Dr	3rd St / Broadway	Long Beach	Signalized
226	Shoreline Dr	7th St	Long Beach	Signalized
228	Shoreline Dr	Ocean Blvd (West)	Long Beach	Signalized
230	I-710 NB	Slauson Ave (FC Off)	South Gate	Signalized

Table 3.5-7: Study Intersections

ID	Main Street	Cross Street	City	Control
231	I-710 SB	Slauson Ave (FC On)	South Gate	Signalized
274	I-710 SB	Atlantic Blvd (On/Off)	Vernon	Signalized
501	Wardlow Rd	Long Beach Blvd	Long Beach	Signalized
502	I-405 SB	Crest Dr (On/Off)	Long Beach	Unsignalized
503	I-405 SB	223rd St (On/Off)	Carson	Signalized
504	I-405 NB	Alameda St (On/Off)	Los Angeles	Signalized
505	Santa Fe Ave	Warnock Way	Long Beach	Signalized
506	I-405 NB	Warnock Way (On/Off)	Long Beach	Signalized
507	I-405 SB	223rd St (On)	Long Beach	Unsignalized
508	I-405 SB	Wardlow Rd (Off)	Long Beach	Unsignalized
509	SR-91 EB	Atlantic Ave (On/Off)	Long Beach	Signalized
510	SR-91 WB	Atlantic Ave (On/Off)	Long Beach	Signalized
511	SR-91 EB	Long Beach Blvd (On/Off)	Long Beach	Signalized
512	SR-91 WB	Long Beach Blvd (On/Off)	Long Beach	Signalized
513	SR-91 EB	Santa Fe Ave (On/Off)	Compton	Signalized
514	SR-91 WB	Santa Fe Ave (Off)	Compton	Signalized
515	Artesia Blvd	Santa Fe Ave	Compton	Signalized
516	SR-91 EB	Cherry Ave (On/Off)	Long Beach	Signalized
517	SR-91 WB	Cherry Ave (On/Off)	Long Beach	Signalized
518	Artesia Blvd	Cherry Ave	Long Beach	Signalized
519	SR-91 EB	Alameda St (On/Off)	Compton	Signalized
520	Imperial Hwy	Wright Rd	South Gate	Signalized
521	Garfield Ave	Southern Ave	South Gate	Signalized
522	Bandini Blvd	Pennington Way	Vernon	Signalized
523	Long Beach Blvd	Victoria St	Long Beach	Signalized
524	Eastern Ave	Whittier Blvd	East LA (unincorp)	Signalized
525	I-710 SB	Whittier Blvd (On/Off)	East LA (unincorp)	Signalized
1001	Willow St	Easy St	Long Beach	Signalized
1002	Pacific Coast Hwy	Harbor Ave	Long Beach	Signalized

EB = eastbound
I-710 = Interstate 710
NB = northbound
SB = southbound
SR-91 = State Route 91
WB = westbound

LEGEND

(#) Study Intersection

FIGURE 3.5-5
Sheet 1 of 2

NOT TO SCALE
SOURCE: AECOM

I-710 Corridor Project RDEIR/SDEIS

Study Intersection Locations

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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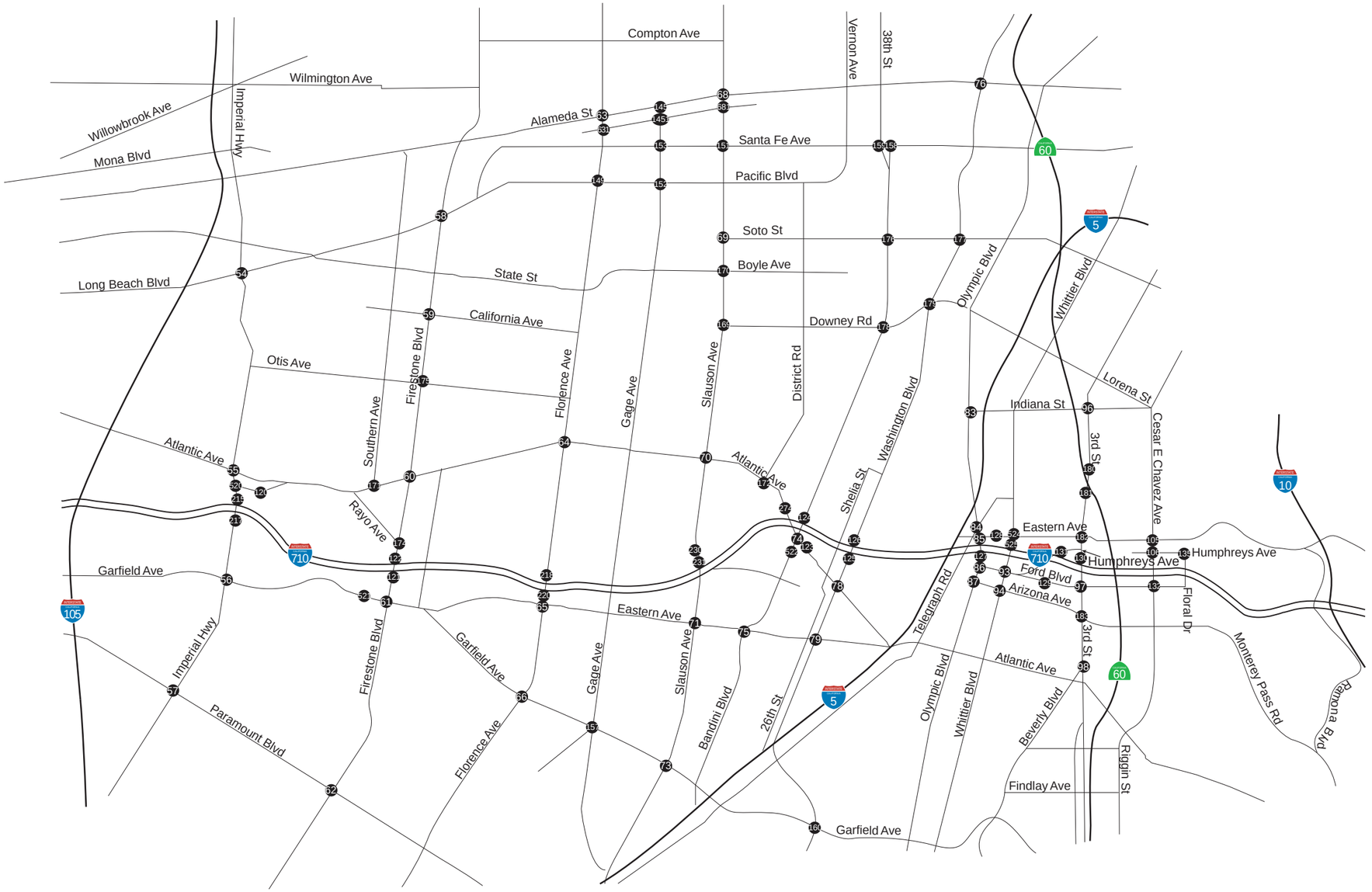

FIGURE 3.5-5
Sheet 2 of 2

NOT TO SCALE
SOURCE: AECOM

I-710 Corridor Project RDEIR/SDEIS
Study Intersection Locations
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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The average intersection delay and operating conditions will get worse under 2035 No Build conditions compared to the 2012/2013 existing conditions. This is attributed to the projected growth in peak-hour traffic volumes within the Study Area. The total number of intersections projected to operate at LOS E or F will increase during all three peak hours analyzed under 2035 No Build conditions compared to the 2012/2013 existing conditions. A total of 43 intersections are currently operating at poor LOS (E or F) considering any of the three peak hours, and 78 intersections are projected to operate at poor LOS E or F during the morning, midday, or evening peak hours under 2035 No Build conditions.

A comparison of the total number of intersections with poor LOS (E or F) between 2035 No Build and existing conditions are shown below:

- **Morning Peak Hour:** 49 of 174 (28 percent) under 2035 No Build compared to 18 of 172 intersections (10 percent) under 2012/2013 existing conditions
- **Midday Peak Hour:** 15 of 160 (9 percent) under 2035 No Build compared to 3 of 158 intersections (2 percent) under 2012/2013 existing conditions
- **Evening Peak Hour:** 60 of 174 (34 percent) under 2035 No Build compared to 36 of 172 intersections (21 percent) under 2012/2013 existing conditions

Similar to 2012/2013 existing conditions, the evening peak hour has the highest number of intersections projected to operate at an unacceptable LOS (E or F) under 2035 No Build conditions. Average intersection delay will increase by approximately 30 percent under 2035 No Build compared to 2012/2013 existing conditions considering average delay for all three peak hours. The same comparison shows an increase in delay of approximately 32 percent over 2012/2013 existing conditions if only the evening peak hour is considered.

It should be noted that a number of intersections along the following streets currently operate or have been projected to operate at a LOS E or F in 2035, which are primarily the east-west arterials in the I-710 Study Area.

- Anaheim St. (2012/2013 Existing only)
- Pacific Coast Hwy.
- Alameda St. (2035 No Build only)
- Willow St.
- Del Amo Blvd.
- Alondra Blvd. (2012/2013 Existing only)
- Rosecrans Ave.
- Imperial Hwy.

- Firestone Blvd.
- Slauson Ave.
- Atlantic Blvd.
- 223rd St. (2012/2013 Existing only)
- Washington Blvd. (2035 No Build only)

BICYCLE AND PEDESTRIAN FACILITIES. Bicycle travel is accommodated in the Study Area through the use of designated bikeways and existing roadways. Class 1 Bikeways provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians, with cross-flow by motorists minimized. Class 2 Bikeways provide a striped lane for one-way bike travel on a street or highway. Class 3 Bikeways provide for shared use by pedestrian or motor vehicle traffic.[3]

Class 1 Bikeways within the Study Area include the Los Angeles River Trail, the Rio Hondo Trail, and the Compton Creek Bike Path. Within the Study Area, the Los Angeles River Trail runs parallel to the I-710 mainline from the City of Long Beach to the City of Vernon, and access points are provided along the trail near local interchanges, parks, and other trail connections. The Rio Hondo Trail, a Class 1 Bikeway, is also located within the Study Area. The southern terminus of the trail is located in the City of South Gate and proceeds in a northeasterly direction toward the City of El Monte. The Compton Creek Bike Path, Class 1 Bikeway, is located within the Study Area along the east bank of Compton Creek. The northern terminus of the trail is located in the City of Compton and proceeds southeasterly through the City of Compton and unincorporated Rancho Dominguez. The trail ends at Del Amo Blvd. near the confluence of Compton Creek and the Los Angeles River in the City of Long Beach, and a connection to the Los Angeles River Trail is provided to the east along Del Amo Blvd. Figure 3.1-4 in Section 3.1, Land Use, of this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) provides the locations of local and regional bikeways in the Study Area.

Pedestrian facilities within the Study Area include sidewalks, walkways, and crosswalks. These facilities are located throughout the Study Area. Pedestrian access is also provided via the Los Angeles River Trail and the Rio Hondo Trail.

[3] California Department of Transportation. 2006. *Highway Design Manual*, Chapter 1000 Bikeway Planning and Design.

3.5.3 ENVIRONMENTAL CONSEQUENCES

3.5.3.1 PERMANENT IMPACTS

This section discusses the operation of Study Area transportation facilities under the various build alternatives. Alternative 5C and Alternative 7 conditions for the Study Area are depicted in Figures 3.5-6 and 3.5-7, respectively, and described below.

FREEWAYS.

I-710 MAINLINE SEGMENTS. Tables 3.5-8 through 3.5-14 provide a summary of the freeway segment analysis for each I-710 build alternative and applicable design options. Design Options 1A and 1B (applicable to Alternatives 5C and 7, respectively) are not analyzed here as they do not propose changes to the configurations of their respective alternatives and therefore do not affect traffic operations or circulation. As a reference, Tables 3.5-1 through 3.5-2 provide the existing 2012/2013 Baseline and 2035 No Build (Alternative 1) LOS results for comparison. Generally, these tables show the following results:

- It is expected that in 2035 under Alternative 5C conditions, traffic operations along the I-710 freeway corridor for both northbound and southbound directions will improve when compared to the traffic operations under existing and Alternative 1 conditions. The morning peak hour benefits the most from the proposed Alternative 5C improvements in both directions. However, even with the proposed geometric enhancements, severe congestion still occurs on a few selected segments of the freeway due to high projected future general purpose and truck traffic demand:
    - I-710 southbound (weaving area) between Del Amo Blvd. and I-405 (LOS F, AM/PM
    - I-710 northbound (weaving area) between Long Beach Blvd. and SR-91 (LOS F, MD)
    - I-710 northbound and southbound (weaving area) between I-5 and SR-60 (LOS F, AM/MD/PM)
- It is expected that in 2035 under Alternative 7 conditions, traffic operations along the I-710 freeway corridor for both northbound and southbound directions will improve when compared to the traffic operations under existing and Alternative 1 conditions. The morning and midday peak hours would benefit the most from the proposed Alternative 7 improvements in both directions. However, even with the proposed geometric enhancements, severe congestion still occurs on some freeway sections due to the high concentration of truck traffic and/or insufficient capacity at those particular locations.

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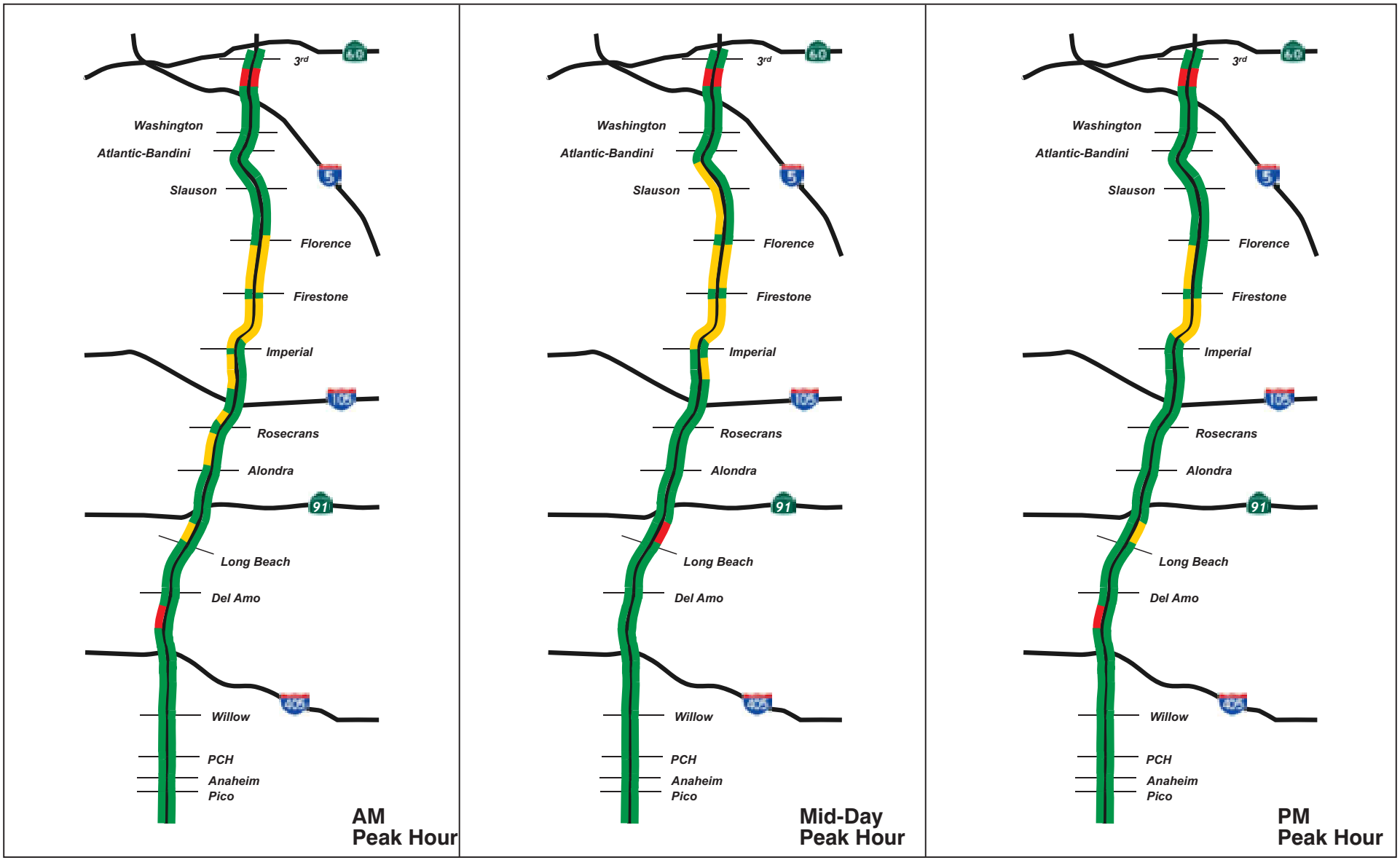

I-710 General Purpose Lanes

Peak Hour LOS (Level of Service)

HCS (Highway Capacity Software) Analysis

Level of Service

LOS D or Better

LOS E

LOS F

FIGURE 3.5-6

I-710 Corridor Project RDEIR/SDEIS

I-710 Alternative 5C Levels of Service

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

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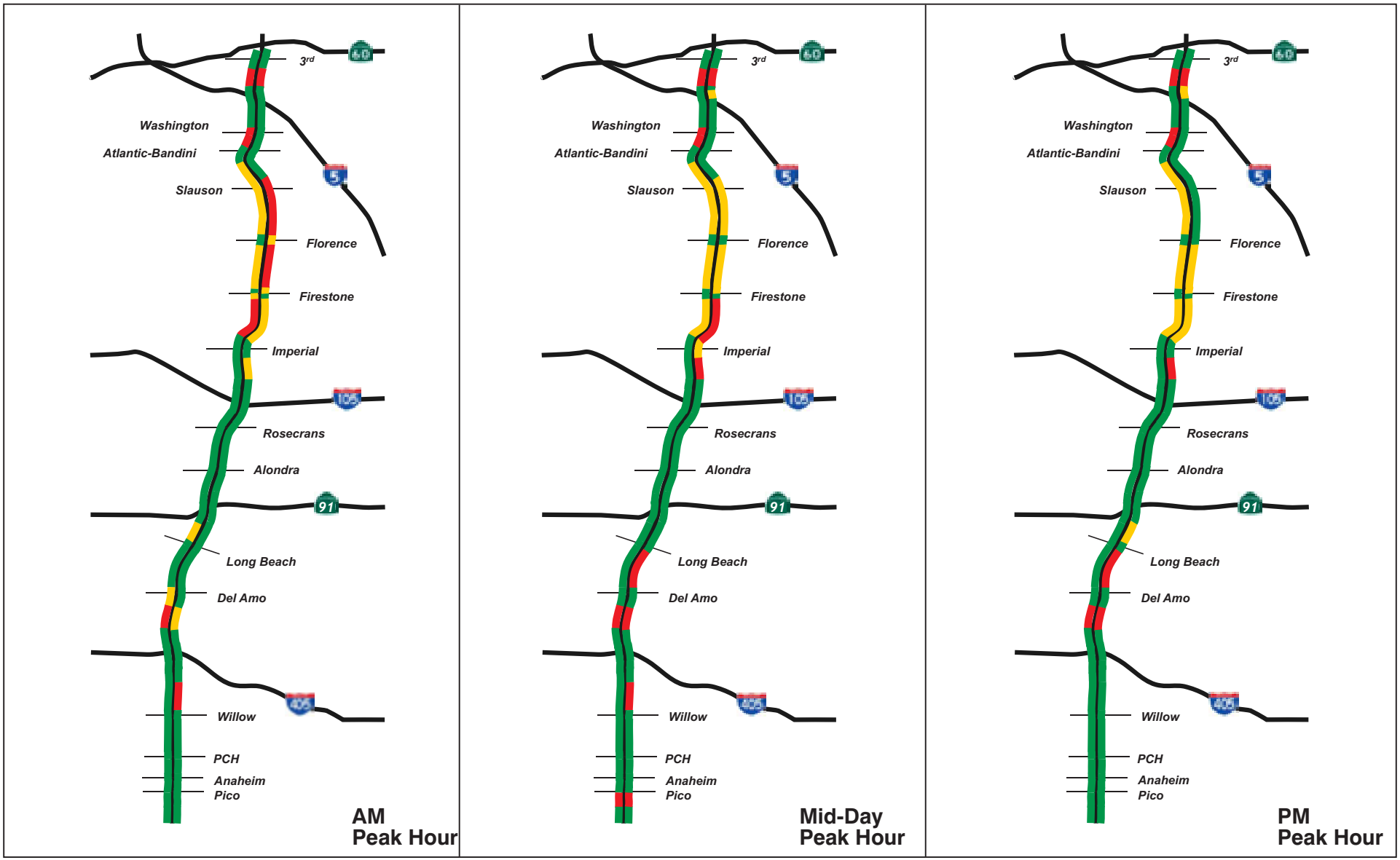

I-710 General Purpose Lanes

Peak Hour LOS (Level of Service)

HCS (Highway Capacity Software) Analysis

Level of Service

LOS D or Better

LOS E

LOS F

FIGURE 3.5-7

I-710 Corridor Project RDEIR/SDEIS

I-710 Alternative 7 Levels of Service

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

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Table 3.5-8: I-710 2035 Northbound Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
I-710 Northbound Mainline							
North of Ford Blvd. On	Basic	30.3	D	28.9	D	33.4	D
Ford Blvd. On	On	28.8	D	27.4	C	30.9	D
Ford Blvd. Off / Ford Blvd. On	Basic	27.7	D	27.7	D	29.4	D
Ford Blvd. Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
SR-60 Off / Ford Blvd. Off	Basic	21.4	C	21.5	C	23.9	C
SR-60 Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Olympic Blvd. On / SR-60 Off	Weave	--*	**F**	--*	**F**	--*	**F**
Olympic Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-5 NB On / Olympic Blvd. On	Basic	29.5	D	27.1	D	30.5	D
I-5 NB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Olympic Blvd. Off / I-5 NB On	Basic	29.0	D	28.9	D	28.8	D
Olympic Blvd. Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
Washington Blvd. On / Olympic Blvd. Off	Basic	24.9	C	24.4	C	25.1	C
Washington Blvd. On	On	23.4	C	24.1	C	24.0	C
Atlantic & Bandini On / Washington Blvd. On	Basic	22.7	C	21.5	C	22.5	C
Atlantic & Bandini On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Washington Blvd. & I-5 Off / Atlantic & Bandini On	Basic	28.0	D	24.5	C	25.2	C
Washington Blvd. & I-5 Off	Major Off[3]	35.0	D	33.1	D	29.5	D
Atlantic & Bandini Blvd. Off / Washington Blvd. & I-5 Off	Basic	33.4	D	30.7	D	26.4	D
Atlantic & Bandini Blvd. Off	Major Off[3]	34.6	D	31.5	D	28.2	D
Florence Ave. On / Atlantic & Bandini Blvd. Off	Basic	32.8	D	28.7	D	25.0	C
Florence Ave. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Florence Ave. Off / Florence Ave. On	Basic	35.7	**E**	31.2	D	27.1	D
Florence Ave. Off	Off	32.0	D	28.6	D	26.9	C
WB Firestone Blvd. On / Florence Ave. Off	Basic	43.8	**E**	38.6	**E**	34.3	D
WB Firestone Blvd. On	On	32.5	D	29.2	D	26.8	C
EB Firestone Blvd. On / WB Firestone Blvd. On	Basic	39.5	**E**	36.6	**E**	32.9	D
EB Firestone Blvd. On	On	24.0	C	22.7	C	20.9	C
Firestone Blvd. Off / EB Firestone Blvd. On	Basic	31.6	D	29.4	D	26.7	D
Firestone Blvd. Off	Off	19.7	B	20.3	C	19.0	B
Imperial Hwy. On / Firestone Blvd. Off	Basic	40.3	**E**	39.3	**E**	35.0	**E**
Imperial Hwy. On	On	33.9	D	31.8	D	30.9	D

Table 3.5-8: I-710 2035 Northbound Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
I-105 On / Imperial Hwy. On	Basic	32.9	D	34.1	D	29.4	D
I-105 On	Major On[2]	0.8	N/A	0.9	N/A	0.8	N/A
Imperial Hwy. Off / I-105 On	Basic	28.7	D	30.3	D	24.7	C
Imperial Hwy. Off	Off	36.4	**E**	38.5	**E**	37.1	**E**
Rosecrans Ave. On / Imperial Hwy. Off	Basic	33.0	D	35.9	**E**	30.7	D
Rosecrans Ave. On	On	28.6	D	29.7	D	27.8	C
I-105 Off / Rosecrans Ave. On	Basic	30.0	D	32.7	D	27.5	D
I-105 Off	Major Off[3]	28.5	D	31.7	D	29.2	D
Rosecrans Ave. Off / I-105 Off	Basic	25.4	C	28.9	D	26.0	D
Rosecrans Ave. Off	Off	34.4	D	37.9	**E**	38.7	**E**
Alondra Blvd. On / Rosecrans Ave. Off	Basic	28.4	D	33.0	D	31.1	D
Alondra Blvd. On	On	28.7	D	29.2	D	28.8	D
SR-91 WB On / Alondra Blvd. On	Basic	24.4	C	29.4	D	27.3	D
SR-91 WB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
SR-91 EB On / SR-91 WB On	Basic	26.8	D	30.9	D	29.2	D
SR-91 EB On	On[4]	N/A	N/A	--*	**F**	--*	**F**
Alondra Blvd. Off / SR-91 EB On	Basic	26.2	D	27.2	D	24.3	C
Alondra Blvd. Off	Off	30.1	D	31.4	D	33.5	D
SR-91 EB Off / Alondra Blvd. Off	Basic	27.3	D	28.7	D	28.1	D
SR-91 EB Off	Major Off[3]	30.9	D	34.0	D	32.3	D
SR-91 WB & Artesia Blvd. Off / SR-91 EB Off	Basic	28.0	D	32.0	D	29.7	D
SR-91 WB & Artesia Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. On / SR-91 WB & Artesia Blvd. Off	Weave	33.8	D	--*	**F**	36.1	**E**
Long Beach Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. Off / Long Beach Blvd. On	Basic	24.1	C	27.2	D	26.6	D
Long Beach Blvd. Off	Off	31.1	D	33.5	D	33.7	D
Del Amo Blvd. On / Long Beach Blvd. Off	Basic	26.0	D	29.4	D	29.0	D
Del Amo Blvd. On	On	27.8	C	30.4	D	31.4	D
Truck Bypass On / Del Amo Blvd. On	Basic	22.3	C	24.5	C	23.6	C
Truck Bypass On	Major On[2]	0.6	N/A	0.7	N/A	0.7	N/A
Del Amo Blvd. Off / Truck Bypass On	Basic	25.3	C	24.2	C	29.2	D
Del Amo Blvd. Off	Major Off[3]	24.3	C	23.0	C	N/A	N/A
I-405 SB On / Del Amo Blvd. Off	Basic	21.4	C	20.2	C	31.8	D
I-405 SB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.5-8: I-710 2035 Northbound Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
I-405 NB On / Del Amo Blvd. Off	Basic	22.2	C	21.0	C	24.8	C
I-405 NB On	On[4]	N/A	N/A	N/A	N/A	--*	**F**
I-405 Off / I-405 SB On	Basic	20.0	C	17.2	B	21.2	C
I-405 Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. On / I-405 Off	Weave	32.2	D	29.9	D	31.1	D
Willow St. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Truck Bypass Off / Willow St. On	Basic	21.0	C	19.5	C	19.3	C
Truck Bypass Off	Major Off[3]	28.1	D	30.6	D	25.6	C
Willow St. Off / Truck Bypass Off	Basic	24.9	C	27.7	D	22.5	C
Willow St. Off	Off	31.0	D	31.9	D	29.4	D
Pacific Coast Hwy. On / Willow St. Off	Basic	26.8	D	29.1	D	24.4	C
Pacific Coast Hwy. On	On	28.8	D	31.1	D	29.3	D
Anaheim St. On / Pacific Coast Hwy. On	Basic	21.6	C	22.7	C	18.7	C
Anaheim St. On	On	24.8	C	26.3	C	23.7	C
Shoreline Dr. On / Anaheim St. On	Basic	17.6	B	18.3	C	14.2	B
Shoreline Dr. On	Major On[2]	0.49	N/A	0.51	N/A	0.39	N/A
Pacific Coast Hwy. Off / Shoreline Dr. On	Basic	9.7	A	17.4	B	7.9	A
Pacific Coast Hwy. Off	Off	16.9	B	26.0	C	15.3	B
Anaheim St. Off / Pacific Coast Hwy. Off	Basic	11.3	B	20.0	C	9.8	A
Anaheim St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Pico Ave. On / Anaheim St. Off	Weave	10.2	B	18.9	B	10.2	B
Pico Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Harbor Scenic Dr. On / Pico Ave. On	Basic	12.3	B	18.7	C	9.3	A
Harbor Scenic Dr. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
From Ocean Blvd.	Basic	8.9	A	15.6	B	5.7	A
I-710 NB Collector/Distributor Road at Hobart Yard							
To I-5 NB	Basic	24.6	C	25.7	C	16.6	B
Washington Blvd. Off	Off	22.5	C	23.8	C	15.3	B
Atlantic & Bandini Blvd. On / Washington Blvd. Off	Basic	28.6	D	30.0	D	21.1	C
Atlantic & Bandini Blvd. On	On	26.2	C	27.3	C	19.6	B
From I-710 NB	Basic	26.6	D	28.5	D	17.6	B
I-710 NB Collector/Distributor Road from I-105 to Imperial Hwy.							
To I-710 NB	Basic	24.5	C	23.9	C	25.4	C
Imperial Hwy. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-105 WB On / Imperial Hwy. Off	Weave[5]	31.4	C	31.2	C	35.9	D

Table 3.5-8: I-710 2035 Northbound Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
I-105 WB On	On	N/A	N/A	N/A	N/A	N/A	N/A
From I-105 EB	Basic	33.5	D	34.2	D	32.7	D

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-9: I-710 2035 Southbound Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
I-710 Southbound Mainline							
North of Third St. On	Basic	32.1	D	29.7	D	20.8	C
Third St. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Third St. On / Eagle St. Off	Weave	27.8	C	26.1	C	18.3	B
Eagle St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Eagle St. Off / Lane Add	Basic	32.4	D	30.5	D	20.0	C
Lane Add	Basic	22.7	C	21.7	C	15.0	B
SR-60 On	On	N/A	N/A	N/A	N/A	N/A	N/A
SR-60 On / Eastern Ave. Off	Weave	--*	**F**	--*	**F**	--*	**F**
Eastern Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Eastern Ave. Off / I-5 SB Off	Basic	23.4	C	20.9	C	19.7	C
I-5 SB Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
I-5 SB Off / Eastern Ave. On	Basic	22.3	C	20.8	C	17.5	B
Eastern Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Eastern Ave. On / Washington & Atlantic & Bandini Blvd. Off	Weave	27.8	C	25.3	C	21.6	C
Washington & Atlantic & Bandini Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Washington & Atlantic & Bandini Blvd. Off / I-5 SB On	Basic	20.1	C	21.1	C	16.9	B
I-5 SB On	Major On[2]	0.71	N/A	0.72	N/A	0.62	N/A
I-5 SB On / Washington Blvd. On	Basic	26.3	D	26.5	D	22.6	C
Washington Blvd. On	On	21.1	C	23.7	C	22.5	C
Washington Blvd. On / Atlantic Blvd. On	Basic	29.5	D	31.3	D	27.1	D
Atlantic Blvd. On	On	29.2	D	33.6	D	32.2	D
Atlantic Blvd. On / Florence Ave. Off	Basic	33.8	D	38.8	**E**	34.2	D
Florence Ave. Off	Off	19.0	B	21.2	C	19.2	B
Florence Ave. Off / Florence Ave. On	Basic	29.0	D	31.0	D	27.7	D
Florence Ave. On	On	34.7	D	35.7	**E**	34.2	D
Florence Ave. On / Firestone Blvd. Off	Basic	37.8	**E**	40.4	**E**	36.3	**E**
Firestone Blvd. Off	Off	18.7	B	19.8	B	18.9	B
Firestone Blvd. Off / Firestone Blvd. WB On	Basic	31.3	D	31.2	D	27.8	D
Firestone Blvd. WB On	On	30.8	D	29.9	D	26.9	C
Firestone Blvd. WB On / Firestone Blvd. EB On	Basic	36.4	**E**	35.7	**E**	31.1	D
Firestone Blvd. EB On	On	33.3	D	32.0	D	30.6	D
Firestone Blvd. EB On / Imperial Hwy. Off	Basic	42.4	**E**	40.5	**E**	36.1	**E**
Imperial Hwy. Off	Off	21.2	C	19.7	B	17.8	B
Imperial Hwy. Off / I-105 & MLK Blvd. Off	Basic	36.5	**E**	35.2	**E**	31.1	D
I-105 & MLK Blvd. Off	Major Off[3]	37.0	**E**	36.2	**E**	33.4	D
I-105 & MLK Blvd. Off / Imperial Hwy. On	Basic	28.7	D	27.9	D	23.9	C
Imperial Hwy. On	On	33.5	D	30.7	D	27.1	C
Imperial Hwy. On / Rosecrans Ave. Off	Basic	36.7	**E**	33.4	D	27.7	D
Rosecrans Ave. Off	Off	38.4	**E**	35.7	**E**	32.8	D
Rosecrans Ave. Off / MLK Blvd. On	Basic	31.7	D	30.0	D	24.3	C
MLK Blvd. On	On	29.7	D	26.7	C	24.0	C
MLK Blvd. On / I-105 On	Basic	35.1	**E**	31.4	D	26.0	C
I-105 On	Major On[2]	0.8	N/A	0.7	N/A	0.6	N/A
I-105 On / Rosecrans Ave. WB On	Basic	30.0	D	26.4	D	21.8	C

Table 3.5-9: I-710 2035 Southbound Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Rosecrans Ave. WB On	On	27.3	C	23.3	C	21.8	C
Rosecrans Ave. WB On / Rosecrans Ave. EB On	Basic	32.3	D	27.6	D	23.2	C
Rosecrans Ave. EB On	On	30.9	D	24.1	C	22.1	C
Rosecrans Ave. EB On / Alondra Blvd. Off	Basic	36.3	**E**	29.0	D	24.6	C
Alondra Blvd. Off	Off	39.9	**E**	35.0	D	32.0	D
Alondra Blvd. Off / SR-91 Off	Basic	31.4	D	25.7	C	21.6	C
SR-91 Off	Major Off[3]	33.6	D	28.9	D	24.6	C
SR-91 Off / Alondra Blvd. On	Basic	22.4	C	22.9	C	18.2	C
Alondra Blvd. On	On	25.9	C	24.6	C	21.7	C
Alondra Blvd. On / SR-91 WB On	Basic	25.9	C	25.4	C	20.9	C
SR-91 WB On	On4	--*	**F**	--*	**F**	--*	**F**
SR-91 WB On / SR-91 EB & Artesia Blvd. On	Basic	31.2	D	30.3	D	23.8	C
SR-91 EB & Artesia Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
SR-91 EB & Artesia Blvd. On / Long Beach Blvd. Off	Weave	37.4	**E**	33.8	D	28.3	D
Long Beach Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. Off / Long Beach Blvd. On	Basic	32.5	D	31.5	D	24.6	C
Long Beach Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. On / Del Amo Blvd. Off	Weave	34.1	D	32.4	D	26.7	C
Del Amo Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Del Amo Blvd. Off / Truck Bypass Off	Basic	24.4	C	24.0	C	20.8	C
Truck Bypass Off	Major Off[3]	27.5	C	27.2	C	23.6	C
Truck Bypass Off / Del Amo Blvd. On	Basic	28.6	D	23.1	C	23.9	C
Del Amo Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Del Amo Blvd. On / I-405 Off	Weave	--*	**F**	28.2	D	--*	**F**
I-405 Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-405 Off / I-405 SB On	Basic	18.4	C	17.5	B	15.4	B
I-405 SB On	On4	--*	**F**	N/A	N/A	N/A	N/A
I-405 SB On / I-405 NB On	Basic	22.3	C	19.4	C	19.3	C
I-405 NB On	On	28.9	D	28.2	D	25.1	C
I-405 NB On / Willow St. Off	Basic	27.9	D	25.3	C	23.4	C
Willow St. Off	Off	35.4	**E**	33.3	D	32.1	D
Willow St. Off / Truck Bypass On	Basic	22.4	C	20.3	C	18.3	C
Truck Bypass On	Major On[2]	0.6	N/A	0.6	N/A	0.5	N/A
Truck Bypass On / Willow St. On	Basic	21.8	C	23.1	C	17.5	B
Willow St. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. On / Pacific Coast Hwy. Off	Weave	27.5	C	27.7	C	22.0	C
Pacific Coast Hwy. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Coast Hwy. Off / Anaheim St. Off	Basic	21.6	C	23.6	C	17.5	B
Anaheim St. Off	Off	31.6	D	32.7	D	25.5	C
Anaheim St. Off / Shoreline Dr. Off	Basic	16.8	B	19.2	C	14.8	B
Shoreline Dr. Off	Major Off[3]	19.1	B	21.8	C	16.8	B
Shoreline Dr. Off / Pacific Coast Hwy. On	Basic	12.6	B	19.5	C	9.4	A
Pacific Coast Hwy. On	On	17.4	B	24.3	C	14.5	B
Pacific Coast Hwy. On / Anaheim St. On	Basic	15.6	B	23.0	C	12.4	B
Anaheim St. On	On	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.5-9: I-710 2035 Southbound Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Anaheim St. On / Pico Ave. Off	Weave	14.3	B	20.4	C	10.9	B
Pico Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Pico Ave. Off / Harbor Scenic Dr. Off	Basic	16.5	B	22.8	C	13.0	B
Harbor Scenic Dr. Off	Major Off[3]	18.8	B	25.9	C	14.7	B
To Ocean Blvd.	Basic	14.8	B	24.8	C	15.5	B
I-710 SB Collector/Distributor Road at Hobart Yard							
From I-710 GP	Basic	23.7	C	15.2	B	15.3	B
I-5 SB On	On	24.2	C	17.4	B	17.0	B
I-5 SB On / Washington Blvd. Off	Basic	26.3	D	18.5	C	18.0	B
Washington Blvd. Off	Off	27.9	C	20.5	C	20.0	C
To Bandini & Atlantic Blvd.	Basic	17.8	B	9.9	A	9.9	A
I-710 SB Collector/Distributor Road from Imperial Hwy. to I-105							
From I-710 SB	Basic	30.5	D	29.9	D	30.5	D
Imperial Hwy. On	On	31.9	D	30.3	D	30.9	D
Imperial Hwy. On / MLK Blvd. Off	Basic	35.9	**E**	33.6	D	34.4	D
MLK Blvd. Off	Off	36.6	**E**	34.8	D	35.4	E
MLK Blvd. Off / I-105 Off	Basic	31.8	D	29.6	D	29.2	D
To I-105 WB	Off	33.0	D	31.0	D	30.6	D
To I-105 EB	Basic	20.1	C	15.1	B	16.6	B
I-710 SB Collector/Distributor Road at I-105							
From I-710 SB	Basic	13.6	B	10.3	A	13.2	B
MLK Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
MLK Blvd. On / Rosecrans Ave. Off	Weave[5]	13.3	B	8.3	A	11.4	A
Rosecrans Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
To I-710 SB	Basic	9.6	A	4.4	A	6.7	A

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

1 Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
2 Major merge area; HCM methodology applied for analysis.
3 Major diverge area; HCM methodology applied for analysis.
4 Single-lane addition/drop; HCM methodology applied for analysis.
5 Weave operation occurs on freeway collector/distributor.
6 Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
GP = general purpose
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-10: I-710 2035 Northbound Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
I-710 Northbound Mainline							
North of Ford On	Basic	32.8	D	33.3	D	42.2	**E**
Ford Blvd. On	On	30.1	D	29.8	D	34.4	D
Ford Blvd. Off / Ford Blvd. On	Basic	30.1	D	32.3	D	37.4	**E**
Ford Blvd. Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
SR-60 Off / Ford Blvd. Off	Basic	23.0	C	24.6	C	28.9	D
SR-60 Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Olympic Blvd. On / SR-60 Off	Weave	--*	**F**	--*	**F**	--*	**F**
Olympic Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-5 NB On / Olympic Blvd. On	Basic	31.6	D	33.6	D	37.5	**E**
I-5 NB On	On[4]	N/A	N/A	N/A	N/A	--*	**F**
Olympic Blvd. Off / I-5 NB On	Basic	32.9	D	36.3	**E**	36.2	**E**
Olympic Blvd. Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
Washington Blvd. On / Olympic Blvd. Off	Basic	27.3	D	28.6	D	29.7	D
Washington Blvd. On	On	24.4	C	26.1	C	26.2	C
Lane Drop	Basic	24.8	C	25.2	C	26.5	D
Atlantic & Bandini Blvd. On / Lane Drop	Basic	20.5	C	20.8	C	21.7	C
Atlantic & Bandini Blvd. On	On	19.0	B	20.7	C	23.5	C
FC On / Atlantic & Bandini Blvd. On	Basic	19.8	C	19.4	C	19.3	C
FC On	Major On[2]	0.55	N/A	0.54	N/A	0.53	N/A
I-5 & Atlantic & Bandini & Washington Blvd. Off / FC On	Basic	22.5	C	20.3	C	22.2	C
I-5 & Atlantic & Bandini & Washington Blvd. Off	Major Off[3]	29.5	D	26.4	C	24.0	C
Lane Add	Basic	26.4	D	23.3	C	21.1	C
Florence Ave. On / Lane Add	Basic	53.9	**F**	41.6	**E**	34.9	D
Florence Ave. On	On	--*	**F**	34.8	D	32.1	D
Florence Ave. Off / Florence Ave. On	Basic	38.0	**E**	32.7	D	28.1	D
Florence Ave. Off	Off	--*	**F**	28.9	D	26.8	C
Firestone Blvd. WB On / Florence Ave. Off	Basic	48.1	**F**	42.4	**E**	38.6	**E**
Firestone Blvd. WB On	On	--*	**F**	31.2	D	30.1	D
Firestone Blvd. EB On / Firestone Blvd. WB On	Basic	42.7	**E**	40.2	**E**	36.4	**E**
Firestone Blvd. EB On	On	36.5	**E**	35.0	**E**	33.5	D

Table 3.5-10: I-710 2035 Northbound Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Firestone Blvd. Off / Firestone Blvd. EB On	Basic	31.5	D	30.9	D	28.4	D
Firestone Blvd. Off	Off	22.3	C	--*	**F**	20.0	C
Imperial Hwy. On / Firestone Blvd. Off	Basic	43.6	**E**	45.4	**F**	40.1	**E**
Imperial Hwy. On	On	35.7	**E**	--*	**F**	33.8	D
Imperial Hwy. Off / Imperial Hwy. On	Basic	33.8	D	38.0	**E**	32.4	D
Imperial Hwy. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-105 On / Imperial Hwy. Off	Weave	43.1	**E**	--*	**F**	--*	F
I-105 On	On	N/A	N/A	N/A	N/A	N/A	N/A
Rosecrans Ave. On / I-105 On	Basic	27.1	D	28.8	D	28.8	D
Rosecrans Ave. On	On	25.3	C	26.2	C	26.8	C
I-105 Off / Rosecrans Ave. On	Basic	24.8	C	26.5	D	25.8	C
I-105 Off	Major Off[3]	25.4	C	28.2	D	28.3	D
Rosecrans Ave. Off / I-105 Off	Basic	22.4	C	25.0	C	25.1	C
Rosecrans Ave. Off	Off	30.3	D	33.9	D	37.5	**E**
Alondra Blvd. On / Rosecrans Ave. Off	Basic	24.4	C	28.0	D	29.8	D
Alondra Blvd. On	On	28.0	C	28.4	D	29.9	D
SR-91 WB On / Alondra Blvd. On	Basic	20.4	C	24.0	C	25.2	C
SR-91 WB On	On4	N/A	N/A	N/A	N/A	N/A	N/A
SR-91 EB On / SR-91 WB On	Basic	21.3	C	24.2	C	25.4	C
SR-91 EB On	Major On[2]	0.59	N/A	0.67	N/A	0.69	N/A
Alondra Blvd. Off / SR-91 EB On	Basic	27.1	D	28.6	D	27.8	D
Alondra Blvd. Off	Off	32.1	D	33.6	D	35.1	**E**
SR-91 EB Off / Alondra Blvd. Off	Basic	28.5	D	30.9	D	32.8	D
SR-91 EB Off	Major Off[3]	28.8	D	31.7	D	32.5	D
SR-91 WB & Artesia Blvd. Off / SR-91 EB Off	Basic	25.7	C	28.9	D	29.9	D
SR-91 WB & Artesia Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. On / SR-91 WB & Artesia Blvd. Off	Weave	31.2	D	34.8	D	36.4	**E**
Long Beach Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. Off / Long Beach Blvd. On	Basic	21.7	C	24.0	C	25.8	C
Long Beach Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Del Amo Blvd. On / Long Beach Blvd. Off	Weave	28.2	D	--*	**F**	--*	**F**

Table 3.5-10: I-710 2035 Northbound Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Del Amo Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Del Amo Blvd. Off / Del Amo Blvd. On	Basic	23.1	C	25.0	C	27.4	D
Del Amo Blvd. Off	Off	33.3	D	34.3	D	37.2	**E**
FC Off / Del Amo Blvd. Off	Basic	27.2	D	29.1	D	32.7	D
FC Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-405 SB On / FC Off	Weave	38.3	**E**	--*	**F**	--*	**F**
I-405 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-405 NB On / I-405 SB On	Basic	29.0	D	30.2	D	30.2	D
I-405 NB On	On4	--*	**F**	--*	**F**	--*	**F**
I-405 Off / I-405 NB On	Basic	23.7	C	25.0	C	24.5	C
I-405 Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. On / I-405 Off	Weave	--*	F	--*	**F**	34.6	D
Willow St. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. Off / Willow St. On	Basic	24.6	C	25.2	C	22.6	C
Willow St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Coast Hwy. On / Willow St. Off	Weave	30.0	D	30.2	D	29.3	D
Pacific Coast Hwy. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Anaheim St. On / Pacific Coast Hwy. On	Basic	21.0	C	20.1	C	19.0	C
Anaheim St. On	On	22.5	C	22.0	C	22.2	C
Shoreline Dr. On / Anaheim St. On	Basic	17.5	B	16.5	B	14.3	B
Shoreline Dr. On	Major On[2]	0.48	N/A	0.46	N/A	0.40	N/A
Lane Drop	Basic	5.7	A	12.6	B	4.9	A
Pacific Coast Hwy. Off / Lane Drop	Basic	3.8	A	8.4	A	3.2	A
Pacific Coast Hwy. Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
FC Off / Pacific Coast Hwy. Off	Basic	4.1	A	8.1	A	3.8	A
FC Off	Off	14.0	B	21.0	C	14.3	B
Pico On / FC Off	Basic	8.5	A	14.6	B	8.4	A
Pico On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Anaheim St. Off / Pico On	Basic	10.8	A	16.8	B	8.9	A
Anaheim St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Harbor Scenic Dr. On / Anaheim St. Off	Weave	13.3	B	--*	**F**	11.5	B

Table 3.5-10: I-710 2035 Northbound Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Harbor Scenic Dr. On	On	N/A	N/A	N/A	N/A	N/A	N/A
South of Harbor Scenic Dr. On	Basic	9.3	A	16.3	B	8.9	A
I-710 NB Collector/Distributor Road at Hobart Yard							
To Washington Blvd.	Basic	5.8	A	7.4	A	7.1	A
I-5 NB Off	Major Off[3]	20.9	C	21.9	C	15.4	B
Bandini Blvd. On / I-5 NB Off	Basic	21.8	C	22.8	C	16.0	B
Bandini Blvd. On	On	18.7	B	19.5	B	14.6	B
FC On / Bandini Blvd. On	Basic	21.0	C	22.0	C	14.6	B
FC On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Atlantic Blvd. SB Off / FC On	Basic	23.6	C	24.2	C	13.7	B
Atlantic Blvd. SB Off	Off	35.3	**E**	30.5	D	19.8	B
Bandini Blvd. Off / Atlantic Blvd. SB Off	Basic	34.3	D	29.1	D	17.8	B
Bandini Blvd. Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
From I-710 NB	Basic	25.8	C	22.8	C	14.9	B

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

1 Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
2 Major merge area; HCM methodology applied for analysis.
3 Major diverge area; HCM methodology applied for analysis.
4 Single-lane addition/drop; HCM methodology applied for analysis.
5 Weave operation occurs on freeway collector/distributor.
6 Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-11: I-710 2035 Southbound Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
I-710 Southbound Mainline							
North of Third St. On	Basic	35.5	**E**	34.7	D	22.0	C
Third St. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Third St. On / Eagle St. Off	Weave	31.3	D	30.3	D	21.0	C
Eagle St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Eagle St. Off / Lane add	Basic	38.1	**E**	37.4	**E**	22.9	C
Lane add	Basic	25.2	C	24.9	C	17.1	B
SR-60 On	On	N/A	N/A	N/A	N/A	N/A	N/A
SR-60 On / Eastern Ave. Off	Weave	--*	**F**	--*	**F**	--*	**F**
Eastern Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Eastern Ave. Off / I-5 SB Off	Basic	25.1	C	23.0	C	21.2	C
I-5 SB Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
I-5 SB Off / Eastern Ave. On	Basic	24.1	C	23.2	C	19.4	C
Eastern Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Eastern Ave. On / Washington & Atlantic & Bandini Blvd. Off	Weave	29.6	D	28.2	D	23.8	C
Washington & Atlantic & Bandini Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Washington & Atlantic & Bandini Blvd. Off / I-5 SB On	Basic	22.1	C	23.9	C	19.5	C
I-5 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-5 SB On / FC Off	Weave	--*	**F**	--*	**F**	--*	**F**
FC Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
FC Off / Lane Drop	Basic	21.5	C	20.9	C	18.9	C
Lane Drop	Basic	27.6	D	26.7	D	23.7	C
Washington Blvd. On	On	27.0	C	27.1	C	26.1	C
Washington Blvd. On / Atlantic & Bandini Blvd. On	Basic	30.1	D	29.6	D	26.9	D
Atlantic & Bandini Blvd. On	On	31.8	D	33.7	D	34.0	D
Atlantic & Bandini Blvd. On / Florence Ave. Off	Basic	36.0	**E**	37.7	**E**	35.7	**E**
Florence Ave. Off	Off	20.5	C	21.2	C	20.3	C
Florence Ave. Off / Florence Ave. On	Basic	29.9	D	29.5	D	27.8	D
Florence Ave. On	On	36.3	**E**	35.0	D	34.9	D
Florence Ave. On / Firestone Blvd. Off	Basic	40.9	**E**	39.0	**E**	37.4	**E**
Firestone Blvd. Off	Off	19.9	B	19.2	B	18.9	B
Firestone Blvd. Off / Firestone Blvd. WB On	Basic	31.7	D	29.0	D	27.0	D
Firestone Blvd. WB On	On	32.9	D	30.9	D	29.0	D
Firestone Blvd. WB On / Firestone Blvd. EB On	Basic	38.5	**E**	34.4	D	31.4	D
Firestone Blvd. EB On	On	--*	**F**	33.2	D	33.2	D
Firestone Blvd. EB On / Lane Add	Basic	48.7	**F**	40.8	**E**	38.5	**E**
Lane Add	Basic	32.0	D	28.6	D	27.4	D

Table 3.5-11: I-710 2035 Southbound Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Imperial Hwy. Off	Off	35.9	**E**	33.5	D	32.8	D
Imperial Hwy. Off / I-105 & MLK Blvd. Off	Basic	28.5	D	25.6	C	24.6	C
I-105 & MLK Blvd. Off	Major Off[3]	31.4	D	28.8	D	27.7	C
I-105 & MLK Blvd. Off / Imperial Hwy. On	Basic	25.1	C	20.4	C	20.1	C
Imperial Hwy. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Imperial Hwy. On / Rosecrans Ave. Off	Basic	32.9	D	25.0	C	24.1	C
Rosecrans Ave. Off	Off	36.1	**E**	29.8	D	29.7	D
Rosecrans Ave. Off / MLK Blvd. On	Basic	28.8	D	22.7	C	21.3	C
MLK Blvd. On	On	28.2	D	22.0	C	21.8	C
MLK Blvd. On / I-105 On	Basic	31.9	D	23.7	C	22.8	C
I-105 On	Major On[2]	0.74	N/A	0.62	N/A	0.56	N/A
I-105 On / Rosecrans Ave. WB On	Basic	27.4	D	22.3	C	20.2	C
Rosecrans Ave. WB On	On	25.0	C	20.5	C	20.0	B
Rosecrans Ave. WB On / Rosecrans Ave. EB On	Basic	29.3	D	23.2	C	21.4	C
Rosecrans Ave. EB On	On	30.4	D	23.4	C	22.0	C
Rosecrans Ave. EB On / Alondra Blvd. Off	Basic	33.6	D	25.1	C	23.0	C
Alondra Blvd. Off	Off	38.5	**E**	32.7	D	30.8	D
Alondra Blvd. Off / SR-91 Off	Basic	29.1	D	21.9	C	20.1	C
SR-91 Off	Major Off[3]	31.9	D	24.9	C	22.8	C
SR-91 Off / Alondra Blvd. On	Basic	18.2	C	14.9	B	13.8	B
Alondra Blvd. On	On	21.6	C	18.1	B	17.7	B
Alondra Blvd. On / Lane Drop	Basic	20.9	C	17.2	B	16.3	B
Lane Drop	Basic	28.8	D	22.9	C	21.8	C
SR-91 WB On	On[4]	--*	**F**	N/A	N/A	N/A	N/A
SR-91 WB On / SR-91 EB & Artesia Blvd. On	Basic	32.0	D	24.8	C	22.9	C
SR-91 EB & Artesia Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
SR-91 EB & Artesia Blvd. On / Long Beach Blvd. Off	Weave	37.5	**E**	28.9	D	26.8	C
Long Beach Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. Off / Long Beach Blvd. On	Basic	33.9	D	25.9	C	23.8	C
Long Beach Blvd. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. On / Del Amo Blvd. Off	Basic	27.5	D	22.2	C	21.3	C
Del Amo Blvd. Off	Major Off[3]	30.5	D	25.2	C	24.2	C
Del Amo Blvd. Off / Del Amo Blvd. On	Basic	31.6	D	24.8	C	24.6	C
Del Amo Blvd. On	On	33.5	D	27.4	C	26.5	C

Table 3.5-11: I-710 2035 Southbound Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Del Amo Blvd. On / FC On	Basic	39.1	**E**	28.6	D	27.8	D
FC On	On	N/A	N/A	N/A	N/A	N/A	N/A
FC On / I-405 Off	Weave	--*	**F**	--*	**F**	--*	**F**
I-405 Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-405 Off / I-405 SB On	Basic	22.0	C	23.2	C	18.5	C
I-405 SB On	On[4]	--*	**F**	N/A	N/A	N/A	N/A
I-405 SB On / I-405 NB On	Basic	25.9	C	24.2	C	22.1	C
I-405 NB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
I-405 NB On / Willow St. Off	Basic	24.2	C	24.0	C	20.9	C
Willow St. Off	Major Off[3]	27.41	C	27.12	C	23.73	C
Willow St. Off / Willow St. On	Basic	26.8	D	26.5	D	21.7	C
Willow St. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. On / Pacific Coast Hwy. Off	Weave	27.4	C	25.7	C	22.9	C
Pacific Coast Hwy. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Coast Hwy. Off / Anaheim St. & Pico Ave. Off	Basic	21.5	C	21.5	C	18.3	C
Anaheim St. & Pico Ave. Off	Major Off[3]	24.4	C	24.4	C	20.8	C
Anaheim St. & Pico Ave. Off / Shoreline Dr. Off	Basic	21.6	C	21.4	C	19.1	C
Shoreline Dr. Off	Major Off[3]	24.6	C	24.4	C	21.7	C
Shoreline Dr. Off / Pacific Coast Hwy. On	Basic	10.1	A	16.4	B	8.5	A
Pacific Coast Hwy. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Coast Hwy. On / FC On	Basic	9.7	A	14.4	B	8.8	A
FC On	On	17.3	B	24.9	C	15.2	B
FC On / Anaheim St. On	Basic	14.5	B	21.5	C	12.7	B
Anaheim St. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Anaheim St. On / Harbor Scenic Dr. Off	Weave	16.9	B	--*	**F**	15.5	B
Harbor Scenic Dr. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
To Ocean Blvd.	Basic	15.7	B	26.4	D	17.5	B
I-710 SB Collector/Distributor Road at Hobart Yard							
From I-710 GP	Basic	24.0	C	16.0	B	15.4	B
I-5 SB On	On	23.9	C	17.2	B	16.9	B
I-5 SB On / Washington Blvd. Off	Basic	25.9	C	18.2	C	17.9	B
Washington Blvd. Off	Off	27.5	C	20.2	C	19.9	B
To Bandini	Basic	17.8	B	9.8	A	9.8	A
I-710 SB Collector/Distributor Road from Imperial Hwy. to I-105							
From I-710 SB	Basic	22.7	C	26.5	D	24.5	C
Imperial Hwy. On	On	24.7	C	28.3	D	25.9	C
Imperial Hwy. On / MLK Blvd. Off	Basic	27.0	D	31.3	D	28.4	D
MLK Blvd. Off	Off	28.5	D	32.6	D	29.9	D
MLK Blvd. Off / I-105 Off	Basic	23.8	C	27.6	D	24.2	C

Table 3.5-11: I-710 2035 Southbound Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
To I-105 WB	Off	25.5	C	29.1	D	25.9	C
To I-105 EB	Basic	13.2	B	14.2	B	12.7	B
I-710 SB Collector/Distributor Road at I-105							
From I-710 SB	Basic	12.8	B	10.0	A	12.4	B
MLK Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
MLK Blvd. On / Rosecrans Ave. Off	Weave[5]	13.0	B	8.3	A	11.0	A
Rosecrans Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
To I-710 SB	Basic	9.8	A	4.8	A	6.9	A

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
GP = general purpose
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-12: I-710 Freight Corridor 2035 Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density /V/C[1]	LOS
Northbound							
To I-710 GP	Basic	14.4	B	17.5	B	13.6	B
Washington Blvd. & I-5 Off	Off	26.5	C	30.9	D	26.0	C
Slauson Ave. Off / Washington Blvd. & I-5 Off	Basic	21.1	C	25.2	C	20.6	C
Slauson Ave. Off	Off	30.7	D	37.4	**E**	30.9	D
SR-91 EB Off / Slauson Ave. Off	Basic	25.0	C	33.4	D	25.2	C
SR-91 EB Off	Off	34.7	D	43.5	**E**	34.8	D
I-710 GP (Del Amo) On / SR-91 EB Off	Basic	29.6	D	45.4	**E**	29.8	D
I-710 GP (Del Amo) On	On	29.6	D	37.6	**E**	29.8	D
I-710 GP (Anaheim) On / I-710 GP (Del Amo) On	Basic	14.6	B	20.7	C	15.4	B
I-710 GP (Anaheim) On	On	16.0	B	22.0	C	16.8	B
Anaheim St. On / I-710 GP (Anaheim) On	Basic	5.8	A	7.8	A	6.2	A
Anaheim St. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
From Pico St	Basic	4.9	A	4.5	A	2.9	A
Southbound							
From I-710 GP	Basic	15.9	B	17.8	B	16.5	B
Washington Blvd. On	On	18.7	B	22.9	C	22.2	C
Washington Blvd. On / Slauson Ave. On	Basic	16.8	B	20.9	C	20.4	C
Slauson Ave. On	On	23.0	C	29.4	D	27.0	C
Slauson Ave. On / SR-91 WB On	Basic	21.2	C	28.7	D	25.6	C
SR-91 WB On	On	27.2	C	36.1	**E**	29.3	D
SR-91 WB On / I-710 GP (Del Amo) Off	Basic	25.8	C	40.4	**E**	28.3	D
I-710 GP (Del Amo) Off	Off	31.4	D	41.4	**E**	33.6	D
I-710 GP (Del Amo) Off / I-710 GP (Anaheim) Off	Basic	15.2	B	20.1	C	13.1	B
I-710 GP (Anaheim) Off	Off	20.0	C	25.4	C	17.6	B
I-710 GP (Anaheim) Off / Anaheim St. Off	Basic	8.1	A	9.6	A	7.3	A
Anaheim St. Off	Off	12.0	B	13.7	B	11.1	B
To Pico St	Basic	3.6	A	5.2	A	2.6	A

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

1 Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
2 Major merge area; HCM methodology applied for analysis.
3 Major diverge area; HCM methodology applied for analysis.
4 Single-lane addition/drop; HCM methodology applied for analysis.
5 Weave operation occurs on freeway collector/distributor.
6 Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
GP = general purpose
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-13: I-710 2035 Merge/Diverge Areas Alternative 5C Design Options Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Alternative 5C Design Option 3A – I-710 NB Mainline							
North of Ford Blvd. On	Basic	35.2	**E**	29.1	D	34.8	D
Ford Blvd.	On	31.8	D	27.6	C	31.7	D
Ford Blvd. Off / Ford Blvd. On	Basic	30.9	D	27.4	D	30.5	D
Ford Blvd.	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-5 NB On / Ford Blvd. Off	Weave	27.3	C	24.9	C	30.6	D
I-5 NB	On	N/A	N/A	N/A	N/A	N/A	N/A
Lane Drop	Basic	21.5	C	20.7	C	21.7	C
Olympic Blvd. & SR-60 Off / I-5 NB On	Basic	16.1	B	15.5	B	16.3	B
Olympic Blvd. & SR-60	Off	N/A	N/A	N/A	N/A	N/A	N/A
Washington Blvd. On / Olympic Blvd. & SR-60 Off	Weave	--*	**F**	--*	**F**	--*	**F**
Washington Blvd.	On	N/A	N/A	N/A	N/A	N/A	N/A
South of Washington Blvd. On	Basic	22.7	C	21.5	C	22.5	C
Alternative 5C Design Option 3A – I-710 NB Collector/Distributor							
SR-60 EB	Basic	13.6	B	15.5	B	19.3	C
SR-60 WB	Off	32.7	D	32.8	D	30.2	D
Olympic Blvd. On / SR-60 WB Off	Basic	27.2	D	27.3	D	24.6	C
Olympic Blvd.	On	28.5	D	28.6	D	26.4	C
Olympic Blvd. Off / Olympic Blvd. On	Basic	24.3	C	25.7	C	23.3	C
Olympic Blvd.	Off	36.0	**E**	35.9	**E**	35.9	**E**
From I-710 NB	Basic	31.4	D	31.3	D	31.3	D
Alternative 5C Design Option 2A - I-710 NB Mainline							
North of Willow St. Off	Basic	24.9	C	27.7	D	22.5	C
Willow St	Off	30.4	D	31.7	D	28.8	D
Pacific Coast Hwy. On / Willow St. Off	Basic	26.5	D	29.0	D	24.1	C
Pacific Coast Hwy.	On	28.6	D	31.0	D	29.1	D
Shoreline Dr. On / Pacific Coast Hwy. On	Basic	21.3	C	22.6	C	18.5	C
Shoreline Dr.	Major On[2]	0.59	N/A	0.63	N/A	0.51	N/A
Anaheim St. On / Shoreline Dr. On	Basic	16.4	B	25.0	C	15.4	B
Anaheim St	On	20.0	C	28.0	C	19.6	B
South of Anaheim St. On	Basic	9.7	A	17.4	B	7.9	A
Alternative 5C Design Option 2A – I-710 NB Collector/Distributor							
To I-710 NB	Basic	30.3	D	19.4	C	23.2	C
Pacific Coast Hwy.	Off	37.4	**E**	27.2	C	31.9	D
From Shoreline Dr.	Basic	33.4	D	21.6	C	26.3	D
Alternative 5C Design Option 3A - I-710 SB Mainline							
North of Third St. On	Basic	35.4	**E**	31.5	D	21.6	C
Third St	On	N/A	N/A	N/A	N/A	N/A	N/A
Third St. On / Eagle St. Off	Weave	31.6	D	28.7	D	19.9	B
Eagle St.	Off	N/A	N/A	N/A	N/A	N/A	N/A
Eagle St. Off / I-5 SB Off	Basic	34.1	D	32.1	D	21.0	C
Lane Add	Basic	23.5	C	22.5	C	15.7	B
I-5 SB	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
I-5 SB Off / SR-60 On	Basic	21.6	C	23.3	C	10.4	A
SR-60	On	N/A	N/A	N/A	N/A	N/A	N/A
SR-60 On / Washington & Atlantic & Bandini Blvd. Off	Weave	--*	**F**	--*	**F**	--*	**F**
Washington & Atlantic & Bandini Blvd.	Off	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.5-13: I-710 2035 Merge/Diverge Areas Alternative 5C Design Options Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Washington & Atlantic & Bandini Blvd. Off / I-5 SB & Whittier Blvd. On	Basic	18.8	C	21.6	C	16.4	B
I-5 SB & Whittier Blvd.	Major On[2]	0.59	N/A	0.60	N/A	0.52	N/A
I-5 SB & Whittier Blvd. On / Washington Blvd. On	Basic	21.3	C	21.6	C	18.8	C
Lane Drop	Basic	26.0	D	26.3	D	22.6	C
Washington Blvd.	On	21.5	C	23.9	C	22.5	C
South of Washington Blvd. On	Basic	29.5	D	31.3	D	27.1	D
Alternative 5C Design Option 3A - I-710 SB Collector/Distributor							
SR-60 WB	Basic	20.2	C	18.9	C	21.1	C
SR-60 EB	On	28.0	D	24.6	C	34.3	D
SR-60 EB On / Whittier Blvd. Off	Basic	26.9	D	22.9	C	37.1	**E**
Whittier Blvd.	Off	32.4	D	28.5	D	39.6	**E**
I-710 SB	Basic	25.7	C	21.2	C	32.2	D
Alternative 5C Design Option 2A - I-710 SB Mainline							
North of Willow St. On	Basic	21.8	C	23.1	C	17.5	B
Willow St	On	N/A	N/A	N/A	N/A	N/A	N/A
Willow St. On / Pacific Coast Hwy. Off	Weave	27.3	C	27.7	C	21.7	C
Pacific Coast Hwy.	Off	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Coast Hwy. Off / Anaheim St. Off	Basic	21.5	C	23.6	C	17.4	B
Anaheim St	Off	32.8	D	32.7	D	25.3	C
Anaheim St. Off / Shoreline Dr. Off	Basic	16.7	B	19.1	C	14.6	B
Shoreline Dr.	Major Off[3]	19.0	B	21.8	C	16.6	B
South of Shoreline Dr. Off	Basic	12.6	B	19.5	C	9.4	A
Alternative 5C Design Option 2A - I-710 SB Collector/Distributor							
From I-710 SB	Basic	22.9	C	18.6	C	22.4	C
Pacific Coast Hwy.	On	27.3	C	22.8	C	27.2	C
To Shoreline Dr.	Basic	25.7	C	20.9	C	25.7	C

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-14: I-710 2035 Merge/Diverge Areas Alternative 7 Design Options Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Alternative 7 Design Option 3B - I-710 NB Mainline							
North of Ford Blvd. On	Basic	35.3	**E**	34.6	D	42.9	**E**
Ford Blvd.	On	31.5	D	30.6	D	34.7	D
Ford Blvd. Off / Ford Blvd. On	Basic	31.9	D	33.1	D	37.6	**E**
Ford Blvd.	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-5 NB On / Ford Blvd. Off	Weave	27.3	C	29.9	D	34.9	D
I-5 NB	On	N/A	N/A	N/A	N/A	N/A	N/A
Lane Drop	Basic	23.7	C	25.8	C	26.8	D
Olympic Blvd. & SR-60 Off / I-5 NB On	Basic	17.7	B	19.1	C	19.7	C
Olympic Blvd. & SR-60	Off	N/A	N/A	N/A	N/A	N/A	N/A
Washington Blvd. On / Olympic Blvd. & SR-60 Off	Weave	--*	**F**	--*	**F**	--*	**F**
Washington Blvd.	On	N/A	N/A	N/A	N/A	N/A	N/A
Lane Drop	Basic	24.4	C	24.5	C	26.5	D
Atlantic & Bandini Blvd. On / Washington Blvd. On	Basic	20.2	C	20.3	C	21.7	C
Atlantic & Bandini Blvd.	On	18.6	B	19.8	B	23.5	C
FC On / Atlantic & Bandini Blvd. On	Basic	19.6	C	19.1	C	19.3	C
FC	Major On[2]	0.5	N/A	0.5	N/A	0.5	N/A
I-5 & Atlantic & Bandini & Washington Blvd. Off / FC On	Basic	22.2	C	19.9	C	22.2	C
I-5 & Atlantic & Bandini & Washington Blvd.	Major Off[3]	29.5	D	26.4	C	24.0	C
Lane Add	Basic	26.4	D	23.3	C	21.1	C
South of I-5 & Atlantic & Bandini & Washington Blvd. Off	Basic	53.9	**F**	41.6	**E**	34.9	D
Alternative 7 Design Option 3B – I-710 NB Collector/Distributor							
SR-60 EB	Basic	18.3	C	19.2	C	20.6	C
SR-60 WB	Off	32.5	D	32.0	D	32.0	D
Olympic Blvd. On / Sr-60 WB Off	Basic	27.0	D	26.5	D	26.5	D
Olympic Blvd.	On	28.4	D	28.0	D	28.0	D
Olympic Blvd. Off / Olympic Blvd. On	Basic	24.9	C	25.5	C	26.0	C
Olympic Blvd.	Off	36.6	**E**	35.6	**E**	38.4	**E**
From I-710 NB	Basic	32.2	D	30.8	D	35.0	D
Alternative 7 Design Option 3B – I-710 SB Mainline							
North of Third St. On	Basic	35.8	**E**	37.5	**E**	22.8	C
Third St	On	N/A	N/A	N/A	N/A	N/A	N/A
Third St. On / Eagle St. Off	Weave	31.9	D	32.2	D	22.6	C
Eagle St	Off	N/A	N/A	N/A	N/A	N/A	N/A
Eagle St. Off / I-5 SB Off	Basic	37.6	**E**	40.3	**E**	23.7	C
Lane Add	Basic	25.0	C	26.1	D	17.7	B
I-5 SB	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
I-5 SB Off / SR-60 On	Basic	23.1	C	27.3	D	12.8	B
SR-60	On	N/A	N/A	N/A	N/A	N/A	N/A
SR-60 On / Washington & Atlantic & Bandini Blvd. Off	Weave	--*	**F**	--*	**F**	--*	**F**
Washington & Atlantic & Bandini Blvd.	Off	N/A	N/A	N/A	N/A	N/A	N/A

Table 3.5-14: I-710 2035 Merge/Diverge Areas Alternative 7 Design Options Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Washington & Atlantic & Bandini Blvd. Off / I-5 SB & Whittier Blvd. On	Basic	21.0	C	24.6	C	19.0	C
I-5 SB & Whittier Blvd.	On	N/A	N/A	N/A	N/A	N/A	N/A
I-5 SB & Whittier Blvd. On / FC Off	Weave	--*	**F**	--*	**F**	--*	**F**
FC	Off	N/A	N/A	N/A	N/A	N/A	N/A
South of FC Off	Basic	21.5	C	20.9	C	18.9	C
Alternative 7 Design Option 3B – I-710 SB Collector/Distributor							
SR-60 WB	Basic	18.6	C	18.9	C	22.3	C
SR-60 EB	On	30.4	D	25.1	C	35.2	**E**
SR-60 EB On / Whittier Blvd. Off	Basic	30.4	D	23.4	C	39.0	**E**
Whittier Blvd.	Off	35.3	**E**	29.1	D	40.6	**E**
I-710 SB	Basic	28.8	D	22.6	C	34.8	D

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.
[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

- I-710 northbound between Imperial Hwy. and Firestone Blvd. (LOS F, MD)
- I-710 northbound between Firestone Ave. and Florence Ave. (LOS F, AM)
- I-710 northbound between Florence Ave. and Slauson Ave. (LOS F, AM)
- I-710 southbound between Firestone Blvd. and Imperial Hwy. (LOS F, AM)

- There are no appreciable differences in the overall LOS results for Alternative 5C and Alternative 7. Both alternatives improve four deficient intersections (LOS E or worse) along I-710 relative to Alternative 1. This finding also holds true for the Design Options evaluated in the I-710 Corridor.

I-710 FREIGHT CORRIDOR SEGMENTS. Table 3.5-12 shows the LOS for the various segments of the I-710 freight corridor under Alternative 7. As these tables illustrate, some segments are forecast to operate at LOS E. The following summary describes operations on the I-710 freight corridor under Alternative 7.

In general, capacity on the freight corridor is expected to be more than sufficient to address demand, with the exception of the freight corridor segments between Del Amo Blvd. and the SR-91 interchange during the midday peak period. An influx of non-port trucks access the freight corridor through the I-710 general purpose ramps to freight corridor near the Del Amo Blvd. interchange, as this is the first opportunity that trucks using I-405 can enter and exit the ZE/NZE freight corridor. However, all freight corridor segments operate at LOS E or better.

I-405 MAINLINE SEGMENTS. Tables 3.5-15 and 3.5-16 provide a summary of the freeway segment analysis for I-405 under Alternatives 5C and 7. These tables show the following:

- Similar to Alternative 1, under Alternatives 5C and 7, northbound I-405 is projected to experience heavy congestion during the morning peak hour while southbound I-405 is projected to experience heavy congestion during the midday and evening peak hour. Existing access between mainline I-405 and Pacific Pl. is removed under Alternative 5C and 7, thereby eliminating the weave segments associated with existing ramps to and from Pacific Pl. As a result, when compared to Alternative 1, the LOS projected under Alternatives 5C and 7 are improved. While removal of these ramps results in loss of access, the traffic demand impacted due to the changes is small with alternative accesses available via nearby Wardlow Rd.

SR-91 MAINLINE SEGMENTS. Tables 3.5-17 and 3.5-18 provide a summary of the freeway segment analysis for SR-91. These tables show the following:

- Similar to Alternative 1, under Alternative 5C, westbound SR-91 is projected to be congested near the I-710 interchange during the morning peak hour. The weaving segment along westbound SR-91, downstream of the ramp from southbound I-710 is eliminated under Alternative 5C with the closing of the off-ramp to Long Beach Blvd. The removal of accesses to and from Long Beach Blvd. and Atlantic Ave. do not adversely affect mainline operations. Eliminating one of the two weaving segments along westbound SR-91 improves operating conditions through the SR-91/I-710 interchange. Operations within the segment downstream of the ramps from northbound and southbound I-710 are projected to improve to LOS E or better in all three peak analysis hours.

Table 3.5-15: I-405 2035 Basic/Weaving Segments and Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Northbound							
North of Alameda St. Off	Basic	30.2	D	26.8	D	29.2	D
Alameda St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Santa Fe Ave. On / Alameda St. Off	Weave	32.9	D	29.4	D	31.2	D
Santa Fe Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Santa Fe Ave. On	Basic	25.9	C	23.2	C	23.6	C
I-710 SB On	Major On[2]	0.7	N/A	0.6	N/A	0.6	N/A
I-710 NB On / I-710 SB On	Basic	24.7	C	23.7	C	23.1	C
I-710 NB On	Major On[2]	0.7	N/A	0.7	N/A	0.6	N/A
Santa Fe Ave. Off / I-710 NB On	Basic	24.5	C	23.1	C	24.1	C
Santa Fe Ave. Off	Off	40.2	**E**	32.9	D	33.3	D
I-710 Off / Santa Fe Ave. Off	Basic	32.8	D	27.0	D	27.8	D
I-710 Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Wardlow Rd. On / I-710 Off	Weave	--*	**F**	--*	**F**	--*	**F**
Wardlow Rd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
South of Wardlow Rd. On	Basic	34.9	D	31.9	D	31.6	D
Southbound							
North of Alameda On	Basic	28.8	D	33.1	D	30.6	D
Alameda St. (223rd St) On	On	N/A	N/A	N/A	N/A	N/A	N/A
Alameda St. (223rd St) On / I-710 NB & Wardlow Rd. Off	Weave	37.5	**E**	--*	**F**	--*	**F**
I-710 NB & Wardlow Rd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB & Wardlow Rd. Off / I-710 SB Off	Basic	33.9	D	41.1	**E**	38.2	**E**
I-710 SB Off	Major Off[3]	35.4	**E**	--*	**F**	37.9	**E**
I-710 SB Off / Wardlow Rd. On	Basic	32.3	D	50.0	**F**	40.0	**E**
Wardlow Rd. On	On	--*	**F**	--*	**F**	--*	**F**
Wardlow Rd. On / I-710 SB On	Basic	46.1	**F**	66.1	**F**	70.9	**F**
I-710 SB On	Major On[2]	--*	**F**	--*	**F**	--*	**F**
I-710 SB On / I-710 NB On	Basic	46.7	**F**	49.3	**F**	56.9	**F**
I-710 NB On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB On / Long Beach Blvd. (Crest St.) Off	Weave	--*	**F**	--*	**F**	--*	**F**

Table 3.5-15: I-405 2035 Basic/Weaving Segments and Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Long Beach Blvd. (Crest St.) Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
South of Long Beach Blvd. Off	Basic	34.9	D	37.2	**E**	39.2	**E**

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.
[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-16: I-405 2035 Alternatives 7 Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Northbound							
North of Alameda St. Off	Basic	28.3	D	25.8	C	28.7	D
Alameda St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Alameda St. Off	Weave	31.9	D	28.8	D	30.9	D
Santa Fe Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Alameda St. Off	Basic	24.7	C	22.6	C	23.6	C
I-710 SB On	Major On[2]	0.7	N/A	0.6	N/A	0.7	N/A
I-710 NB On / I-710 SB On	Basic	24.4	C	23.2	C	23.5	C
I-710 NB On	Major On[2]	0.67	N/A	0.64	N/A	0.65	N/A
Santa Fe Ave. Off / I-710 NB On	Basic	23.7	C	22.5	C	24.2	C
Santa Fe Ave. Off	Off	39.3	**E**	32.0	D	33.2	D
I-710 Off / Santa Fe Ave. Off	Basic	31.4	D	26.1	D	27.9	D
I-710 Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Wardlow Rd. On / I-710 Off	Weave	--*	**F**	--*	**F**	--*	**F**
Wardlow Rd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
South of Wardlow Rd. On	Basic	37.4	**E**	33.3	D	33.4	D
Southbound							
North of Alameda On	Basic	28.9	D	33.1	D	30.4	D
Alameda St. (223rd St) On	On	N/A	N/A	N/A	N/A	N/A	N/A
Alameda St. (223rd St) On / I-710 NB & Wardlow Rd. Off	Weave	37.9	**E**	--*	**F**	--*	**F**
I-710 NB & Wardlow Rd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB & Wardlow Rd. Off / I-710 SB Off	Basic	32.5	D	36.5	**E**	35.0	**E**
I-710 SB Off	Major Off[3]	34.4	D	36.9	**E**	36.0	**E**
I-710 SB Off / Wardlow Rd. On	Basic	29.5	D	40.4	**E**	34.3	D
Wardlow Rd. On	On	35.6	**E**	--*	**F**	--*	**F**
Wardlow Rd. On / I-710 SB On	Basic	39.8	**E**	49.9	**F**	52.4	**F**
I-710 SB On	Major On[2]	--*	**F**	--*	**F**	--*	**F**
I-710 SB On / I-710 NB On	Basic	65.1	**F**	61.1	**F**	71.8	**F**
I-710 NB On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB On / Long Beach Blvd. (Crest St.) Off	Weave	--*	**F**	--*	**F**	--*	**F**
Long Beach Blvd. (Crest St.) Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
South of Long Beach Blvd. Off	Basic	41.6	**E**	39.8	**E**	42.2	**E**

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-17: SR-91 2035 Basic/Weaving Segments and Merge/Diverge Areas Alternative 5C Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density / V/C[1]	LOS
Eastbound							
West of Long Beach Off	Basic	27.7	D	32.7	D	32.1	D
Long Beach Blvd. Off	Off	30.4	D	34.1	D	33.9	D
Long Beach Blvd. Off / Alameda & Santa Fe Ave. On	Basic	26.6	D	30.8	D	30.0	D
Alameda & Santa Fe Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Alameda & Santa Fe Ave. On / I-710 SB Off	Weave	27.9	C	31.3	D	32.4	D
I-710 SB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB Off / I-710 NB Off	Basic	22.6	C	24.1	C	25.8	C
I-710 NB Off	Major Off[3]	25.7	C	27.3	C	28.9	D
I-710 NB Off / I-710 NB On	Basic	29.3	D	27.3	D	29.0	D
I-710 NB On	Major On[2]	0.63	N/A	0.66	N/A	0.64	N/A
I-710 NB On / I-710 SB On	Basic	22.8	C	23.8	C	23.4	C
I-710 SB On	On4	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Atlantic Ave. On	Basic	23.8	C	24.1	C	23.4	C
Atlantic Ave. On	On	23.1	C	22.0	C	21.5	C
Atlantic Ave. On / Cherry Ave. Off	Basic	25.4	C	25.3	C	24.5	C
Cherry Ave. Off	Major Off[3]	28.6	D	28.4	D	27.7	C
East of Cherry Off	Basic	29.3	D	29.2	D	27.7	D
Lane Drop	Basic	42.3	**E**	42.3	**E**	39.1	**E**
Westbound							
East of Cherry Ave. On	Basic	31.0	D	31.3	D	27.8	D
Cherry Ave. On	On	27.9	C	28.3	D	26.2	C
Cherry Ave. On / Atlantic Ave. Off	Basic	33.9	D	34.4	D	30.7	D
Atlantic Ave. Off	Off	20.9	C	21.1	C	19.1	B
Atlantic Ave. Off / I-710 Off	Basic	30.5	D	31.7	D	27.0	D
I-710 Off	Major Off[3]	32.9	D	33.8	D	30.1	D
I-710 Off / I-710 SB On	Basic	30.0	D	28.3	D	26.4	D
I-710 SB On	Major On[2]	--*	**F**	0.81	N/A	0.76	N/A
I-710 SB On / I-710 NB On	Basic	45.3	**F**	31.3	D	28.4	D
I-710 NB On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB On / Santa Fe Ave. Off	Weave	45.1	**E**	37.7	**E**	33.6	D
Santa Fe Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Santa Fe Ave. Off / Long Beach Blvd. On	Basic	48.8	**F**	33.7	D	29.8	D
Long Beach Blvd. On	On	--*	**F**	29.1	D	27.8	C
West of Long Beach Blvd. On	Basic	56.0	**F**	35.9	**E**	32.2	D

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

1 Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
2 Major merge area; HCM methodology applied for analysis.
3 Major diverge area; HCM methodology applied for analysis.
4 Single-lane addition/drop; HCM methodology applied for analysis.
5 Weave operation occurs on freeway collector/distributor.
6 Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-18: SR-91 2035 Basic/Weaving Segments and Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density / V/C[1]	LOS	Density/ V/C[1]	LOS	Density / V/C[1]	LOS
Eastbound							
West of Alameda St. On	Basic	26.7	D	32.4	D	31.6	D
Alameda St. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Alameda St. On / Santa Fe Ave. On	Basic	23.2	C	26.5	D	27.7	D
Santa Fe Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Santa Fe Ave. On / Long Beach Blvd. Off	Weave	26.8	C	31.0	D	33.4	D
Long Beach Blvd. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. Off / Long Beach Blvd. On	Basic	24.5	C	28.3	D	30.0	D
Long Beach Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. On / I-710 SB Off	Weave	31.3	D	33.2	D	35.4	**E**
I-710 SB Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB Off / I-710 NB & Atlantic Ave. Off	Basic	24.6	C	26.8	D	29.0	D
I-710 NB & Atlantic Ave. Off	Major Off[3]	27.8	C	29.8	D	31.8	D
I-710 NB & Atlantic Ave. Off / I-710 NB On	Basic	31.5	D	31.5	D	30.4	D
I-710 NB On	Major On[2]	0.60	N/A	0.62	N/A	0.61	N/A
I-710 NB On / I-710 SB On	Basic	21.5	C	22.6	C	21.9	C
I-710 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Cherry Ave. Off	Weave	--*	**F**	--*	**F**	--*	**F**
Cherry Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Cherry Ave. Off / Lane Drop	Basic	27.2	D	28.0	D	26.5	D
Lane Drop	Basic	38.1	**E**	39.6	**E**	36.5	**E**
I-710 NB FC & Atlantic Ave. On	On	--*	**F**	--*	**F**	34.2	D
East of I-710 NB FC On	Basic	46.6	**F**	49.8	**F**	43.8	**E**
Westbound							
East of Cherry Ave. On	Basic	31.7	D	30.8	D	28.3	D
Cherry Ave. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Cherry Ave. On / I-710 SB FC Off	Weave	34.1	D	36.0	**E**	30.5	D
I-710 SB FC Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB FC Off / Atlantic Ave. Off	Basic	25.3	C	24.5	C	24.3	C
Atlantic Ave. Off	Off[4]	N/A	N/A	N/A	N/A	N/A	N/A
Atlantic Ave. Off / I-710 Off	Basic	30.3	D	29.5	D	28.0	D
I-710 Off	Major Off[3]	32.8	D	32.2	D	30.9	D
I-710 Off / Atlantic Ave. On	Basic	33.4	D	31.5	D	29.9	D
Atlantic Ave. On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
Atlantic Ave. On / I-710 SB On	Basic	27.0	D	23.9	C	23.6	C

Table 3.5-18: SR-91 2035 Basic/Weaving Segments and Merge/Diverge Areas Alternative 7 Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density / V/C[1]	LOS	Density/ V/C[1]	LOS	Density / V/C[1]	LOS
I-710 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Long Beach Blvd.	Weave	--*	**F**	28.1	D	26.9	C
Long Beach Blvd.	Off	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. / I-710 NB On	Basic	34.5	D	25.5	C	23.6	C
I-710 NB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
I-710 NB On / Long Beach Blvd. On	Basic	30.5	D	24.4	C	22.0	C
Long Beach Blvd. On	On	N/A	N/A	N/A	N/A	N/A	N/A
Long Beach Blvd. On / Santa Fe Ave. Off	Weave	41.9	**E**	31.6	D	29.2	D
Santa Fe Ave. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
West of Santa Fe Ave. Off	Basic	75.1	**F**	41.9	**E**	35.8	**E**

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.
[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

In general, enhancements proposed under Alternative 7 will improve traffic operations through the I-710/SR-91 interchange area. Midday and evening peak operations at the weaving segments along westbound SR-91, downstream of the ramp from southbound I-710 are expected to improve from LOS F under the No Build condition to LOS C under Alternative 7. In the eastbound direction, even though vehicle throughputs are projected to increase under Alternative 7, traffic operating conditions remain similar to that of the No Build condition.

Alternative 7 provides direct freight corridor connectors from northbound I-710 to eastbound SR-91 and from westbound SR-91 to southbound I-710. This new access point favoring ZE/NZE trucks facilitates truck movement on SR-91 to points east within the region. The added capacity attracts additional truck traffic to and from east of I-710. Under No Build

conditions, traffic demand on eastbound SR-91, to the east of the Cherry Ave. is projected to be nearing capacity. Under Alternative 7 conditions, the facilitated truck movement would further increase the projected traffic demand on eastbound SR-91, causing segments that are outside of the improvement area to experience heavy congestion.

I-105 MAINLINE SEGMENTS. Tables 3.5-19 and 3.5-20 provide a summary of the freeway segment analysis for I-105. These tables show the following:

- Operations on eastbound and westbound I-105 would not be adversely affected by the improvements on I-710 under Alternative 5C. Similar to Alternative 1, under Alternative 5C, operations through the I-105/I-710 interchange area are projected to operate at an acceptable LOS of D or better. Congestion would continue along segments upstream and downstream of the interchange area.
- The improvements on I-710 are projected to have marginal effects on the operations on I-105 under Alternative 7. Overall traffic analysis results indicate that operations under Alternative 7 would not be substantially different compared to 2035 No Build conditions.

I-5 MAINLINE SEGMENTS. Tables 3.5-21 and 3.5-22 provide a summary of the freeway segment analysis for I-5. These tables show the following:

- Travel conditions are improved somewhat along I-5 under Alternative 5C conditions when compared to future No Build conditions. While LOS results may have improved slightly under Alternative 5C conditions, the projected vehicle throughputs during the morning and evening peak hours are still constrained by the bottlenecks upstream and queues extending from downstream of the Study Area along I-5.
- A portion of traffic is shifted away from I-5 to I-710 as a result of the improvements proposed along I-710 under Alternative 7. As a result, travel conditions are improved somewhat along I-5 under Alternative 7.

- **ADDITIONAL PUBLIC TRANSPORTATION SYSTEM FEATURES.** Transit improvements, including increased revenue vehicle service hours for light rail service (Blue Line/Green Line), Los Angeles County Metropolitan Transportation Authority (Metro) Rapid routes, local bus service, and community bus service within the I-710 Corridor would be included as programmatic elements under both build alternatives in addition to the freeway features described above (*Intersection Traffic Impact Analysis Report,* 2017*)*.
- **ROADWAY SEGMENTS.** The roadway segment analysis is provided in the *Intersection Traffic Impact Analysis Report* (2017). This section provides a summary of the roadway segments that experience V/C ratios approaching or exceeding the available capacity and operating at LOS E or F with the project build alternatives.

Table 3.5-19: I-105 2035 Basic/Weaving Segments and Merge/Diverge Areas Alternative 5C Levels of Service

Ramp	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Eastbound							
East of Long Beach Blvd. On	Basic	36.8	**E**	44.0	**E**	40.0	**E**
I-710 Off	Off	18.9	B	19.8	B	18.5	B
I-710 Off / Garfield Ave. Off	Basic	18.5	C	23.4	C	21.9	C
Garfield Ave. Off	Off	9.0	A	13.7	B	12.2	B
Garfield Ave. Off / I-710 NB On	Basic	16.2	B	20.7	C	19.3	C
I-710 NB On	Major On[2]	0.39	N/A	0.51	N/A	0.48	N/A
I-710 NB On / I-710 SB On	Basic	13.9	B	18.6	C	17.5	B
I-710 SB On	On	25.8	C	23.7	C	23.7	C
I-710 SB On / Lane Drop	Basic	19.4	C	21.8	C	21.0	C
Lane Drop	Basic	24.4	C	28.1	D	26.9	D
East of I-710 On	Basic	36.3	**E**	45.5	**F**	42.2	**E**
Westbound							
East of I-710 Off	Basic	24.4	C	21.4	C	19.7	C
I-710 Off	Major Off[3]	27.6	C	24.4	C	22.4	C
I-710 Off / Garfield Ave. On	Basic	27.0	D	22.8	C	20.7	C
Garfield Ave. On	On	25.1	C	21.2	C	19.1	B
Garfield Ave. On / I-710 SB On	Basic	31.5	D	26.1	D	23.5	C
I-710 SB On	On	--*	**F**	36.6	**E**	33.1	D
I-710 SB On / I-710 NB On	Basic	45.1	**F**	39.2	**E**	33.1	D
I-710 NB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
West of I-710 NB On	Basic	60.6	**F**	50.7	**F**	44.1	**E**

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-20: I-105 2035 Alternative 7 Levels of Service

Location Description	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Eastbound							
East of Long Beach Blvd. On	Basic	38.5	**E**	45.1	**F**	41.5	**E**
I-710 Off	Off	18.0	B	--*	**F**	19.0	B
I-710 Off / Garfield Ave. Off	Basic	21.0	C	24.3	C	22.5	C
Garfield Ave. Off	Off	11.4	B	14.5	B	12.9	B
Garfield Ave. Off / I-710 NB On	Basic	18.9	C	21.8	C	19.9	C
I-710 NB On	Major On[2]	0.43	N/A	0.52	N/A	0.50	N/A
I-710 NB On / I-710 SB On	Basic	15.5	B	18.8	C	18.0	C
I-710 SB On	On	20.2	C	22.1	C	18.6	B
I-710 SB On / Lane Drop	Basic	18.1	C	21.3	C	19.3	C
Lane Drop	Basic	22.6	C	27.2	D	24.3	C
East of I-710 On	Basic	32.3	D	43.1	**E**	35.9	**E**
Westbound							
East of I-710 Off	Basic	23.5	C	20.8	C	19.0	C
I-710 Off	Major Off[3]	26.6	C	23.7	C	21.7	C
I-710 Off / Garfield Ave. On	Basic	27.3	D	21.1	C	22.2	C
Garfield Ave. On	On	25.4	C	19.8	B	20.3	C
Garfield Ave. On / I-710 SB On	Basic	31.9	D	24.3	C	25.0	C
I-710 SB On	On	37.3	**E**	34.3	D	33.4	D
I-710 SB On / I-710 NB On	Basic	44.3	**E**	35.0	D	34.3	D
I-710 NB On	On[4]	N/A	N/A	N/A	N/A	N/A	N/A
West of I-710 NB On	Basic	58.9	**F**	45.4	**F**	45.7	**F**

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-21: I-5 2035 Basic/Weaving Segments and Merge/Diverge Areas Alternative 5C Levels of Service

Ramp/Weaving Sections	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Northbound							
North of Dennison St. On	Basic	33.0	D	36.2	**E**	25.6	C
Dennison St. On	On	25.7	C	27.0	C	20.3	C
Dennison St. Off / Dennison St. On	Basic	32.0	D	35.8	**E**	25.4	C
Dennison St. Off	Off	37.6	**E**	42.9	**E**	31.8	D
Downey Rd. On / Dennison St. Off	Basic	35.7	**E**	43.2	**E**	27.5	D
Downey Rd. On	On	28.8	D	32.0	D	23.0	C
I-710 NB On / Downey Rd. On	Basic	32.6	D	39.5	**E**	26.1	D
I-710 NB On	On[4]	--*	**F**	--*	**F**	N/A	N/A
I-710 NB Off / I-710 NB On	Basic	28.4	D	34.7	D	25.4	C
I-710 NB Off	Off[4]	N/A	N/A	N/A	N/A	--*	**F**
McBride Ave. Off / I-710 NB Off	Basic	28.9	D	31.3	D	27.5	D
McBride Ave. Off	Off	32.9	D	37.5	**E**	33.2	D
Lane Add	Basic	30.5	D	35.1	**E**	29.7	D
Woods Ave. On / Lane Add	Basic	45.1	**F**	56.9	**F**	43.3	**E**
Woods Ave. On	On	--*	**F**	--*	**F**	32.4	D
Woods Ave. Off / Woods Ave. On	Basic	38.9	**E**	48.7	**F**	39.2	**E**
Woods Ave. Off	Off	37.1	**E**	--*	**F**	39.3	**E**
Camfield Ave. On / Woods Ave. Off	Basic	40.2	**E**	52.0	**F**	42.8	**E**
Camfield Ave. On	On	31.3	D	--*	**F**	33.4	D
Camfield Ave. Off / Camfield Ave. On	Basic	36.7	**E**	43.5	**E**	36.7	**E**
Camfield Ave. Off	Off	37.8	**E**	--*	**F**	35.1	**E**
South of Camfield Ave. Off	Basic	39.5	**E**	46.3	**F**	37.1	**E**
Southbound							
North of Ditman Off	Basic	40.3	**E**	52.9	**F**	34.1	D
Ditman Ave. Off	Off	36.3	**E**	--*	**F**	33.5	D
Ditman Ave. Off / Ditman Ave. On	Basic	38.8	**E**	50.4	**F**	32.7	D
Ditman Ave. On	On	32.1	D	--*	**F**	28.4	D
Ditman Ave. On / Boswell Pl. (Downey Rd.) Off	Basic	42.8	**E**	55.8	**F**	35.4	**E**
Boswell Pl. (Downey Rd.) Off	Off	38.3	**E**	--*	**F**	35.4	**E**
Boswell Pl. (Downey Rd.) Off / I-710 SB Off	Basic	41.5	**E**	50.6	**F**	33.9	D
I-710 SB Off	Major Off[3]	--*	**F**	--*	**F**	35.4	**E**
I-710 SB Off / I-710 SB On	Basic	59.2	**F**	105.5	**F**	42.4	**E**
I-710 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Triggs St. Off	Weave	--*	**F**	--*	**F**	--*	**F**
Triggs St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Triggs St. Off / Triggs St. On	Basic	46.7	**F**	55.9	**F**	39.3	**E**
Triggs St. On	On	--*	**F**	--*	**F**	--*	**F**

Table 3.5-21: I-5 2035 Basic/Weaving Segments and Merge/Diverge Areas Alternative 5C Levels of Service

Ramp/Weaving Sections	Freeway Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Triggs St. On / Stevens Pl. & Eastern Ave. Off	Basic	55.9	**F**	67.1	**F**	46.1	**F**
Stevens Pl. & Eastern Ave. Off	Off	--*	**F**	--*	**F**	--*	**F**
South of Eastern Ave. Off	Basic	49.4	**F**	59.1	**F**	42.7	**E**

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.

[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
LOS = level(s) of service
MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

Table 3.5-22: I-5 2035 Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Northbound							
North of Dennison St. On	Basic	34.2	D	39.1	**E**	24.6	C
Dennison St. On	On	26.3	C	28.3	D	19.6	B
Dennison St. Off / Dennison St. On	Basic	33.3	D	38.7	**E**	24.4	C
Dennison St. Off	Off	38.4	**E**	39.6	**E**	30.8	D
Downey Rd. On / Dennison St. Off	Basic	37.3	**E**	42.3	**E**	26.3	D
Downey Rd. On	On	29.6	D	30.9	D	22.1	C
I-710 NB On / Downey Rd. On	Basic	34.0	D	39.9	**E**	25.2	C
I-710 NB On	On[4]	--*	**F**	--*	**F**	N/A	N/A
I-710 NB Off / I-710 NB On	Basic	28.5	D	34.3	D	24.1	C
I-710 NB Off	Off4	N/A	N/A	N/A	N/A	--*	**F**
McBride Ave. Off / I-710 NB Off	Basic	28.2	D	32.1	D	26.9	D
McBride Ave. Off	Off	32.8	D	36.9	**E**	33.0	D
Lane Add	Basic	30.0	D	35.3	**E**	29.1	D
Woods Ave. On / Lane Add	Basic	43.9	**E**	57.5	**F**	42.0	**E**
Woods Ave. On	On	34.1	D	--*	**F**	32.0	D
Woods Ave. Off / Woods Ave. On	Basic	36.8	**E**	50.7	**F**	38.1	**E**
Woods Ave. Off	Off	36.6	**E**	--*	**F**	39.6	**E**
Camfield Ave. On / Woods Ave. Off	Basic	38.5	**E**	53.4	**F**	42.3	**E**
Camfield Ave. On	On	30.4	D	--*	**F**	33.2	D
Camfield Ave. Off / Camfield Ave. On	Basic	35.6	**E**	42.9	**E**	36.4	**E**
Camfield Ave. Off	Off	37.1	**E**	--*	**F**	35.3	**E**
South of Camfield Ave. Off	Basic	38.2	**E**	45.3	**F**	37.0	**E**
Southbound							
North of Ditman Off	Basic	42.0	**E**	52.3	**F**	33.5	D
Ditman Ave. Off	Off	37.0	**E**	--*	**F**	32.8	D
Ditman Ave. Off / Ditman Ave. On	Basic	40.4	**E**	49.7	**F**	32.5	D
Ditman Ave. On	On	32.9	D	--*	**F**	28.4	D
Ditman Ave. On / Boswell Pl. (Downey Rd.) Off	Basic	44.8	**E**	56.9	**F**	35.3	**E**
Boswell Pl. (Downey Rd.) Off	Off	38.8	**E**	--*	**F**	35.1	**E**
Boswell Pl. (Downey Rd.) Off / I-710 SB Off	Basic	43.6	**E**	54.4	**F**	34.1	D
I-710 SB Off	Major Off[3]	--*	**F**	--*	**F**	35.5	**E**
I-710 SB Off / I-710 SB On	Basic	65.0	**F**	155.6	**F**	39.9	**E**
I-710 SB On	On	N/A	N/A	N/A	N/A	N/A	N/A
I-710 SB On / Triggs St. Off	Weave	--*	**F**	--*	**F**	--*	**F**
Triggs St. Off	Off	N/A	N/A	N/A	N/A	N/A	N/A
Triggs St. Off / Triggs St. On	Basic	49.2	**F**	60.4	**F**	37.6	**E**
Triggs St. On	On	--*	**F**	--*	**F**	33.2	D
Triggs St. On / Stevens Pl. & Eastern Ave. Off	Basic	58.7	**F**	77.7	**F**	43.2	**E**

Table 3.5-22: I-5 2035 Alternative 7 Levels of Service

Location Description	Type	AM		MD		PM	
		Density/ V/C[1]	LOS	Density/ V/C[1]	LOS	Density/ V/C[1]	LOS
Stevens Pl. & Eastern Ave. Off	Off	--*	**F**	--*	**F**	39.0	**E**
South of Eastern Ave. Off	Basic	53.5	**F**	67.7	**F**	40.6	**E**

Source: AECOM. *I-710 Corridor Project Traffic Operations Analysis Report* (2017).
Note: **Bold** text within cells indicates LOS E or F.
* = Demand exceeds capacity, no density is predicted.
LOS and/or density information is not shown for major merge areas, single-lane addition/drop, and merge/diverge operations within a weaving segment. Therefore, this information is listed as not applicable (N/A) in the table.
[1] Density = passenger car/mile/lane; v/c = volume-to-capacity ratio.
[2] Major merge area; HCM methodology applied for analysis.
[3] Major diverge area; HCM methodology applied for analysis.
[4] Single-lane addition/drop; HCM methodology applied for analysis.
[5] Weave operation occurs on freeway collector/distributor.
[6] Observed speed at this location lower than 50 mph; the junction is assumed to be oversaturated.

EB = eastbound
FC = freight corridor
HCM = *Highway Capacity Manual*
I-5 = Interstate 5
I-105 = Interstate 105
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MD = midday
mph = miles per hour
N/A = not applicable
NB = northbound
SB = southbound
SR-60 = State Route 60
SR-91 = State Route 91
WB = westbound

With the No Build conditions under Alternative 1, 38 of the Study Area roadway segments are forecast to operate at LOS E or F in 2035, an increase from 2012/2013 existing conditions wherein 27 roadway segments operate at LOS E or F. Under Alternative 5C, 35 roadway segments would operate at LOS E or F. Under Alternative 7, 35 roadway segments would operate at LOS E or F. As a result, the I-710 Corridor Project build alternatives would improve roadway operations slightly within the Study Area as compared to the No Build conditions. These improvements result in part from not as much I-710 traffic diverting onto local arterials under the I-710 Corridor Project build alternatives as compared to Alternative 1.

ON-STREET PARKING. As discussed in Section 2.3.2.1 of this RDEIR/SDEIS, peak-period parking restrictions will be implemented as part of Alternatives 5C and 7 to improve traffic operations on some of the congested arterial roadway segments within the Study Area. More specifically, parking restrictions during peak periods (6:00 a.m.–9:00 a.m. and 4:00 p.m.–7:00 p.m.) will be implemented on four arterial roadways shown below:

- Atlantic Blvd., between Pacific Coast Hwy. and State Route 60 (SR-60)
- Cherry Ave./Garfield Ave., between Pacific Coast Hwy. and SR-60
- Eastern Ave., between Cherry Ave. and Atlantic Blvd.
- Long Beach Blvd., between San Antonio Dr. and Firestone Blvd.

Using the standard parallel parking length of 22 feet to calculate parking capacity, at most, approximately 7,300 parking spaces along the northbound and southbound arterial roadways shown above would be removed during the peak period. However, this total is conservative in that it does not represent the quantity of parking spaces being displaced by the proposed restrictions but rather indicates a theoretical supply based on linear feet of available curb space. Based on field observations, parking demand during the AM peak period is approximately 30 percent of this capacity, and parking demand during the PM peak period is approximately 40 percent of this capacity. Although some drivers may alter their behaviors and schedules to avoid the time-of-day parking restrictions, much of the parking demand is expected to be absorbed in off-street parking areas for uses that generate the parking demand and in nearby available on-street parking areas.

INTERSECTIONS. The *Intersection Traffic Impact Analysis Report* (2017) also provides an analysis of the Study Area intersections. The following summary compares the No Build conditions under Alternative 1 LOS E or F intersection operations with those of the I-710 Corridor Project build alternatives. In aggregate, Study Area intersection operations generally improve compared to the No Build conditions. In at least one of the peak hours (AM, MD or PM):

- 78 of the 174 intersections analyzed for Alternative 1 operate at LOS E or worse
- 69 of the 185 intersections analyzed for Alternative 5C operate at LOS E or worse
- 70 of the 187 intersections analyzed for Alternative 7 operate at LOS E or worse

To identify intersections that would be impacted by the project, the operations at each intersection under the 2035 build alternatives/design options were compared to the intersection operations under the 2035 No Build Alternative. For the purposes of this analysis, uniform criteria were applied to all intersection locations within the Study Area. These impact criteria were developed collaboratively among Caltrans and Metro in coordination with other major transportation corridor projects currently under environmental review in this subregion of Los Angeles County.

During any of the peak analysis hours, if one or more of the following criteria were met, the intersection was identified as being impacted by the project:

- If the intersection is projected to operate at LOS E and the increase in delay over 2035 No Build (Alternative 1) conditions is 5 seconds or more;
- If the intersection is projected to operate at LOS F and the increase in delay over 2035 No Build (Alternative 1) conditions is 2 seconds or more; and
- If the intersection is projected to operate at LOS D or better the under 2035 No Build (Alternative 1) and degrades to LOS E or F under the build scenario.

Several intersections that are projected to experience poor LOS and heavy intersection delay under Alternative 1 conditions are not identified as adversely impacted intersections because they do not have an increase in delay in the build alternative and therefore are not impacted by the I-710 Corridor Project.

The LOS and/or intersection delay on the Study Area intersections would generally be maintained or improved during the peak hours in 2035 under the build alternatives compared to Alternative 1. However, there would be degradation in LOS with the project build alternatives at some locations.

Based on the arterial intersection LOS analysis, 42 Study Area intersections have been identified as adversely impacted by the project for any of the proposed build alternatives. Of these, 32 intersections are projected to be impacted under Alternative 5C, and 30 intersections are projected to be impacted under Alternative 7. Twenty-two intersections are projected to be impacted by both Alternative 5C and Alternative 7. Intersections impacted by each of the I-710 Corridor Project build alternatives and applicable Design Options are presented in Table 3.5-23 below. Figure 3.5-8 provides a map of the impacted intersections

Measures that would improve intersection operations and delay to a level equivalent to, or better than, what would occur under the No Build Alternative condition have been identified for impacted intersections, and have been evaluated for reasonability and feasibility. Of the 42 intersections impacted by at least one of the build alternatives or Design Options, proposed improvements were found to be infeasible at four locations due to right-of-way constraints. These four locations are:

- Pacific Coast Hwy./Long Beach Blvd. - This intersection is projected to be impacted by Build Alternative 7. One potential improvement to mitigate traffic impacts at this location is to add a separate right-turn lane on the eastbound approach, which would require the full acquisition of the parcel on the southwest quadrant of the intersection. Therefore, due to this right-of-way constraint, no mitigation improvements are recommended for this intersection.
- Willow St./Atlantic Ave. - This intersection is projected to be impacted by Build Alternative 7. One potential improvement to mitigate traffic impacts at this location is to add a separate right-turn lane on the northbound approach, which would require the full acquisition of the parcel on the southeast quadrant of the intersection. Therefore, due to this right-of-way constraint, no mitigation improvements are recommended for this intersection.

LEGEND

Study Intersection

Impacted Study Intersection

N

NOT TO SCALE

SOURCE: AECOM

FIGURE 3.5-8

Sheet 1 of 2

I-710 Corridor Project RDEIR/SDEIS

Impacted Study Intersection Locations

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

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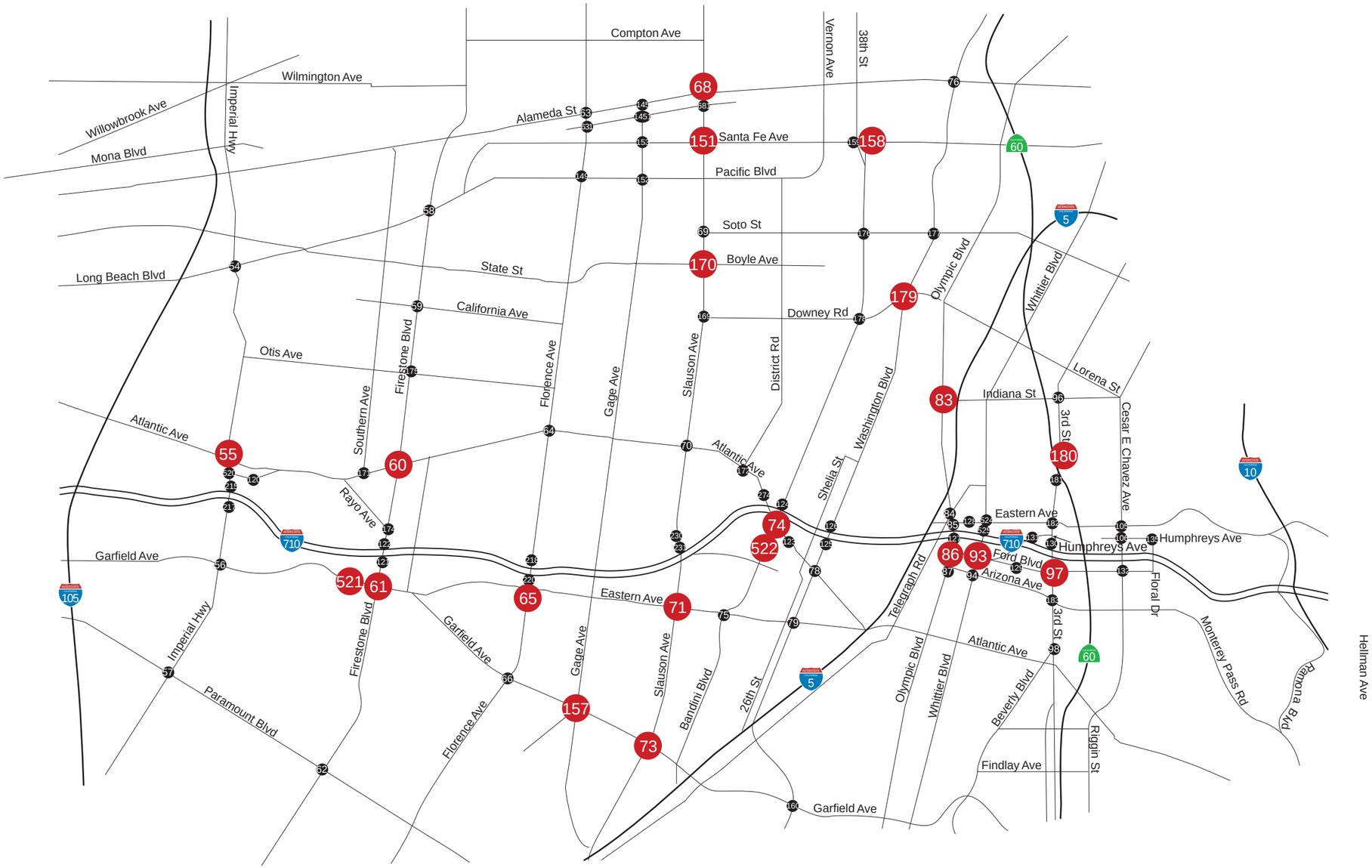

FIGURE 3.5-8
Sheet 2 of 2

N

NOT TO SCALE
SOURCE: AECOM

I-710 Corridor Project RDEIR/SDEIS
Impacted Study Intersection Locations
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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Table 3.5-23: Summary of Impacted Intersections

Int. ID	Description	Existing Traffic Control	Adverse Impact	Potential Improvement	Is improvement recommended?		
					Yes	No	Comment
ALTERNATIVE 5C							
12	Anaheim St/Santa Fe Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 39.5 seconds (LOS D) in the No Build Alternative to 76.7 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 36.1 seconds (LOS D) in the No Build Alternative to 66.4 seconds (LOS E).	• Convert separate SB right-turn lane to a shared through/right-turn lane. • Add an extra left-turn lane to the SB approach.	☐		Yes, recommended for implementation
19	Pacific Coast Hwy/Santa Fe Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 83 seconds (LOS F) in the No Build Alternative to 144.2 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 151.4 seconds (LOS F) in the No Build Alternative to 179.7 seconds (LOS F).	• Convert WB right-turn lane to a shared through/right-turn lane. • Convert EB right-turn lane to a shared through/right-turn lane	☐		Yes, recommended for implementation
34	Del Amo Blvd/Santa Fe Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 60.8 seconds (LOS E) in the No Build Alternative to 82.6 seconds (LOS F).	• Add a separate right-turn lane on the EB approach • Add an extra left turn lane (dual left) on the SB approach	☐		Yes, recommended for implementation
35	Del Amo Blvd/Long Beach Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 65.2 seconds (LOS E) in the No Build Alternative to 77.2 seconds (LOS E).	• Add an extra left-turn lane on both the SB and NB approaches.	☐		Yes, recommended for implementation
36	Del Amo Blvd/Atlantic Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 63.9 seconds (LOS E) in the No Build Alternative to 69.6 seconds (LOS E).	• Add an extra left-turn lane on the NB approach.	☐		Yes, recommended for implementation
39	Artesia Blvd/Long Beach Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 64 seconds (LOS E) in the No Build Alternative to 72.5 seconds (LOS E).	• Add a separate right-turn lane on the SB approach	☐		Yes, recommended for implementation
50	Rosecrans Ave/Atlantic Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 109.7 seconds (LOS F) in the No Build Alternative to 129.9 seconds (LOS F).	• Add a separate right-turn lane on the WB approach	☐		Yes, recommended for implementation
51	Rosecrans Ave/Garfield Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 88.5 seconds (LOS F) in the No Build Alternative to 94.5 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 53.2 seconds (LOS D) in the No Build Alternative to 62.9 seconds (LOS E).	• Add an extra left-turn lane on the EB approach.	☐		Yes, recommended for implementation
52	Rosecrans Ave/Paramount Blvd	Signal	In the PM peak hour, the intersection delay is expected to increase from 102.8 seconds (LOS F) in the No Build Alternative to 111.8 seconds (LOS F).	• Add an extra left-turn lane on the EB approach.	☐		Yes, recommended for implementation
55	Imperial Hwy/Atlantic Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 76.2 seconds (LOS E) in the No Build Alternative to 85.7 seconds (LOS F).	• Add an extra left-turn lane on the EB approach resulting in triple left-turn lanes.	☐		Yes, recommended for implementation
60	Firestone Blvd/Atlantic Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 62.8 seconds (LOS E) in the No Build Alternative to 82.1 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 47.8 seconds (LOS D) in the No Build Alternative to 56.4 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 93.9 seconds (LOS F) in the No Build Alternative to 117.6 seconds (LOS F).	• Add separate right-turn lanes on both the EB and WB approaches	☐		Yes, recommended for implementation
61	Firestone Blvd/Garfield Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 65.6 seconds (LOS E) in the No Build Alternative to 72.2 seconds (LOS E). In the MD peak hour, the intersection delay is expected to increase from 44.2 seconds (LOS D) in the No Build Alternative to 65.6 seconds (LOS E).	• Add an extra left-turn lane on the EB approach.	☐		Yes, recommended for implementation

Table 3.5-23: Summary of Impacted Intersections

Int. ID	Description	Existing Traffic Control	Adverse Impact	Potential Improvement	Is improvement recommended?		
					Yes	No	Comment
65	Florence Ave/Eastern Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 62.4 seconds (LOS E) in the No Build Alternative to 83.8 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 51.1 seconds (LOS D) in the No Build Alternative to 76.7 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 57.9 seconds (LOS E) in the No Build Alternative to 75.8 seconds (LOS E).	• Add an extra left turn lane on EB (triple left) approach. • Add a separate right-turn lane on the WB approach. • Implement overlap phase for EB right-turn movement.	☐		Yes, recommended for implementation
73	Garfield Ave/Slauson Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 52.8 seconds (LOS D) in the No Build Alternative to 58.5 seconds (LOS E).	• Convert the EB right-turn lane to a shared through/right-turn lane.	☐		Yes, recommended for implementation
74	Bandini Blvd/Atlantic Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 36.4 seconds (LOS D) in the No Build Alternative to 65.4 seconds (LOS E).	• Add an extra right turn lane on the SB approach	☐		Yes, recommended for implementation
83	Indiana St/Olympic Blvd	Signal	In the MD peak hour, the intersection delay is expected to increase from 177.6 seconds (LOS F) in the No Build Alternative to 207.3 seconds (LOS F).	• Convert both the NB and SB approaches to provide a separate left-turn lane and a shared through/right-turn lane.	☐		Yes, recommended for implementation
93	Ford Blvd/Whittier Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 49.9 seconds (LOS D) in the No Build Alternative to 82.6 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 49.4 seconds (LOS D) in the No Build Alternative to 69 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 212.2 seconds (LOS F) in the No Build Alternative to 241.8 seconds (LOS F).	• Convert both the NB and SB approaches to provide a separate left-turn lane and a shared through/right-turn lane.	☐		Yes, recommended for implementation
114	I-710 NB/Artesia Blvd (Off)	Signal	In the PM peak hour, the intersection delay is expected to increase from 41.2 seconds (LOS D) in the No Build Alternative to 90.1 seconds (LOS F).	• Add an extra right-turn lane on the NB approach.	☐		Yes, recommended for implementation
141	3rd St/Magnolia Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 72.2 seconds (LOS E) in the No Build Alternative to 120 seconds (LOS F).	• Add a separate right-turn lane on the SB approach	☐		Yes, recommended for implementation
157	Garfield Ave/Gage Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 56.3 seconds (LOS E) in the No Build Alternative to 73.9 seconds (LOS E).	• Add separate right-turn lanes on both the EB and WB approaches.	☐		Yes, recommended for implementation
158	37th St/Santa Fe Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 50.3 seconds (LOS D) in the No Build Alternative to 59.2 seconds (LOS E).	• Add a separate right-turn lane on the WB approach.		☐	No, this improvement is not proposed for implementation because it would require full right-of-way acquisition of the parcel on the northeast (NE) quadrant of the intersection.
164	Anaheim St/Canal Ave	Unsignalized	In the AM peak hour, the intersection delay is expected to increase from 43.2 seconds (LOS E) in the No Build Alternative to 158.5 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 159.1 seconds (LOS F) in the No Build Alternative to 1448.4 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 249 seconds (LOS F) in the No Build Alternative to 1510.6 seconds (LOS F).	• Implement Access Management: prohibit left- and through- movements on both the NB and SB approaches during the AM, MD, and PM peak hours.	☐		Yes, recommended for implementation
170	Slauson Ave/Boyle Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 52.8 seconds (LOS D) in the No Build Alternative to 56.6 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 80.5 seconds (LOS F) in the No Build Alternative to 86.9 seconds (LOS F).	• Add a separate right-turn lane on the EB approach	☐		Yes, recommended for implementation
173	Atlantic Ave/Artesia Blvd	Signal	In the PM peak hour, the intersection delay is expected to increase from 101.9 seconds (LOS F) in the No Build Alternative to 108.4 seconds (LOS F).	• Add a separate left-turn lane on the WB approach	☐		Yes, recommended for implementation
180	3rd St/Gage Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 34.6 seconds (LOS C) in the No Build Alternative to 76.9 seconds (LOS E).	• Add separate right-turn lanes on both the EB and WB approaches	☐		Yes, recommended for implementation

Table 3.5-23: Summary of Impacted Intersections

Int. ID	Description	Existing Traffic Control	Adverse Impact	Potential Improvement	Is improvement recommended?		
					Yes	No	Comment
515	Artesia Blvd/Santa Fe Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 86.6 seconds (LOS F) in the No Build Alternative to 97.5 seconds (LOS F).	• Convert the EB right-turn lane into shared through/right-turn lane • Add an extra right-turn lane on the EB approach	☐		Yes, recommended for implementation
518	Artesia Blvd/Cherry Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 56.5 seconds (LOS E) in the No Build Alternative to 62 seconds (LOS E).	• Convert the EB right-turn lane into a shared through/right-turn lane.	☐		Yes, recommended for implementation
521	Garfield Ave/Southern Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 48.8 seconds (LOS D) in the No Build Alternative to 58.7 seconds (LOS E). In the MD peak hour, the intersection delay is expected to increase from 31 seconds (LOS C) in the No Build Alternative to 60.7 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 43.9 seconds (LOS D) in the No Build Alternative to 110.6 seconds (LOS F).	• Add an extra left turn lane on the NB, SB and EB approaches	☐		Yes, recommended for implementation
522	Bandini Blvd/Pennington Way	Signal	In the PM peak hour, the intersection delay is expected to increase from 30.6 seconds (LOS C) in the No Build Alternative to 55.1 seconds (LOS E).	• Implement overlap phase for NB right-, SB right-, and WB right-turn movements.	☐		Yes, recommended for implementation
523	Long Beach Blvd/Victoria St	Signal	In the MD peak hour, the intersection delay is expected to increase from 44.6 seconds (LOS D) in the No Build Alternative to 77.8 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 135.4 seconds (LOS F) in the No Build Alternative to 231.1 seconds (LOS F).	• Convert the EB shared through/left- turn lane [middle lane] to a shared through/right-turn lane.	☐		Yes, recommended for implementation
1001	Willow St/Easy St	Signal	In the AM peak hour, the intersection delay is expected to increase from 67.5 seconds (LOS E) in the No Build Alternative to 93.1 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 80.1 seconds (LOS F) in the No Build Alternative to 133.3 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 120.3 seconds (LOS F) in the No Build Alternative to 126.7 seconds (LOS F).	• Add a separate left-turn lane on the SB approach • Convert the EB right-turn lane to a shared through/right-turn lane.	☐		Yes, recommended for implementation
1002	Pacific Coast Hwy/Harbor Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 60.5 seconds (LOS E) in the No Build Alternative to 120.6 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 49.2 seconds (LOS D) in the No Build Alternative to 103.5 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 96.1 seconds (LOS F) in the No Build Alternative to 160.9 seconds (LOS F).	• Add an extra through lane on the EB approach • Convert the WB right-turn lane to a shared through-right turn lane		☐	No, this improvement is not proposed for implementation because it would require full right-of-way acquisition of up to six parcels along the eastbound approach and one parcel at the southwest (SW) quadrant of the intersection.
ALTERNATIVE 5C DESIGN OPTION 2A							
12	Anaheim St/Santa Fe Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 39.5 seconds (LOS D) in the No Build Alternative to 64.5 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 36.1 seconds (LOS D) in the No Build Alternative to 62.5 seconds (LOS E).	• Convert separate SB right-turn lane to a shared through/right-turn lane. • Add an extra left-turn lane to the SB approach.	☐		Yes, recommended for implementation
19	Pacific Coast Hwy/Santa Fe Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 83 seconds (LOS F) in the No Build Alternative to 141.5 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 151.4 seconds (LOS F) in the No Build Alternative to 185 seconds (LOS F).	• Convert WB right-turn lane to a shared through/right-turn lane. • Convert EB right-turn lane to a shared through/right-turn lane	☐		Yes, recommended for implementation
26	Willow St/Santa Fe Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 79.9 seconds (LOS E) in the No Build Alternative to 84.1 seconds (LOS F).	• Add a separate right-turn lane on the WB approach	☐		Yes, recommended for implementation
141	3rd St/Magnolia Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 72.2 seconds (LOS E) in the No Build Alternative to 116.8 seconds (LOS F).	• Add a separate right-turn lane on the SB approach	☐		Yes, recommended for implementation

Table 3.5-23: Summary of Impacted Intersections

Int. ID	Description	Existing Traffic Control	Adverse Impact	Potential Improvement	Is improvement recommended?		
					Yes	No	Comment
164	Anaheim St/Canal Ave	Unsignalized	In the AM peak hour, the intersection delay is expected to increase from 43.2 seconds (LOS E) in the No Build Alternative to 105.4 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 159.1 seconds (LOS F) in the No Build Alternative to 1357.2 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 249 seconds (LOS F) in the No Build Alternative to 1047.9 seconds (LOS F).	• Implement Access Management: prohibit left- and through- movements on both the NB and SB approaches during the AM, MD, and PM peak hours.	☐		Yes, recommended for implementation
1001	Willow St/Easy St	Signal	In the AM peak hour, the intersection delay is expected to increase from 67.5 seconds (LOS E) in the No Build Alternative to 90.6 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 80.1 seconds (LOS F) in the No Build Alternative to 143.1 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 120.3 seconds (LOS F) in the No Build Alternative to 140 seconds (LOS F).	• Add a separate left-turn lane on the SB approach • Convert the EB right-turn lane to a shared through/right-turn lane.	☐		Yes, recommended for implementation
1002	Pacific Coast Hwy/Harbor Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 60.5 seconds (LOS E) in the No Build Alternative to 160 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 49.2 seconds (LOS D) in the No Build Alternative to 132.3 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 96.1 seconds (LOS F) in the No Build Alternative to 228.4 seconds (LOS F).	• Add an extra through lane on the EB approach • Convert the WB right-turn lane to a shared through/right-turn lane • Add an extra left-turn lane on the SB approach • Add separate left-turn lane on the NB approach		☐	No, this improvement is not proposed for implementation because it would require full right-of-way acquisition of up to six parcels along the eastbound approach and one parcel at the southwest (SW) quadrant of the intersection.
ALTERNATIVE 5C DESIGN OPTION 3A							
86	I-710 NB/Olympic Blvd (Off)	Signal	In the PM peak hour, the intersection delay is expected to increase from 29.2 seconds (LOS C) in the No Build Alternative to 65.5 seconds (LOS E).	• Add a separate right-turn lane on the NB approach.	☐		Yes, recommended for implementation
93	Ford Blvd/Whittier Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 49.9 seconds (LOS D) in the No Build Alternative to 76.5 seconds (LOS E). In the MD peak hour, the intersection delay is expected to increase from 49.4 seconds (LOS D) in the No Build Alternative to 100.7 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 212.2 seconds (LOS F) in the No Build Alternative to 384.9 seconds (LOS F).	• Convert both the NB and SB approaches to provide a separate left-turn lane and a shared through/right-turn lane.	☐		Yes, recommended for implementation
97	Ford Blvd/3rd St	Unsignalized*	In the PM peak hour, the intersection delay is expected to increase from 100.7 seconds (LOS F) in the No Build Alternative to 126.4 seconds (LOS F).	• Add a separate right-turn lane on the NB approach	☐		Yes, recommended for implementation
ALTERNATIVE 7							
11	Anaheim St/Alameda St	Signal	In the AM peak hour, the intersection delay is expected to increase from 86 seconds (LOS F) in the No Build Alternative to 93.3 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 90.9 seconds (LOS F) in the No Build Alternative to 93.7 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 152.4 seconds (LOS F) in the No Build Alternative to 163 seconds (LOS F).	• Implement protected phase for EB left-turn movement.	☐		Yes, recommended for implementation
12	Anaheim St/Santa Fe Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 39.5 seconds (LOS D) in the No Build Alternative to 81.7 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 36.1 seconds (LOS D) in the No Build Alternative to 68.2 seconds (LOS E).	• Convert separate SB right-turn lane to a shared through/right-turn lane. • Add an extra left-turn lane to the SB approach.	☐		Yes, recommended for implementation

Table 3.5-23: Summary of Impacted Intersections

Int. ID	Description	Existing Traffic Control	Adverse Impact	Potential Improvement	Is improvement recommended?		
					Yes	No	Comment
19	Pacific Coast Hwy/Santa Fe Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 83 seconds (LOS F) in the No Build Alternative to 122.5 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 151.4 seconds (LOS F) in the No Build Alternative to 169.7 seconds (LOS F).	• Convert WB right-turn lane to a shared through/right-turn lane. • Convert EB right-turn lane to a shared through/right-turn lane	☐		Yes, recommended for implementation
21	Pacific Coast Hwy/Long Beach Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 53.6 seconds (LOS D) in the No Build Alternative to 55.6 seconds (LOS E).	• Add a separate right-turn lane on the EB approach		☐	No, this improvement is not proposed for implementation because it would require full right-of-way acquisition of the parcel on the southwest (SW) quadrant of the intersection
29	Willow St/Atlantic Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 54.4 seconds (LOS D) in the No Build Alternative to 56.2 seconds (LOS E).	• Add a separate right-turn lane on the NB approach		☐	No, this improvement is not proposed for implementation because it would require full right-of-way acquisition of the parcel on the southeast (SE) quadrant of the intersection.
34	Del Amo Blvd/Santa Fe Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 60.8 seconds (LOS E) in the No Build Alternative to 78.3 seconds (LOS E).	• Add a separate right-turn lane on the EB approach	☐		Yes, recommended for implementation
35	Del Amo Blvd/Long Beach Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 65.2 seconds (LOS E) in the No Build Alternative to 74.3 seconds (LOS E).	• Add an extra left-turn lane on both the SB and NB approaches.	☐		Yes, recommended for implementation
50	Rosecrans Ave/Atlantic Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 109.7 seconds (LOS F) in the No Build Alternative to 141.8 seconds (LOS F).	• Add a separate right-turn lane on the WB approach	☐		Yes, recommended for implementation
55	Imperial Hwy/Atlantic Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 76.2 seconds (LOS E) in the No Build Alternative to 100.5 seconds (LOS F).	• Add an extra left-turn lane on the EB approach resulting in triple left-turn lanes.	☐		Yes, recommended for implementation
60	Firestone Blvd/Atlantic Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 62.8 seconds (LOS E) in the No Build Alternative to 92.9 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 47.8 seconds (LOS D) in the No Build Alternative to 55.8 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 93.9 seconds (LOS F) in the No Build Alternative to 119.9 seconds (LOS F).	• Add separate right-turn lanes on the EB, WB and NB approaches	☐		Yes, recommended for implementation
65	Florence Ave/Eastern Ave	Signal	In the MD peak hour, the intersection delay is expected to increase from 51.1 seconds (LOS D) in the No Build Alternative to 58.7 seconds (LOS E).	• Implement overlap phase for the EB right-turn movement.	☐		Yes, recommended for implementation
68	Slauson Ave/Alameda St (West)	Signal	In the PM peak hour, the intersection delay is expected to increase from 91.6 seconds (LOS F) in the No Build Alternative to 100.9 seconds (LOS F).	• Add a separate right-turn lane on the SB approach	☐		Yes, recommended for implementation
71	Slauson Ave/Eastern Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 59.3 seconds (LOS E) in the No Build Alternative to 65.9 seconds (LOS E).	• Add a separate right-turn lane on the EB approach	☐		Yes, recommended for implementation
74	Bandini Blvd/Atlantic Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 36.4 seconds (LOS D) in the No Build Alternative to 58.4 seconds (LOS E).	• Add an extra right turn lane on the SB approach	☐		Yes, recommended for implementation
83	Indiana St/Olympic Blvd	Signal	In the MD peak hour, the intersection delay is expected to increase from 177.6 seconds (LOS F) in the No Build Alternative to 293.8 seconds (LOS F).	• Convert both the NB and SB approaches to provide a separate left-turn lane and a shared through/right-turn lane.	☐		Yes, recommended for implementation
93	Ford Blvd/Whittier Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 49.9 seconds (LOS D) in the No Build Alternative to 64.8 seconds (LOS E). In the MD peak hour, the intersection delay is expected to increase from 49.4 seconds (LOS D) in the No Build Alternative to 65.6 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 212.2 seconds (LOS F) in the No Build Alternative to 335.8 seconds (LOS F).	• Convert both the NB and SB approaches to provide a separate left-turn lane and a shared through/right-turn lane.	☐		Yes, recommended for implementation
97	Ford Blvd/3rd St	Unsignalized*	In the MD peak hour, the intersection delay is expected to increase from 44.8 seconds (LOS D) in the No Build Alternative to 64 seconds (LOS E).	• Add a separate right-turn lane on the NB approach	☐		Yes, recommended for implementation

Table 3.5-23: Summary of Impacted Intersections

Int. ID	Description	Existing Traffic Control	Adverse Impact	Potential Improvement	Is improvement recommended?		
					Yes	No	Comment
114	I-710 NB/Artesia Blvd (Off)	Signal	In the PM peak hour, the intersection delay is expected to increase from 41.2 seconds (LOS D) in the No Build Alternative to 79.2 seconds (LOS E).	• Add an extra right-turn lane on the NB approach.	☐		Yes, recommended for implementation
141	3rd St/Magnolia Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 72.2 seconds (LOS E) in the No Build Alternative to 119.1 seconds (LOS F).	• Add a separate right-turn lane on the SB approach	☐		Yes, recommended for implementation
151	Slauson Ave/Santa Fe Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 82.7 seconds (LOS F) in the No Build Alternative to 86.4 seconds (LOS F).	• Add a separate right-turn lane on the NB approach.	☐		Yes, recommended for implementation
157	Garfield Ave/Gage Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 56.3 seconds (LOS E) in the No Build Alternative to 68.1 seconds (LOS E).	• Add separate right-turn lanes on both the EB and WB approaches.	☐		Yes, recommended for implementation
158	37th St/Santa Fe Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 50.3 seconds (LOS D) in the No Build Alternative to 65.8 seconds (LOS E).	• Add a separate right-turn lane on the WB approach.		☐	No, this improvement is not proposed for implementation because it would require full right-of-way acquisition of the parcel on the northeast (NE) quadrant of the intersection.
164	Anaheim St/Canal Ave	Unsignalized	In the AM peak hour, the intersection delay is expected to increase from 43.2 seconds (LOS E) in the No Build Alternative to 271.6 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 159.1 seconds (LOS F) in the No Build Alternative to 999 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 249 seconds (LOS F) in the No Build Alternative to 1510.6 seconds (LOS F).	• Implement Access Management: prohibit left- and through- movements on both the NB and SB approaches during the AM, MD, and PM peak hours.	☐		Yes, recommended for implementation
170	Slauson Ave/Boyle Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 52.8 seconds (LOS D) in the No Build Alternative to 57.4 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 80.5 seconds (LOS F) in the No Build Alternative to 85.9 seconds (LOS F).	• Add a separate right-turn lane on the EB approach	☐		Yes, recommended for implementation
179	Washington Blvd/Downey Rd	Signal	In the PM peak hour, the intersection delay is expected to increase from 66.2 seconds (LOS E) in the No Build Alternative to 74.1 seconds (LOS E).	• Add an extra left turn lane on both the NB & SB approaches	☐		Yes, recommended for implementation
180	3rd St/Gage Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 34.6 seconds (LOS C) in the No Build Alternative to 57 seconds (LOS E).	• Add separate right-turn lanes on both the EB and WB approaches	☐		Yes, recommended for implementation
521	Garfield Ave/Southern Ave	Signal	In the PM peak hour, the intersection delay is expected to increase from 43.9 seconds (LOS D) in the No Build Alternative to 101.4 seconds (LOS F).	• Add an extra left turn lane on the NB, SB and EB approaches	☐		Yes, recommended for implementation
523	Long Beach Blvd/Victoria St	Signal	In the AM peak hour, the intersection delay is expected to increase from 41.6 seconds (LOS D) in the No Build Alternative to 62.4 seconds (LOS E). In the MD peak hour, the intersection delay is expected to increase from 44.6 seconds (LOS D) in the No Build Alternative to 83 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 135.4 seconds (LOS F) in the No Build Alternative to 207.2 seconds (LOS F).	• Convert the EB shared through/left- turn lane [middle lane] to a shared through/right-turn lane.	☐		Yes, recommended for implementation
1001	Willow St/Easy St	Signal	In the AM peak hour, the intersection delay is expected to increase from 67.5 seconds (LOS E) in the No Build Alternative to 111.4 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 80.1 seconds (LOS F) in the No Build Alternative to 134.4 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 120.3 seconds (LOS F) in the No Build Alternative to 152.9 seconds (LOS F).	• Add a separate left-turn lane on the SB approach • Convert the EB right-turn lane to a shared through/right-turn lane.	☐		Yes, recommended for implementation

Table 3.5-23: Summary of Impacted Intersections

Int. ID	Description	Existing Traffic Control	Adverse Impact	Potential Improvement	Is improvement recommended?		
					Yes	No	Comment
1002	Pacific Coast Hwy/Harbor Ave	Signal	In the AM peak hour, the intersection delay is expected to increase from 60.5 seconds (LOS E) in the No Build Alternative to 113.2 seconds (LOS F). In the MD peak hour, the intersection delay is expected to increase from 49.2 seconds (LOS D) in the No Build Alternative to 103.5 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 96.1 seconds (LOS F) in the No Build Alternative to 156.5 seconds (LOS F).	• Add an extra through lane on the EB approach • Convert the WB right-turn lane to a shared through-right turn lane		☐	No, this improvement is not proposed for implementation because it would require full right-of-way acquisition of up to six parcels along the eastbound approach and one parcel at the southwest (SW) quadrant of the intersection.
ALTERNATIVE 7 DESIGN OPTION 3B							
86	I-710 NB/Olympic Blvd (Off)	Signal	In the PM peak hour, the intersection delay is expected to increase from 29.2 seconds (LOS C) in the No Build Alternative to 72.5 seconds (LOS E).	• Add a separate right-turn lane on the NB approach.	☐		Yes, recommended for implementation
93	Ford Blvd/Whittier Blvd	Signal	In the AM peak hour, the intersection delay is expected to increase from 49.9 seconds (LOS D) in the No Build Alternative to 56.7 seconds (LOS E). In the MD peak hour, the intersection delay is expected to increase from 49.4 seconds (LOS D) in the No Build Alternative to 105.6 seconds (LOS F). In the PM peak hour, the intersection delay is expected to increase from 212.2 seconds (LOS F) in the No Build Alternative to 337.9 seconds (LOS F).	• Convert both the NB and SB approaches to provide a separate left-turn lane and a shared through/right-turn lane.	☐		Yes, recommended for implementation
97	Ford Blvd/3rd St	Unsignalized*	In the MD peak hour, the intersection delay is expected to increase from 44.8 seconds (LOS D) in the No Build Alternative to 76.9 seconds (LOS E). In the PM peak hour, the intersection delay is expected to increase from 100.7 seconds (LOS F) in the No Build Alternative to 140.9 seconds (LOS F).	• Add a separate right-turn lane on the NB approach	☐		Yes, recommended for implementation

* Intersection is proposed to be signalized under the Build Alternatives and related Design Options.

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- 37th St./Santa Fe Ave. - This intersection is projected to be impacted by Build Alternatives 5C and 7. One potential improvement to mitigate traffic impacts at this location is to add a separate right-turn lane on the westbound approach. However, due to right-of-way constraints (specifically, the full acquisition of the parcel on the northeast quadrant of the intersection), no mitigation improvements are recommended for this intersection.
- Pacific Coast Hwy./Harbor Ave. - This intersection is projected to be impacted by Build Alternatives 5C, 7, and 5C Design Option 2A. Potential improvements to mitigate traffic impacts at this location include adding an extra through lane on the eastbound approach and converting the westbound right-turn lane to a shared through/right-turn lane, which would require the full acquisition of up to six parcels along the eastbound approach and one parcel in the southwest quadrant of the intersection. Therefore, due to this right-of-way constraint, no mitigation improvements are recommended for this intersection.

VEHICLE MILES TRAVELED/VEHICLE HOURS TRAVELED/VEHICLE HOURS OF DELAY. An analysis of 2035 daily vehicle miles traveled (VMT), vehicle hours traveled (VHT), and vehicle hours of delay (VHD) within the Study Area was prepared for the I-710 Corridor Project. Table 3.5-24 compares the VMT, the VHT, and the VHD for Alternative 1 and the I-710 Corridor Project build alternatives.

Table 3.5-24: 2035 Daily Vehicle Miles Traveled, Vehicle Hours Traveled, and Vehicle Hours of Delay Comparison

Alternative	VMT	VHT	VHD
No Build	22,079,000	613,900	105,800
5C	+389,000	+2,500	-3,400
7	+604,000	+400	-6,400

Source: AECOM. *I-710 Corridor EIR/EIS Travel Demand Modeling Methodology* (2017).
VHD = Vehicle Hours of Delay
VHT = Vehicle Hours Traveled
VMT = Vehicle Miles Traveled

As shown in the table, with the I-710 Corridor Project build alternatives, the VMT would increase throughout the Study Area compared to the No Build condition, most likely due to the increased vehicular mobility provided by the I-710 Corridor improvements. Drivers will travel further if they achieve an overall travel time benefit by choosing a different route (i.e., trading distance for time). Also, as travel times improve, additional drivers may choose to opt into the I-710 Corridor from outside the Study Area. It should be noted that although the VMT and VHT would increase, the VHD is forecast to decrease throughout the Study Area compared to Alternative 1, which is also likely due to the improvements proposed as part of Alternatives 5C and 7.

BICYCLE AND PEDESTRIAN FACILITIES. As discussed in Chapter 2.0 of this RDEIR/SDEIS, the I-710 Corridor Project includes changes to arterial interchanges and intersections which may affect sidewalks and bicycle lanes. The build alternatives will provide facilities for bicycles and pedestrians in locations where local roadways are affected by the construction of the build alternatives. These facilities will be designed consistent with the local General Plan Circulation Element and will comply with ADA requirements. The project will improve pedestrian facilities (sidewalks) by replacing the old ones that will be removed as part of the project. Bike travel would also be improved by providing new pavement on the arterial bridges that will be replaced over I-710 and the Los Angeles River. Class I Bikeways within the Study Area will be maintained with the proposed build alternatives.

The addition of the pedestrian and bicycle-only overcrossings (five additional structures under Alternative 5C, and three under Alternative 7), proposed at locations in which gaps in freeway-crossing opportunities have been identified, will also improve pedestrian and bicycle travel within the corridor by introducing new connectivity points traversing the I-710 and the Los Angeles River (and in the case of the Pacific Place overcrossing, the I-405 and Metro Blue Line).

Because bicycle and pedestrian facilities will generally be maintained or improved, the effect of the I-710 Corridor Project is that travel by walking and bicycling will not substantially change as a result of the implementation of the build alternatives. Chapter 5.0 discusses coordination meetings and summarizes outreach with interested parties regarding bicycle and pedestrian facilities.

NO BUILD ALTERNATIVE. Alternative 1 would not provide any mobility improvements within the I-710 Corridor. As a result, traffic congestion would continue to increase within the I-710 Corridor and LOS would continue to deteriorate due to forecast increases in traffic volumes between the existing (2012/2013) and Design Year (2035) conditions. Additionally, because no improvements would be made to the I-710 Corridor under Alternative 1, the public health benefits of reduced congestion, improved conditions for pedestrian or bicycle travel, and reduction in the number of total and fatal accidents described in Section 3.5.2.1would not be realized.

3.5.3.2 PUBLIC HEALTH CONSIDERATIONS – CONGESTION/MOBILITY

PUBLIC HEALTH STATEMENT. Increased access to transit is associated with increased biking and walking as modes of transportation. Increases in congestion and corresponding decreases in bicycle or pedestrian safety are associated with decreased biking and walking. Increases in walking and biking are positively associated with improvements in health, including decreased obesity, chronic disease, and stress (P. Simon et al. 2009).

I-710 CORRIDOR PROJECT. Table 3.5-23 shows the change in VMT, VHT, and VHD associated with the build alternatives. As shown in the table, the VHD are forecast to be less with the build alternatives than under Alternative 1. The slight reduction in VHD that would be experienced by residents in the Study Area would have nominal benefits to public health considerations related to congestion and mobility.

Changes to local interchanges are also included in the project description. In some cases, these improvements may require modification to local arterial intersections near ramp termini. As part of the interchange design evaluation of the alternatives at highway access locations, line-of-sight, turning movements, queuing, and signal timing for all modes – pedestrians, bicyclists, and vehicles – were assessed and included in the design for the local interchanges. The improvements to intersections included in the design were found to provide equal or better safety performance as compared to existing conditions. As an example, for many of the ramp termini that are currently uncontrolled, the new design utilizes traffic signals and phasing to provide for the safe movement of pedestrians and bicycles through the interchanges.

Also, where sidewalks are affected by proposed intersection improvements, existing sidewalks will be replaced with sidewalks that comply with ADA requirements. Bikeways and trails along the Los Angeles River will be maintained with the I-710 Corridor Project.

Because sidewalks will be improved, bikeways and trails will be maintained, interchange designs will be upgraded for all user types, and new pedestrian and bicycle-only bridges will be added, the I-710 Corridor Project would improve conditions for pedestrian or bicycle travel, thereby resulting in a beneficial effect to public health considerations related to congestion and mobility.

The I-710 Corridor Project would modernize existing design elements of the I-710 freeway, such as the curves of on- and off-ramps that do not meet current design standards and the weaving sections between interchanges that are of insufficient length. Modernization of the I-710 design is expected to improve safety, resulting in accident rates on the I-710 Corridor that are more reflective of the statewide average for a similar facility. This expected reduction in accidents would reduce public health risks related to traffic safety.

3.5.3.3 MOTION 22.1

As described in Chapter 2.0, Section 2.2.2.1 (Community Alternative 7) of this RDEIR/SDEIS, the Metro Board of Directors passed Board Motion 22.1 in October 2015 that directed Metro and Caltrans to study a number of additional items as a part of the I-710 Corridor Project Description. For transportation, Motion 22.1 requires evaluation of the following measures:

- **Implementing high-frequency Express Bus Transit service along the main I-710 Corridor and the impact of such a line on commuter and freight traffic demands.** Three new routes (Express Line 51X, Express Line 52X, and Rapid Line 7XX) are described in Section 2.3.2.1, Common Features of Build Alternatives. These new routes will provide additional north-south transit service throughout the I-710 Corridor Project Study Area. These new routes will provide additional options for commuters within the Study Area, but would not be expected to have any effect on freight traffic demands.

- **Adding transit service on the bus and rail lines serving the I-710 project area, including operating Blue and Green Line trains with a minimum of 10-minute headways and a minimum of 25 percent increase in Local Bus, Express Bus, and community shuttles service frequencies.** The proposed expansion of transit service on existing bus and rail lines in the I-710 Corridor Project Study Area is described in Section 2.3.2.1, Common Features of Build Alternatives. This expanded service will improve mobility by reducing passenger wait times for the next bus or train, as well as reducing crowding on existing buses and trains.

- **Traffic control measures, traffic management, intelligent transportation systems, and operational efficiency improvements, such as highway ramp metering and transit system signal prioritization, to reduce congestion on local roadways and arterials before considering expanding lanes.** These measures are described in Section 2.3.2.1, Common Features of Build Alternatives. For example, new or updated adaptive ramp metering is proposed for all I-710 on-ramps between Pico Ave. and Third St. to better manage traffic flows up and down the freeway corridor. These measures will improve existing traffic operations with little or no environmental impact; however, they do not provide enough operational capacity to serve existing or future travel demand within the I-710 Corridor.

- **The replacement/enhancement of approximately 28 existing bridges/underpasses and the construction of at least five new pedestrian/bike bridges/underpasses to ensure safe and easily accessible freeway and river crossings to reduce gaps between crossings further than 0.5 mile where demand for increased access exists along the project corridor.** These measures are described in Section 2.3.2.1, Common Features of Build Alternatives. The improvements to existing bridges/ underpasses will occur as part of the reconstruction of freeway interchanges and existing overcrossings of I-710 and will improve mobility and safety for bicyclists and pedestrians. The five new pedestrian/bicycle overcrossings will further improve mobility by reducing cycling time/walk time for bicyclists and pedestrians seeking to cross the I-710 freeway.

3.5.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The I-710 Corridor Project will provide additional capacity and design improvements to address projected traffic volumes, will improve traffic safety by modernizing corridor design, and will provide infrastructure to address projected growth in population, employment, and activities related to goods movement. As discussed previously in this section, the build alternatives would result in improved traffic operations on the I-710 mainline, freight movement corridor, and ramp facilities. However, without mitigation, implementation of the project would cause permanent adverse impacts at to 32 Study Area intersections under Alternative 5C and 30 Study Area intersections under Alternative 7. Intersection improvements have been identified at each of these locations that would improve intersection operations and delay to a level equivalent to, or better than, what would occur under the Alternative 1 condition.

Mitigation for impacts to local intersections by the build alternatives would be implemented by Caltrans as the lead agency in coordination with the local jurisdiction (if applicable). The improvements described below are those that would improve intersection operations and delay to a level equivalent to or better than what would occur under the Alternative 1 condition. The following measure is proposed to address these impacts. The improvements described apply to both build alternatives unless otherwise noted.

TR-1 The following improvements to address project impacts to arterial intersections will be implemented:

CITY OF BELL GARDENS.

- **FLORENCE AVE./EASTERN AVE.:** Add an extra left-turn lane on the eastbound (triple-left) approach. Add a separate right-turn lane on the westbound approach. Implement overlap phase for eastbound right-turn movement.

CITY OF BELL GARDENS/CITY OF COMMERCE.

- **GARFIELD AVE./GAGE AVE.:** Add separate right-turn lanes on both the eastbound and westbound approaches.

CITY OF CARSON/COUNTY OF LOS ANGELES.

- **DEL AMO BLVD./SANTA FE AVE.:** Add a separate right-turn lane on the eastbound approach. Add an extra left-turn lane (dual left) on the southbound approach.

CITY OF COMMERCE.

- **SLAUSON AVE./EASTERN AVE.:** Add a separate right-turn lane on the eastbound approach. The improvement at this intersection pertains to Alternative 7 only.

- **SLAUSON AVE./GARFIELD AVE.:** Convert the eastbound right-turn lane to a shared through/right-turn lane. The improvement at this intersection pertains to Alternative 5C only.

CITY OF COMPTON.

- **ROSECRANS AVE./ATLANTIC AVE.:** Add a separate right-turn lane on the westbound approach.
- **ARTESIA BLVD./SANTA FE AVE.:** Convert the eastbound right-turn lane into shared through/right-turn lane. Add an extra right-turn lane on the eastbound approach. The improvement at this intersection pertains to Alternatives 5C only.

CITY OF HUNTINGTON PARK.

- **SLAUSON AVE./ALAMEDA ST. (WEST):** Add a separate right-turn lane on the southbound approach. The improvements at this intersection pertain to Alternative 7 only.
- **SLAUSON AVE./SANTA FE AVE.:** Add a separate right-turn lane on the northbound approach. The improvements at this intersection pertain to Alternative 7 only.
- **SLAUSON AVE./BOYLE AVE.:** Add a separate right-turn lane on the eastbound approach.

CITY OF LONG BEACH.

- **ANAHEIM ST./SANTA FE AVE.:** Convert separate southbound right-turn lane to a shared through/right-turn lane. Add an extra left-turn lane to the southbound approach.
- **PACIFIC COAST HWY./SANTA FE AVE.:** Convert westbound right-turn lane to a shared through/right-turn lane. Convert eastbound right-turn lane to a shared through/right-turn lane.
- **WILLOW ST./SANTA FE AVE.:** Add a separate right-turn lane on the westbound approach. The improvement at this intersection pertains to Alternative 5C only.
- **DEL AMO BLVD./LONG BEACH BLVD.:** Add an extra left-turn lane on both southbound and northbound approaches.
- **DEL AMO BLVD./ATLANTIC AVE.:** Add an extra left-turn lane on northbound approach. The improvement at this intersection pertains to Alternative 5C only.

- **ARTESIA BLVD./LONG BEACH BLVD.:** Add a separate right-turn lane on the southbound approach. The improvement at this intersection pertains to Alternative 5C only.
- **I-710 NORTHBOUND/ARTESIA BLVD. (OFF):** Add an extra right-turn lane on the northbound approach.
- **3RD ST./MAGNOLIA AVE.:** Add a separate right-turn lane on the southbound approach.
- **ANAHEIM ST./CANAL AVE.:** Implement Access Management: prohibit left- and through- movements on both the northbound and southbound approaches during the AM, midday, and PM peak hours.
- **ATLANTIC AVE./ARTESIA BLVD.:** Add a separate left-turn lane on the westbound approach. The improvement at this intersection pertains to Alternative 5C only.
- **ARTESIA BLVD./CHERRY AVE.:** Convert the eastbound right-turn lane into a shared through/right-turn lane. The improvement at this intersection pertains to Alternative 5C only.
- **LONG BEACH BLVD./VICTORIA ST.:** Convert the eastbound shared through/left-turn lane (middle lane) to a shared through/right-turn lane.
- **WILLOW ST./EASY ST.:** Add a separate left-turn lane on the southbound approach. Convert the eastbound right-turn lane to a shared through/right-turn lane.

CITY OF LOS ANGELES (WILMINGTON).

- **ANAHEIM ST./ALAMEDA ST.:** Implement protected phase for eastbound left-turn movement. The improvement at this intersection pertains to Alternative 7 only.

COUNTY OF LOS ANGELES (UNINCORPORATED EAST LOS ANGELES).

- **INDIANA ST./OLYMPIC BLVD.:** Convert both the northbound and southbound approaches to provide a separate left-turn lane and a shared through/right-turn lane.
- **I-710 NORTHBOUND/OLYMPIC BLVD. (OFF):** Add a separate right-turn lane on the northbound approach (Alternative 5C Design Option 3A and Alternative 7 Design Option 3B only).
- **FORD BLVD./WHITTIER BLVD.:** Convert both the northbound and southbound approaches to provide a separate left-turn lane and a shared through/right-turn lane.

- **FORD BLVD./3RD ST.:** Add a separate right-turn lane on the northbound approach. (Alternative 7 and Alternative 5C Design Option 3A only).
- **3RD ST./GAGE AVE.:** Add separate right-turn lanes on both the eastbound and westbound approaches.

CITY OF LYNWOOD.

- **IMPERIAL HWY./ATLANTIC AVE.:** Add an extra left-turn lane on the eastbound approach resulting in triple left-turn lanes.

CITY OF PARAMOUNT.

- **ROSECRANS AVE./GARFIELD AVE.:** Add an extra left-turn lane on the eastbound approach. The improvement at this intersection pertains to Alternative 5C only.
- **ROSECRANS AVE./PARAMOUNT BLVD.:** Add an extra left-turn lane on the eastbound approach. The improvement at this intersection pertains to Alternative 5C only.

CITY OF SOUTH GATE.

- **FIRESTONE BLVD./ATLANTIC AVE.:** Add separate right-turn lanes on both the eastbound and westbound approaches.
- **FIRESTONE BLVD./GARFIELD AVE.:** Add an extra left-turn lane on the eastbound approach. The improvement at this intersection pertains to Alternative 5C only.
- **GARFIELD AVE./SOUTHERN AVE.:** Add an extra left-turn lane on the northbound, southbound and eastbound approaches.

CITY OF VERNON.

- **BANDINI BLVD./ATLANTIC BLVD.:** Add an extra right-turn lane on the southbound approach.
- **BANDINI BLVD./PENNINGTON WAY:** Implement overlap phase for northbound right-, southbound right-, and westbound right-turn movements. The improvement at this intersection pertains to Alternative 5C only.
- **WASHINGTON BLVD./DOWNEY RD.:** Add an extra left-turn lane on both the northbound and southbound approaches. The improvement at this intersection pertains to Alternative 7 only.

3.6 VISUAL/AESTHETICS

The information in this section is based on the following documents:

- Interstate 710 (I-710) Corridor Project *Revised Draft Visual Impact Assessment* (VIA) (February 2017)
- California Department of Transportation (Caltrans) *I-710 Corridor Aesthetic Master Plan* (2014), which was developed and based upon the *Urban Design and Aesthetics Toolbox Report* (February 2012)

3.6.1 REGULATORY SETTING

The National Environmental Policy Act of 1969 (NEPA), as amended, establishes that the Federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 U.S.C. 4331[b][2]). To further emphasize this point, the Federal Highway Administration in its implementation of NEPA (23 U.S.C. 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities." (California Public Resources Code Section 21001[b])

3.6.2 AFFECTED ENVIRONMENT

3.6.2.1 VISUAL ENVIRONMENT STUDY AREA

The Study Area for visual impacts includes or is adjacent to commercial, industrial, residential, parks and recreational land uses, local roads, and major highways/freeways (Interstate 405 [I-405], State Route 91 [SR-91], Interstate 105 [I-105], Interstate 5 [I-5], and State Route 60 [SR-60]). The Study Area does not contain any State, County, or City-designated scenic highways or corridors. The primary viewer groups in the Study Area are residents, motorists, pedestrians, cyclists, park and recreational facility users, employees, and users of commercial and industrial facilities.

3.6.2.2 LANDSCAPE UNITS

A landscape unit is a portion of the regional landscape and can be thought of as an outdoor room that exhibits a distinct visual character. A landscape unit will often correspond to a place or district that is commonly known among local viewers. The following landscape units were defined within the Study Area.

RESIDENTIAL. The residential landscape unit applies solely to residential households. This unit includes views of the I-710 Corridor Project from all residences within the Study Area. This unit includes single-family homes, multifamily homes (such as apartments, townhouses, and condominiums), and mobile homes. Housing styles and residential landscaping may vary substantially between residential areas. Residents along the existing I-710 do not see much of the existing freeway due to the presence of existing walls and fences along the freeway.

RECREATION. The recreation landscape unit applies to parks, bicycle trails, golf courses, and other recreational/leisure-time facilities. Trees such as eucalyptus and liquidambar are prevalent in this unit.

EDUCATION. The education landscape unit is characterized by elementary, middle, and high schools. Although many of these facilities are located within 0.1 mile of the freeway, soundwalls and surrounding buildings contribute to obstruction of the views to I-710.

FREEWAY. The I-710 mainline within the Study Area represents the freeway landscape unit. Most of I-710's route is located parallel to the course of the Los Angeles River and is within several hundred feet from the riverbed. Within the I-710 right of way, guardrails, advertisement signs, light poles, and utility lines are found. The freeway landscape unit also contains various types of landscaping.

3.6.2.3 TOPOGRAPHY

The I-710 Corridor Project is situated within the central part of the Los Angeles Basin. The elevation of the I-710 Corridor Project varies from near sea level in the south to approximately 180 feet above mean sea level near SR-60 (United States Geological Survey [USGS] 1994). The lands within the Study Area are generally flat with a slight downward slope toward the Pacific Ocean, located just south of Ocean Blvd. There are no prominent land forms within the Study Area, however, the most prominent landforms near the I-710 Corridor Project are the Dominguez Hills to the southwest of the I-710/SR-91 interchange and Signal Hill to the southeast of the I-710/I-405 interchange.

3.6.2.4 METHODOLOGY

This section summarizes the methodology and terminology used to assess visual impacts of the build alternatives. More details on the methodology are available in the VIA (2017), which was prepared following the methodology prescribed in the publication *Guidelines for the Visual Impact Assessment for Highway Projects* (Federal Highway Administration [FHWA], January 2015). The following six principal steps were carried out to assess the visual impacts of the build alternatives:

1. Define the project setting and viewshed.
2. Identify Key Views for visual assessment.

3. Analyze existing visual resources and viewer response.
4. Depict the visual appearance of project alternatives.
5. Assess the visual impacts of project alternatives.
6. Propose methods to lessen adverse visual impacts.

The visual impacts of the build alternatives were determined by assessing the existing visual resources, the visual resource change due to the I-710 Corridor Project, and predicting viewer response to that change.

VISUAL RESOURCE CHANGE. Visual resource change is the combination of the change in visual character and change in visual quality. Determining visual resource change involves assessing the visual compatibility of the proposed project with existing resources.

Visual character was evaluated using the following FHWA descriptive attributes:

- Form: Visual mass or shape
- Line: Edges or linear definition
- Color: Reflective brightness (light, dark) and hue (red, green)
- Texture: Surface coarseness
- Dominance: Position, size, or contrast
- Scale: Apparent size as it relates to the surroundings
- Diversity: A variety of visual patterns
- Continuity: Uninterrupted flow of form, line, color, or textural pattern

Numeric value ratings were assigned to describe the changes in each visual character attribute (0 = no visual change; 1 = very low; 2 = low; 3 = moderate; 4 = high; 5 = very high). Attribute changes from existing conditions to build alternative conditions were averaged to give an overall Visual Character Change (VCC) rating:

The degree of visual quality in a view was evaluated using the following FHWA descriptive terms:

- **Vividness:** Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns (e.g., Niagara Falls is a highly vivid landscape component).
- **Intactness:** Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes and natural settings.

- **Unity:** Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

A numerical value is assigned to vividness, intactness, and unity using a numeric scale (1.0 = very low; 2.0 = low; 3.0 = moderately low; 4.0 = moderate; 5.0 = moderately high; 6.0 = high; 7.0 = very high). These values are then combined and divided by three to determine an overall visual quality rating.

For these ratings, the common rounding off method is used to determine the level of impact. For example, a value of 3.5-3.9 will round up to 4.0 and a value of 3.1-3.4 will round down to 3.0.

VIEWER RESPONSE. Viewer response is the measure or prediction of the viewer's reaction to changes in the visual environment. Viewer response is assessed through the evaluation of viewer exposure, which is the measure of the viewer's ability to see a particular object (e.g., location, quantity and duration), and viewer sensitivity, which is the measure of the viewer's recognition of a particular object (e.g., activity, awareness and local value). Viewer response numeric scale was established by averaging the viewer exposure and viewer sensitivity to the project (1.0 = very low; 2.0 = low; 3.0 = moderately low; 4.0 = moderate; 5.0 = moderately high; 6.0 = high; 7.0 = very high).

For these ratings, the common rounding off method is used to determine the level of impact. For example, a value of 3.5-3.9 will round up to 4.0 and a value of 3.1-3.4 will round down to 3.0.

VISUAL IMPACT. The levels of visual impact are determined by combining the severity of resource change with the degree to which people are likely to be affected by the change. Resource change and viewer response numerical scores are averaged to give the evaluation for the visual impact. The following ratings describe the levels of the resulting visual impact with the associated level of visual mitigation required:

- Very Low (0.5–1.4): Little to no visual impact resulting from very low viewer response and very low resource change. Mitigation not required. (No Mitigation)
- Low (1.5–2.4): Minor adverse change to the existing visual resource with low viewer response to change in the visual environment. May or may not require mitigation. (Low Mitigation)
- Moderately Low (2.5–3.4): Moderately low adverse change to the existing visual resource with moderately low viewer response. Impact can be mitigated within five years using conventional practices. (Moderate Mitigation)

- Moderate (3.5–4.4): Moderate adverse change to the existing visual resource with moderate viewer response. Impact can be mitigated within five years using conventional practices. (Moderate Mitigation)
- Moderately High (4.5–5.4): Moderately high adverse change to the existing resource with a higher viewer response. Extraordinary mitigation practices may be required. Required landscape treatment will generally take longer than five years to mitigate. (Moderately High Mitigation)
- High (5.4–6.5): Excessive adverse change to the existing resource with a higher level of viewer response to visual changes such that architectural design and landscape treatment cannot mitigate the impacts. An alternative project design may be required to avoid highly adverse impacts. (High Mitigation)

VISUAL SIMULATIONS. Visual simulations were prepared for representative locations along the I-710 Corridor Project. A photographic inventory was taken from each candidate Key View location. All photographs were taken using a digital camera with a 35-millimeter focal length. This specific focal length best simulates the view perspective of the human eye. Twenty-nine preliminary Key Views were assessed and ranked relative to appropriateness and anticipated viewer response. Twenty-five of the top-ranked Key Views were recommended for further study. These 25 Key Views are presented within this section.

To prepare the visual simulations, a photograph of the existing view was taken from each approved Key View location. These existing photographs were used as a baseline from which all other images of the view are compared. Digital models of the scene depicted in the Key View were then created from engineering data of the I-710 Corridor Project. The resulting image is a "wireframe" view of the completed project construction from the standpoint of the Key View location. Upon completion of the digital modeling, the "wireframe" is "painted" to simulate solid objects. Using materials, textures, and colors obtained from the project engineers, the model is given solid surfaces that simulate the completed construction. This simulation rendering shows the proposed project as it would look after installation of standard Caltrans landscaping.

3.6.2.5 KEY VIEWS

Key Views form the foundation for the visual impact analysis. Visual impacts are analyzed relative to changes between existing and proposed conditions from the 25 Key Views selected for analysis. Given that the Study Area is approximately 19 miles in length and goes through a dense urban area composed of many land uses, these Key Views represent typical views within the Study Area from the various landscape units. Figure 3.6-1 shows the location of the Key Views.

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LEGEND

- Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

N

FIGURE 3.6-1

I-710 Corridor Project RDEIR/SDEIS

Key View Locations

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Tatsumi & Partners, Inc. (2016)

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KEY VIEW 1. The existing setting photograph for Key View 1 is shown in Figure 3.6-2. This Key View is located at LARIO Trail in the City of Long Beach and looks northwest across the Los Angeles River towards the I-710 Corridor. The landscape unit for Key View 1 is recreational, as pedestrians and cyclists are the primary viewer group of this Key View. The water and vegetation in the Los Angeles River create striking scenery at this location.

The existing vividness of this Key View is high considering the water and vegetation in the Los Angeles River that create a memorable view. The existing intactness is high, as natural landscapes can be seen with minimal encroachment from utility lines in the distance. The existing unity is high because the arrangement of the Los Angeles River, the row of trees in the distance, the row of boulders, and the bike path create strong linear lines. As a result, the existing visual quality of this Key View is high.

KEY VIEW 2. The existing setting photograph for Key View 2 is shown in Figure 3.6-3. This Key View is located on the Willow St. Bridge in the City of Long Beach and overlooks the northbound and southbound lanes of the I-710 Corridor towards the Willow St. off-ramp. There is a large cluster of mature trees to the east of the freeway and a short row of trees along the horizon. The existing landscape unit of Key View 2 is categorized as freeway, as most of the viewers at this location are motorists.

The existing vividness is moderate as the prominent freeway and tree visual elements in this view are not considered memorable. The existing intactness is moderately high since the existing freeway creates visual flow, and the existing unity is moderate, as the view contains both a dominant freeway element along the lower half of the view and vegetation along the top half of the view. As a result, the existing visual quality of this Key View is moderate.

KEY VIEW 3. The existing setting photograph for Key View 3 is shown in Figure 3.6-4. Key View 3 is located on the northbound I-710 between West Willow St. and West Wardlow Rd. in the City of Long Beach. The Key View is comprised of I-710 northbound lanes and barren landscape adjacent to the freeway lanes with small tree groupings on the horizon. The existing view landscape unit is categorized as freeway, as viewers consist entirely of motorists.

The existing vividness is moderately low as it includes unmaintained landscaping and freeway lanes on the lower half of the view, and open sky on the top half of the view, with no dominant or unique visual elements. The existing intactness is moderately high as there is little encroachment from utility poles, billboards, or signs. The existing unity is moderate, due to the consistent lines created by the components in the view. As a result, the existing visual quality of this Key View is moderate.

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KEY VIEW 1

LARIO Trail
Between East 21st. Street and West Hill Street
Long Beach, CA 90813

GPS Location:
Latitude = 33° 47’43.86”N
Longitude = 118° 12’16.06”W
Heading = 334° NW

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 1 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-2

I-710 Corridor Project RDEIR/SDEIS
Key View 1
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 2

Willow Street Bridge
Long Beach, CA 90810

GPS Location:
Latitude = 33° 48’16.15”N
Longitude = 118° 12’27.94”W
Heading = 19° NE

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 2 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

FIGURE 3.6-3

SOURCE: Tatsumi & Partners, Inc. (2016)

I-710 Corridor Project RDEIR/SDEIS

Key View 2
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 3

I-710
Between Willow Street and Wardlow Road
Long Beach, CA 90810

GPS Location:
Latitude = 33° 48’49.09”N
Longitude = 118° 12’24.44”W
Heading = 359° N

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 3 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

FIGURE 3.6-4

I-710 Corridor Project RDEIR/SDEIS
Key View 3
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Tatsumi & Partners, Inc. (2016)

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KEY VIEW 4. The existing setting photograph for Key View 4 is shown in Figure 3.6-5. This Key View is located in a residential area on Fashion Ave. west of the I-710 in the City of Long Beach, and looks towards the southbound lanes of I-710. The view of the freeway is currently screened by a cluster of large trees in the middle of the view. The landscape unit of this Key View is residential.

The existing vividness is low due to the absence of a single dominant visual element. The existing intactness is moderately low due to the strong presence of utility lines. The existing unity is moderately low due to the utility lines that cut across the skyline, creating disharmony with the vertical elements in the residential neighborhood. As a result, the visual quality rating is moderately low.

KEY VIEW 5. The existing setting photograph for Key View 5 is shown in Figure 3.6-6. This Key View is located on the LARIO Trail, east of the I-710 and south of Del Amo Blvd., in the City of Long Beach. This Key View looks northwest toward I-710 interchange at West Del Amo Blvd. and across the Los Angeles River. The landscape unit for this Key View is recreational as cyclists and pedestrian users are the primary viewer group.

The existing vividness is high as the Los Angeles River and bridge are the dominant visual elements in the view with limited landscape vegetation and utility lines in the distance. The existing intactness is moderately high since the utility line encroachments are far in the distance. The existing unity is moderate because the existing lines, size and design of the elements within the view are harmonious with each other. As a result, the existing visual quality is moderately high.

KEY VIEW 6. The existing setting photograph for Key View 6 is shown in Figure 3.6-7. This Key View is located on the sports field at Colin Powell Elementary School in the City of Long Beach. This Key View looks southeast across the sports field toward the I-710. The view of the freeway is currently screened by a chain-link fence. The landscape unit is education.

The existing vividness is moderately high because, although the green field stands out in this Key View, the presence of a billboard is a prominent and negative visual element in the view. The existing intactness is moderately low due to the billboard, electric lines and freeway encroachments, and the existing unity is low due to the unharmonious arrangement of visual elements within this view. As a result, the existing visual quality is moderately low.

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KEY VIEW 4

3702 Fashion Avenue
Long Beach, CA 90810

GPS Location:
Latitude = 33° 49’24.65”N
Longitude = 118° 12’30.30”W
Heading = 91° E

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 4 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-5

I-710 Corridor Project RDEIR/SDEIS
Key View 4

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 5

LARIO Trail
Near Del Amo Boulevard
Long Beach, CA 90805

GPS Location:
Latitude = 33° 50’43.13”N
Longitude = 118° 12’9.19”W
Heading = 300° NW

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 5 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

FIGURE 3.6-6

SOURCE: Tatsumi & Partners, Inc. (2016)

I-710 Corridor Project RDEIR/SDEIS
Key View 5
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 6

Colin Powell Elementary School
150 West Victoria Street
Long Beach, CA 90805

GPS Location:
Latitude = 33° 51’41.10”N
Longitude = 118° 12’7.24”W
Heading = 118° SE

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 6 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

FIGURE 3.6-7

I-710 Corridor Project RDEIR/SDEIS
Key View 6
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Tatsumi & Partners, Inc. (2016)

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KEY VIEW 7. The existing setting photograph for Key View 7 is shown in Figure 3.6-8. This Key View is located on the southbound I-710, between Artesia Blvd. and Long Beach Blvd. in the City of Long Beach. The Key View consists of current freeway traffic lanes and a narrow strip of landscape adjacent to the traffic lanes with existing power lines and freeway signs in the background. The existing view landscape unit is categorized as freeway, as viewers consist entirely of motorists.

The existing vividness of this Key View is moderately low, as there are no distinct visual elements that stand out in the view. The existing intactness is also moderately low due to the encroachment of utility lines and freeway signs along the top half of the view. The existing unity is moderately low as there is a lack of unifying visual elements within the view. As a result, the existing visual quality is given a rating of moderately low.

KEY VIEW 8. The existing setting photograph for Key View 8 is shown in Figure 3.6-9. Key View 8 is located at Coolidge Park in the City of Long Beach near the I-710 and SR-91 interchange. The Key View is within the park near a baseball field and looks northeast- toward the I-710. The existing wall, fence, and trees divide the park from the I-710. The landscape unit for this Key View is recreational, as park users are the primary viewer group.

The existing vividness is moderate as the horizontal arrangement of the green field, fence, row of trees and skyline draws viewer attention in a vertical manner. The existing intactness is moderately low due to several visual encroachments from utility lines, street lights, and sports field lights, and the existing unity is moderate because these visual encroachments cut into the visual aesthetics of the landscape. As a result, the existing visual quality is moderate.

KEY VIEW 9. The existing setting photograph for Key View 9 is shown in Figure 3.6-10. This Key View is located on LARIO Trail, northeast of the I-710/SR-91 interchange, in the City of Long Beach. The Key View looks southwest at a bridge across the Los Angeles River, with the bike trail and vegetated concrete barrier in the foreground. The landscape unit for this Key View is recreational as cyclists and pedestrians are the primary viewer group.

The existing vividness is moderately high, as the vegetated concrete barrier is the most prominent visual element in the view and it draws viewer attention toward the bridge. The existing intactness is moderate as the bridge in the distance divides the view in half, and utility lines, freeway signs, and a billboard extend into the skyline in the distance. The existing unity is moderate because the vegetation and lines on the concrete barrier create rhythm, texture, and pattern within the view. As a result, the existing view is considered moderate.

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KEY VIEW 7

I-710 Southbound
Between East Artesia Boulevard and Long Beach Boulevard
Long Beach, CA 90805

GPS Location:
Latitude = 33° 52’3.12”N
Longitude = 118° 11’47.61”W
Heading = 206° SW

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 7 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-8

I-710 Corridor Project RDEIR/SDEIS
Key View 7
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 8

Coolidge Park
6400 White Avenue
Long Beach, CA 90805

GPS Location:
Latitude = 33° 52’21.89”N
Longitude = 118° 11’41.81”W
Heading = 58° NE

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 8 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

FIGURE 3.6-9

I-710 Corridor Project RDEIR/SDEIS
Key View 8
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Tatsumi & Partners, Inc. (2016)

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KEY VIEW 9

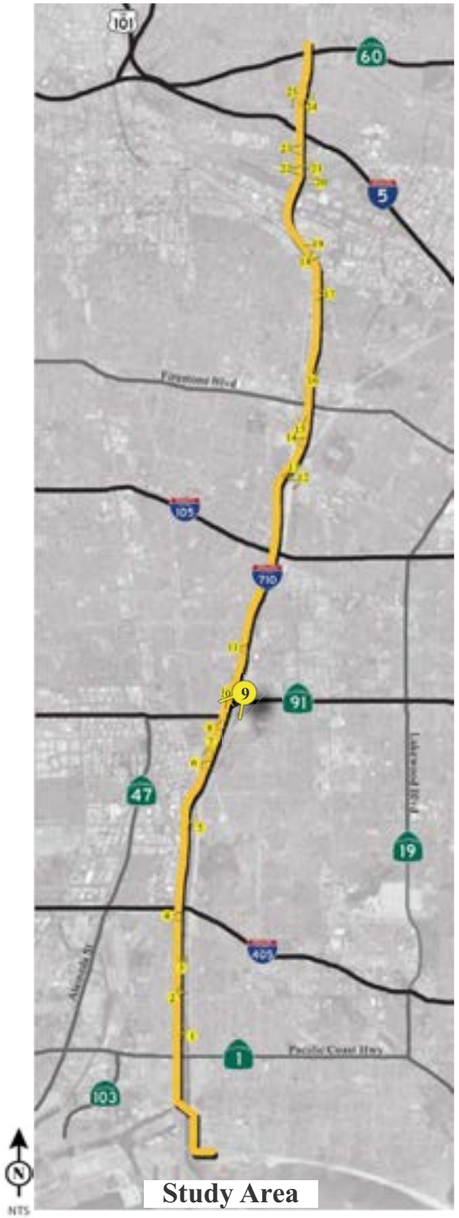
LARIO Trail
Northeast of I-710/SR-91 interchange
Long Beach, CA 90805

GPS Location:
Latitude = 33° 52’43.91”N
Longitude = 118° 12’18.63”W
Heading = 234° SW

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7



LEGEND

- 9 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-10

I-710 Corridor Project RDEIR/SDEIS
Key View 9
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 10. The existing setting photograph for Key View 10 is shown in Figure 3.6-11. Key View 10 is located on southbound I-710, looking south toward the I-710/SR-91 interchange, in the City of Long Beach. The view consists primarily of freeway lanes with a few trees in the distance. The existing view landscape unit is categorized as freeway, as viewers consist of motorists.

The existing vividness is moderate due to the lack of a distinct major visual element, and the utility pole and freeway elements are evenly spread out in the view. The existing intactness is moderate because of some encroachment by utility lines and freeway signs in the distance. The existing unity is moderately low because the freeway dominates the lower portion of the view, vegetation is spread along the middle of the view, and the skyline dominates the top of the view. As a result, the existing visual quality of this view is moderate.

KEY VIEW 11. The existing setting photograph for Key View 11 is shown in Figure 3.6-12. This Key View is located within a senior apartment complex on Williams Ave. in the City of Compton. The Key View was taken from the recreation area within the senior apartment complex looking east toward the adjacent I-710. The view consists of a well-maintained park and soundwall that separates the complex from the freeway. The landscape unit is residential.

The existing vividness is moderately high with the open sky and large green park area that create a strong landscape aesthetic. The existing intactness is moderate as light posts are the only encroachment within the view. The existing unity of Key View 11 is moderately high due to the strong presence of the sky and horizontal visual flow of the grass, sidewalk, and soundwall. As a result, the existing visual quality of this view is moderately high.

KEY VIEW 12. The existing setting photograph for Key View 12 is shown in Figure 3.6-13. This Key View is located on LARIO Trail north of the Imperial Hwy. Bridge in the City of South Gate, next to a Los Angeles County Flood Control facility. The Key View looks southwest across the Los Angeles River toward I-710. The view consists of the trail, concrete barrier, and bridge with minimal vegetation enhancements. The landscape unit is recreational, as cyclists and pedestrians are the primary viewer group.

The existing vividness is moderately high, as the concrete barrier between the trail and the Los Angeles River is the dominant feature in the view. This barrier obscures the majority of the view of the river. The existing intactness is moderate, as there are not heavy encroachments in this view and the streets lights along the bridge in the distance are uniformly spaced. The existing unity is moderately high because the existing lines, patterns, and colors are harmonious with each other. As a result, the existing visual quality of this Key View is moderately high.

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KEY VIEW 10

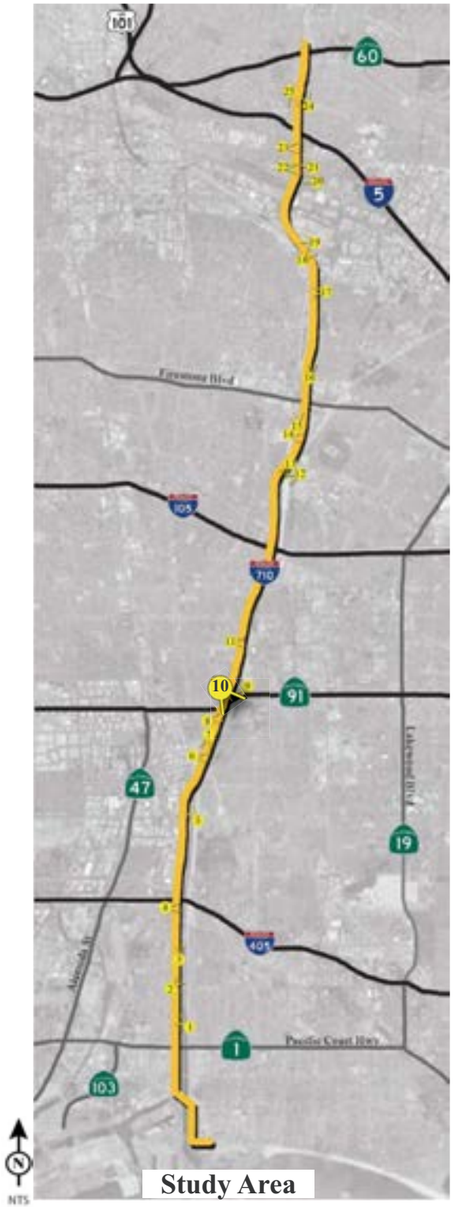
I-710 Southbound
At I-710 and SR-91 interchange
Long Beach, CA 90805

GPS Location:
Latitude = 33° 52’47.21”N
Longitude = 118° 11’32.47”W
Heading = 170° S

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7



LEGEND

- 10 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-11

I-710 Corridor Project RDEIR/SDEIS
Key View 10
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 11

Senior Apartments
15898 Williams Avenue
Compton, CA 90221

GPS Location:
Latitude = 33° 53’25.68”N
Longitude = 118° 11’22.60”W
Heading = 91° E

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 11 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-12

I-710 Corridor Project RDEIR/SDEIS
Key View 11
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 12

LARIO Trail
Next to Los Angeles Country Flood Control
5525 Imperial Highway
South Gate, CA 90280

GPS Location:
Latitude = 33° 55’52.19”N
Longitude = 118° 10’30.40”W
Heading = 245° W

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 12 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-13

I-710 Corridor Project RDEIR/SDEIS
Key View 12
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 13. The existing setting photograph for Key View 13 is shown in Figure 3.6-14. Key View 13 is located on LARIO Trail, north of Imperial Hwy. in the City of South Gate looking southwest toward I-710. The landscape unit is recreational as cyclists and pedestrians are the primary viewer group

The existing vividness is moderately high, as the vegetation in the foreground, the row of trees in the background, and the open sky are the prominent features in this Key View. The existing intactness is moderate as the trail encompasses half of the view and there are no utility encroachments. The existing unity is moderate due to the contrast between the hard lines of the bike trail and undulating lines of vegetation and row of trees in the background. As a result, Key View 13 has an overall existing visual quality of moderate.

KEY VIEW 14. The existing setting photograph for Key View 14 is shown in Figure 3.6-15. This Key View is taken from the street within the Thunderbird Villa Mobile Home Park in the City of South Gate looking east across Frontage Rd. toward I-710. There are currently large shrubs that partially screen the view of the freeway. The existing landscape unit is residential as the primary viewers are residents within the mobile home park.

The existing vividness is moderately low because the view contains many random features, but none of the features are considered memorable. The existing intactness is moderately low due to numerous encroachments (i.e., utility lines, street signs, fencing, and freeway barrier) that create a disorganized view. The existing unity of Key View 14 is low, as the landscape lacks pattern and rhythm and all visual elements within the view are random, disorganized, and unbalanced. As a result, the existing visual quality is moderately low.

KEY VIEW 15. The existing setting photograph for Key View 15 is shown in Figure 3.6-16. Key View 15 is located at 10001 West Frontage Rd. in the City of North Gate. The Key View is looking north up Frontage Rd. with Thunderbird Villa Mobile Home Park to the west and southbound I-710 to the east. A large billboard and numerous utility poles and lines are the dominant features in this view. The landscape unit is residential as the primary viewers are residents who utilize the road as they leave and return to their homes.

The existing vividness is moderate as the billboard is a dominant element in this view, shared with utility lines and street lights. The existing intactness is moderately low due to the numerous encroachments into the landscape and the unbalanced manner in which the visual elements are arranged. The existing unity is very low as the disorganized visual elements in the view do not relate to each other and lack balance and rhythm. As a result, the existing visual quality is low.

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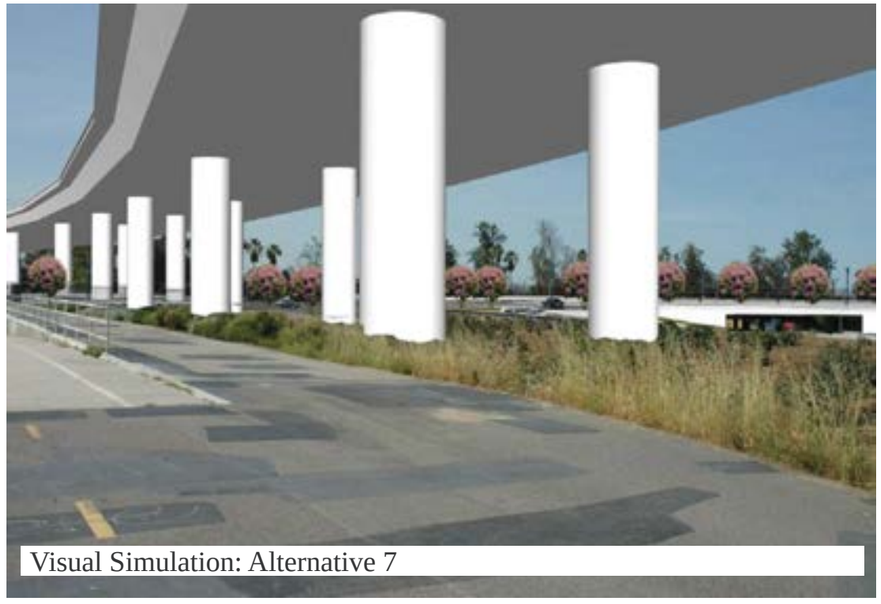
KEY VIEW 13

LARIO Trail north of Imperial Highway
South Gate, CA 90280

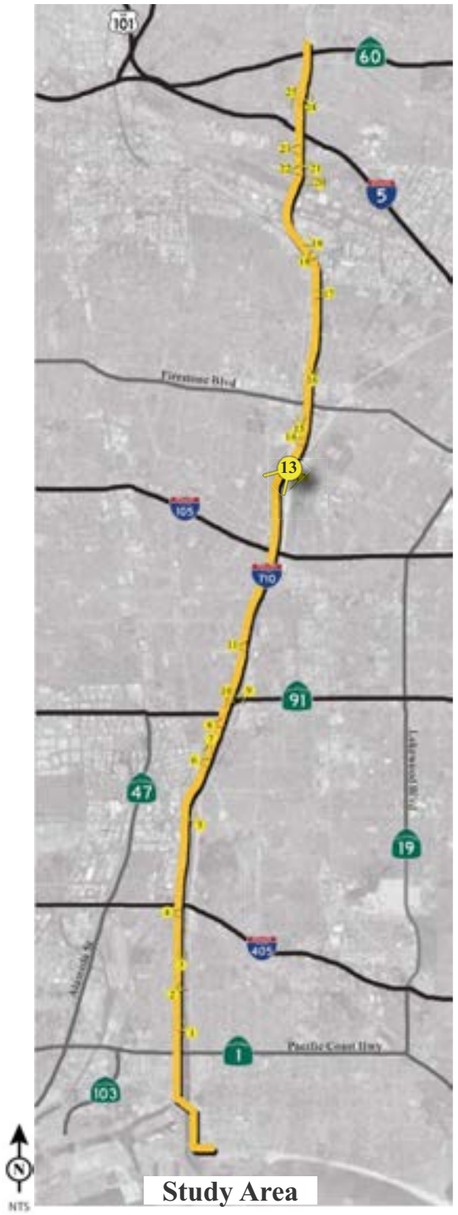
GPS Location:
Latitude = 33° 55’55.61”N
Longitude = 118° 10’35.25”W
Heading = 240° SW

Existing Condition

Visual Simulation: Alternative 5C



Visual Simulation: Alternative 7



LEGEND

- 13 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-14

I-710 Corridor Project RDEIR/SDEIS
Key View 13
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 14

Thunderbird Villa Mobile Home Park
10001 West Frontage Road
South Gate, CA 90280

GPS Location:
Latitude = 33° 56’40.08”N
Longitude = 118° 10’18.48”W
Heading = 95° E by SE

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 14 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-15

I-710 Corridor Project RDEIR/SDEIS
Key View 14
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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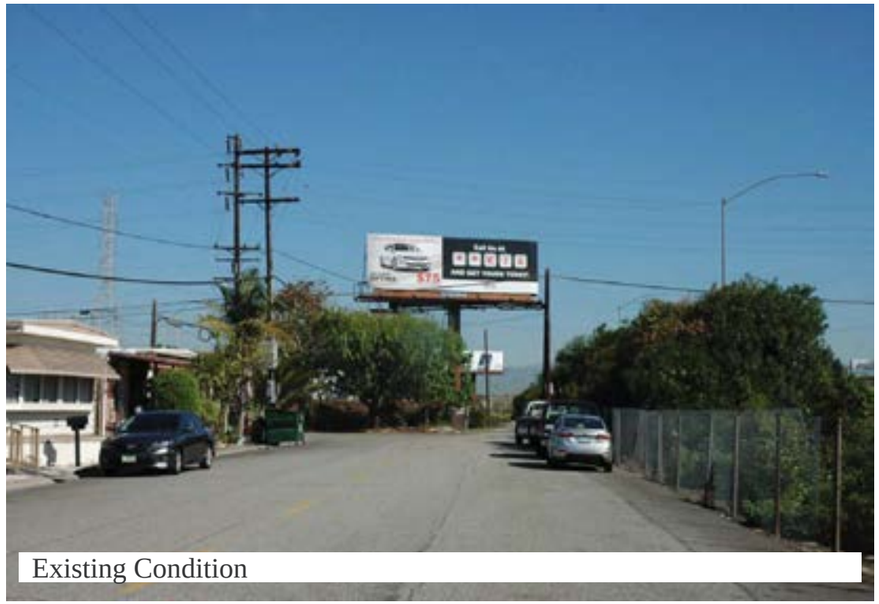
KEY VIEW 15

Frontage Road
10001 West Frontage Road
South Gate, CA 90280

GPS Location:
Latitude = 33° 56’40.08”N
Longitude = 118° 10’16.46”W
Heading = 5° N



Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 15 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

FIGURE 3.6-16

SOURCE: Tatsumi & Partners, Inc. (2016)

I-710 Corridor Project RDEIR/SDEIS
Key View 15
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 16. The existing setting photograph for Key View 16 is shown in Figure 3.6-17. This Key View is located on the northbound I-710 between Firestone Blvd. and Florence Blvd. in the City of Bell Gardens. The Key View faces north towards the mountains in the distance, and there are utility lines on the left and vegetation and billboards on the right of the view. The landscape unit is considered freeway, as motorists are the primary viewers.

The existing vividness of this Key View is moderate, as the view of the mountains to the north is not the prominent feature in this view because it competes with the obstructions of the utility poles and billboard. The existing intactness is moderately low due to the arrangement of the manmade elements in this view make the encroachments more prominent. The existing unity is moderate because, although the freeway itself does create visual flow with the utility lines, the arrangement of elements in this view are random and unbalanced. As a result, the existing visual quality is moderately low.

KEY VIEW 17. The existing setting photograph for Key View 17 is shown in Figure 3.6-18. Key View 17 looks west toward I-710 and is located at 5522 Lanto St. in the City of Bell Gardens. The Key View faces a cul-de-sac within a residential neighborhood. An existing soundwall screens the freeway, and there are two prominent utility poles within the view. The landscape unit is residential.

The existing vividness of this Key View is moderate, as the large utility pole in the center of the view and trees on either side of the street are the most prominent features in the view. The existing intactness is moderately low due to the strong presence of the utility pole encroachments within the view. The unity is low due to the lack of balance, rhythm and overall harmony of visual elements. As a result, the existing visual quality is moderately low.

KEY VIEW 18. The existing setting photograph for Key View 18 is shown in Figure 3.6-19. This Key View is on LARIO Trail next to Maywood Riverfront Park in the City of Maywood. The Key View looks northeast from the trail toward Slauson Ave. and I-710. The view consists of the trail and chain-link fence in the foreground, the Los Angeles River and bridge in the mid ground, and utility poles and mountains in the background. The landscape unit is recreational, as cyclists and pedestrians are the primary viewer group.

The existing vividness is moderately low, as the Los Angeles River is the dominant feature in the view with the fence in the foreground and mountains in the background. The existing intactness is low due to visual encroachments by many man-made structures. The existing unity of Key View 18 is moderately low, as strong rigid lines comprise the view, with curvilinear lines in the background. As a result, the existing visual quality of this Key View is moderately low.

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KEY VIEW 16

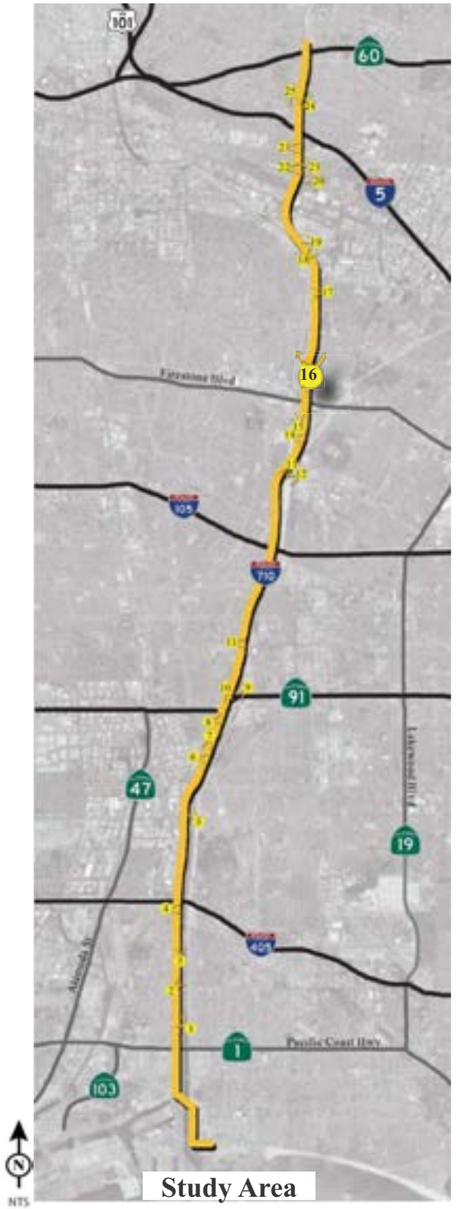
I-710
Between Firestone Boulevard and Florence Boulevard
Bell Gardens, CA 90201

GPS Location:
Latitude = 33° 57’25.53”N
Longitude = 118° 10’13.10”W
Heading = 6° N

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7



LEGEND

- 16 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-17

I-710 Corridor Project RDEIR/SDEIS
Key View 16
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 17

5522 Lanto Street
Bell Gardens, CA 90201

GPS Location:
Latitude = 33° 58’40.01”N
Longitude = 118° 10’0.09”W
Heading = 277° W

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

Study Area

LEGEND

- 17 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-18

I-710 Corridor Project RDEIR/SDEIS
Key View 17
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 18

LARIO Trail
Near Maywood Riverfront Park
5000 Slauson Avenue
Maywood, CA 90270

GPS Location:
Latitude = 33° 59’7.42”N
Longitude = 118° 10’18.41”W
Heading = 53° NE

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 18 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-19

I-710 Corridor Project RDEIR/SDEIS
Key View 18
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 19. The existing setting photograph for Key View 19 is shown in Figure 3.6-20. Key View 19 is located next to the Salvation Army Bell Shelter on K St. in the City of Bell. The Key View looks northwest toward I-710 and is located in the parking lot of the homeless shelter within a residential area. The landscape unit is residential.

The existing vividness is low since there are no dominant visual elements within the view. The existing intactness is also low due to several utility lines encroaching on the view. The existing unity of Key View 19 is moderately low because of the lack of focus, pattern, and rhythm in this view, and the elements within the view are unbalanced. As a result, the existing visual quality is low.

KEY VIEW 20. The existing setting photograph for Key View 20 is shown in Figure 3.6-21. This Key View is located at 4913 Noble St. within a residential neighborhood in the City of Commerce. The Key View looks west toward the I-710 Corridor, which is approximately 400 feet away. The road and sky dominate the view with trees across the middle of the view. The landscape unit is residential.

The existing vividness is moderate low due to the large mass of mature trees in the distance balanced by equal portions of paved road and sky within the view. The existing intactness is moderate due to the visual encroachment by telephone lines and street lights. The existing unity of Key View 20 is moderately low due to lack of focus and balance. However, there is rhythm created by the trees across the view. As a result, the existing visual quality of this Key View is moderately low.

KEY VIEW 21. The existing setting photograph for Key View 21 is shown in Figure 3.6-22. This Key View is located within an open sports field in Bandini Park in the City of Commerce and looks northwest toward I-710. The park's grass and trees are the most prominent features within the view, with a soundwall and bridge in the background. The landscape unit for this Key View is recreational as park users are the primary viewer group.

The existing vividness is moderate due to the strong visual landscape created by the grass, trees, and sky. The existing intactness is moderately low due to the encroachment of the bridge that cuts across the middle of the view. The existing unity of Key View 21 is moderate due to the harmony created by the grass, trees, and sky. However, the bridge interrupts the balance of the existing natural elements. As a result, the existing visual quality of this Key View is moderate.

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KEY VIEW 19

The Salvation Army Bell Shelter
5600 Rickenbacker Road
Bells, CA 90201

GPS Location:
Latitude = 33° 59’19.55”N
Longitude = 118° 10’6.86”W
Heading = 292° W

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 19 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-20

I-710 Corridor Project RDEIR/SDEIS
Key View 19
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 20

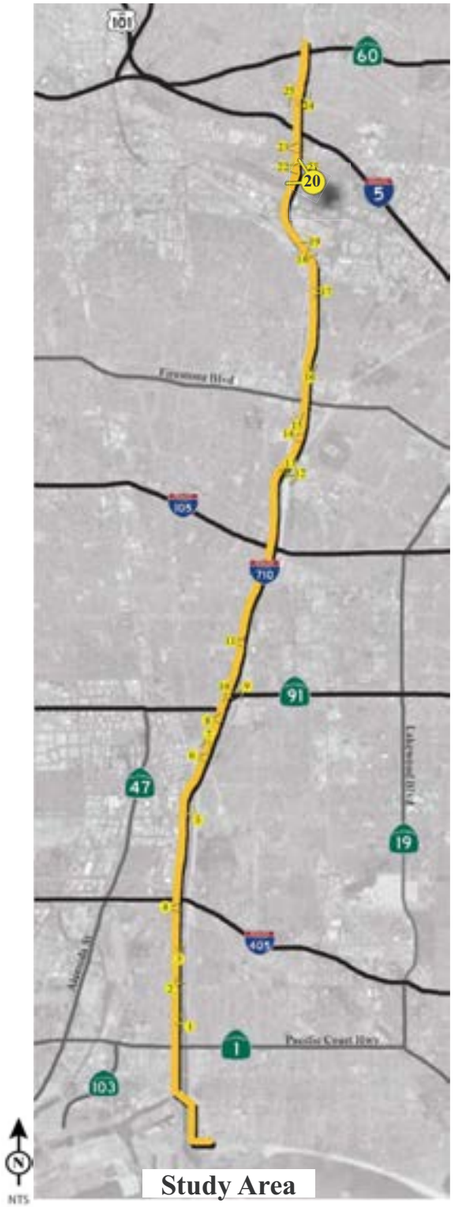
4913 Noble Street
Commerce, CA 90044

GPS Location:
Latitude = 34° 0’17.23”N
Longitude = 118° 10’13.21”W
Heading = 293° W

Existing Condition

Visual Simulation: Alternative 5C / 7

Visual Simulation: Design Option 1B



LEGEND

- 20 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-21

I-710 Corridor Project RDEIR/SDEIS
Key View 20
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 21

Bandini Park
4725 Astor Avenue
Commerce, CA 90040

GPS Location:
Latitude = 34° 0’26.39”N
Longitude = 118° 10’15.98”W
Heading = 306° NW

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 21 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

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FIGURE 3.6-22

I-710 Corridor Project RDEIR/SDEIS
Key View 21
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 22. The existing setting photograph for Key View 22 is shown in Figure 3.6-23. This Key View is within a residential neighborhood on Leonis St. in the City of Commerce looking east toward the southbound I-710. The existing view consists of residential landscaping and trees on the left, residential homes on the right, the road in the center, and the existing soundwall is prominent in the background. The landscape unit is residential as residents and passing motorists are the primary viewers.

The existing vividness is moderate due to the cluster of vegetation on the left of the view that stands out as much as the soundwall that cuts across the middle of the view, and neither feature is considered striking. The existing intactness is also moderate due to the telephone line and street sign encroachments. The existing unity of Key View 22 is moderately low due to the lack of pattern rhythm and balance in this view, and although the visual elements are proportionate to each other, there is not visual flow. As a result, the existing visual quality of this Key View is moderately low.

KEY VIEW 23. The existing setting photograph for Key View 23 is shown in Figure 3.6-24. This Key View is located on Dunham St. in a residential community in the City of Commerce that looks east toward I-710. Mature trees on either side of the street are the most prominent features in the view and the existing I-710 soundwall can be seen in the background. The landscape unit is residential.

The existing vividness is moderate due to the mature trees that stand out in the view as they cross the view from the foreground to the background. The existing intactness is moderate due to the encroachment of the utility lines across the view. The existing unity of Key View 23 is moderately low due to pattern and balance created by the placement of the existing trees. As a result, the existing visual quality of this Key View is moderately low.

KEY VIEW 24. The existing setting photograph for Key View 24 is shown in Figure 3.6-25. This Key View is located at the corner of Whittier Blvd. and Burger Ave. in East Los Angeles. The Key View looks north up Burger Ave. in a residential area, adjacent to the northbound I-710. The landscape unit is residential.

The existing vividness is moderately low due to the prominent tree canopy located between the road and I-710. The existing intactness is moderately low due to the presence of numerous encroachments from utility lines and freeways signage. The existing unity of Key View 24 is moderately low because there is pattern and rhythm from the fence posts and utility poles across the view, as well as visual flow created by the elements in the view. As a result, the existing visual quality of this Key View is moderately low.

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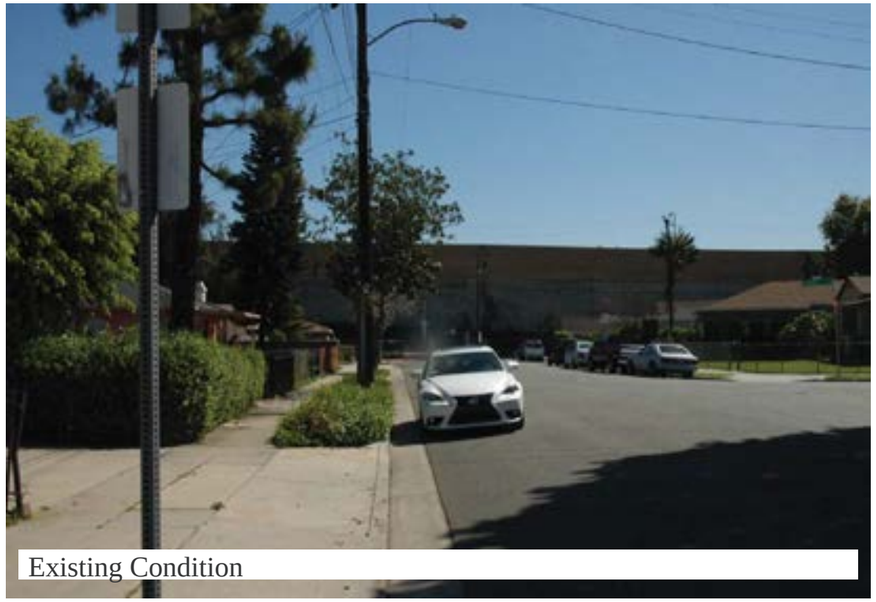
KEY VIEW 22

4615 Leonis Street
Commerce, CA 900040

GPS Location:
Latitude = 34° 0’24.94”N
Longitude = 118° 10’25.63”W
Heading = 96° E



Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

Study Area

LEGEND

- 22 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-23

I-710 Corridor Project RDEIR/SDEIS
Key View 22
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 23

4571 Dunham Street
Commerce, CA 90040

GPS Location:
Latitude = 34° 0’46.45”N
Longitude = 118° 10’25.61”W
Heading = 90° E

Existing Condition

Visual Simulation: Alternative 5C

Visual Simulation: Alternative 7

LEGEND

- 23 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

FIGURE 3.6-24

I-710 Corridor Project RDEIR/SDEIS
Key View 23
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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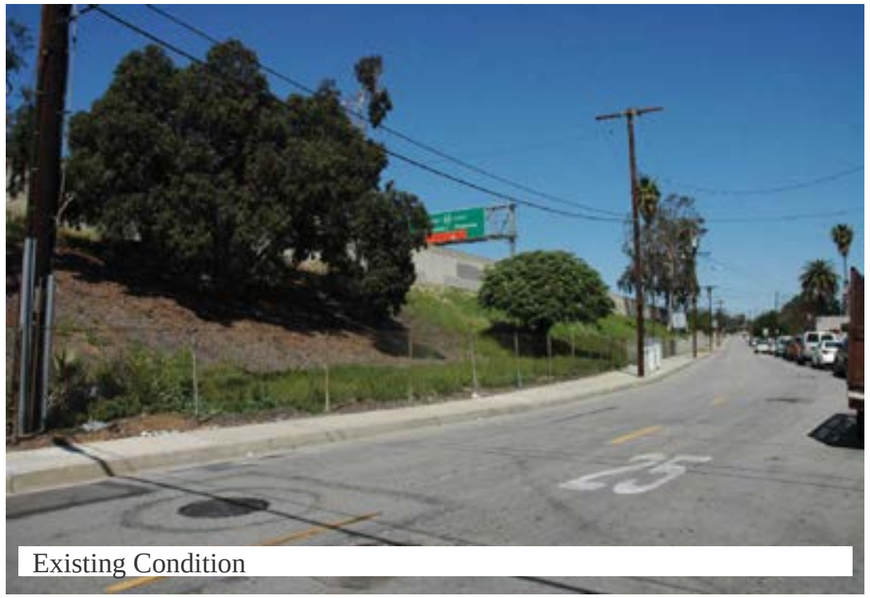

Existing Condition

Visual Simulation: Alternative 5C/7

KEY VIEW 24

Burger Avenue
4465 Whittier Boulevard
East Los Angeles, CA 90022

GPS Location:
Latitude = 34° 1’25.10”N
Longitude = 118° 10’19.32”W
Heading = 4° N

Visual Simulation: Design Option 3A/B

LEGEND

- 24 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

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FIGURE 3.6-25

I-710 Corridor Project RDEIR/SDEIS
Key View 24
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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KEY VIEW 25. The existing setting photograph for Key View 25 is shown in Figure 3.6-26. This Key View looks south toward I-710 and Whittier Blvd. The Key View is located on Sydney Dr. in East Los Angeles. The view consists of utility lines on the right, residential homes on the left, and the large cypress trees are in the center of the view. The landscape unit is residential.

The existing vividness is moderate due the presence of the cluster of large cypress trees that are the most prominent feature in the view. The existing intactness is moderate due to the prominent presence of utility line encroachments along the right side of the view. The existing unity of Key View 25 is moderately low because sloped landscape harmonizes with the street and sidewalk as they curve into the distance. As a result, the existing visual quality of this Key View is moderately low.

3.6.3 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to visual and aesthetics are located in Section 3.24.3.6.

For both build alternatives, long term visual impacts would result from the permanent alteration of the visual environment through the reconstruction of the freeway and associated bridges, interchange structures, retaining walls, and soundwalls. The freight corridor component of Alternative 7 would generally result in additional visual impacts than those that would occur under Alternative 5C.

Table 3.6-1, Existing and Proposed Visual Quality, provides the visual quality ratings for both build alternatives. The overall visual quality rating (from 1 to 7, or very low to very high) is an average of the three criteria ratings (i.e., vividness, intactness, and unity). The use of these evaluative criteria helps to establish an existing baseline against which to evaluate effects of the build alternatives on visual quality.

The visual impacts of the project build alternatives are determined by assessing the existing visual resources, the visual resource change due to the project build alternatives, and predicting viewer response to that change.

Visual resource change is the sum of the change in visual character and change in visual quality. Visual resource change is determined by assessing the visual compatibility of the project build alternatives with existing resources.

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KEY VIEW 25

710 South Sydney Drive
East Los Angeles, CA 90022

GPS Location:
Latitude = 34° 1’31.17”N
Longitude = 118° 10’22.70”W
Heading = 177° S

Existing Condition

Visual Simulation: Alternative 5C/7

Visual Simulation: Design Option 3A/B

LEGEND

- 25 — Key View Location
- Project Alignment
- Major Freeways/Highways
- Major Roads

SOURCE: Tatsumi & Partners, Inc. (2016)

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FIGURE 3.6-26

I-710 Corridor Project RDEIR/SDEIS
Key View 25
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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Table 3.6-1: Existing and Proposed Visual Quality

Key View	Existing Visual Quality				Proposed Visual Quality for Alternative 5C				Proposed Visual Quality for Alternative 7				Visual Change for Alternative 5C	Visual Change for Alternative 7
	Vividness (V)	Intactness (I)	Unity (U)	Existing Visual Quality (E) *([V=I+U]/3)*	Vividness (V)	Intactness (I)	Unity (U)	Proposed Visual Quality *([V=I+U]/3)*	Vividness (V)	Intactness (I)	Unity (U)	Proposed Visual Quality *([V=I+U]/3)*		
1	5.5	5.5	5.5	5.5	5.0	4.5	4.5	4.7	5.5	5.0	5.0	5.2	-0.8	-0.3
2	3.5	4.5	3.5	3.8	5.0	2.0	5.0	4.0	6.0	3.0	6.0	5.0	+0.2	+1.2
3	3.0	5.0	4.0	4.0	4.5	3.5	4.5	4.2	4.5	4.0	4.0	4.2	+0.2	+0.2
4	2.0	3.0	2.5	2.5	4.0	4.0	3.0	3.7	4.0	4.0	3.0	3.7	+1.2	+1.2
5	5.5	5.0	4.0	4.8	6.0	5.0	4.0	5.0	5.5	4.5	4.0	4.7	+0.2	-0.1
6	4.5	2.5	2.0	3.0	4.5	2.5	2.0	3.0	5.5	2.0	4.5	4.0	0.0	+1.0
7	3.0	3.0	2.5	2.8	3.5	2.5	3.0	3.0	5.0	2.0	4.0	3.7	+0.2	+0.9
8	4.0	3.0	3.5	3.5	4.0	3.0	4.0	3.7	4.5	2.5	4.0	3.7	+0.2	+0.2
9	5.0	3.5	4.0	4.2	5.0	4.0	4.0	4.3	6.0	3.0	3.0	4.0	+0.1	-0.2
10	3.5	4.0	3.0	3.5	3.0	3.5	2.5	3.0	4.5	3.0	2.0	3.2	-0.5	-0.3
11	5.0	4.0	5.0	4.7	5.0	4.0	5.5	4.8	5.5	3.0	6.0	4.8	+0.1	+0.1
12	5.0	4.0	4.5	4.5	4.5	4.5	5.0	4.7	5.5	4.0	4.0	4.5	+0.2	0.0
13	4.5	3.5	3.5	3.8	4.0	3.0	3.5	3.5	6.5	1.0	1.5	3.0	-0.3	-0.8
14	3.0	2.5	2.0	2.5	4.0	4.0	4.0	4.0	4.5	3.5	4.0	4.0	+1.5	+1.5
15	3.5	2.5	1.0	2.3	5.0	3.0	5.0	4.3	5.0	3.0	5.0	4.3	+2.0	+2.0
16	3.5	3.0	3.5	3.3	4.5	3.5	4.0	4.0	6.5	2.5	6.0	5.0	+0.7	+1.7
17	4.0	2.5	2.0	2.8	4.5	3.0	2.5	3.3	4.5	3.5	3.5	3.8	+0.5	+1.0
18	3.0	2.0	3.0	2.7	3.0	2.0	3.0	2.7	3.5	2.0	3.5	3.0	0.0	+0.3
19	2.0	2.0	3.0	2.3	2.0	2.0	3.0	2.3	4.5	4.0	5.0	4.5	0.0	+2.2
20*	3.5	3.5	2.5	3.2	4.0	4.0	3.5	3.8	4.0	3.0	2.0	3.0	+0.6	-0.2
21	4.0	3.0	3.5	3.5	3.5	2.5	3.0	3.0	3.5	2.5	3.0	3.0	-0.5	-0.5
22	3.5	3.5	3.0	3.3	4.5	3.0	4.0	3.8	4.5	3.0	4.0	3.8	+0.5	+0.5
23	3.5	3.5	2.5	3.2	4.5	3.0	3.0	3.5	4.5	3.0	3.0	3.5	+0.3	+0.3
24*	3.0	2.5	2.5	2.7	4.0	3.0	3.0	3.3	5.0	3.0	4.0	4.0	+0.6	+1.3
25*	3.5	3.5	3.0	3.3	3.5	3.0	3.0	3.2	5.5	3.0	4.5	4.3	-0.1	+1.0

Source: AECOM and Tatsumi and Partners, *Revised Draft Visual Impact Assessment* (February 2017).
Rating Scale: 1.0 to 7.0 (1.0 = very low, 2.0 = low, 3.0= moderately low, 4.0 = moderate, 5.0 = moderately high, 6.0 = high, 7.0 = very high
[1] The proposed visual quality ratings are based on the conceptual ideas of what the views would look like with the proposed project. The change in overall visual character at project build out is the difference between the "Existing Visual Quality" rating and the "Proposed Visual Quality" rating. For example, if the overall Existing Visual Quality rating is 6.0 and the Proposed Visual Quality rating is 5.0, then the difference from existing is -1.0. A negative number indicates the potential for lowering the visual impact from the existing visual setting. The greater the negative number, the more substantial the visual impact (e.g., a -1.0 rating would have more visual impact than a -0.4). A positive number represents a potential improvement in the visual setting with the implementation of the particular project alternative. As an industry standard, numerical differences between +1.0 and -1.0 are not considered to be a substantial visual impact
*Note: For Key View 20, Alternatives 5C and 7 have the same Proposed Visual Quality ratings, which are represented in the table under the Alternative 5C columns, and the Proposed Visual Quality ratings for Design Option 1B are represented in this table under the Alternative 7 columns. For Key View 24 and Key View 25, Alternatives 5C and 7 have the same Proposed Visual Quality ratings, which are represented in the table under the Alternative 5C columns, and the Proposed Visual Quality ratings for Design Options 3A and 3B are represented in this table under the Alternative 7 columns.

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Viewer response to the project build alternatives is the sum of viewer exposure and viewer sensitivity to changes in the visual environment. The viewer exposure and viewer sensitivity at each Key View location is determined prior to any changes in the environment. Thus, the overall viewer response at each Key View is the same for all alternatives and design options proposed at a given location.

The resulting level of visual impact is determined by combining the severity of resource change with the degree to which people are likely to be affected by the change. Resource change and viewer response were assessed for each Key View and were assigned numerical values from 1.0 to 7.0. These numerical scores were averaged to give the evaluation for the visual impact. Based on best-case and worst-case scenarios, the range of possible results for the visual impact occurred on a scale of 0.5 to 6.5. The ratings describe the levels of the resulting visual impacts as well as the associated level of visual mitigation required (0.5 reflecting a very low visual impact with no mitigation required, to 6.5 being a high level of visual impact with a high level of mitigation necessary).

Table 3.6-2, Proposed Visual Character Change, Resource Change, Viewer Response, and Visual Impact Evaluation, provides the anticipated visual character change, resource change, and viewer response ratings for each build alternative, and provides the overall visual impact rating for each build alternative.

3.6.3.1 PERMANENT IMPACTS

BUILD ALTERNATIVES.

KEY VIEW 1. The visual simulation for Key View 1 is shown in Figure 3.6-2. As this Key View is located at a pedestrian/bike trail, the number of viewers is minimal. Trail users would be very aware of their surroundings, and their duration at this location could range from a few minutes to a few hours. The viewer exposure is moderate (4.0). The viewer sensitivity is moderately high (5.0). The view of the Los Angeles River and open sky dominates the view in this area, which would occupy much of the viewer's attention. The overall viewer response to changes at this location would be moderately high (4.5).

Alternative 5C. Under Alternative 5C, a new bicycle/pedestrian bridge is proposed to cross over the I-710 and the Los Angeles River. The Los Angeles River would still be a striking view, but the proposed bridge would shorten the view of the river, and the columns of the bridge would be intrusive into the Los Angeles River. Therefore, the proposed vividness would decrease from high (5.5) to moderately high (5.0), and the proposed intactness and unity would each decrease from high (5.5) to moderately high (4.5). This would result in the proposed overall visual quality under Alternative 5C to decrease from high (5.5) to moderately high (4.7). The visual quality change under Alternative 5C compared to the existing condition would be negative (-0.8).

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Table 3.6-2: Proposed Visual Character Change, Resource Change, Viewer Response, and Visual Impact Evaluation

	Alternative 5C							Alternative 7						
Key View	Visual Quality Change	Visual Character (compatibility)	Resource Change (RC) [Visual Change + Visual Character)/2]	Viewer Exposure (VE)	Viewer Sensitivity (VS)	Viewer Response (VR) [(VE+VS)/2]	Visual Impact Evaluation [(RC+VR)/2]	Visual Quality Change	Visual Character (compatibility)	Resource Change (RC) [Visual Change + Visual Character)/2]	Viewer Exposure (VE)	Viewer Sensitivity (VS)	Viewer Response (VR) [(VE+VS)/2]	VISUAL IMPACT EVALUATION [(RC+VR)/2]
1	-0.8	1.3	0.2	4.0	5.0	4.5	2.4	-0.3	0.8	0.3	4.0	5.0	4.5	2.4
2	0.2	2.6	1.4	4.8	3.5	4.2	2.8	1.2	1.9	1.5	4.8	3.5	4.2	2.9
3	0.2	1.8	1.0	4.3	3.3	3.8	2.4	0.2	1.5	0.9	4.3	3.3	3.8	2.4
4	1.2	0.8	1.0	4.3	5.0	4.7	2.9	1.2	0.8	1.0	4.3	5.0	4.7	2.9
5	0.2	0.5	0.4	3.7	4.3	4.0	2.2	-0.1	0.6	0.3	3.7	4.3	4.0	2.2
6	0.0	0.3	0.2	3.7	3.3	3.5	1.9	1.0	1.9	1.5	3.7	3.3	3.5	2.5
7	0.2	1.8	1.0	4.3	3.3	3.8	2.4	0.9	1.8	1.4	4.3	3.3	3.8	2.6
8	0.2	0.3	0.2	4.0	3.8	3.9	2.1	0.2	1.1	0.6	4.0	3.8	3.9	2.3
9	0.1	0.0	0.1	4.0	5.0	4.5	2.3	-0.2	1.9	0.9	4.0	5.0	4.5	2.7
10	-0.5	0.4	-0.1	4.3	3.3	3.8	1.9	-0.3	1.5	0.6	4.3	3.3	3.8	2.2
11	0.1	0.5	0.3	4.3	5.3	4.8	2.6	0.1	1.4	0.8	4.3	5.3	4.8	2.8
12	0.2	0.9	0.6	3.7	5.0	4.3	2.5	0.0	1.4	0.7	3.7	5.0	4.3	2.5
13	-0.3	0.4	0.1	3.7	5.0	4.3	2.2	-0.8	2.4	0.8	3.7	5.0	4.3	2.6
14	1.5	1.6	1.6	4.3	5.7	5.0	3.3	1.5	2.0	1.8	4.3	5.7	5.0	3.4
15	2.0	1.8	1.9	4.7	4.7	4.7	3.3	2.0	1.8	1.9	4.7	4.7	4.7	3.3
16	0.7	1.4	1.1	4.3	3.3	3.8	2.5	1.7	2.3	2.0	4.3	3.3	3.8	2.9
17	0.5	0.4	0.5	4.7	5.7	5.2	2.9	1.0	1.3	1.2	4.7	5.7	5.2	3.2
18	0.0	0.0	0.0	3.7	2.7	3.2	1.6	0.3	0.6	0.5	3.7	2.7	3.2	1.9
19	0.0	0.4	0.2	3.3	2.8	3.1	1.7	2.2	1.8	2.0	3.3	2.8	3.1	2.6
20*	0.6	1.5	1.1	4.3	4.8	4.6	2.9	-0.2	2.9	1.4	4.3	4.8	4.6	3.0
21	-0.5	1.8	0.7	4.0	5.3	4.7	2.7	-0.5	1.8	0.7	4.0	5.3	4.7	2.7
22	0.5	1.5	1.0	4.3	5.7	5.0	3.0	0.5	1.5	1.0	4.3	5.7	5.0	3.0
23	0.3	1.9	1.1	4.3	5.7	5.0	3.1	0.3	1.9	1.1	4.3	5.7	5.0	3.1
24*	0.6	1.0	0.8	4.3	5.5	4.9	2.9	1.3	2.5	1.9	4.3	5.5	4.9	3.5
25*	-0.1	0.5	0.2	4.3	5.5	4.9	2.6	1.0	2.3	1.7	4.3	5.5	4.9	3.3

Source: AECOM and Tatsumi and Partners, *Revised Draft Visual Impact Assessment* (February 2017).
Rating Scale for Visual Character: -3.0 to 3.0 (-3.0 = very poor, -2.0 = poor, -1.0= moderately poor, 0.0 = no notable change, 1.0 = moderately good, 2.0 = good, 3.0 = very good)

Rating Scale for Resource Change: -5.0 to 5.0 (-5.0 = high negative change, 5.0 = high positive change)

Rating Scale for Viewer Exposure and Viewer Sensitivity: 1.0 to 7.0 (1.0 = low, 7.0 = high)
The proposed ratings are based on the conceptual ideas of what the views would look like with the proposed I-710 Corridor Project. The overall resource change at project build out is the difference between the "Visual Character" rating and the "Visual Change" rating. The overall Visual Impact Evaluation for each key view is the difference between the "Viewer Response" rating and the "Resource Change" rating.

*Note: For Key View 20, Alternatives 5C and 7 have the same visual impact ratings, which are represented in the table under the Alternative 5C columns, and the visual impact ratings for Design Option 1B are represented in this table under the Alternative 7 columns. For Key View 24 and Key View 25, Alternatives 5C and 7 have the same visual impact ratings, which are represented in the table under the Alternative 5C columns, and the visual impact ratings for Design Options 3A and 3B are represented in this table under the Alternative 7 columns.

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The visual character of Alternative 5C would be compatible with the existing visual character as the new bridge over the Los Angeles River and I-710 curves across the horizon to increase visual flow. The visual character change under Alternative 5C would be very low (1.3).

Given the visual quality change (-0.8) and visual character change (1.3) ratings, the visual resource change would be very low (0.2) for Alternative 5C.

The visual impact for Alternative 5C at Key View 1 would be low (2.4) and the level of visual mitigation required would be low.

Alternative 7. Alternative 7 includes the addition of an elevated freight corridor and soundwall parallel to the Los Angeles River. The elevated freight corridor and soundwall would block the row of trees in the distance, which would shorten the view of vegetation to the mid ground. However, the elevated freight corridor and soundwall would be in the distance, which would make it appear smaller in scale, and runs parallel to the existing freeway. Therefore, the proposed vividness would not change and would remain high (5.5), and the proposed intactness and unity would each decrease from high to moderately high (from 5.5 to 5.0). This would result in the proposed overall visual quality under Alternative 7 to slightly decrease from high to moderately high (from 5.5 to 5.2). The visual quality change under Alternative 7 compared to the existing condition would be negative (-0.3).

The visual character of Alternative 7 would be compatible with the existing visual character as the elevated freight corridor and soundwalls would reinforce strong linear lines as they would run parallel to the Los Angeles River. The visual character change under Alternative 7 would be considered very low change (0.8).

Given the visual quality change (-0.3) and visual character change (0.8) ratings, the visual resource change would be very low (0.3) for Alternative 7.

The visual impact for Alternative 7 at Key View 1 would be low (2.4), and the level of visual mitigation required would be low.

KEY VIEW 2. The visual simulation for Key View 2 is shown in Figure 3.6-3. As this Key View is located on a roadway bridge, a large number of people pass by this location on a daily basis. The duration a viewer spends at this location can range from a few seconds to several minutes, depending on traffic conditions. The majority of viewers at this location are motorists, with a much smaller portion of pedestrians who utilize the bridge. The viewer exposure is moderately high (4.8). The viewer sensitivity is moderate (3.5). The overall viewer response to changes at this location would be moderate (4.2).

ALTERNATIVE 5C. Under Alternative 5C, a new on-ramp and retaining wall are proposed on the northbound side of I-710. The existing landscape would be removed, with no available room for replacement. Although the new on-ramp would remove much of the existing vegetation, as well as prevent new vegetation in the midground area, the introduction of strong, linear structures would create prominent visual elements in this Key View. Therefore, the proposed vividness would increase from moderate (3.5) to moderately high (5.0), the proposed intactness would decrease from moderately high (4.5) to low (2.0), and the unity would increase from moderate (3.5) to moderately high (5.0). This would result in the proposed overall visual quality under Alternative 5C to increase slightly but remain moderate (from 3.8 to 4.0). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.2).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. Under Alternative 5C, the ramp would replace the random cluster of trees, but help highlight the uniform row of tree canopies in the distance. The ramp would also visually run parallel to the existing freeway, which would reinforce the linear lines from the traffic lanes. The visual character change under Alternative 5C would be moderate (2.6).

Given the visual quality change (+0.2) and visual character change (2.6) ratings, the visual resource change would be very low (1.4) for Alternative 5C.

The visual impact for Alternative 5C at Key View 2 would be moderately low (2.8) and the level of visual mitigation required would be moderate.

ALTERNATIVE 7. Under Alternative 7, an elevated freight corridor to the east of northbound I-710 is proposed, as well as new landscaping proposed on the northbound side of I-710. Although the elevated freight corridor would encroach into the vertical space of this view, the introduction of new and uniform landscape helps to screen some of the elevated freight corridor. Therefore, the proposed vividness would increase from moderately low (3.5) to high (6.0), the proposed intactness would decrease from moderate (4.5) to moderately low (3.0), and the unity would increase from moderately low (3.5) to high (6.0). This would result in the proposed overall visual quality under Alternative 7 to increase from moderately low (3.8) to moderately high (5.0). The visual quality change under Alternative 7 compared to the existing condition would be positive (+1.2).

The proposed visual character for Alternative 7 would be compatible with the existing visual character. Under Alternative 7, the form of the elevated freight corridor would follow the existing freeway and the columns would increase uniformity. The proposed landscape area would help soften the structures and visually enhance the view. The visual character change under Alternative 7 would be low (1.9).

Given the visual quality change (+1.2) and visual character change (1.9) ratings, the visual resource change would be low (1.5) for Alternative 7.

The visual impact for Alternative 7 at Key View 2 would be moderately low (2.9) and the level of visual mitigation required would be moderate.

KEY VIEW 3. The visual simulation for Key View 3 is shown in Figure 3.6-4. A large number of people pass through this location on a daily basis as they travel on the freeway. The duration a viewer spends at this location ranges a few seconds to several minutes, depending on traffic conditions. The viewers at this location are made up entirely of motorists on the freeway. There are no dominating features in this view. The viewer exposure is moderate (4.3). The viewer sensitivity is moderately low (3.3). The overall viewer response to changes at this location would be moderate (3.8).

ALTERNATIVE 5C. Under Alternative 5C, both sides of I-710 would be widened and have a barrier between the at-grade truck bypass lanes and other vehicles. Alternative 5C also proposes a new soundwall for the freeway widening on the southbound I-710 and a new ramp on the northbound I-710 connecting to I-405. Although, this alternative would remove most of the existing landscape area on the right side of the view, the view on the right side would be minimally affected visually. The design of this alternative would be an extension of the existing linear form of the freeway. Therefore, the proposed vividness would increase from moderately low (3.0) to moderately high (4.5), the proposed intactness would decrease from moderately high (5.0) to moderate (3.5), and the unity would increase from moderate (4.0) to moderately high (4.5). This would result in the proposed overall visual quality under Alternative 5C to increase slightly, but remain moderate (from 4.0 to 4.2). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.2).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. Under Alternative 5C, the proposed structures are within the lower half of the view, consisting of linear forms that match the existing linear forms of the freeway. The visual character change under Alternative 5C would be low (1.8).

Given the visual quality change (+0.2) and visual character change (1.8) ratings, the visual resource change would be very low (1.0) for Alternative 5C.

The visual impact for Alternative 5C at Key View 3 would be low (2.4) and the level of visual mitigation required would be low.

ALTERNATIVE 7. Alternative 7 proposes the same structures as Alternative 5C. However, the at-grade truck bypass lanes would only be on the northbound I-710. Alternative 7 would also propose a new retaining wall on northbound I-710, which would require

cutting into the levee east of I-710. An area of landscaping would be added between the general purpose lanes and the truck bypass lanes. Therefore, the proposed vividness would increase from moderately low (3.0) to moderately high (4.5), the proposed intactness would decrease from moderately high (5.0) to moderate (4.0), and the unity would remain moderate (4.0). This would result in the proposed overall visual quality under Alternative 7 to increase slightly, but remain moderate (from 4.0 to 4.2). The visual quality change under Alternative 7 compared to the existing condition would be positive (+0.2).

The proposed visual character for Alternative 7 would be compatible with the existing visual character. Under Alternative 7, the proposed structures are within the lower half of the view, consisting of linear forms that match the existing linear forms of the freeway. The visual character change under Alternative 7 would be low (1.5).

Given the visual quality change (+0.2) and visual character change (1.5) ratings, the visual resource change would be very low (0.9) for Alternative 7.

The visual impact for Alternative 7 at Key View 3 would be low (2.4) and the level of visual mitigation required would be low.

KEY VIEW 4. The visual simulation for Key View 4 is shown in Figure 3.6-5. Although the view of the build alternative would be in a residential area, it would be the backdrop of a small street and therefore, not the focus of daily activities. Viewer exposure at this location is moderate (4.3) and viewer sensitivity is moderately high (5.0). The overall viewer response is moderately high (4.7).

ALTERNATIVE 5C. Alternative 5C would introduce a new soundwall and off-ramp from southbound I-710. The structures introduced by Alternative 5C are visible from the residential neighborhood, but the structures are in the background. There are currently no other dominating features in the view aside from the sky, and the existing visual quality is already lowered due to the presence of utility lines. Although this alternative would remove the mature trees in the center of the view, it could be mitigated with the addition of new landscaping. Therefore, the proposed vividness would increase from low (2.0) to moderate (4.0), the proposed intactness would increase from moderately low (3.0) to moderate (4.0), and the unity would increase but remain moderately low (from 2.5 to 3.0). This would result in the proposed overall visual quality under Alternative 5C to increase from moderately low (2.5) to moderate (3.7). The visual quality change under Alternative 5C compared to the existing condition would be positive (+1.2).

The proposed visual character for Alternative 5C would be somewhat compatible with the existing visual character. Under Alternative 5C, the introduction of a solid structure in place of mature trees would create hard linear lines. While the linear lines would match

the horizontal utility lines, it would not be compatible with the other elements in this view. Although the view would not be as soft as before, the new soundwall could be mitigated with new landscaping The visual character change under Alternative 5C would be very low (0.8).

Given the visual quality change (+1.2) and visual character change (0.8) ratings, the visual resource change would be very low (1.0) for Alternative 5C.

The visual impact for Alternative 5C at Key View 4 would be moderately low (2.9) and the level of visual mitigation required would be moderate.

ALTERNATIVE 7. As with Alternative 5C, Alternative 7 would introduce a new soundwall and off-ramp from southbound I-710. Alternative 7 also proposes a freight corridor; however, it would not be visible from this location. The soundwall and off-ramp structures introduced by Alternative 7 would be visible from the residential neighborhood, but the structures would be in the background. There are currently no other dominating features in the view aside from the sky, and the existing visual quality is already lowered due to the presence of utility lines. Although this alternative would remove the mature trees in the center of the view, it could be mitigated with the addition of new landscaping. Therefore, the proposed vividness would increase from low (2.0) to moderate (4.0), the proposed intactness would increase from moderately low (3.0) to moderate (4.0), and the unity would increase but remain moderately low (from 2.5 to 3.0). This would result in the proposed overall visual quality under Alternative 7 to increase from moderately low (2.5) to moderately (3.7). The visual quality change under Alternative 7 compared to the existing condition would be positive (+1.2).

The proposed visual character for Alternative 7 would be somewhat compatible with the existing visual character. Under Alternative 7, the introduction of a solid structure in place of mature trees would create hard linear lines. While the linear lines would match the horizontal utility lines, they would not be compatible with the other elements in this view. Although the view would not be as soft as before, the new soundwall could be mitigated with new landscaping The visual character change under Alternative 7 would be very low (0.8).

Given the visual quality change (+1.2) and visual character change (0.8) ratings, the visual resource change would be very low (1.0) for Alternative 7.

The visual impact for Alternative 7 at Key View 4 would be moderately low (2.9) and the level of visual mitigation required would be moderate.

KEY VIEW 5. The visual simulation for Key View 5 is shown in Figure 3.6-6. Viewers are primarily people using the bike trail for exercise or recreation. Much of the viewers' attention

would be focused on the overall span of the view at this location. Duration of views could range from several minutes to a few hours. Viewer exposure is moderate (3.7) and viewer sensitivity is moderate (4.3). The overall viewer response at this location is moderate (4.0).

ALTERNATIVE 5C. Alternative 5C proposes to widen the I-710 and widen the bridge over the Los Angeles River. The new wall from the freeway widening would have low visibility from this location because it would be in the distance. The widening of the existing bridge would still maintain the same shape. Therefore, the proposed vividness would increase but remain high (from 5.5 to 6.0), the proposed intactness would remain moderately high (5.0), and the unity would remain moderate (4.0). This would result in the proposed overall visual quality under Alternative 5C to slightly increase but remain moderately high (from 4.8 to 5.0). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.2).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. Alternative 5C would introduce new elements with similar attributes as the existing elements and that would not add any distinct features that would improve or worsen the existing view. The visual character change under Alternative 5C would be very low (0.5).

Given the visual quality change (+0.2) and visual character change (0.5) ratings, the visual resource change would be very low (0.4) for Alternative 5C.

The visual impact for Alternative 5C at Key View 5 would be low (2.2) and the level of visual mitigation required would be low.

ALTERNATIVE 7. Alternative 7 proposes to widen the bridge and add an elevated freight corridor to I-710. The widening of the existing bridge would still maintain the same shape. The elevated freight corridor and flyovers would be in the distance, but would encroach into the vertical space of the view and would block most of the view of the existing trees in the distance. Therefore, the proposed vividness would remain high (5.5), the proposed intactness would decrease but remain moderately high (from 5.0 to 4.5), and the unity would remain moderate (4.0). This would result in the proposed overall visual quality under Alternative 7 to slightly decrease but remain moderately high (from 4.8 to 4.7). The visual quality change under Alternative 7 compared to the existing condition would be negative (-0.1).

The proposed visual character for Alternative 7 would be compatible with the existing visual character. Alternative 7 would introduce new elements that have similar attributes as the existing elements, and do not add any distinct features that improve or worsen the existing view. The visual character change under Alternative 7 would be very low (0.6).

Given the visual quality change (-0.1) and visual character change (0.6) ratings, the visual resource change would be very low (0.3) for Alternative 7.

The visual impact for Alternative 7 at Key View 5 would be low (2.2) and the level of visual mitigation required would be low.

KEY VIEW 6. The visual simulation for Key View 6 is shown in Figure 3.6-7. Viewers consist primarily of people recreating or watching sport events at the school field. The freeway is currently visible from this view as the field lies immediately west of I-710. The number of viewers at this location can reach up into the hundreds during sports games. The duration of the view would vary from less than a minute up to multiple hours, depending on the activity of viewers. Viewer exposure is moderate (3.7) and viewer sensitivity is moderately low (3.3). The overall viewer response at this location is moderate (3.5).

ALTERNATIVE 5C. Alternative 5C proposes to add a soundwall that screens I-710. Under this alternative, the new soundwall moves the visual limits of the I-710 freeway closer to the school's property, but screens some of the view of the I-710. Therefore, the proposed vividness would remain moderately high (4.5), the proposed intactness would remain moderately low (2.5), and the unity would remain low (2.0). This would result in the proposed overall visual quality under Alternative 5C to remain moderately low (3.0). The visual quality change under Alternative 5C compared to the existing condition would be no change (0.0).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. The visual character change under Alternative 5C would be very little (0.3).

Given the visual quality change (0.0) and visual character change (0.3) ratings, the visual resource change would be very little to no change (0.2) for Alternative 5C.

The visual impact for Alternative 5C at Key View 6 would be low (1.9) and the level of visual mitigation required would be low.

ALTERNATIVE 7. Alternative 7 proposes to add a new soundwall and elevated northbound and southbound freight corridor to the I-710. The freight corridor would be an additional encroachment into the already disorderly view with the existing freeway in the distance. The freight corridor would create a prominent structure in the sky that would encroach vertically into the view at this location. There would be less harmony in the proposed view than the existing view. However, the new elevated freight corridor structure would help reinforce the horizontal lines in gradual layers from the middle towards the top of the view. Therefore, the proposed vividness would increase from moderately high (4.5) to high (5.5), the proposed intactness would decrease from moderately low (2.5) to low

(2.0), and the unity would increase from low (2.0) to moderately high (4.5). This would result in the proposed overall visual quality under Alternative 7 to increase from moderately low (3.0) to moderate (4.0). The visual quality change under Alternative 7 compared to the existing condition would be positive (+1.0).

The proposed visual character for Alternative 7 would be compatible with the existing visual character. Under Alternative 7, the elevated freight corridor would introduce strong lines that create a more uniform and balanced visual appeal within this view. The visual character change under Alternative 7 would be low (1.9).

Given the visual quality change (+1.0) and visual character change (1.9) ratings, the visual resource change would be low (1.5) for Alternative 7.

The visual impact for Alternative 7 at Key View 6 would be moderately low (2.5) and the level of visual mitigation required would be moderate.

KEY VIEW 7. The visual simulation for Key View 7 is shown in Figure 3.6-8. Vehicular drivers and motorists make up the viewers at this location. A large number of people pass through this location on a daily basis, with the duration ranging from a few seconds to several minutes, depending on traffic conditions. There are existing utility power lines and freeway signs in the background, but no dominating features. The viewer exposure is moderate (4.3). The viewer sensitivity is moderately low (3.3). The overall viewer response to changes at this location would be moderate (3.8).

ALTERNATIVE 5C. Alternative 5C proposes additional traffic lanes with a new soundwall on northbound I-710. The existing narrow strip of landscape on the shoulder of the freeway would be removed. Under Alternative 5C, the view on the right is altered slightly by additional traffic lanes and a new soundwall. The rest of the view would be visually unaffected. Therefore, the proposed vividness would increase from moderately low (3.0) to moderate (3.5), the proposed intactness would decrease but remain moderately low (from 3.0 to 2.5), and the unity would increase but remain moderately low (from 2.5 to 3.0). This would result in the proposed overall visual quality under Alternative 5C to increase slightly but remain moderately low (from 2.8 to 3.0). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.2).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. This alternative reinforces the linear lines created by the traffic lanes and freeway edges as they converge in the distance. The design would be uniform and balanced. The visual character change under Alternative 5C would be low (1.8).

Given the visual quality change (+0.2) and visual character change (1.8) ratings, the visual resource change would be very low (1.0) for Alternative 5C.

The visual impact for Alternative 5C at Key View 7 would be low (2.4) and the level of visual mitigation required would be low.

ALTERNATIVE 7. Alternative 7 proposes a split elevated freight corridor over the median of I-710 with higher soundwalls than Alternative 5C. The existing narrow strip of landscape would be removed from the shoulder of the freeway. The elevated freight corridor would create a prominent structure in the sky, encroaching into the view vertically and would be visible from the foreground and into the distance. Therefore, the proposed vividness would increase from moderately low (3.0) to moderately high (5.0), the proposed intactness would decrease from moderately low (3.0) to low (2.0), and the unity would increase from moderately low (2.5) to moderate (4.0). This would result in the proposed overall visual quality under Alternative 7 to increase from moderately low (2.8) to moderate (3.7). The visual quality change under Alternative 7 compared to the existing condition would be positive (+0.9).

The proposed visual character for Alternative 7 would be compatible with the existing visual character. Alternative 7 would reinforce the linear lines created by the traffic lanes and freeway edges as they converge in the distance. Although the elevated freight corridor introduces a massive man-made structure, the design would be uniform and balanced. The visual character change under Alternative 7 would be low (1.8).

Given the visual quality change (+0.9) and visual character change (1.8) ratings, the visual resource change would be very low (1.4) for Alternative 7.

The visual impact for Alternative 7 at Key View 7 would be moderately low (2.6) and the level of visual mitigation required would be moderate.

KEY VIEW 8. The visual simulation for Key View 8 is shown in Figure 3.6-9. The number of viewers could easily reach up into three-digit numbers during high park activity days including weekends and summer periods. The duration of the view ranges from less than a minute up to multiple hours, depending on the activity of viewers. The viewpoint would be approximately 300 feet from the I-710 Corridor Project. The viewer exposure is moderate (4.0). The viewer sensitivity is moderate (3.8). The overall viewer response to changes at this location would be moderate (3.9).

ALTERNATIVE 5C. Alternative 5C proposes a new soundwall and an elevated ramp. The new soundwall would be very similar in size and shape to the existing soundwall. The soundwall would make the view more uniform and balanced, while the elevated ramp would be screened by the existing trees. Under Alternative 5C, there would be no change in visual quality/character with the exception of the connector ramp. Therefore, the proposed vividness would remain moderate (4.0), the proposed intactness would remain moderately low (3.0), and the unity would increase but remain moderate (from

3.5 to 4.0). This would result in the proposed overall visual quality under Alternative 5C to slightly increase, but remain moderate (from 3.5 to 3.7). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.2).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. The proposed soundwall would have almost identical characteristics to the existing soundwall, and the new soundwall would appear as an enhancement to the existing view. The visual character change under Alternative 5C would be very little to no change (0.3).

Given the visual quality change (+0.2) and visual character change (0.3) ratings, the visual resource change would be very low (0.2) for Alternative 5C.

The visual impact for Alternative 5C at Key View 8 would be low (2.1) and the level of visual mitigation required would be low.

ALTERNATIVE 7. Alternative 7 proposes an elevated freight corridor in addition to a new soundwall at this Key View. The connector ramp and the elevated freight corridor would be located on the west side of I-710. The new soundwall would be very similar in size and shape to the existing soundwall. The elevated ramp and freight corridor would encroach somewhat into the view at this location; however, they would be mostly screened by the existing trees. The proposed intactness would be lessened due to the new elevated freight corridor, but the proposed unity would remain the same. Therefore, the proposed vividness would increase from moderate (4.0) to moderately high (4.5), the proposed intactness would decrease but remain moderately low (from 3.0 to 2.5), and the unity would increase but remain moderate (from 3.5 to 4.0). This would result in the proposed overall visual quality under Alternative 7 to increase slightly but would remain moderate (from 3.5 to 3.7). The visual quality change under Alternative 7 compared to the existing condition would be positive (+0.2).

The proposed soundwall would have almost identical characteristics to the existing soundwall, and the new soundwall would appear as an enhancement to the existing view. However, the elevated freight corridor would not be compatible with the existing view because it would encroach behind the trees and into the sky. The visual character change under Alternative 7 would be very low (1.1).

Given the visual quality change (+0.2) and visual character change (1.1) ratings, the visual resource change would be very low (0.6) for Alternative 7.

The visual impact for Alternative 7 at Key View 8 would be low (2.3) and the level of visual mitigation required would be low.

KEY VIEW 9. The visual simulation for Key View 9 is shown in Figure 3.6-10. Viewers are primarily people using the bike trail for exercise or recreation. The number of viewers at this location is relatively low; however, they would be very aware of their surroundings, and their duration at this location can range from a few minutes to a few hours. Viewer exposure is moderate (4.0) and viewer sensitivity is moderately high (5.0). The overall viewer response at this location is moderately high (4.5).

ALTERNATIVE 5C. Alternative 5C proposes the demolition of a bridge and addition of new freeway connectors for the I-710 and SR-91 interchange. The bridge closest to the viewer will be removed, but it would not be very noticeable. The view of the new free connectors for the I-710 and SR-91 interchange would be low and in the distance, thus making this view only slightly visible from this location. There would be very little overall change in visual elements. Therefore, the proposed vividness would remain moderately high (5.0), the proposed intactness would increase but remain moderate (from 3.5 to 4.0), and the unity would remain moderate (4.0). This would result in the proposed overall visual quality under Alternative 5C to slightly increase but remain moderate (from 4.2 to 4.3). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.1).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. There is very minimal to no visible changes within this view. The visual character change under Alternative 5C would be no change (0.0).

Given the visual quality change (+0.1) and visual character change (0.0) ratings, the visual resource change would be very low (0.1) for Alternative 5C.

The visual impact for Alternative 5C at Key View 9 would be low (2.3) and the level of visual mitigation required would be low.

ALTERNATIVE 7. Alternative 7 proposes the demolition of one bridge and the addition of a multi-level freight corridor, with one section very prominent across the view. Visually, it would cut across the center of the view, taking dominance over the other elements. Alternative 7 would have a dramatic change to the existing view as the new elevated freight corridor structure takes precedence from the left to the right of the view. Although dominating, its lines and continuity would lessen the harshness of the feature as a whole. It would also replace the existing utility power lines with new and uniform ones. However the relocated overhead power lines would be larger and closer to the viewer. Therefore, the proposed vividness would increase from moderately high (5.0) to high (6.0), the proposed intactness would decrease from moderate (3.5) to moderately low (from 3.0), and the unity would decrease from moderate (4.0) to moderately low (3.0). This would result in the proposed overall visual quality under Alternative 7 to slightly

decrease but remain moderate (from 4.2 to 4.0). The visual quality change under Alternative 7 compared to the existing condition would be negative (-0.2).

The proposed visual character for Alternative 7 would be somewhat compatible with the existing visual character. The design of the elevated freight corridor itself is uniform and curvilinear; however, it is disproportionate to the surrounding visual elements. The visual character change under Alternative 7 would be low (1.9).

Given the visual quality change (-0.2) and visual character change (1.9) ratings, the visual resource change would be very low (0.9) for Alternative 7.

The visual impact for Alternative 7 at Key View 9 would be moderately low (2.7) and the level of visual mitigation required would be moderate.

KEY VIEW 10. The visual simulation for Key View 10 is shown in Figure 3.6-11. Viewers are vehicular drivers and motorists at this location. A large number of people pass through this location on a daily basis, with the duration ranging from a few seconds to several minutes, depending on traffic conditions. The sky and freeway make up the majority of this view, but there are no dominant features that exist. Viewer exposure is moderate (4.3) and viewer sensitivity is moderately low (3.3). The overall viewer response at this location is moderate (3.8).

ALTERNATIVE 5C. Alternative 5C proposes a new ramp and freeway widening, with a new soundwall and landscape buffer. Under Alternative 5C, the existing landscape on the right would be removed and replaced with a new soundwall. The freeway widening encroaches to the edge of the right side of the view, and the elevated ramp encroaches into view on the left. Therefore, the proposed vividness would decrease from moderate (3.5) to moderately low (3.0), the proposed intactness would decrease but remain moderate (from 4.0 to 3.5), and the unity would decrease but remain moderately low (from 3.0 to 2.5). This would result in the proposed overall visual quality under Alternative 5C to decrease from moderate (3.5) to moderately low (3.0). The visual quality change under Alternative 5C compared to the existing condition would be negative (-0.5).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. The visual character will remain very linear despite new encroachments. The visual character change under Alternative 5C would be very little change (0.4).

Given the visual quality change (-0.5) and visual character change (0.4) ratings, the visual resource change would be very low (-0.1) for Alternative 5C.

The visual impact for Alternative 5C at Key View 10 would be low (1.9) and the level of visual mitigation required would be low.

ALTERNATIVE 7. Alternative 7 proposes a new ramp and freeway widening, with a new soundwall, as well as addition of multi-level elevated freight corridor connectors at the I-710/SR-91 interchange. Under Alternative 7, the elevated freight corridor would be the dominant visual element, which would alter the view drastically from the existing view since mature trees were visible in the distance. Alternative 7 would block out all the existing mature vegetation in the background. The existing landscape on the right of the view would also be removed and replaced with a new soundwall. Therefore, the proposed vividness would increase from moderate (3.5) to moderately high (4.5), the proposed intactness would decrease from moderate (4.0) to moderately low (3.0), and the unity would decrease from moderately low (3.0) to low (2.0). This would result in the proposed overall visual quality under Alternative 7 to slightly decrease from moderate (3.5) to moderately low (3.2). The visual quality change under Alternative 7 compared to the existing condition would be negative (-0.3).

The proposed visual character for Alternative 7 would be somewhat compatible with the existing visual character. Alternative 7 encroaches into the left of the view by the presence of the elevated freight corridor. The existing visual character was very linear with few encroachments. The visual character change under Alternative 7 would be low (1.5).

Given the visual quality change (-0.3) and visual character change (1.5) ratings, the visual resource change would be very low (0.6) for Alternative 7.

The visual impact for Alternative 7 at Key View 10 would be low (2.2) and the level of visual mitigation required would be low.

KEY VIEW 11. The visual simulation for Key View 11 is shown in Figure 3.6-12. Numerous viewers reside adjacent to I-710. Duration of views would depend upon the activities of viewers and it could range from minutes to hours. Since this view lies within an exercise park area, the duration of viewer exposure is moderate (4.3) and viewer sensitivity is moderately high (5.3). The overall viewer response at this location is moderately high (4.8).

ALTERNATIVE 5C. Alternative 5C proposes a new soundwall along the adjacent southbound I-710. It would extend further to the left than the existing soundwall. The proposed soundwall would have very minimal changes to the existing visual quality since it would replace the present soundwall, being just slightly higher than the original. The viewer sensitivity would be somewhat high, but the proposed soundwall would have a low effect on visual aesthetics. Therefore, the proposed vividness would remain moderately high (5.0), the proposed intactness would remain moderate (4.0), and the

proposed unity would increase from moderately high (5.0) to high (5.5). This would result in the proposed overall visual quality under Alternative 5C to slightly increase but remain moderately high (from 4.7 to 4.8). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.1).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. The strong linear lines would stay intact and be reinforced by the soundwall. The visual character change under Alternative 5C would be very low (0.5).

Given the visual quality change (+0.1) and visual character change (0.5) ratings, the visual resource change would be very low (0.3) for Alternative 5C.

The visual impact for Alternative 5C at Key View 11 would be moderately low (2.6) and the level of visual mitigation required would be low.

ALTERNATIVE 7. Alternative 7 proposes a new soundwall in addition to an elevated freight corridor, which would be visible above the soundwall. The proposed soundwall would replace the existing soundwall and be slightly higher and would extend all the way to the left of the view. The elevated freight corridor in would be very prominent and encroach into the sky, but from this view, it would not appear to be higher than the horizon. The elevated freight corridor design characteristics would blend in well with the existing visual characteristics. The viewer sensitivity would be high, but the proposed structures are balanced and have a low effect on visual aesthetics. Therefore, the proposed vividness would increase from moderately high (5.0) to high (5.5), the proposed intactness would decrease from moderate (4.0) to moderately low (3.0), and the proposed unity would increase from moderately high (5.0) to high (6.0). This would result in the proposed overall visual quality under Alternative 7 to slightly increase but remain moderately high (from 4.7 to 4.8). The visual quality change under Alternative 7 compared to the existing condition would be positive (+0.1).

The proposed visual character for Alternative 7 would be compatible with the existing visual character. The strong linear lines would stay intact and be reinforced by the soundwall and the elevated freight corridor. The visual character change under Alternative 7 would be very low (1.4).

Given the visual quality change (+0.1) and visual character change (1.4) ratings, the visual resource change would be very low (0.8) for Alternative 7.

The visual impact for Alternative 7 at Key View 11 would be moderately low (2.8) and the level of visual mitigation required would be moderate.

KEY VIEW 12. The visual simulation for Key View 12 is shown in Figure 3.6-13. The main viewers at this location are pedestrians and cyclists. Although the number of viewers would be relatively low, viewers would be very aware of their surroundings, and their duration at this location can range from a few minutes to a few hours. Viewer exposure is moderate (3.7) and viewer sensitivity is moderately high (5.0). The overall viewer response at this location is moderate (4.3).

ALTERNATIVE 5C. Alternative 5C proposes to widen the Imperial Hwy. Bridge. Alternative 5C would have very minimal resource change from the existing view aside from the proposed trees in the parkway on the new bridge, which would be uniform across the center of the view, and the bridge widening would visually and physically push the structure closer to the view. The new trees would increase the aesthetic appeal at this location. The bridge widening would have a slightly larger mass than the existing, but the form and lines would stay the same. Therefore, the proposed vividness would decrease but remain moderately high (from 5.0 to 4.5), the proposed intactness would increase from moderate (4.0) to moderately high (4.5), and the proposed unity would increase but remain moderately high (from 4.5 to 5.0). This would result in the proposed overall visual quality under Alternative 5C to slightly increase but remain moderately high (from 4.5 to 4.7). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.2).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. The forms, lines, and colors from the proposed structures are very similar to the existing linear forms and colors. The visual character change under Alternative 5C would be very low (0.9).

Given the visual quality change (+0.2) and visual character change (0.9) ratings, the visual resource change would be very low (0.6) for Alternative 5C.

The visual impact for Alternative 5C at Key View 12 would be moderately low (2.5) and the level of visual mitigation required would be moderate.

ALTERNATIVE 7. Alternative 7 proposes to widen the Imperial Hwy. Bridge and would also include an elevated freight corridor that would be visible in the right half of the view. The proposed bridge widening would minimally affect the visual quality at this Key View location because it would be very similar in form to the existing view, only slightly larger in size. The proposed row of trees across the bridge would enhance the visual aesthetic in this view. The visible elevated freight corridor encroaches into the right center of the view, but the structures have the same visual characteristics as the existing view, which minimizes visual impacts. Therefore, the proposed vividness would increase from moderately high (5.0) to high (5.5), the proposed intactness would remain moderate (4.0), and the proposed unity would decrease from moderately high (4.5) to moderate

(4.0). This would result in the proposed overall visual quality under Alternative 7 to remain moderately high (4.5). The visual quality change under Alternative 7 compared to the existing condition would be no change (0.0).

The proposed visual character for Alternative 7 would be compatible with the existing visual character. The forms, lines, and colors from the proposed structures are very similar to the existing linear forms and colors. The visual character change under Alternative 7 would be very low (1.4).

Given the visual quality change (0.0) and visual character change (1.4) ratings, the visual resource change would be very low (0.7) for Alternative 7.

The visual impact for Alternative 7 at Key View 12 would be moderately low (2.5) and the level of visual mitigation required would be moderate.

KEY VIEW 13. The visual simulation for Key View 13 is shown in Figure 3.6-14. The main viewers at this location are pedestrians and cyclists. Although the number of viewers would be relatively low, viewers would be very aware of their surroundings, and their duration at this location can range from a few minutes to a few hours. Viewer exposure is moderate (3.7) and viewer sensitivity is moderately high (5.0). The overall viewer response at this location is moderate (4.3).

ALTERNATIVE 5C. Alternative 5C proposes a new ramp and to widen the Imperial Hwy. Bridge, which is minimally visible in the distance. The proposed row of trees on the Imperial Hwy. Bridge replacement would go across the view. The visible change for Alternative 5C would be minimal since the new roadway and bridge widening stays low and unobtrusive within this view. The proposed trees across the center of the view would blend in with the existing row of trees in the distance. Therefore, the proposed vividness would decrease from moderately high (4.5) to moderate (4.0), the proposed intactness would decrease from moderate (3.5) to moderately low (3.0), and the proposed unity would remain moderate (3.5). This would result in the proposed overall visual quality under Alternative 5C to slightly decrease but remain moderate (from 3.8 to 3.5). The visual quality change under Alternative 5C compared to the existing condition would be negative (-0.3).

As Alternative 5C would have minimal changes, the proposed visual character would be compatible with the existing visual character. The visual character change under Alternative 5C would be very little change (0.4).

Given the visual quality change (-0.3) and visual character change (0.4) ratings, the visual resource change would be very low (0.1) for Alternative 5C.

The visual impact for Alternative 5C at Key View 13 would be low (2.2) and the level of visual mitigation required would be low.

ALTERNATIVE 7. Alternative 7 proposes to widen the Imperial Hwy. Bridge and would also include an elevated freight corridor that would go over the viewer's head. The structure would encroach dramatically into the view. Much of the existing view of the sky would be blocked and the columns of the elevated freight corridor would intrude into the landscape. The elevated freight corridor alters the existing view disproportionately and becomes the dominant feature in this view. Although there would be a high change in visual character under Alternative 7, the viewer response would be considered the same as Alternative 7, thus keeping the score of the resulting visual impact closer to Alternative 7. Therefore, the proposed vividness would increase from moderately high (4.5) to very high (6.5), the proposed intactness would decrease from moderate (3.5) to very low (1.0), and the proposed unity would decrease from moderate (3.5) to low (1.5). This would result in the proposed overall visual quality under Alternative 7 to decrease from moderate (3.8) to moderately low (3.0). The visual quality change under Alternative 7 compared to the existing condition would be negative (-0.8).

The proposed visual character for Alternative 7 would not be compatible at this location due to the elevated freight corridor that dominates the view. The visual character change under Alternative 7 would be low (2.4).

Given the visual quality change (-0.8) and visual character change (2.4) ratings, the visual resource change would be very low (0.8) for Alternative 7.

The visual impact for Alternative 7 at Key View 13 would be moderately low (2.6) and the level of visual mitigation required would be moderate.

KEY VIEW 14. The visual simulation for Key View 14 is shown in Figure 3.6-15. This location is in a residential area and the duration of their view depends on the activity. The distance between the Key View location and the new construction is estimated to be approximately 100 feet. The viewer exposure is moderate (4.3) and viewer sensitivity is high (5.7). The overall viewer response at this location is moderately high (5.0).

ALTERNATIVE 5C. Alternative 5C proposes a new soundwall that would screen the existing freeway uniformly. The new soundwall would be a prominent change, but a positive one as it would screen out marginal sprawling vegetation and views to the existing freeway. The new soundwall would be placed closer to the mobile homes under Alternative 5C, which would be a moderately high visual change in the character for the mobile home park viewers. Due to the anticipated improved appearance of the new soundwall and the new replacement planting, the vividness, intactness and the unity would be increased. Therefore, the proposed vividness would increase from moderately

low (3.0) to moderate (4.0), the proposed intactness would increase from moderately low (2.5) to moderate (4.0), and the proposed unity would increase from low (2.0) to moderate (4.0). This would result in the proposed overall visual quality under Alternative 5C to increase from moderately low (2.5) to moderate (4.0). The visual quality change under Alternative 5C compared to the existing condition would be positive (+1.5).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. The strong linear lines from the wall would give the view balance, uniformity, and harmony. It would also help screen out the existing views to the freeway. The visual character change under Alternative 5C would be low (1.6).

Given the visual quality change (+1.5) and visual character change (1.6) ratings, the visual resource change would be low (1.6) for Alternative 5C.

The visual impact for Alternative 5C at Key View 14 would be moderately low (3.3) and the level of visual mitigation required would be moderate.

ALTERNATIVE 7. Alternative 7 proposes a new soundwall that would screen the existing freeway uniformly, and would also propose an elevated freight corridor that would be seen above the soundwall, but would also be screened by a wall on the freight corridor. The freight corridor would be located on the east side of the I-710 mainline approximately 40 feet over the northbound lanes. The new soundwall would be a prominent change, but a positive one as it would screen out marginal sprawling vegetation and views to the existing freeway. The new soundwall would be placed closer to the mobile homes, which would be a moderately high visual change in the character for the mobile home park viewers. The new soundwall would help organize and beautify the view of the existing area by introducing strong linear forms and minimizing the visual encroachments of the existing view and increasing the view's vividness, and the elevated freight corridor would further reinforce strong linear forms. Therefore, the proposed vividness would increase from moderately low (3.0) to moderately high (4.5), the proposed intactness would increase from moderately low (2.5) to moderate (3.5), and the proposed unity would increase from low (2.0) to moderate (4.0). This would result in the proposed overall visual quality under Alternative 7 to increase from moderately low (2.5) to moderate (4.0). The visual quality change under Alternative 7 compared to the existing condition would be positive (+1.5).

The proposed visual character for Alternative 7 would be compatible with the existing visual character. The strong linear lines from the wall and elevated freight corridor would give the view balance, uniformity, and harmony. It would also help screen out the existing views to the freeway. The visual character change under Alternative 7 would be low (2.0).

Given the visual quality change (+1.5) and visual character change (2.0) ratings, the visual resource change would be low (1.8) for Alternative 7.

The visual impact for Alternative 7 at Key View 14 would be moderately low (3.4) and the level of visual mitigation required would be moderate.

KEY VIEW 15. The visual simulation for Key View 15 is shown in Figure 3.6-16. Residents would have the potential to see the view multiple times per day as they leave and return to their homes. The duration of the view would depend upon each viewer's activities. A new soundwall on the right side of the view would separate the residential homes from I-710. All travelers would notice the elevated ramp above the existing street. The viewer exposure is moderately high (4.7) and viewer sensitivity is moderately high (4.7). The overall viewer response at this location is moderately high (4.7).

ALTERNATIVES 5C AND 7. Both Alternatives 5C and 7 would propose the same structures within this view. Alternatives 5C and 7 both propose a new soundwall, Southern Ave. overcrossing, and West Frontage Rd. extension. There would be a strong horizontal structure across the view, and a uniform soundwall to screen out the existing freeway. The new soundwall would remove the existing vegetation on the right, but new landscaping would be planted and would enhance the street. The visual quality and character of this location would be visibly altered from the existing view. A new overcrossing would cut across the view at this location and remove the cluttered look of the existing trees, billboard, and utility lines. A new soundwall with enhanced landscaping would create a more uniform feature on the right side of this view. Therefore, the proposed vividness would increase from moderate (3.5) to moderately high (5.0), the proposed intactness would increase but remain moderately low (from 2.5 to 3.0), and the proposed unity would increase from very low (1.0) to moderately high (5.0). This would result in the proposed overall visual quality under Alternatives 5C and 7 to increase from low (2.3) to moderate (4.3). The visual quality change under Alternatives 5C and 7 compared to the existing condition would be positive (+2.0).

The proposed visual character for Alternatives 5C and 7 would be compatible with the existing visual character. The new elevated road would clean up the midground and make it more uniform. The strong linear lines from the elevated road and new soundwall would be strong, simple, and create a sense of order that is absent in the existing view. The visual character change under Alternatives 5C and 7 would be low (1.8).

Given the visual quality change (+2.0) and visual character change (1.8) ratings, the visual resource change would be low (1.9) for both Alternatives 5C and 7.

The visual impact for both Alternatives 5C and 7 at Key View 15 would be moderately low (3.3) and the level of visual mitigation required would be moderate.

KEY VIEW 16. The visual simulation for Key View 16 is shown in Figure 3.6-17. Vehicular drivers and motorists make up the viewers at this location. A large number of people pass through this location on a daily basis, with the duration ranging from a few seconds to several minutes, depending on traffic conditions. The sky and freeway make up the majority of this view, but there are no dominant features that exist. The viewer exposure is moderate (4.3) and viewer sensitivity is moderately low (3.3). The overall viewer response at this location is moderate (3.8).

ALTERNATIVE 5C. Alternative 5C proposes to add more traffic lanes by widening the freeway and building a new soundwall. There would be no more landscaping on the side of the freeway, however the mountains would be more visible as Alternative 5C would remove existing encroachments. Therefore, the proposed vividness would increase from moderate (3.5) to moderately high (4.5), the proposed intactness would increase from moderately low (3.0) to moderate (3.5), and the proposed unity would increase but remain moderate (from 3.5 to 4.0). This would result in the proposed overall visual quality under Alternative 5C to increase from moderately low (3.3) to moderate (4.0). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.7).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. The widening of the freeway and new soundwall would reinforce the existing lines from the traffic lanes as they converge and disappear in the center of the view. The visual character change under Alternative 5C would be very low (1.4).

Given the visual quality change (+0.7) and visual character change (1.4) ratings, the visual resource change would be very low (1.1) for Alternative 5C.

The visual impact for Alternative 5C at Key View 16 would be moderately low (2.5) and the level of visual mitigation required would be moderate.

ALTERNATIVE 7. Alternative 7 proposes freeway widening, a new soundwall, and an elevated freight corridor along the median of I-710. There would be no more landscaping on the side of the freeway. The elevated freight corridor would be the dominant feature in this view. Alternative 7 would enclose the space and introduce a dominating large concrete structure overhead. However, Alternative 7 would screen the utility lines and add strong linear lines to the view. There is more harmony within the view due to the widened freeway, new soundwall, and elevated freight corridor, leading to a vanishing point in the center of the view. Therefore, the proposed vividness would increase from moderate (3.5) to very high (6.5), the proposed intactness would decrease but remain moderately low (from 3.0 to 2.5), and the proposed unity would increase from moderate (3.5) to high (6.0). This would result in the proposed overall visual quality under Alternative 7 to increase from moderately low (3.3) to moderately high (5.0). The visual

quality change under Alternative 7 compared to the existing condition would be positive (+1.7).

The proposed visual character for Alternative 7 would be somewhat compatible with the existing visual character of this view. The linear forms of the elevated freight corridor would strongly reinforce the existing lines, but the structure itself is disproportionate and overpowering within this view. The visual character change under Alternative 7 would be low (2.3).

Given the visual quality change (+1.7) and visual character change (2.3) ratings, the visual resource change would be low (2.0) for Alternative 7.

The visual impact for Alternative 7 at Key View 16 would be moderately low (2.9) and the level of visual mitigation required would be moderate.

KEY VIEW 17. The visual simulation for Key View 17 is shown in Figure 3.6-18. There are numerous viewers of mostly residents who reside adjacent to I-710 in Key View 17. Duration of the view depends upon the activities of viewers and it may vary from seconds to hours. The Key View is approximately 200 feet from proposed improvements. Due to its residential nature, the viewer exposure is moderately high (4.7) and viewer sensitivity is high (5.7). The overall viewer response at this location is moderately high (5.2).

ALTERNATIVE 5C. Alternative 5C proposes a higher soundwall that would screen more of the bottom of the utility pole. The freeway would be widened at this location, but because the widening is at-grade, it would not be seen from this Key View. The proposed new soundwall would have the same characteristics as the existing soundwall; therefore, the new soundwall would help to reinforce the strong linear lines currently going across the center of the view. The new soundwall would visually appear as an enhanced aesthetic design to the existing soundwall, thus increasing the visual quality. Therefore, the proposed vividness would increase from moderate (4.0) to moderately high (4.5), the proposed intactness would increase but remain moderately low (from 2.5 to 3.0), and the proposed unity would increase from low (2.0) to moderately low (2.5). This would result in the proposed overall visual quality under Alternative 5C to increase but remain moderately low (from 2.8 to 3.3). The visual quality change under Alternative 5C compared to the existing condition would be positive (+0.5).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. The strongest element in this view would be the geometric lines reinforced by the new soundwall. The visual character change under Alternative 5C would be very little change (0.4).

Given the visual quality change (+0.5) and visual character change (0.4) ratings, the visual resource change would be very low (0.5) for Alternative 5C.

The visual impact for Alternative 5C at Key View 17 would be moderately low (2.9) and the level of visual mitigation required would be moderate.

ALTERNATIVE 7. Alternative 7 proposes a higher soundwall in addition to an elevated freight corridor. The elevated freight corridor encroaches above the soundwall, but its form and size matches with its surroundings. The new soundwall would visually appear as an enhanced aesthetic design to the existing soundwall. The soundwall and elevated freight corridor would create strong horizontal lines across the view that would harmonize with the utility lines. The improved view from the elimination of a smaller electrical power pole and the relocation of the large electrical tower would be negated by the added structure of the elevated freight corridor and its soundwall. Therefore, the proposed vividness would increase from moderate (4.0) to moderately high (4.5), the proposed intactness would increase from moderately low (2.5) to moderate (3.5), and the proposed unity would increase from low (2.0) to moderate (3.5). This would result in the proposed overall visual quality under Alternative 7 to increase from moderately low (2.8) to moderate (3.8). The visual quality change under Alternative 7 compared to the existing condition would be positive (+1.0).

The proposed visual character for Alternative 7 would be compatible with the existing visual character of this view. The strongest element in this view would be the geometric lines reinforced by the soundwall and elevated freight corridor. The visual character change under Alternative 7 would be very low (1.3).

Given the visual quality change (+1.0) and visual character change (1.3) ratings, the visual resource change would be very low (1.2) for Alternative 7.

The visual impact for Alternative 7 at Key View 17 would be moderately low (3.2) and the level of visual mitigation required would be moderate.

KEY VIEW 18. The visual simulation for Key View 18 is shown in Figure 3.6-19. The main viewers at this location would be pedestrians and cyclists. They would be very aware of their surroundings, and their duration at this location could range from a few minutes to a few hours. The viewer exposure is moderate (3.7) and viewer sensitivity is moderately low (2.7). The overall viewer response at this location is moderately low (3.2).

ALTERNATIVE 5C. Alternative 5C proposes a replacement bridge over I-710. It is minimally visible in the distance from the center right of the view. Since the visible changes from Alternatives 5C would be so minimal and in the distance, there would be very little change in the visual quality. Therefore, the proposed vividness would remain

moderately low (3.0), the proposed intactness would remain low (2.0), and the proposed unity would remain moderately low (3.0). This would result in the proposed overall visual quality under Alternative 5C to remain moderately low (2.7). The visual quality change under Alternative 5C compared to the existing condition would be no change (0.0).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. The proposed changes would visually be minimal and located in the distance. The visual character change under Alternative 5C would be no change (0.0).

Given the visual quality change (0.0) and visual character change (0.0) ratings, the visual resource change would be no change (0.0) for Alternative 5C.

The visual impact for Alternative 5C at Key View 18 would be low (1.6) and the level of visual mitigation required would be little to no mitigation.

ALTERNATIVE 7. Alternative 7 proposes the same new bridge as Alternative 5C and an elevated freight corridor. Alternative 7 would replace and widen the existing Slauson Bridge. In this view, the freight corridor structure is minimally visible in the distance on the right side. The elevated freight corridor would minimally encroach into the view on the right, but it stays low towards the existing elements. The size, location, and form of the elevated freight corridor would blend in with the surrounding view. The overall resource change for Alternative 7 would have very little to no change due to low visibility and vicinity of the proposed structures. Therefore, the proposed vividness would increase from moderately low (3.0) to moderate (3.5), the proposed intactness would remain low (2.0), and the proposed unity would increase from moderately low (3.0) to moderate (3.5). This would result in the proposed overall visual quality under Alternative 7 to increase slightly but remain moderately low (from 2.7 to 3.0). The visual quality change under Alternative 7 compared to the existing condition would be positive (+0.3).

The proposed visual character for Alternative 7 would be compatible with the existing visual character of this view. The proposed changes would visually be minimal and located in the distance. Alternative 7 would be visible, but its form matches the linear lines of the existing Los Angeles River, bridge, and fence, thus making the visual changes very minimal. The visual character change under Alternative 7 would be very low (0.6).

Given the visual quality change (+0.3) and visual character change (0.6) ratings, the visual resource change would be very low (0.5) for Alternative 7.

The visual impact for Alternative 7 at Key View 18 would be low (1.9) and the level of visual mitigation required would be little to no mitigation.

KEY VIEW 19. The visual simulation for Key View 19 is shown in Figure 3.6-20. This area contains housing, so depending on viewer activity, the duration could range from a few seconds to a few hours. This is also a parking lot for a homeless shelter, which houses up to 350 people. The level of activity is projected to be low, thus lowering the impact of viewer exposure and sensitivity at this location. The viewer exposure is moderately low (3.3) and viewer sensitivity is moderately low (2.8). The overall viewer response at this location is moderately low (3.1).

ALTERNATIVE 5C. Alternative 5C proposes a railroad realignment and a replacement of the railroad bridge overcrossing over I-710. Alternative 5C would have very little change in resources because the proposed changes would be in the distance and minimally visible. Therefore, the proposed vividness would remain low (2.0), the proposed intactness would remain low (2.0), and the proposed unity would remain moderately low (3.0). This would result in the proposed overall visual quality under Alternative 5C to remain low (2.3). The visual quality change under Alternative 5C compared to the existing condition would be no change (0.0).

The proposed visual character for Alternative 5C would be compatible with the existing visual character. No visual attributes would be affected by the railroad realignment and railroad overcrossing. The visual character change under Alternative 5C would be very little change (0.4).

Given the visual quality change (0.0) and visual character change (0.4) ratings, the visual resource change would be very low (0.2) for Alternative 5C.

The visual impact for Alternative 5C at Key View 19 would be low (1.7) and the level of visual mitigation required would be little to no mitigation.

ALTERNATIVE 7. Alternative 7 proposes the same features as Alternative 5C, in addition to removing the buildings, housing and trees on the left side of the parking lot, and the addition of an elevated freight corridor. Alternative 7 proposes demolition to half of the view to build a new fence and an elevated freight corridor. Alternative 7 would have a much higher change in resources because the left side of the view would be compromised by introduction of the elevated freight corridor. Alternative 7 would make the existing utility lines more prominent, but they would be in balance with the existing telephone lines. The elevated freight corridor would become the dominant feature at this location, introducing strong lines along with the new fence. Therefore, the proposed vividness would increase from low (2.0) to moderately high (4.5), the proposed intactness would increase from low (2.0) to moderate (4.0), and the proposed unity would increase from moderately low (3.0) to moderately high (5.0). This would result in the proposed overall visual quality under Alternative 7 to increase from low (2.3) to

moderately high (4.5). The visual quality change under Alternative 7 compared to the existing condition would be positive (+2.2).

The proposed visual character for Alternative 7 would be somewhat compatible with the existing visual character of this view. A large portion of the existing landscape and structures would be demolished to make room for strong linear lines from the new fence and elevated freight corridor. The visual character change under Alternative 7 would be low (1.8).

Given the visual quality change (+2.2) and visual character change (1.8) ratings, the visual resource change would be low (2.0) for Alternative 7.

The visual impact for Alternative 7 at Key View 19 would be moderately low (2.6) and the level of visual mitigation required would be moderate.

KEY VIEW 20. The visual simulation for Key View 20 is shown in Figure 3.6-21. Numerous viewers reside adjacent to I-710. Duration of views would depend upon the activities of the viewers and could vary from seconds to hours. This Key View is approximately 400 feet from the proposed improvements. Due to this view's residential nature, the viewer exposure is moderate (4.3) and viewer sensitivity is moderately high (4.8). The overall viewer response at this location is moderately high (4.6).

ALTERNATIVES 5C AND 7. Alternatives 5C and 7 propose a new soundwall to replace the existing soundwall and an elevated freeway connector to I-5. Under Alternatives 5C and 7, the depth of field would be shortened and the aesthetic view of the existing landscape would be compromised due to the new soundwall from the freeway widening and elevated freight corridor. The soundwall and elevated freight corridor would visually merge as one solid structure to block the row of trees in the background. The texture from the existing trees in the background would be removed and the streetlight and telephone pole would become more present with the new soundwall and elevated road as a backdrop. Therefore, the proposed vividness would increase but remain moderate (from 3.5 to 4.0), the proposed intactness would increase but remain moderate (from 3.5 to 4.0), and the proposed unity would increase from moderately low (2.5) to moderate (3.5). This would result in the proposed overall visual quality under Alternatives 5C and 7 to increase from moderately low (3.2) to moderate (3.8). The visual quality change under Alternatives 5C and 7 compared to the existing condition would be positive (+0.6).

The proposed visual character for Alternatives 5C and 7 would be somewhat compatible with the existing visual character. The strong linear lines from the new soundwall and I-5 connector are in harmony with the street running north and south. However, this new construction would screen out the tree canopies in the distance, leaving the view of the

proposed vegetation unbalanced. The visual character change under Alternatives 5C and 7 would be low (1.5).

Given the visual quality change (+0.6) and visual character change (1.5) ratings, the visual resource change would be very low (1.1) for Alternatives 5C and 7.

The visual impact for Alternatives 5C and 7 at Key View 20 would be moderately low (2.9) and the level of visual mitigation required would be moderate.

ALTERNATIVE 7, DESIGN OPTION 1B. Alternative 7, Design Option 1B would require several homes to be removed to make space for the new street and freeway alignment, soundwall/retaining wall, and elevated connector. Under Alternative 7, Design Option 1B, the new street and freeway alignment would remove almost all of the homes in this view. An elevated connector and soundwall/retaining wall would be constructed across the center of the view, creating a vivid view of strong, linear concrete structures. The elevated connector and new soundwall/retaining wall would be the dominant feature at this location. Therefore, the proposed vividness would increase but remain moderate (from 3.5 to 4.0), the proposed intactness would decrease from moderate (3.5) to moderately low (3.0), and the proposed unity would decrease from moderately low (2.5) to low (2.0). This would result in the proposed overall visual quality under Alternative 7, Design Option 1B, to slightly decrease but remain moderately low (from 3.2 to 3.0). The visual quality change under Alternative 7, Design Option 1B, compared to the existing condition would be negative (-0.2).

The proposed visual character for Alternative 7, Design Option 1B, would not be compatible with the existing visual character of this view. The fluid and complex lines and forms from the existing view would change into linear and geometric forms which would drastically alter the existing visual characteristics in this view. The visual character change under Alternative 7, Design Option 1B, would be moderate (2.9).

Given the visual quality change (-0.2) and visual character change (2.9) ratings, the visual resource change would be very low (1.4) for Alternative 7, Design Option 1B.

The visual impact for Alternative 7, Design Option 1B, at Key View 20 would be moderately low (3.0) and the level of visual mitigation required would be moderate.

KEY VIEW 21. The visual simulation for Key View 21 is shown in Figure 3.6-22. The number of viewers could easily reach into three-digit numbers during high park activity days including weekends and summer periods. The duration of the view would vary from less than a minute up to multiple hours, depending on the activities of the viewers. The viewer exposure is moderate (4.0) and viewer sensitivity is moderately high (5.3). The overall viewer response at this location is moderately high (4.7).

ALTERNATIVES 5C AND 7. Alternatives 5C and 7 would both propose a new soundwall and an elevated I-5 connector. The existing trees on the left side of the view would be removed and the elevated freight corridor and new soundwall would visually and physically be closer to the viewer. The grass and existing trees to the right are still prominent, but now they would share the view with the new concrete structures. The aesthetic aspect would be lower in this view. Therefore, the proposed vividness would decrease but remain moderate (from 4.0 to 3.5), the proposed intactness would decrease but remain moderately low (from 3.0 to 2.5), and the proposed unity would decrease from moderate (3.5) to moderately low (3.0). This would result in the proposed overall visual quality under both Alternatives 5C and 7 to decrease from moderate (3.5) to moderately low (3.0). The visual quality change under both Alternatives 5C and 7 compared to the existing condition would be negative (-0.5).

The proposed visual character for both Alternatives 5C and 7 would be somewhat compatible with the existing visual character. The vegetation would be unbalanced due to the removal of the trees on the left side of the view, but the new soundwall would continue the linear lines where the existing soundwall stopped abruptly. It would continue with the bridge to go across the center of the view. The visual character change under both Alternatives 5C and 7 would be low (1.8).

Given the visual quality change (-0.5) and visual character change (1.8) ratings, the visual resource change would be very low (0.7) for both Alternatives 5C and 7.

The visual impact for both Alternatives 5C and 7 at Key View 21 would be moderately low (2.7) and the level of visual mitigation required would be moderate.

KEY VIEW 22. The visual simulation for Key View 22 is shown in Figure 3.6-23. The most impacted viewers at this location are residents and passing motorists. The new soundwall/retaining wall would be directly in front of the residents' front yards, thus making the proposed structure very prominent on a daily basis. Residents may have a high level of concern about the views from I-710 into their community. The viewer exposure is moderate (4.3) and viewer sensitivity is high (5.7). The overall viewer response at this location is moderately high (5.0).

ALTERNATIVES 5C AND 7. Alternatives 5C and 7 both propose to widen the freeway and the pedestrian tunnel. This would require the removal of a few existing homes and vegetation. The location of the new soundwall would physically and visually move the existing soundwall closer to the viewer. Visually, the proposed design would push the wall closer to the viewer, but the structure would have the same design characteristics as the existing structure. The visual quality of the existing view would be altered by both Alternatives 5C and 7. Vividness increases because the soundwall would now be closer to the viewers. The removal of the nearby homes would also create more focus to the

soundwall. Therefore, the proposed vividness would increase from moderate (3.5) to moderately high (4.5), the proposed intactness would decrease from moderate (3.5) to moderately low (3.0), and the proposed unity would increase from moderately low (3.0) to moderate (4.0). This would result in the proposed overall visual quality under both Alternatives 5C and 7 to increase from moderately low (3.3) to moderate (3.8). The visual quality change under both Alternatives 5C and 7 compared to the existing condition would be positive (+0.5).

The proposed visual character for both Alternatives 5C and 7 would be compatible with the existing visual character. The removal of homes takes away some of the texture and diverse elements in this view. However, the original linear lines from the existing soundwall would be reinforced with the new soundwall, and it would create strong forms across the center of the view. The visual character change under both Alternatives 5C and 7 would be low (1.5).

Given the visual quality change (+0.5) and visual character change (1.5) ratings, the visual resource change would be very low (1.0) for both Alternatives 5C and 7.

The visual impact for both Alternatives 5C and 7 at Key View 22 would be moderately low (3.0) and the level of visual mitigation required would be moderate.

KEY VIEW 23. The visual simulation for Key View 23 is shown in Figure 3.6-24. Residents could be seeing the view multiple times per day as they leave and return to their homes. The duration of the view would depend on viewer activity and the duration could span from a couple of seconds to a few hours. The viewer exposure is moderate (4.3) and viewer sensitivity is high (5.7). The overall viewer response at this location is moderately high (5.0).

ALTERNATIVES 5C AND 7. Alternatives 5C and 7 would both propose multi-level connectors and a new soundwall. This would require the removal of a few existing homes. Additionally, some vegetation will be lost as the new soundwall is closer to the viewer. The location of the new soundwall would shorten the physical space and depth of field of this area. Landscaping would be an impactful mitigation measure to soften the proposed design and reintroduce lost vegetation. The visual quality of the existing view would be altered by both Alternatives 5C and 7. Vividness increases because a new soundwall is built across the view, shortening the depth of field and physical space in this area. Intactness and Unity increase slightly because the soundwall introduces strong linear lines to contrast with the varying textures of the existing trees. Therefore, the proposed vividness would increase from moderate (3.5) to moderately high (4.5), the proposed intactness would decrease from moderate (3.5) to moderately low (3.0), and the proposed unity would increase but remain moderately low (from 2.5 to 3.0). This would result in the proposed overall visual quality under both Alternatives 5C and 7 to slightly increase from moderately low (3.2) to moderate (3.5). The visual quality change

under both Alternatives 5C and 7 compared to the existing condition would be positive (+0.3).

The proposed visual character for both Alternatives 5C and 7 would be somewhat compatible with the existing visual character. The rigid lines of the new soundwall would replace the textured forms of the group of trees in the background. The visual character change under both Alternatives 5C and 7 would be low (1.9).

Given the visual quality change (+0.3) and visual character change (1.9) ratings, the visual resource change would be very low (1.1) for both Alternatives 5C and 7.

The visual impact for both Alternatives 5C and 7 at Key View 23 would be moderately low (3.1) and the level of visual mitigation required would be moderate.

KEY VIEW 24. The visual simulation for Key View 24 is shown in Figure 3.6-25. The most impacted viewers at this location are residents and passing motorists. Residents could see the view multiple times per day as they leave and return to their homes. The duration could range from a few seconds to a several hours, depending on viewer activity. The viewer exposure is moderate (4.3) and viewer sensitivity is high (5.5). The overall viewer response at this location is moderately high (4.9).

ALTERNATIVES 5C AND 7. Alternatives 5C and 7 would propose the widening of I-710 freeway with a new soundwall/retaining wall. The new soundwall/retaining wall would be in closer proximity to the viewers, but it would be very similar to form and size to the existing soundwall. The visual quality of the existing view would be slightly altered under Alternatives 5C and 7. Therefore, the proposed vividness would increase from moderately low (3.0) to moderate (4.0), the proposed intactness would increase but remain moderately low (from 2.5 to 3.0), and the proposed unity would increase but remain moderately low (from 2.5 to 3.0). This would result in the proposed overall visual quality under Alternatives 5C and 7 to increase but remain moderately low (from 2.7 to 3.3). The visual quality change under Alternatives 5C and 7 compared to the existing condition would be positive (+0.6).

The proposed visual character for Alternatives 5C and 7 would be compatible with the existing visual character. The proposed structures would create a strong sense of flow by reinforcing the existing lines created by the sidewalk, road, and landscape edges. The visual character change under Alternatives 5C and 7 would be very low (1.0).

Given the visual quality change (+0.6) and visual character change (1.0) ratings, the visual resource change would be very low (0.8) for Alternatives 5C and 7.

The visual impact for Alternatives 5C and 7 at Key View 24 would be moderately low (2.9) and the level of visual mitigation required would be low.

DESIGN OPTIONS 3A AND 3B. Design Options 3A and 3B would propose an elevated connector with a soundwall to the east of I-710. The elevated connector would be a strong linear design overhead that would dominate this view. Design Options 3A and 3B would drastically change the existing view within this area. However, the proposed design and form of the elevated structure blends in with the existing linear form of the street. Therefore, the proposed vividness would increase from moderately low (3.0) to moderately high (5.0), the proposed intactness would increase but remain moderately low (from 2.5 to 3.0), and the proposed unity would increase from moderately low (2.5) to moderate (4.0). This would result in the proposed overall visual quality under Design Options 3A and 3B to increase from moderately low (2.7) to moderate (4.0). The visual quality change under Design Options 3A and 3B compared to the existing condition would be positive (+1.3).

The proposed visual character for Design Options 3A and 3B would be somewhat compatible with the existing visual character. The proposed project would create a strong sense of flow by reinforcing the existing lines created by the sidewalk, road, and landscape edges. It would also introduce a large overhead mass that would be disproportionate to its existing surroundings. The visual character change under Design Options 3A and 3B would be moderate (2.5).

Given the visual quality change (+1.3) and visual character change (2.5) ratings, the visual resource change would be low (1.9) for Design Options 3A and 3B.

The visual impact for Design Options 3A and 3B at Key View 24 would be moderate (3.5) and the level of visual mitigation required would be moderate.

KEY VIEW 25. The visual simulation for Key View 25 is shown in Figure 3.6-26. The most impacted viewers at this location are the residents and passing motorists. The new soundwall/retaining wall would be directly in front of the residents' front yards, thus making the proposed structure very prominent, on a daily basis. Residents may have a high level of concern about the views from I-710 into their community. The viewer exposure is moderate (4.3) and viewer sensitivity is high (5.5). The overall viewer response at this location is moderately high (4.9).

ALTERNATIVES 5C AND 7. Alternatives 5C and 7 would propose freeway and bridge widening with a new soundwall/retaining wall. At this location, the proposed project features would be in the distance. Under Alternatives 5C and 7, the proposed design features are minimally visible in the distance and resulting visual impact would be minimal. Therefore, the proposed vividness would remain moderate (3.5), the proposed

intactness would decrease from moderate (3.5) to moderately low (3.0), and the proposed unity would remain moderately low (3.0). This would result in the proposed overall visual quality under Alternatives 5C and 7 to slightly decrease, but remain moderately low (from 3.3 to 3.2). The visual quality change under Alternatives 5C and 7 compared to the existing condition would be negative (-0.1).

The proposed visual character for Alternatives 5C and 7 would be compatible with the existing visual character. The visual character change under Alternatives 5C and 7 would be very low (0.5).

Given the visual quality change (-0.1) and visual character change (0.5) ratings, the visual resource change would be very low (0.2) for Alternatives 5C and 7.

The visual impact for Alternatives 5C and 7 at Key View 25 would be moderately low (2.6) and the level of visual mitigation required would be moderate.

DESIGN OPTIONS 3A AND 3B. Design Options 3A and 3B would propose a new soundwall/retaining wall. Several existing homes would be removed to accommodate the freeway widening. Under Design Options 3A and 3B, the existing landscape on the left side of the view would change from a diverse mix of elements of trees and homes to a simplified linear structure. The removal of existing homes adjacent to the freeway and the introduction of a new soundwall/retaining wall would drastically change the view of this area under Design Options 3A and 3B. However, the proposed design and form of the new soundwall/retaining wall is very uniform, balanced, and proportionate to its surroundings. New landscaping would enhance this view. The visual quality of the existing view will be altered by Design Options 3A and 3B Therefore, the proposed vividness would increase from moderate (3.5) to high (5.5), the proposed intactness would decrease from moderate (3.5) to moderately low (3.0), and the proposed unity would increase from moderately low (3.0) to moderately high (4.5). This would result in the proposed overall visual quality under Design Options 3A and 3B to increase from moderately low (3.3) to moderate (4.3). The visual quality change under Design Options 3A and 3B compared to the existing condition would be positive (+1.0).

The proposed visual character for Design Options 3A and 3B would be compatible with the existing visual character. The proposed project under Design Options 3A and 3B would contrast sharply with the existing view, but the form and size of the structure would be simple, uniform, and proportionate to its surroundings, thus making it suitable and compatible with its surroundings. The visual character change under Design Options 3A and 3B would be low (2.3).

Given the visual quality change (+1.0) and visual character change (2.3) ratings, the visual resource change would be low (1.7) for Design Options 3A and 3B.

The visual impact for Design Options 3A and 3B at Key View 25 would be moderately low (3.3) and the level of visual mitigation required would be moderate.

OTHER VISUAL IMPACTS – LIGHT, GLARE, SHADE, AND SHADOW. Existing urban land uses within the Study Area would experience an elevated level of night lighting due to the widening of the I-710 mainline, where traffic light fixtures would be relocated closer to all land uses. Additionally, traffic light fixtures installed onto the freight corridor under Alternative 7 would add increased night lighting to some neighborhoods along Alternative 7. The effects of this new light will be lessened to some degree by utilizing light control appliances on the light fixtures. In addition, there may also be an increase in night lighting for two existing golf courses within the Study Area. However, golfing activity is mainly restricted to daylight hours, and with the distance from the viewer (minimum of 0.20 mile), the I-710 Corridor Project would have minimal impact to these golf courses from the increased lighting. There may also be increased night lighting along portions of the I-710 Corridor Project where it is relatively close to the LARIO Trail. However, because most of the trail use occurs during daylight hours, no impact is anticipated.

Glare from vehicle headlights in the general-purpose lanes and the elevated portions of the freight corridor are expected to be minimized by the construction of soundwalls and screen walls. Since soundwalls would be installed whenever the I-710 Corridor Project is adjacent to residential areas, these walls would block the vehicle headlight glare. For views from the opposing side of the Los Angeles River, screen walls would be constructed. However, the distance from the views (minimum of 0.15 mile) across the Los Angeles River to the I-710 Corridor Project is anticipated to limit any glare.

During hours where the sun is low to the horizon and during the winter solar declination seasons (September through March), the elevated freight corridor would create some shade and/or shadows within the I-710 Corridor that do not exist today. The acute angle of the sun relative to the ground plain creates “longer” shadows during these times. The shade/shadows created by the proposed project would impact the neighborhoods west of the I-710 Corridor Project from Pacific Coast Hwy. to SR-91, as well as the residents in the Thunderbird Villas Mobile Home Park in the City of South Gate closest to the west side of the I-710 mainline. Using solar declination calculations (please refer to the VIA [2017]), it was determined that the first row of homes immediately adjacent to Frontage Rd. in South Gate can expect morning shadows between September and March. Late December would result in the longest shadows. These shadows will shorten considerably during the summer months.

NO BUILD ALTERNATIVE. Alternative 1 does not include any improvements within the I-710 Corridor other than those projects that are already funded and/or committed to be constructed by or before the planning horizon year of 2035. Therefore, Alternative 1 would not change the existing visual setting and would, consequently, not result in the visual impacts (both adverse and beneficial) within the I-710 landscape units.

3.6.3.2 PUBLIC HEALTH CONSIDERATIONS

As stated under the "Other Visual Impacts" portion of this section, sensitive viewers adjacent to the I-710 Corridor Project would experience light and glare effects either where the build alternatives result in new light sources in the existing environment, or when existing light sources are moved closer to sensitive viewers. The health effects of any light and glare effects caused by the build alternatives would be minimal because of the urban nature of the I-710 Corridor, which already has an extensive number of existing sources of light and glare.

BUILD ALTERNATIVES.

ALTERNATIVE 5C. Light and glare from the general-purpose lanes under Alternative 5C is not expected to impact viewers in residences adjacent to I-710. Therefore, Alternative 5C is not anticipated to have an adverse impact to public health with regard to visual impacts.

ALTERNATIVE 7. In addition to the lighting provided under Alternative 5C, Alternative 7 will add traffic lighting and vehicle lights associated with the freight corridor. The effects of this new lighting can be lessened to some degree by utilizing light shielding devices on the safety lighting fixtures.

In addition to the glare discussed above for Alternative 5C, glare related to the freight corridor under Alternative 7 is expected to be minimized by the construction of soundwalls (and potentially screen walls as an aesthetic enhancement) and by the distance of the viewer from the traffic lighting and vehicle lights. For views from the opposing side of the Los Angeles River, no soundwalls will be included, but screen walls may be included as an aesthetic enhancement. However, the distance from the views (minimum of 0.15 mile) across the Los Angeles River to the I-710 Corridor Project is anticipated to minimize the glare.

Alternative 7 is not anticipated to have an adverse impact on public health in regard to visual impacts.

3.6.3.3 MOTION 22.1

As described in Chapter 2.0, Section 2.2.2.1 (Community Alternative 7) of this Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS), the Los Angeles County Metropolitan Transportation Authority (Metro) Board of Directors passed Board Motion 22.1 in October 2015 that directed Metro and Caltrans to study a number of additional items as a part of the I-710 Corridor Project Description. All of these measures are described in Section 2.3.2.1, Common Features of Build Alternatives.

The Motion 22.1 measure with the greatest potential for visual impacts in the I-710 Corridor Project Study Area is the provision of five new pedestrian/bicycle bridges over I-710 and the Los

Angeles River. These new bridges would have a minimal effect on sensitive viewers during project construction as they would be under construction at the same time as other components of the build alternatives. The permanent impacts resulting from these new bridges are described above under Key View 1. At that location, the visual impact analysis concluded that the Los Angeles River would still be a striking view within the viewshed, but the proposed bridge under Alternative 5C would shorten the view of the river, and the columns of the bridge would be intrusive to the Los Angeles River. Therefore, the proposed vividness would decrease from high (5.5) to moderately high (5.0), and the proposed intactness and unity would each decrease from high (5.5) to moderately high (4.5). This would result in the proposed overall visual quality under Alternative 5C to decrease from high (5.5) to moderately high (4.7). The visual quality change under Alternative 5C compared to the existing condition would be negative (-0.8). Similar effects would be expected as a result of the other new pedestrian/bicycle bridges proposed under Motion 22.1.

Motion 22.1 also includes a measure which states that, consistent with Caltrans' policy, maximize the number of new trees, shrubs, and foliage within proposed State right of way that are drought resistant and have superior biosequestration and biofiltration capabilities, in an effort to surpass the minimum tree removal/replacement ratio. This Motion 22.1 measure has been incorporated into Mitigation Measure VIS-2, described below in Section 3.6.4, Avoidance, Minimization, and Mitigation Measures.

3.6.4 Avoidance, Minimization, and/or Mitigation Measures

As discussed above, the I-710 Corridor Project would result in adverse visual impacts due to loss of landscaping, addition of new structures (including soundwalls), widening of existing structures, and the creation of new sources of light and glare. Measures have been identified and are described below to avoid, minimize, or reduce the adverse visual impacts that would result from construction and operation of the I-710 Corridor Project. While these measures would reduce the impacts of the I-710 Corridor Project, there would still be a residual visual impact due to the introduction of reconstructed freeway-to-freeway connectors, soundwalls, and the freight corridor (Alternative 7) into the visual landscape of the Study Area. These measures would apply to all I-710 Corridor Project build alternatives.

VIS-1 Elements from the California Department of Transportation (Caltrans) *I-710 Corridor Aesthetic Master Plan* (2014) will be incorporated into the final design of the Interstate 710 (I-710) Corridor Project. The *I-710 Corridor Aesthetic Master Plan* defines aesthetic treatment measures to be incorporated into the final design of the Interstate 710 (I-710) Corridor Project. The *I-710 Corridor Aesthetic Master Plan* has been developed in a context-sensitive design process in consultation with the affected local agencies and includes involvement of local community members as determined by the local agencies.

The following are the aesthetic structure design considerations of the *I-710 Corridor Aesthetic Master Plan* (2014) that will be incorporated into the design of the I-710 Corridor Project:

- Provision of visual continuity and a unified experience for the driver, from the coastal City of Long Beach to the community of East Los Angeles to the north.
- Bridge concrete barriers and railing shall contribute to the visual continuity of the travel way.
- Selection of a distinctive light standard design that is compatible with the lines and shapes of the proposed aesthetic theme for structures and that reflects an artistic solution for pole lighting.
- Travel way appurtenances shall exhibit simple design language that unifies various travel way components (e.g., bridge rails, abutments and security fencing).
- The form and surfacing of all vertical elements such as abutments, bridge superstructures, columns, retaining walls, and soundwalls along the travel way, shall exhibit a consistent aesthetic treatment and style.

The *I-710 Corridor Aesthetic Master Plan* determined that the "Modern Theme" will serve as the concept for the I-710 Corridor. Conceptual representations of the "Modern Theme" for all structural elements are portrayed in the *I-710 Corridor Aesthetic Master Plan* (2014).

VIS-2 **TREES.** During preparation of plans, specifications, and estimates (PS&E), the Caltrans District 7 Landscape Architect will verify that the design minimizes removal of existing mature trees. If removal of mature trees cannot be avoided, additional landscape improvements will be incorporated into the final design for these areas. The replacement ratio of any trees removed shall be determined by the Caltrans District 7 Landscape Architect. Consistent with Caltrans' policy, the objective of this measure is to maximize the number of new trees, shrubs, and foliage within proposed State right of way that are drought resistant and have superior biosequestration and biofiltration capabilities, in an effort to surpass the minimum tree removal/replacement ratio. Depending on the types of trees removed, removal and replacement ratios differ, but will be included in the final landscaping plan.

VIS-3 **HARDSCAPE.** During preparation of PS&E, the Caltrans District 7 Landscape Architect will verify that the project design incorporates attractive walls, medians, and other visually pleasing hardscape in the project design consistent with the

I-710 Corridor Aesthetic Master Plan. Permeable paving material will be used to reduce surface water runoff.

VIS-4 **SOUNDWALLS.** During preparation of PS&E, Caltrans will include aesthetic enhancements for soundwalls in the final design**.** The designs of soundwalls require compliance with Caltrans standards for sound attenuation (where walls provide that function), safety requirements, and other pertinent standards. The design of soundwalls requires compliance with the Caltrans *Highway Design Manual* standards, and aesthetic treatments shall be reviewed by the Caltrans District 7 Landscape Architect. The soundwalls shall be developed consistent with the *I-710 Corridor Aesthetic Master Plan* and include the following features:

- Attractive, decorative elements including features that provide an expression of the "sense of place" for the I-710 Corridor communities shall be incorporated into wall designs in order to increase the visual quality of the area.
- Areas in front of soundwalls shall be landscaped, where landscaping can be accommodated within the public right of way, including trees, shrubs, and vines (depending upon the space available) to break the visual monotony, soften the appearance of soundwalls, and deter graffiti.

VIS-5 **RETAINING WALLS.** During preparation of PS&E, Caltrans will include aesthetic enhancements for retaining walls in the project design. Attractive, decorative elements, including features that provide an expression of the "sense of place" for the I-710 Corridor communities, shall be incorporated into wall designs in order to increase the visual quality of the area. The use of retaining walls along the I-710 freeway mainline or at interchange off- and on-ramps will require compliance with Caltrans' design standards for safety.

VIS-6 **SCREEN WALLS.** As discussed in the Project Description, Caltrans will include screen walls along the freight corridor in areas where soundwalls are not provided and where sensitive viewer groups are exposed to the view of the freight corridor. During preparation of PS&E, aesthetic enhancements for screen walls in the project design will include attractive, decorative elements that provide an expression of the "sense of place" for the I-710 Corridor communities.

VIS-7 **LIGHTING.** During preparation of PS&E, a lighting plan will be prepared by Caltrans. The lighting fixtures will be designed to minimize glare on adjacent properties and into the night sky. Lighting will be shielded with nonglare hoods and focused within the I-710 Corridor Project right of way.

VIS-8 **DETENTION BASINS AND BIOSWALES.** During preparation of PS&E, detention basins and bioswales will be addressed as visually integrated elements of the landscape planting. An *Enhanced Water Quality Features Report for the I-710*

Corridor Project (December 2016) has been developed. The proposed Enhanced Water Quality Features will clean the water while simultaneously adding aesthetic features to the area. A common theme will be implemented in the design to help add character, beauty, and unity to the surrounding cities that all share the same responsibility and waterways.

VIS-9 **LOCAL JURISDICTION REVIEW.** During final design, Caltrans will review with each local jurisdiction the aesthetic features and treatments proposed to be incorporated in the final facility design for freeway components adjacent to each local jurisdiction, in accordance with the I-710 Corridor Aesthetic Master Plan described in Measure VIS-1.

VIS-10 **GRAFFITI REDUCTION, REMOVAL, AND CONTROL.** During final design, Caltrans will include planting plans for vine planting on sound barriers and other vertical structures, planting plans for trees and shrubs in State right of way adjacent to south barriers and other vertical structures, and the use of decorative/surface treatments on sound barriers and other vertical structures in the *I-710 Corridor Aesthetic Master Plan*, to reduce the potential for graffiti and to soften the appearance of those walls, consistent with the *Highway Design Manual*, Index 902.3(5).

After the construction of each sound barrier or vertical structure where vine planting is shown in the project specifications, Caltrans will require the construction contractor to install the vine planting consistent with the project specifications and the planting requirements in the *I-710 Corridor Aesthetic Master Plan*.

Caltrans has an existing ongoing maintenance program for the control and removal of graffiti from structures and facilities within the State right of way for State highways. That program would apply to all new and modified structures in the I-710 Corridor Project build alternatives. The Caltrans program for the control and removal of graffiti is described in Chapter D1, Litter, Debris, and Graffiti, in the Caltrans *Maintenance Manual,* Volume I (July 2014). Key program components applicable to the project features in the I-710 Corridor Project build alternatives include:

- Use of recycled paint for various structures and matching paint used to cover graffiti with the original paint color on the structure.
- Use of physical devices such as rat guards, sign hoods, razor wire, and glare screen patches to limit access to facilities targeted by taggers.

- Replacement of ground-mounted signs with signs that have protective coatings or application of protective coatings to signs.

- Evaluation and use of new products available to aid in control of graffiti, for both preventative and removal of graffiti. Caltrans maintains a list of products that have been tested for safety and effectiveness.

- Multi-Agency Graffiti Intervention Committees (MAGIC) are regional anti-graffiti organizations. They are effective in coordination of regional resources and efforts from local agencies.

Many local jurisdictions along the alignment of I-710 also have graffiti abatement and control programs in their Municipal Codes or other City or County requirements. Those programs apply throughout those jurisdictions and may apply to structures on public and private property. Methods used by local agencies for the removal of graffiti include power washing, gel removers, and painting.

3.7 CULTURAL RESOURCES

The information in this section is based on the following technical reports:

- *Historical Resources Evaluation Report* (HRER) (April 2012)
- *Archaeological Survey Report (ASR), Interstate I-710 between Ocean Boulevard and SR-60* (April 2012)
- *Supplemental HPSR* (April 2017)
- *Supplemental HRER* (April 2017)
- *Supplemental ASR* (Confidential Report) (Supplemental ASR) (April 2017)
- *Archaeological Sensitivity Study for the Interstate 710 Corridor Project* (Confidential Report) (Archaeological Sensitivity Study) (February 2017)

3.7.1 REGULATORY SETTING

The term "cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act of 1966 (NHPA), as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (National Register). Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, an Amended Section 106 Programmatic Agreement (PA) between the Advisory Council, Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and the California Department of Transportation (Caltrans) (Section 106 PA) went into effect for Caltrans projects, both state and local, with FHWA involvement. The *First Amended PA* implements the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA's responsibilities under the Section 106 PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 United States Code [USC] 327).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. Refer to Appendix B, of this Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS), Draft

Section 4(f) Evaluation and Resources Evaluated Relative to the Requirements of Section 4(f), for specific information regarding Section 4(f).

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources (California Register). California PRC Section 5024 requires State agencies to identify and protect state-owned resources that meet National Register listing criteria. It further specifically requires Caltrans to inventory State-owned structures in its rights of way.

3.7.2 AFFECTED ENVIRONMENT

3.7.2.1 CULTURAL RESOURCE SETTING

ENVIRONMENT. The cultural resource setting of the Study Area, which is the more general project vicinity, is based on the underlying assumption that humans and human societies are in continual interaction with the physical environment. Being an integral and major part of the ecological system, humans respond to the limits imposed by the environment through technological and behavioral adaptation and by altering the environment to produce more favorable conditions. In that context, the biotic character and natural environment of the Study Area have been almost completely altered from its natural setting by modern development.

PREHISTORY. Of the many chronological sequences proposed for southern California, two primary regional syntheses are commonly used for the southern California region in the archaeological literature. The first, advanced by Wallace in 1955, defines four cultural horizons, each with characteristic local variations: Early Horizon, Milling Stone, Intermediate, and Late Prehistoric. Employing a more ecological approach, Warren (1968) defined five periods in southern California prehistory: Lake Mojave, Pinto, Gypsum, Saratoga Springs, and Protohistoric. Warren viewed cultural continuity and change in terms of various significant environmental shifts, defining the cultural ecological approach for archaeological research of the California deserts and coast. Many changes in settlement pattern and subsistence focus are viewed as cultural adaptations to a changing environment, beginning with the gradual environmental warming in the late Pleistocene, the desiccation of the desert lakes during the early Holocene, the short return to pluvial conditions during the middle Holocene, and the general warming and drying trend, with periodic reversals, that continues to this day.

ETHNOGRAPHY. Ethnographic studies show that the Study Area was occupied by an Uto-Aztecan-speaking Native American group known as the Gabrielino during the 16th to 19th centuries. The term “Gabrielino” is derived from the association of these Indian peoples with Mission San Gabriel. The Gabrielino practiced a hunter-gatherer lifestyle and lived in permanent communities near the convergence of two or more environmental zones or habitats. Commonly

chosen sites included areas near rivers, streams, and inland watercourses; sheltered coastal bays and estuaries; and the transition zone delineating prairies and foothills.

HISTORY. Prior to Spanish exploration and occupation of California in the mid to late 18th Century, trails crisscrossed the Gabrielino lands and were used in trading between inland and coastal native groups. Some of these trails led from the coastal area of present-day San Pedro into the Los Angeles area and through the passes beyond. During the early development of Pueblo de Los Angeles, the plains south and southeast of the pueblo became the center of the hide and tallow trade, with San Pedro being its major embarkation point. A well-rutted road connected Los Angeles with San Pedro and crossed the flat plains, where the only change in landscape was the low rise of the Dominguez Hills.

Los Angeles, San Pedro, and the main dirt road joining them changed little until 1847, when American settlement began. During the early 1850s, the Sepulveda family of nearby Rancho Los Palos Verdes established freight and passenger service between Los Angeles and San Pedro. The route in those early days was known as both the San Pedro Road and Sepulveda's Stage Road. As the population of Los Angeles grew and the coastal shipping industry developed, with more schooners and steamer traffic arriving at San Pedro, the San Pedro Road became a major artery of travel and the forerunner of later paved roads and highways.

The first transcontinental railroad connection to be constructed in Los Angeles was the Southern Pacific Railroad, and it ushered in an era of population increase and development fostered by the nation-wide networks of passenger and freight railroad systems. Once the railroad line was completed in the 1870s, waves of new settlers began arriving in southern California. Eventually, several major railroads were operating in Southern California during the late 19th and early 20th centuries, including the Southern Pacific Railroad, the Union Pacific Railroad (UP Railroad), and the Santa Fe Railroad.

Throughout the 1920s and 1930s, the City of Los Angeles prospered in unison with the coastal harbors. Imports and exports soon became the driving economy in the Long Beach and Los Angeles harbors but the railroads were not located within proximity to the harbors. Roads began developing to accommodate trucks that could transport goods into Los Angeles without the access limitations of the railroad tracks.

During the post-World War II period, the construction of freeways that linked with the harbors and the introduction of metal container shipping into the area quickly transformed the shipping industry. This period also saw employment in Los Angeles grow the fastest in the outlying areas of the city. The suburban Cities of Compton, South Gate, and Commerce and other cities lining the present-day Interstate 710 (I-710) Corridor experienced an economic boom due to the manufacturing trade, which altered the traffic patterns within the metropolitan region. With the development of Los Angeles suburbs, the automobile was instrumental in easing the burden on the urban infrastructure. Freeway systems played a major role by linking downtown Los Angeles

with the suburbs. The I-710 freeway (also known as the Long Beach Freeway) was constructed in stages between 1951 and 1965 (see Figures 3.7-1 and 3.7-2).

Prior to its construction, a right of way was established for the proposed freeway and properties were acquired by the State through eminent domain. A majority of the properties contained single-family residences that were either moved or demolished; most of these residences were once part of housing tracts that were developed primarily during World War II to house people working at local defense industries.

ARCHITECTURE. Within the I-710 Corridor, architecture followed prevailing trends, but also reflected the realities of a working-class population and the gradual development of architectural forms appropriate to the ideals of the California lifestyle. Residential styles transitioned from the Victorian styles of the late 1800s to the Craftsman and Revival styles in the 1910s and 1920s, followed by the California Ranch style, which gained great popularity during the post-World War II period.

The formation of the Interstate System during the post-World War II period created freeway subdivisions. These residential developments were designed with the automobile in mind, and thus, were easily accessible by freeway and major arterial routes. Freeway subdivisions are prevalent throughout the Study Area.

Industrial and commercial architecture was generally more utilitarian and vernacular, with only a few structures having any identifiable style or stylistic influences. One unique style is referred to as Programmatic Architecture, which was a style that first appeared in the early part of the 20th century and flourished during the post-World War II period as the automobile culture grew in unison with the housing boom. The style involved the use of large-scale objects that mimic animals, food products, and household objects as a form of advertising, especially in the form of roadside advertising.

3.7.2.2 AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the I-710 Corridor Project defines the geographic area within which the build alternatives have the potential to directly or indirectly affect historic properties, if such properties are present. The original APE for the I-710 Corridor Project was finalized and signed on December 20, 2011, and included in the 2012 Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Subsequent to public circulation of the 2012 Draft EIR/EIS and in response to new information and comments received from the public, a revised set of build alternatives was developed. These revised build alternatives extend beyond the limits of the 2011 APE in numerous locations.

Figure 3.7-1: 1951 View of the Long Beach Freeway
1951 view of the Long Beach Freeway during the early stages of construction (Taken from Richard DeAtley, Long Beach: The Golden Shore, 1988).

Figure 3.7-2: 1955 View of the Long Beach Freeway
1955 view of a "cloverleaf" on-/off-ramp at Imperial Hwy. in the City of South Gate (Image courtesy of the Caltrans Transportation Library and History Center).

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The 2011 APE contained approximately 2,532 acres along and adjacent to the I-710 Corridor and along arterial intersections located various distances from I-710; the areas of the new Supplemental APE encompass an additional 509 acres that were not included in the 2011 APE. Also relative to the 2011 APE, the Supplemental APE has been reduced in areas that are no longer affected by the project. The Supplemental APE was delineated based on the combined maximum disturbance limits anticipated for both Alternative 5C and Alternative 7. Figure 3.7-3 presents the Supplemental APE boundary.

In general, delineation of the APE is influenced by the scale and nature of a proposed undertaking and may be different for different kinds of effects. The Supplemental APE was delineated to include all resources that could potentially be directly or indirectly affected by the revised set of build alternatives. This includes both built environment resources and archaeological resources, as discussed in both the Supplemental HRER and the Supplemental ASR. The direct area of potential effects (Direct APE) includes the areas where physical impacts would occur and is based on the horizontal and vertical extents of anticipated ground-disturbing activities, including permanent and temporary project impacts. These are generally limited to the proposed and existing right of way, as well as areas where utilities would be relocated, and include the horizontal and vertical limits. The vertical APE would range from 0–15 feet in depth for roadway grading and drainage; from 5–25 feet in depth for retaining walls (with piles); from 25–75 feet in depth for freeway structures piles; and from 30–120 feet in depth for freight corridor viaduct piles. As of April 2017, the project is currently at 30 percent design and the vertical APE would be further defined at a higher level of design completion (i.e., at 65 percent and 95 percent design completion).

The areas of indirect effects extend beyond the Direct APE and incorporate the area that may be indirectly affected by visual, audible, or atmospheric intrusions, shadow effects, vibrations from construction activities, or changes in access or use. The areas of indirect effects generally include all properties that are adjacent to the proposed right of way unless they are undeveloped.

In most cases, the Supplemental APE includes only the properties that are adjacent to the proposed right of way and/or temporary construction easements (TCEs); however additional parcels have been included where there are proposed new bridges, bridges that are being widened or replaced, or construction of new elevated features such as ramps and the freight corridor in Alternative 7. Exceptions include properties that are buffered by topographic features, large parking and/or landscaped areas, or buildings on other properties. The Supplemental APE extends around the entirety of those parcels where the built environment will be indirectly affected.

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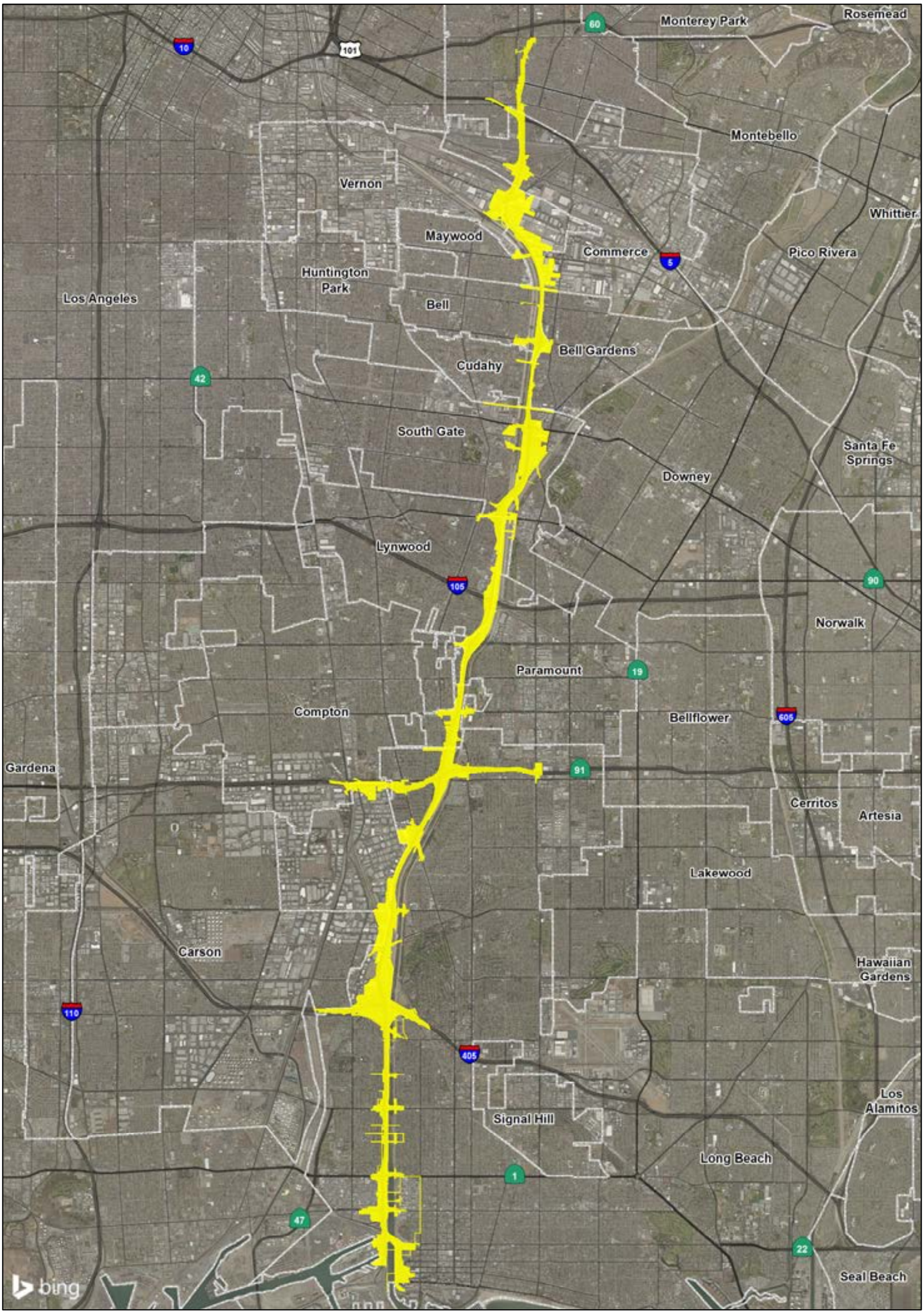

LEGEND

Supplemental Area of Potential Effects (APE)

FIGURE 3.7-1

0 3500 7000
FEET

SOURCE: Bing Maps (2014)

I:\URS0801\GIS _MOD\MXD\EIR_EIS\Chapter3\APE_Overview.mxd (3/1/2017)

I-710 Corridor Project
RDEIR/SDEIS

Supplemental Area of Potential Effects
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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3.7.2.4 RECORDS SEARCH

In May of 2009, in July, September, and October of 2011, and in December 2015, records searches were conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System, located at California State University, Fullerton. In addition to reviewing records pertaining to archaeological and historical sites and previously completed cultural resource studies, the following historical resource inventories were reviewed:

- National Register of Historic Places
- California Register of Historical Resources
- California Historic Resources Inventory
- California Points of Historical Interest
- Caltrans Historic Bridge Inventory—State Agency Bridges
- City of Los Angeles Historic-Cultural Monuments

The records searches identified 82 cultural resources studies previously conducted within a 0.125-mile radius of the project area. Of these studies, 32 included portions of the Supplemental APE. These prior investigations were primarily archaeology-related studies. The original and supplemental records searches revealed that there were no archaeological resources in the original 2012 APE, and likewise there are none in the revised boundaries of the 2017 Supplemental APE.

A total of eight built environment resources (Primary Nos. 19-150348, 19-178699, 19-186110/30-176630, 19-186112, 19-186744, 19-186804, 19-187753, and 19-187942) obtained from the records search, and one built resource (Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line, No. 19-188983) obtained from Caltrans District 7 staff, have been recorded within a 0.125-mile radius of the project area. One historic resource, the Drake Park National Register-eligible Historic District, was obtained from the City of Long Beach records. Of these built environment resources, five are located within the Supplemental APE. These five built environment resources include a segment of the UP Railroad in Los Angeles and Orange Counties (Primary No. 19-186110/30-176630); a segment of the UP Railroad) (Primary No. 19-186112) in Los Angeles, Riverside, and San Bernardino Counties; Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line (Primary No. 19-188983); a segment of the Burlington Northern/Santa Fe (BNSF) Railroad (Primary No. 19-186804); and the Drake Park National Register-eligible Historic District. However, the BNSF Railroad segment has been previously evaluated as ineligible for inclusion on the National Register and thus is not discussed further in this RDEIR/SDEIS. In addition to the SCCIC records searches, general research was conducted at public libraries and city building departments throughout the Study Area, but research did not identify additional historical built resources or sites. A list of the Caltrans Historic Bridge

Inventory highlighting bridges within the Supplemental APE is included as an appendix to the Supplemental HPSR (2017).

To further facilitate the identification of cultural resources, local historical societies and local governments were identified and invited to participate in the Section 106 process in accordance with 36 CFR §800.3(f)(1). Initially, in September 2009, letters were sent to the consulting parties and other individuals and organizations likely to have knowledge of or concerns regarding historic properties in the area. The purpose of the letter was to seek information and identify any issues related to the undertaking's potential effects on historic properties as part of the process of identifying historic properties (36 CFR §800.4 (a)(3)). Property-specific research was conducted at a number of Building and Safety Departments for cities within the Supplemental APE on various dates from February through September 2009, and in December 2009, June 2011, July 2011, September 2011, and April 2016. For detailed information on the property-specific research, refer to the Supplemental HPSR (2017).

Supplemental historical consultation was conducted with the groups and individuals listed below, which were first contacted on September 30, 2009. Comments received regarding the 2009 outreach are summarized in the 2012 I-710 Corridor Project Draft EIR/EIS. On March 4, 2016, a second letter was sent informing the recipients of the preparation of this supplemental analysis, and inviting additional comments (see the Supplemental HPSR [2017], Attachment F: Historical Consultation, for copies of correspondence). No additional comments were received in response to this supplemental consultation. Following is a list of organizations contacted during the supplemental consultation in 2016:

- Clifford Graves, Interim Director, City of Bell, Community Development Department
  6330 Pine Ave., Bell, CA 90201
- Carmen Morales, Interim Community Development Director, City of Bell Gardens, Community Development and Planning Division
  7100 Garfield Ave., Bell Gardens, CA 90201
- Saied Naaseh, Planning Manager, City of Carson, Planning Division
  701 Carson St., Carson, CA 90745
- Matt Marquez, Deputy Director of Development Services, City of Commerce, Planning Division
  2535 Commerce Way, Commerce, CA 90040
- Jonathan Colin, Director of Development Services, City of Lynwood, Development Services Department
  11330 Bullis Rd., Lynwood, CA 90262

- Michael A. Huntley, Community and Economic Development Director, City of Monterey Park, Planning Division
  320 Newmark Ave., Monterey Park, CA 91754
- Joe Perez, Community Development Director, City of Paramount, Community Development
  16400 Colorado Ave., Paramount, CA 90723
- Alvie Betancourt, Senior Planner, City of South Gate, Planning Division
  8650 California Ave., South Gate, CA 90280
- Richard Bruckner, Director of Regional Planning, County of Los Angeles, Regional Planning Department
  320 W. Temple St., 13th Floor, Los Angeles, CA 90012
- Linda Tatum, Planning Bureau Manager, City of Long Beach, Planning Bureau
  333 Ocean Blvd., 4th Floor, Long Beach, CA 90802
- Julie Bartolotto, Executive Director, Historical Society of Long Beach
  4260 Atlantic Ave., Long Beach, CA 90807
- Historical Society of Monterey Park
  781 Orange Ave., Monterey Park, CA 91754
- Mary Kay Nottage, Executive Director, Long Beach Heritage
  Post Office Box 92521, Long Beach, CA 90809
- Adrian Scott Fine, Director of Advocacy, Los Angeles Conservancy
  523 6th St., Ste. 826, Los Angeles, CA 90014
- Marta Solano, City of Bell Gardens, Cultural Heritage Board
  7100 Garfield Ave., Bell Gardens, CA 90201
- Sergio Canales, Planning Assistant, City of Vernon, Community Services Planning Division
  4305 Santa Fe Ave., Vernon, CA 90058
- Robert Delgadillo, Planning Manager, City of Compton, Community Development Department
  205 S. Willowbrook Ave., Compton, CA 90220
- Bellflower Heritage Society
  16601 Civic Center Dr., Bellflower, CA 90706
- Harry Panagiotes, City of Monterey Park, Historic Heritage Commission
  320 W. Newmark Ave., Monterey Park, CA 91754
- Historical Society of Southern California
  Post Office Box 93487, Pasadena, CA 91120

3.7.2.5 SURVEY METHODS

ARCHITECTURAL SURVEY METHODS. Field visits were conducted to identify buildings and/or structures located within the APE that are older than 45 years of age that would require evaluation for historical significance. The general threshold to require evaluation is 50 years of age; however, in anticipation of buildings or structures turning 50 years of age before completion of the project, buildings or structures that were 45 years of age at the time of the survey were considered.

Fieldwork was conducted between December 2008 and January 2012 as part of the original analysis to inform the historical context and identify properties requiring evaluation for historical significance. Additional fieldwork was conducted in March and April 2016, and additionally in January and March 2017, to identify properties in the Supplemental APE that would need to be evaluated.

Within the 2012 APE, a total of 201 properties were identified that required evaluation as part of the original 2012 HRER, which was reviewed and signed by Caltrans on May 1, 2012 and concurred by the SHPO on June 18, 2012. Photographs and notes were taken for each building identified within the APE. Notes from visual observations were taken in the field, and documentary photographs were later used for developing the State of California Department of Parks and Recreation Series 523 forms (DPRs) for those buildings requiring evaluation.

Additional fieldwork for the supplemental analysis was conducted using the same methods as the prior effort, described above. The focus of the field visits was to identify properties in the new areas added to the Supplemental APE which would require evaluation and those that were not evaluated in the original 2012 HRER because they were not yet 45 years of age or older. Within the Supplemental APE, a total of 39 additional properties were identified that required evaluation.

ARCHAEOLOGICAL SURVEY METHODS. An archaeological field survey was conducted for areas within the Supplemental APE that contained possibly intact visible ground surface and were within the maximum limits of direct impacts for all alternatives. The survey area specific to archaeological resources within the Supplemental APE is approximately 27.6 acres and consists of all areas that are subject to being directly affected by the undertaking and that contain possibly intact visible ground surface. This includes utility corridors, road shoulders, parkland, and flood control basins. Between August 2015 and January 2016, these areas of visible ground surface were systematically examined by walking parallel transects at maximum 30-foot intervals. No archaeological resources were identified within or adjacent to the Supplemental APE. The archaeological survey area has been extensively disturbed by construction of existing freeways and roads, railroads, urban development, and other infrastructure; river channelization; hydrologic events; and agriculture. Areas containing bare ground that could be systematically surveyed were limited to the Southern California Edison

(SCE) and the Los Angeles County Department of Water and Power (DWP) power line corridors, the Los Angeles County Flood Control District property adjacent to the Los Angeles River, and a limited number of vacant or minimally developed individual parcels.

Additionally, the Archaeological Sensitivity Study (2017) was conducted to identify areas with a higher potential occurrence of prehistoric and historic archaeological resources within the original and Supplemental APEs. This study incorporated data from pedestrian surveys of accessible, undeveloped portions of the Supplemental APE; a review of historical maps and aerial photos; literature research; and a "proximity analysis." The proximity analysis was conducted using a Geographic Information System (GIS) and used four data layers: elevation highpoints, the historic alignments of the Los Angeles River, the locations of ethnohistoric villages, and the locations of previously recorded cultural resources identified by SCCIC records searches. Additionally, Sanborn Fire Insurance maps were reviewed. While in no way exhaustive, the comparison of these spatial data sets assisted in identifying areas of potential archaeological sensitivity. Based on these potentially sensitive areas, specific recommendations were made regarding monitoring for archaeological resources within the Supplemental APE. Results of the Archaeological Sensitivity Study (2017) are discussed in further detail in Section 3.7.2.5, Results.

NATIVE AMERICAN CONSULTATION. Consultation with the Native American Heritage Commission and Native American community representatives has been ongoing since 2008. In August 2008, a letter was sent to the Native American Heritage Commission (NAHC) requesting a search of the Sacred Lands File (SLF) in order to identify areas of religious or cultural significance to Native Americans. The NAHC responded on August 5, 2008, to say that the SLF search indicated the presence of Native American cultural resources within the Study Area. Specifically, the NAHC stated that resources are present in the *South Gate, Whittier,* and *Torrance, California,* United States Geological Survey (USGS) quadrangle areas of the I-710 Corridor Project.

After continued consultation between 2009 and 2011, the project design was updated to include arterial intersections that would be modified for the project, and they were subsequently included in the APE. A new request was sent to the NAHC in July 2011, and a revised SLF search was completed indicating the presence of cultural resources. Both the NAHC and Caltrans suggested appropriate contacts, and as a result, the following 13 Native American representatives were contacted in January 2016:

- City of Los Angeles/County of Los Angeles Native American Indian Community, Ron Andrade, Director
- Gabrielino Tongva Nation, Sam Dunlap, Chairperson
- Ti'At Society/Inter-Tribal Council of Pimu, Cindi Alvitre, Chairwoman-Manisar

- Gabrielino Tongva Indians of California Tribal Council, Robert Dorame, Tribal Chair/Cultural Resources
- Tongva Ancestral Territorial Tribal Nation, John Tommy Rosas, Tribal Administrator
- Gabrielino-Tongva Tribe, Bernie Acuna
- Gabrieleno/Tongva San Gabriel Band of Mission Indians, Anthony Morales, Chairperson
- Gabrielino-Tongva Tribe, Linda Candelaria, Chairwoman
- Gabrieleno Band of Mission Indians, Andrew Salas, Chairperson
- Gabrieleno/Tongva San Gabriel Band of Mission Indians, Adrian Morales, Cultural Resources Management
- Pechanga Band of Luiseño Indians, Mark Macarro, Chairman
- Pechanga Band of Luiseño Indians, Anna Hoover, Pechanga Cultural Resources Center
- Soboba Band of Luiseño Indians, Joseph Ontiveros, Cultural Resource Director

On January 28, 2016, letters were sent to the Native American contacts describing the project and requesting comment. As a result of the letters, three initial responses were received.

- John Tommy Rosas, Tongva Ancestral Territorial Tribal Nation, responded by email on January 28, 2016, to say that he would review the information and respond soon. Follow-up emails were sent to Mr. Rosas on February 19 and March 3, 2016. On March 3, 2016, Mr. Rosas requested information regarding the “excavation areas” and “cubic yards.” He also stated that his group would like to monitor regardless. On May 4, 2016, an email was sent to Mr. Rosas stating that the information on excavation areas and cubic yards was not available at that time. No additional comments have been received.
- Anthony Morales, Gabrieleno/Tongva San Gabriel Band of Mission Indians, responded by telephone on February 18, 2016, to state that areas in the vicinity of the Los Angeles River are very sensitive for cultural resources as there were prehistoric villages present along its banks. He recommends monitoring throughout the project by a Native American monitor from his group.
- Andrew Salas, Gabrieleno Band of Mission Indians, responded by letter to state that at one time there were hundreds of prehistoric settlements along the entire route of the project that have never been documented. The entire project runs right alongside what was once the main water resource for the Gabrielino people, as well as a traditional trading route. Based on the project map provided in the consultation letters, Mr. Salas believes it to be evident that the project not only runs directly alongside the river (Wenot) but runs through traditional Gabrielino villages. This area was highly utilized by his ancestors and is considered highly sensitive. Therefore, he would like to request that one of his Tribal monitors be on site for this project, as well as archaeological monitors,

during all ground disturbance (including, but not limited to, pavement removal, pot-holing or auguring, boring, grading, excavation, and trenching).

Follow-up emails were sent to the remaining Native American individuals on February 19, 2016, and March 3, 2016, with the exception of Ron Andrade, who defers to Anthony Morales, and Mark Macarro, whose spokesperson for the Pechanga Tribe is Anna Hoover. As a result, three additional responses were received.

- Adrian Morales, Gabrieleno/Tongva San Gabriel Band of Mission Indians, responded by email on March 8, 2016, to request the status of the cultural resources report, and the PA. This information was provided to him on May 5, 2016. No additional comments have been received.
- Anna Hoover, Pechanga Band of Luiseño Indians, stated in an email on March 3, 2016, that the project is outside the Tribe's traditional territory. They will defer to closer tribes.
- Joseph Ontiveros, Soboba Band of Luiseño Indians, stated in a letter dated February 25, 2016, that while the project does fall within the bounds of their Tribal Traditional Use Areas, they do not have specific concerns at this time. They request that appropriate consultation continue to take place. In addition, because the project is in a Traditional Use Area and there is the possibility of encountering cultural resources, they request monitoring by a qualified Native American Monitor during all ground-disturbing activities and recommend Gabrieleño Tribal Consultants who are closer to the project area.

No responses were received from Sam Dunlap, Gabrielino Tongva Nation; Cindi Alvitre, Ti'At Society/Inter-Tribal Council of Pimu; Robert Dorame, Gabrielino Tongva Indians of California Tribal Council; Bernie Acuna, Gabrielino-Tongva Tribe; or Linda Candelaria, Gabrielino-Tongva Tribe. Additional details of the Native American consultation, including letters and emails sent and received as part of the consultation process, are summarized in Chapter 5.0, Comments and Coordination, and in the Supplemental ASR (2017).

Consultation is ongoing with three individuals/tribes who have expressed interest and the dissemination of the I-710 Corridor Project Supplemental ASR (2017) and the Archaeological Sensitivity Study (2017). Communication with interested individuals/tribes has occurred as recently as April 2017. Caltrans will continue to consult with tribes as construction details are developed.

3.7.2.6 RESULTS

The intent of the records searches, outreach efforts, and field studies described above was to identify archaeological and built environment cultural resources that may be eligible for listing in the National Register. In total, there were 201 built environment properties over 45 years old within the original APE and an additional 39 built environment properties identified within the

Supplemental APE that required evaluations for potential historic significance. However, only five built environment properties were identified as eligible for listing in the National Register within the Supplemental APE. For detailed information on resources found ineligible for inclusion on the National Register, refer to the Supplemental HRER (2017). No prehistoric or historic archaeological resources requiring evaluation were identified through archival research, Native American consultation, or the field survey within the Supplemental APE. Table 3.7-1 lists the eligible historic properties within the Supplemental APE for the I-710 Corridor Project. The SHPO concurred with these determinations of eligibility in a letter dated June 1, 2017.

Two UP Railroad segments (Primary Nos. 19-186110/30-176630 and 19-186112) were constructed in the 1870s and previously identified as eligible for the National Register under Criteria A and B in 1999. These portions of the UP Railroad are additions to the first transcontinental railroad and were instrumental in the development of Los Angeles and Southern California in general. The UP Railroad is also associated with important historical figures including the “Big Four” railroad tycoons: Mark Hopkins, Collis P. Huntington, Leland Stanford, and Charles Crocker.

Dale’s Donuts was determined by Caltrans to be eligible for listing in the National Register in the context of architecture. Caltrans submitted a letter dated March 1, 2012, to the SHPO transmitting the original Historic Property Survey Report and requesting concurrence on the determinations of eligibility. In a letter dated June 18, 2013, the SHPO concurred with the finding of ineligibility for 200 properties in the APE and directed Caltrans to assume the Dale’s Donuts property eligible for the purposes of this undertaking only. Caltrans’ correspondence with the SHPO is provided in Appendix J, Comments and Coordination, of this document, as well as in the 2012 I-710 Corridor Project Draft EIR/EIS. It is significant at the local level under Criterion C as a rare example of Programmatic Architecture. Constructed in 1955, the building was one of ten locations in the now-defunct Big Donut Drive-In chain founded by Russell C. Wendell, a donut machine salesman. He hired architect Henry J. Goodwin to design the prototype for the stores, only four of which are extant. The other remaining buildings are located in Inglewood, Gardena, and Bellflower.

The Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line (Primary No. 19-188983), constructed in 1935-1936, is significant under Criterion A for its association with the construction of Hoover Dam, a National Historic Landmark, and the industrial, economic, and urban development that occurred in metropolitan Los Angeles from the mid-1930s through the 1940s. It is also significant under Criterion C for its unique engineering and structural characteristics within the context of development of point-to-point high voltage power transmission in California. SHPO concurrence was received in 2000.

Table 3.7-1: Known Historic Properties Within the Supplemental APE

Resource	Status
Built environment resource: UP Railroad (formerly Southern Pacific Railroad) Segment in Los Angeles and Orange Counties (Primary No. 19-186110/30-176630). Two portions of this historic property intersect I-710: south of Patata St. and south of Frontage Rd., both in the City of South Gate.	This resource was evaluated as eligible for the National Register under Criteria A and B in 1999, and is therefore, a historic property per Section 106. It is also a historical resource per CEQA.
Built environment resource: UP Railroad in Los Angeles, Riverside, and San Bernardino Counties from Los Angeles to Wilmington (Primary No. 19-186112). One portion intersects the I-710: south of Noakes St. in the City of Commerce.	As assigned by FHWA, Caltrans determined this resource is eligible for the National Register under Criteria A and B in 1999, and is, therefore, a historic property per Section 106. It is also a historical resource per CEQA.
Built environment resource: Dale's Donuts, Compton	Caltrans evaluated this resource as eligible for the National Register under Criterion C at the local level of significance in 2009, and the SHPO directed Caltrans to assume this property eligible for the purposes of this undertaking only in 2012. This is a historic property per Section 106 and a historical resource per CEQA.
Built environment resource: Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line (Primary No. 19-188983)	This resource was evaluated as eligible for the National Register under Criteria A and C by the BLM in 1999, and the SHPO formally concurred in 2000. This is a historic property per Section 106 and a historical resource per CEQA.
Built environment resource: Drake Park Historic District	The Drake Park Historic District was determined eligible for the National Register in 1987 under Criteria A and C at the local level. It had been previously designated as a local "historic landmark district" by the City of Long Beach in 1980, and expanded in 1982. In 1998, Long Beach combined the Drake Park Historic Landmark District with nearby Willmore City Historic Landmark District to form a new, larger local district called the Drake Park/Willmore City Historic Landmark District. Only the smaller Drake Park Historic District sub-area within the larger Drake Park/Willmore City local Historic Landmark District is eligible for the National Register.

Source: GPA Consulting. *Supplemental Historical Resources Evaluation Report* (April 2017).

APE = Area of Potential Effects
BLM = Bureau of Land Management
California Register = California Register of Historical Resources
Caltrans = California Department of Transportation
CEQA = California Environmental Quality Act
DPR = Department of Parks and Recreation
National Register = National Register of Historic Places
SHPO = State Historic Preservation Officer
UP Railroad = Union Pacific Railroad

The Drake Park Historic District was determined eligible for the National Register in 1987 under Criteria A and C at the local level. It had been previously designated as a local "historic landmark district" by the City of Long Beach in 1980, and expanded in 1982. In 1998, Long Beach combined the Drake Park Historic Landmark District with nearby Willmore City Historic Landmark District to form a new, larger local district called the Drake Park/Willmore City Historic Landmark District. Only the smaller Drake Park Historic District sub-area within the larger Drake Park/Willmore City Historic Landmark District is eligible for the National Register.

No additional properties that were identified and evaluated within the Supplemental APE for this analysis meet the criteria for inclusion in the National Register and/or the California Register. Therefore, there are five resources in the Supplemental APE eligible for inclusion in the National Register. These five National Register-eligible resources are also considered historical resources for the purposes of CEQA.

No archaeological resources requiring evaluation were identified in the original APE or Supplemental APE through archival research, Native American consultation, or the field survey. In general, the original APE and the Supplemental APE have been extensively disturbed by construction of the existing freeways and roads, railroads, urban development, and other infrastructure; river channelization; hydrologic events; and agriculture. The area of direct effects (Direct APE) is considered to have very low sensitivity for the presence of buried archaeological resources within existing freeway rights of way as any construction activities would likely be limited to within the existing engineered fill. If any deep excavations do occur within the rights of way, there is the potential to encounter undisturbed sediments that may contain archaeological resources.

ARCHAEOLOGICAL SENSITIVITY STUDY. An Archaeological Sensitivity Study (2017) was prepared subsequent to the archaeological survey study. For the Archaeological Sensitivity Study, a proximity analysis was conducted using a Geographic Information System (GIS) and used four data layers: elevation highpoints, the historic alignments of the Los Angeles River, the locations of ethnohistoric villages, and the locations of previously recorded cultural resources identified by SCCIC records searches. Sanborn Fire Insurance Maps were also reviewed. As part of the Archaeological Sensitivity Study, settlement modeling reveals patterned human behavior and the repeated use over time of elevated landforms bordering the lower floodplain. High energy meanderings of the river channel will have erased a great deal of potential archaeological evidence. The Direct APE is considered to have very low sensitivity for the presence of buried archaeological resources within existing freeway rights-of-way (existing I-710 footprint) as any construction activities will likely be limited to within the existing engineered fill. If any excavations occur within the Direct APE outside the existing freeway footprint (i.e., within the existing rights of way) or if deep excavations occur within the freeway footprint/existing rights of way, there is the potential to encounter undisturbed sediments that may contain archaeological resources. In other words excavations within native deposits below and/or outside the existing freeway alignment as part of freeway expansion have the potential to encounter archaeological resources. Pile driving and the construction of retaining walls within previously disturbed deposits do not have the potential. The construction design plans are currently at a 30 percent level of completion; therefore, specific construction details are unknown at this time. Further construction details will be refined at 65 and 95 percent design review. Once specific areas of impact are defined at a 95 percent design review, areas of potential archaeological sensitivity can be reassessed.

The Archaeological Sensitivity Study categorizes areas within the Supplemental APE that are recommended for monitoring for archaeological resources during construction activities. Generally, construction monitoring is not recommended for portions of the Supplemental APE that are within the existing freeway alignment, fill deposits, historical marsh environments, or historical river bed settings. However, construction monitoring may be warranted during ground disturbing activities within previously undisturbed native deposits. The categorized areas are identified by post-mile markers along the I-710 corridor.

The Archaeological Sensitivity Study (2017) identifies three areas within the Supplemental APE that exhibit the possibility to contain previously unrecorded archaeological resources. Archaeological monitoring is presently recommended for 94 acres (3.6 percent) of the Direct APE. Spot checking is recommended for 1,178 acres (45.4 percent) of the Direct APE, and no additional work is recommended for 1,321 acres (50.9 percent) of the Direct APE. The recommendation for spot checking is based on the potential observation of native (previously undisturbed) deposits. Observation during spot checking of previously disturbed and/or fill deposits would negate the continued need for spot checking in those areas. The recommendations are based on review of construction design data that is at a 30 percent level of completion, as of February 2017; a reevaluation in the future with availability of a higher level of completion of the construction design data would be conducted and the vertical APE would be further refined (i.e., at 65 and 95 percent design completion). Caltrans anticipates that the 94 acres recommended for monitoring and the 1,178 acres for spot checking may be further reduced upon review at 65 percent and 95 percent design review. The 65 percent and 95 percent design review requirements are listed in the Environmental Commitment Record and would be added to project plans.

In a letter dated June 1, 2017, the SHPO concurred with the Supplemental HPSR and found the analysis contained in the Archaeological Sensitivity Study to be sufficient. However, the SHPO concluded that Caltrans cannot fully determine how the undertaking may affect unknown historic properties in the Direct APE and advised Caltrans to move forward with a project-level Programmatic Agreement (project-level PA) for this undertaking to phase identification, evaluation, and findings of effect of unknown historic properties (pursuant to Stipulation XII.A of the Section 106 PA). Caltrans will develop the project-level PA following submittal of the Supplemental Finding of Effect document.

A Historic Properties Treatment Plan (HPTP) will be developed by a qualified archaeologist in consultation with the Caltrans PQS in Principal Investigator-Prehistoric or Historic Archaeology to plan for the identification, evaluation, and treatment of archaeological resources should they be discovered during construction. The draft HPTP will be attached to the project-level PA, both of which will be conditions of the Supplemental Finding of Effect for the undertaking. Caltrans will continue consultation with the SHPO on the recommendation for preparation of the project-level PA at the time the Supplemental Finding of Effect is submitted for SHPO review.

3.7.3 Environmental Consequences

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to cultural resources are located in Section 3.24.3.7.

3.7.3.1 Permanent Impacts

Build Alternatives

On September 20, 2012, the SHPO concurred on the finding of No Adverse Effect to the Patata St. Segment and the Noakes St. Segment of the UP Railroad, Dale's Donuts, and the Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line. There have been no changes to the Project Description related to these four resources since that time, and it is assumed that SHPO concurrence on the findings will not change for these resources. However, the Supplemental APE includes two resources, the Frontage Segment of the UP Railroad and the Drake Park Historic District that were not discussed in the original 2012 studies, and therefore, do not yet have SHPO concurrence on findings of effects. This coordination is ongoing.

Alternative 5C. The UP Railroad (formerly Southern Pacific Railroad) Segment (Primary No 19-186110/30-176630) would be impacted by this alternative. A segment south of Patata St. in the City of South Gate, where the rail line crosses over the Los Angeles River and I-710, would be realigned 70 feet to the south and two bridges would be replaced. However, this segment of rail (including the extant bridge spanning the river) was previously replaced in 1938 due to the Los Angeles River flood. The extant bridge over the I-710 was built in 1957 when I-710 was constructed. Therefore, this segment of the rail line has already been altered and does not contribute to the significance of the UP Railroad. Further, this minor realignment would not impact the overall significance of the UP Railroad. Therefore, this alternative would not cause an adverse effect on the historical rail line because the rail line would continue to be eligible for the National Register. This alternative would result in a finding of No Adverse Effect per 36 CFR 800.5. A segment of the UP Railroad (formerly Southern Pacific Railroad) (Primary No. 19-186110/30-176630) south of Frontage Rd. in the City of South Gate, which passes under I-710, would be impacted by this alternative. The extant overpass, constructed in 1957 would be widened. However, this segment of the rail line was previously realigned between 1936 and 1942. Therefore, this segment of the rail line has been altered and does not contribute to the significance of the UP Railroad. Further, this minor change in setting would not impact the overall significance of the UP Railroad. Therefore, this alternative would not cause an adverse effect on the historical rail line because the rail line would continue to be eligible for the National Register. This alternative would result in a finding of No Adverse Effect per 36 CFR 800.5 for this resource. An additional UP Railroad (formerly Southern Pacific Railroad) Segment (Primary No. 19-186112) that is eligible for National Register and/or California Register inclusion

would be impacted by the project. A segment south of Noakes St. includes an area in the City of Commerce that passes under I-710. Under this alternative, the extant overpass constructed in 1957, would be widened, and new overpasses would be added. However, this segment of rail was constructed between 1940 and 1948, after the period of significance for the rail line, which is from 1869 to 1926. Therefore, this segment of the rail line is not original and does not contribute to the significance of the UP Railroad. Consequently, this alternative would result in a preliminary finding of No Adverse Effect per 36 CFR 800.5 for this resource, pending SHPO concurrence.

Dale's Donuts would only be minimally affected by the arterial intersection improvements at the Atlantic Ave./Alondra Blvd. intersection. This alternative would incorporate 0.01 acre of land from the property, permanently removing a small section of parking area and sidewalk and moving back the sidewalk eight feet into the parcel. No changes would occur to the structure as a result of the alternative. Therefore, the Programmatic Architectural features that qualify this resource for the National Register would not be affected. This alternative would result in a finding of No Adverse Effect per 36 CFR 800.5 for this resource.

The Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line (Primary No. 19-188983) would not be impacted by this alternative.

The Drake Park National Register-eligible Historic District would not be impacted by this alternative. A temporary vehicular detour would be routed through the Historic District along Daisy Ave. between 7th and 9th Sts. In addition, 7th St. between Maine and Daisy Aves. is proposed to be modified from a one-way to a two-way street utilizing the existing right of way. This will require restriping of the roadway, and possibly the replacement of the concrete curb and sidewalk on the north side of the street, within the District traffic patterns; however, this temporary condition will not diminish the integrity of the District's significant historic features. In addition, the in-kind replacement of a segment of curb and sidewalk and restriping of vehicular lanes will not diminish the Historic District's integrity.

ARCHAEOLOGICAL RESOURCES. The APE (original and supplemental) has been extensively disturbed by construction of the existing freeways and roads, railroads, urban development, and other infrastructure. Most of this disturbance occurred decades before archaeological sites were routinely and systematically recorded or there were laws and/or regulations to protect cultural resources. No archaeological resources requiring evaluation were identified through archival research, Native American consultation, or the field survey. However, there is the potential (albeit low) to encounter unanticipated archaeological resources during ground-disturbing activity associated with construction. Section 3.24, Construction Impacts, discusses impacts related to construction and CON-CUL-1 refers to mitigation measures related to unanticipated cultural resource discoveries during construction activity. The

Archaeological Sensitivity Study (2017) identifies three areas within the Supplemental APE that exhibit the possibility to contain previously unrecorded archaeological resources.

In a letter dated June 1, 2017, the SHPO concurred with the Supplemental HPSR and found the analysis contained in the Archaeological Sensitivity Study to be sufficient. However, the SHPO concluded that Caltrans cannot fully determine how the undertaking may affect unknown historic properties in the Direct APE and advised Caltrans to move forward with a project-level PA for this undertaking to phase identification, evaluation, and findings of effect of unknown historic properties (pursuant to Stipulation XII.A of the Section 106 PA). Caltrans will develop the project-level PA following submittal of the Supplemental Finding of Effect document. An HPTP will be developed by a qualified archaeologist in consultation with the Caltrans PQS Principal Investigator-Prehistoric or Historic Archaeology to plan for the identification, evaluation, and treatment of archaeological resources should they be discovered during construction. The draft HPTP will be attached to the project-level PA, both of which will be conditions of the Supplemental Finding of Effect for the undertaking. Caltrans will continue consultation with the SHPO on the preparation of the project-level PA and the HPTP following submittal of the Supplemental Finding of Effect. SHPO concurrence regarding the Supplemental Finding of Effect is pending.

Additionally, no indirect impacts that would alter the eligibility status of archaeological or built environment resources are anticipated as a result of this alternative.

ALTERNATIVE 7. The UP Railroad (formerly the Southern Pacific) Segment (Primary No. 19-186110/30-176630) would be impacted by this alternative. A segment south of Patata St., in the City of South Gate where the rail line crosses over the Los Angeles River and I-710, would be realigned 70 feet to the south, and two bridges would be replaced. However, this segment of rail (including the extant river) was previously replaced in 1938 due to the Los Angeles River flood. The extant bridge over I-710 was built in 1957 when the I-710 was constructed. Therefore, this segment of the rail line has already been altered and does not contribute to the significance of the UP Railroad. Further, this minor realignment would not impact the overall significance of the UP Railroad. Therefore, this alternative would not cause an adverse effect on the historical rail line because the rail line would continue to be eligible for the National Register. This alternative would result in a finding of No Adverse Effect per 36 CFR 800.5 for this resource. A segment of the UP Railroad (formerly Southern Pacific Railroad) (Primary No. 19-186110/30-176630) south of Frontage Rd. in the City of South Gate, which passes under I-710, would be impacted by this alternative. A new overpass would be constructed southeast of the I-710 to carry the elevated freight corridor. However, this segment of the rail line was previously realigned between 1936 and 1942. Therefore, this segment of the rail line has been altered and does not contribute to the significance of the UP Railroad. Further, this minor change in setting would not impact the overall significance of the UP Railroad. Therefore, this alternative would not cause an

adverse effect on the historical rail line because the rail line would continue to be eligible for the National Register. This alternative would result in a finding of No Adverse Effect per 36 CFR 800.5 for this resource. An additional UP Railroad (formerly Southern Pacific Railroad) Segment (Primary No. 19-186112) that is eligible for National Register and/or California Register inclusion would be impacted by the project, though the segment includes an area in the City of Commerce that passes under I-710. Under this alternative, the extant overpass, constructed in 1957, would be widened and new overpasses would be added. However, this segment of the rail line was constructed between 1940 and 1948, after the period of significance for the rail line, which was from 1869 to 1926. Therefore, this segment of the rail line is not original and does not contribute to the significance of the UP Railroad. This alternative would result in a preliminary finding of No Adverse Effect per 36 CFR 800.5 for this resource, pending SHPO concurrence.

Dale's Donuts would only be minimally affected by the arterial intersection improvements at the Atlantic Ave./Alondra Blvd. intersection. This alternative would incorporate 0.01 acre of land from the property, permanently removing a small section of parking area and sidewalk and moving back the sidewalk eight feet into the parcel. No changes would occur to the structure as a result of the alternative. Therefore, the Programmatic Architectural features that qualify this resource for the National Register would not be affected. This alternative would result in a finding of No Adverse Effect per 36 CFR 800.5 for this resource.

In contrast to Alternative 5C, the Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line (Primary No. 19-188983) would be impacted under Alternative 7 in that the towers on either side of the I-710 would be replaced and the transmission lines heightened by 55 feet to make room for construction of the elevated freight corridor. However, the integrity of the transmission line would not be reduced to the degree that it would no longer be eligible for the National Register. Therefore, this alternative would result in a finding of No Adverse Effect per 36 CFR 800.5 for this resource. A portion of the Drake Park Historic District would not be impacted by this alternative. A temporary vehicular detour would be routed through the Historic District along Daisy Ave. between 7th and 9th Sts. In addition, 7th St. between Maine and Daisy Aves. is proposed to be modified from a one-way to a two-way street utilizing the existing right of way. This will require restriping of the roadway, and possibly the replacement of the concrete curb and sidewalk on the north side of the street, within the Historic District boundaries. As construction design plans are further developed, the necessity of replacing the curb and sidewalk will be determined. If replacement is needed, it will be in-kind to match the existing scored concrete sidewalk pattern. The temporary vehicular detour will affect the District by altering its traffic patterns; however, this temporary condition will not diminish the integrity of the District's significant historic features. In addition, the in-kind replacement of a segment of curb and sidewalk and restriping of vehicular lanes will not diminish the Historic District's integrity. Therefore, this alternative

would result in a preliminary finding of No Adverse Effect per 36 CFR 800.5 for this resource, pending SHPO concurrence.

ARCHAEOLOGICAL RESOURCES. The APE (original and supplemental) has been extensively disturbed by construction of the existing freeways and roads, railroads, urban development, and other infrastructure. Most of this disturbance occurred decades before archaeological sites were routinely and systematically recorded or there were laws and/or regulations to protect cultural resources. No archaeological resources requiring evaluation were identified through archival research, Native American consultation, or the field survey. However, there is always the potential (albeit low) to encounter unanticipated archaeological resources during ground-disturbing activity associated with construction. Section 3.24, Construction Impacts, discusses impacts related to construction and CON-9 refers to mitigation measures related to unanticipated cultural resource discoveries during construction activity. The Archaeological Sensitivity Study (2017) identifies three areas within the Supplemental APE that are more likely exhibit the possibility to contain previously unrecorded archaeological resources.

In a letter dated June 1, 2017, the SHPO concurred with the Supplemental HPSR and found the analysis contained in the Archaeological Sensitivity Study to be sufficient. However, the SHPO concluded that Caltrans cannot fully determine how the undertaking may affect unknown historic properties in the Direct APE and advised Caltrans to move forward with a project-level PA for this undertaking to phase identification, evaluation, and findings of effect of unknown historic properties (pursuant to Stipulation XII.A of the Section 106 PA). Caltrans will develop the project-level PA following submittal of the Supplemental Finding of Effect document. An HPTP will be developed by a qualified archaeologist in consultation with the Caltrans PQS Principal Investigator-Prehistoric or Historic Archaeology to plan for the identification, evaluation, and treatment of archaeological resources should they be discovered during construction. The draft HPTP will be attached to the project-level PA, both of which will be conditions of the Supplemental Finding of Effect for the undertaking. Caltrans will continue consultation with the SHPO on the preparation of the project-level PA and the HPTP following submittal of the Supplemental Finding of Effect, pending SHPO concurrence.

Additionally, no indirect impacts that would alter the eligibility status of archaeological or built environment resources are anticipated as a result of this alternative.

NO BUILD ALTERNATIVE. No I-710 Corridor Project improvements would be constructed under Alternative 1, the No Build Alternative; therefore, no impacts to cultural resources would result from Alternative 1.

3.7.3.2 SECTION 4(F) RESOURCES

As discussed earlier, five historic properties have been identified as potentially triggering the requirements for protection under Section 4(f). Those resources, and reasons why they do not (or would not) trigger the requirements for protection under Section 4(f), are described in the following sections. Refer to Appendix B for a more detailed discussion of these historic properties and their evaluation under Section 4(f), including whether Section 4(f) would apply.

UP RAILROAD (PRIMARY NOS. 19-186110/30-176630 AND 19-186112 [ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER]). Alternatives 5C and 7 would require the minor realignment and replacement of two bridges in one segment of the rail line in the portion of Segment 19-186110/ 30-176630 south of Patata St. in the City of South Gate to accommodate lane additions and the modified freeway realignment. The minor realignment of those tracks would occur entirely within UP Railroad right of way, would not result in any change in the number of tracks at this location, and would not result in any modifications to the use of those tracks for rail operations. The extant tracks and bridges at this location are not original. Therefore, the proposed changes would not alter any original features and the rail lines as a whole would continue to be eligible for the National Register. Alternative 5C would result in the widening of an existing overpass, and Alternative 7 would result in the construction of a new overpass in the portion of Segment 19-186110/30-176630 south of Frontage Rd. in the City of South Gate. The tracks at this location were previously altered and are not original. Therefore, the proposed changes would not alter any original features and the rail line as a whole would continue to be eligible for the National Register. Under Alternatives 5C and 7, the extant overpass would be widened and new overpasses would be added in the portion of Segment 19-186112 south of Noakes St. in the City of Commerce. The tracks at this location were previously altered and are not original. Therefore, the proposed changes would not alter any original features, and the rail line as a whole would continue to be eligible for the National Register.

Caltrans, as assigned by FHWA, concluded that the I-710 Corridor Project build alternatives would have No Adverse Effect, under Section 106 of the NHPA and 36 CFR 800.5, on the three UP Railroad crossings at I-710 . On September 20, 2012, the SHPO concurred on the finding of No Adverse Effect to the Patata St. Segment and the Noakes St. Segment of the UP Railroad. There have been no changes to the Project Description related to these two segments since the SHPO's previous concurrence. The finding of No Adverse Effect for the Frontage Segment was not included in the prior studies; however, Caltrans anticipates that the SHPO would concur with that conclusion as well. As a result, Caltrans has made a preliminary de minimis determination under Section 4(f) for the project effects related to the permanent acquisition of land from the UP Railroad Line. Section 106 and de minimis documentation will be sent to SHPO. Written notification will be provided to SHPO that a non-response for the purposes of a "no adverse effect" determination will be treated as the written concurrence for a de minimis finding. No further analysis or discussion under Section 4(f) is needed for this resource, pending SHPO concurrence.

DALE'S DONUTS IN COMPTON (ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER). Alternatives 5C and 7 would result in the permanent acquisition of 0.01 acre of land at the property occupied by Dale's Donuts, but would not require any permanent or temporary easements at, or other temporary uses of, that property. The land needed for the build alternatives includes a curb and some parking, but does not affect the building, which is the feature of this property that qualifies it for the National Register. Therefore, this structure would continue to be eligible for the National Register.

Caltrans, as assigned by FHWA, has concluded that the I-710 Corridor Project build alternatives would have No Adverse Effect, under Section 106 of the NHPA and 36 CFR 800.5, on the National Register-eligible building known as Dale's Donuts. On September 20, 2012, the SHPO concurred on the finding of No Adverse Effect for Dale's Donuts. There have been no changes to the Project Description related to this building since the SHPO's previous concurrence. Therefore, Caltrans has made a preliminary de minimis determination under Section 4(f) for the project effects related to the permanent acquisition of land from Dale's Donuts. Section 106 and de minimis documentation will be sent to SHPO. Written notification will be provided to SHPO that a non-response for the purposes of a "no adverse effect" determination will be treated as the written concurrence for a de minimis finding. No further analysis or discussion under Section 4(f) is needed for this resource, pending SHPO concurrence.

BOULDER DAM-LOS ANGELES TRANSMISSION LINES (ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER). Segments of the Boulder Dam-Los Angeles Transmission Lines (two parallel electrical transmission circuits carried on steel lattice towers) cross over I-710 in the Study Area. The transmission lines were constructed in 1935–936 and were found to be eligible for the National Register in 2000 under Criteria A and C. Therefore, the property is subject to protection under the requirements of Section 4(f).

Alternative 5C would not result in a use of the historic transmission lines. However, Alternative 7 would result in permanent changes at the transmission lines as a result of modifying/replacing one tower on each side of I-710 in order to raise the transmission lines 55 feet at their crossing of I-710. These changes would require modifying one tower on each side of I-710, or replacing the towers with new towers that would be a sufficient height to provide the required clearance between the freeway facility and the transmission lines. The modified or new towers would be entirely within existing City of Los Angeles rights of way, and the design and implementation of the modified or new towers would be conducted entirely by the DWP. The modifications to the existing towers, or construction of new towers, would not result in any change in the number of transmission lines. The proposed modifications are similar to other structural modifications and replacements previously made along these lines to allow for safe operation of the transmission lines. Therefore, the proposed changes to the transmission lines and towers under Alternative 7 would not substantively affect the resource, and would not reduce the integrity of the historic property to a degree where the property would no longer be eligible for the National Register.

Caltrans, as assigned by FHWA, has concluded that the I-710 Corridor Project build alternatives would have No Adverse Effect, under Section 106 of the NHPA and 36 CFR 800.5, on the Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line. On September 20, 2012, the SHPO concurred on the finding of No Adverse Effect to this resource. There have been no changes to the Project Description related to the transmission line since the SHPO's previous concurrence. Therefore, Caltrans has made a de minimis determination under Section 4(f) for the project effects related to the permanent acquisition of land from the Boulder Dam-Los Angeles Transmission Lines. No further analysis or discussion under Section 4(f) is needed for this resource, pending SHPO concurrence.

DRAKE PARK HISTORIC DISTRICT. The Drake Park Historic District was determined eligible for the National Register in 1987 under Criteria A and C at the local level. It had been previously designated as a local "historic landmark district" by the City of Long Beach in 1980, and expanded in 1982. In 1998, Long Beach combined the Drake Park Historic Landmark District with nearby Willmore City Historic Landmark District to form a new, larger local district called the Drake Park/Willmore City Historic Landmark District. Only the smaller Drake Park Historic District sub-area within the larger Drake Park/Willmore City Historic Landmark District is eligible for the National Register. Temporary use of public streets for vehicular detours during project construction and the in-kind replacement of a small segment of curb and sidewalk may occur; however, these will not adversely affect the significance, integrity, or eligibility of the Historic District as a whole. Therefore, construction of the proposed project would result in a less than significant impact to a historic property and no mitigation is required.

Caltrans, as assigned by FHWA, has concluded that the I-710 Corridor Project build alternatives would have No Adverse Effect, under Section 106 of the NHPA and 36 CFR 800.5, on the Drake Park Historic District and anticipates that the SHPO would concur with that conclusion. Written notification will be provided to the SHPO that a non-response for the purposes of a "no adverse effect" determination will be treated as the written concurrence. No further analysis or discussion is needed for this resource, pending SHPO concurrence. The larger Drake Park/Wilmore City Historic District, a locally-designated district in the City of Long Beach established in 1998, was determined ineligible for the National Register in 2016. Because it is considered a "CEQA-only" resource, this larger historical resource is discussed in detail within Chapter 4.0 of this document.

3.7.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

As previously discussed in this section, the build alternatives would not adversely affect the qualities of the UP Railroad (P-19-186110/30-176630 [Patata Street and Frontage Road segment] and P-19-186112 [Noakes St. segment]), Dale's Donuts (APN: 7301-017-001), and Boulder Dam-Los Angeles Transmission Lines and Tower (P-19-188983), or the Drake Park Historic District and the project would result in a de minimis impact to these Section 4(f) historic properties. Therefore, no avoidance, minimization, and/or mitigation measures are proposed for

architectural resources. As the project would result in a finding of No Adverse Effect, a Memorandum of Agreement is not required before completion of the final environmental document.

In a letter dated June 1, 2017, the SHPO concurred with the Supplemental HPSR and found the analysis contained in the Archaeological Sensitivity Study to be sufficient. However, the SHPO concluded that Caltrans cannot fully determine how the undertaking may affect unknown historic properties in the Direct APE and advised Caltrans to move forward with a project-level PA for this undertaking to phase identification, evaluation, and findings of effect of unknown historic properties (pursuant to Stipulation XII.A of the Section 106 PA). Caltrans will develop the project-level PA following submittal of the Supplemental Finding of Effect document to SHPO for review. An HPTP will be developed by a qualified archaeologist in consultation with the Caltrans PQS Principal Investigator-Prehistoric or Historic Archaeology to plan for the identification, evaluation, and treatment of archaeological resources should they be discovered during construction. The draft HPTP will be attached to the project-level PA, both of which will be conditions of the Supplemental Finding of Effect for the undertaking. Caltrans will continue consultation with the SHPO on the preparation of the project-level PA and the HPTP following submittal of the Supplemental Finding of Effect. SHPO concurrence regarding the Post-Review Discovery and Monitoring (PRDM) Plan and the Supplemental Finding of Effect is pending.

If previously unidentified cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find. Section 3.24, Construction Impacts, discusses impacts related to construction and CON-9 refers to mitigation measures related to unanticipated cultural resource discoveries during construction activity. To further minimize potential effects to previously unidentified cultural materials, a qualified archaeologist would monitor construction activities in areas of increased archaeological sensitivity as indicated in the Archaeological Sensitivity Study (2017) and its updates at 65 and 95 percent design completion.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to California PRC Section 5097.98, if the remains are thought to be Native American, the Coroner would notify the NAHC, which would then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains would contact the District 7 Cultural Resources Coordinator so that they may work on the respectful treatment and disposition of the remains. Further provisions of California PRC 5097.98 are to be followed as applicable.

Refer to Section 3.24.4.7, Construction Impacts, for measures to reduce impacts to cultural resources and/or human remains that are discovered during project construction.

3.8 HYDROLOGY AND FLOODPLAIN

3.8.1 REGULATORY SETTING

Executive Order (EO) 11988 (Floodplain Management) directs all Federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration (FHWA) requirements for compliance are outlined in 23 Code of Federal Regulations (CFR) 650 Subpart A.

In order to comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

3.8.2 AFFECTED ENVIRONMENT

The information in this section is based on the following technical reports:

- *Flood Control Facilities Report* (January 2017)
- *Water Quality Assessment Report* (March 2017)
- *Preliminary On-Site Hydrology Report* (December 2016)

3.8.2.1 FLOODPLAINS

The Federal Emergency Management Agency (FEMA) has prepared Flood Insurance Rate Maps (FIRMs) that delineate flood zones based on estimated flood risk. According to FEMA FIRM Nos. 06037C1810, 06037C1815F (amended May 13, 2014), 06037C1820F (amended most recently on May 13, 2015), 06037C1955F (amended June 11, 2009), 06037C1962F (amended June 3, 2014), and 06037C1964F (September 26, 2008), the Study Area is located within Zone A of the Los Angeles River, Compton Creek, and Rio Hondo Channel 100-year floodplains from the Union Pacific Railroad (UP Railroad) bridge, north of Firestone Blvd. in the City of South Gate, south to the Ocean Blvd. bridge in the City of Long Beach. Zone A is the FEMA designation for areas of 100-year floodplains where base flood elevations and flood

hazard factors have not been determined. The FEMA FIRMs are included in Appendix K of this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS).

A 100-year flood event is mostly contained within the existing levees in the Study Area. However, two 100-year flood areas outside the Los Angeles River channel are located near the Interstate 710 (I-710)/Anaheim St. Interchange in the City of Long Beach. Two other small ponding areas (Zone AH) are located just north of the Interstate 105 (I-105) freeway and west of I-710. Zone AH areas have a one percent annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from one to three feet. Zone X areas are shown on the FEMA FIRM along the reaches under study. These Zone X areas have either a 0.2 percent annual chance of flood (500-year floodplain) or a one percent annual chance of flood (100-year floodplain) with shallow flooding (less than one foot in depth).

The Los Angeles River parallels the I-710 freeway throughout much of the Study Area and, for the most part, is an unvegetated, concrete- and riprap-lined trapezoidal channel. A small portion of the Los Angeles River, south of Willow St. in Long Beach, has a natural bottom and supports riparian vegetation. The current flow in the river originates from runoff from adjacent commercial, industrial, and residential developments, and groundwater reaching the surface. Water in the Los Angeles River is also fed by Bell Creek and Calabasas Creek, which have headwaters in the Santa Susana and Santa Monica Mountains. Several other feeder creeks flow from the mountains and hills ringing the valley and flow into the Los Angeles River at points throughout the valley. Other major sources of water for the Los Angeles River include the Donald C. Tillman Water Reclamation Plant, which releases recycled wastewater downstream of the Sepulveda Basin, as well as the Tujunga Wash, the Santa Monica Mountains, and the Rio Hondo Channel. Each of these areas carries runoff from areas throughout the watershed and deposits it into the Los Angeles River (The River Project 2011,[1] Tillman Personnel and Multi-use Facility Project IS-MND 2012[2]). Rio Hondo is an unvegetated, rectangular concrete channel with intermittent flows. Compton Creek is a trapezoidal channel with an earthen bottom and concrete and grouted riprap banks. Compton Creek supports riparian vegetation and perennial flows within the Study Area.

Floodplains and wetlands in their natural or relatively undisturbed state serve water resource values (e.g., natural moderation of floods, water quality maintenance, and groundwater recharge), living resource values (e.g., fish, wildlife, and plant species), and cultural resource

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[1] The River Project. 2011. Website: http://www.theriverproject.org/learn/know-your-watershed/the-los-angeles-river-watershed/the-valley (accessed March 22, 2017).

[2] City of Los Angeles. 2016. Department of Public Works Bureau of Engineering. Website: http://eng.lacity.org/techdocs/emg/docs/dc_water/Public_Draft_IS-MND.pdf.

values (e.g., open space, archaeological and historical resources, natural beauty, scientific study, outdoor education, and recreation). Beneficial uses of surface waters are identified in the Los Angeles Region Water Quality Control Plan (Basin Plan). Beneficial uses include the various ways that water can be used for the benefit of people and/or wildlife. The existing, intermittent, and potential beneficial uses are identified in Section 3.9 of this RDEIR/SDEIS in Table 3.9-1, Beneficial Uses of Inland Surface Waters and Coastal Waters Los Angeles Region Water Quality Control Plan.

3.8.2.2 DRAINAGE CONDITIONS

EXISTING DRAINAGE FACILITIES. The I-710 Corridor contains a complex series of interconnected drainage systems that handle flows from both on-site and off-site drainage areas. There are several drainage outlet scenarios depending on the relative elevation differential to the Los Angeles River levee and other physical constraints presented along the I-710 Corridor. Most drainage areas are handled by pump stations located adjacent to the Los Angeles River. As the terrain and freeway profiles rise relative to the river levee height, more gravity drainage systems handle drainage from the freeway right of way and adjacent off-site drainage areas. Existing drainage systems that traverse the I-710 Corridor Project boundary fall into three categories: inflows, outlets, and transfer flows. A brief description of the existing drainage facilities located in the I-710 Corridor near the Los Angeles River is provided below:

- Drainage Area 1 (Pico Ave. to 31st St.) – The terrain in this drainage area is lower than the Los Angeles River levee height and large drainage areas are handled by a series of pump stations situated in the Long Beach Harbor and at the major arterial interchanges including Anaheim St., Pacific Coast Hwy., and Willow St.
- Drainage Area 2 (31st St. to Long Beach Blvd.) – Due to higher terrain, this drainage area contains several gravity-flow drainage systems that outlet to the Los Angeles River. The Dominguez Basin, located north of the I-710/Interstate 405 (I-405) interchange, serves to meter outflow from off-site drainage areas located west of the interchange. A Caltrans pump station located at the Blue Line overcrossing handles drainage from a low point in the freeway profile. There are several existing gravity outlets that enter the Southern California Edison (SCE) right of way and Compton Creek in the vicinity of I-710 improvements.
- Drainage Area 3 (Long Beach Blvd. to Compton Blvd.) – This drainage area includes pump stations located at Long Beach Blvd., the I-710/State Route 91 (SR-91) interchange, and Alondra Blvd. that handle large off-site drainage areas.
- Drainage Area 4 (Compton Blvd. to Clara St.) – This drainage area has several gravity systems that outlet to the Los Angeles River. A Caltrans' pump station is located at the South Gate UP Railroad Crossing. The Bandini Trunk storm drain is a 20-foot by ten-foot concrete drainage channel and is located between the I-710 and the Los Angeles River.

This drainage system transfers off-site flows to the Los Angeles River and also receives flows from several smaller drainage pipes.

- Drainage Area 5 (Clara St. to Slauson Ave.) – This drainage area has Caltrans' pump stations located at Clara St., Gage Ave., and Slauson Ave. to handle low points in the freeway profile.
- Drainage Area 6 (Slauson Ave. to Interstate 5 [I-5]) – The freeway is elevated through this drainage area. Smaller, localized drainage systems typically drain to city streets or connect to two major County flood control drains.
- Drainage Area 7 (I-5 to State Route 60 [SR-60]) – In this drainage area, drainages typically drain to city streets or connect to two major County flood control drains. A large portion of the I-5/I-710 interchange depressed area drains to a Caltrans pump station located near the Eastern Ave. bridge over I-5.

ON-SITE DRAINAGE. The on-site drainage areas are defined based on the topography, roadway profiles, and existing drainage systems. These drainage areas may feed multiple drainage systems before reaching an outlet or pump station. The existing on-site drainage systems consist of a complex series of drainage inlets, cross culverts, dikes, over-side drains, concrete and earthen channels, pump stations, and detention basins located within the vicinity of or directly within the I-710 freeway right of way. The I-710 lanes and ramps generally drain via sheet flow to the shoulders where drainage collects along curbs before entering into underground pipes or down- drains. In some sections of the I-710 freeway, storm water drains to the median shoulders where drainage inlets convey the runoff to the cross drainage facilities. Underground storm drain systems generally channel flows into larger pipes before entering a pump station or the Los Angeles River. In some cases, the underground systems outlet onto vegetated areas adjacent to the I-710 right of way or local roadways.

The Dominguez Gap Spreading Grounds, located in the northeast quadrant of the I-710 to I-405 interchange, serve as recharge facilities and water quality basins. The two basins (east and west of the Los Angeles River) collect runoff from the interchange and off-site areas west of the I-710 Corridor. The basins discharge to a pump station with outlets to the Los Angeles River.

Stormwater runoff at the I-710 to I-5 interchange is conveyed through drainage facilities and one pump station to Los Angeles County facilities. These transport the runoff to outlets in the Los Angeles River before discharging to the Pacific Ocean.

OFF-SITE CONDITIONS. Because of the proximity of I-710 to the Los Angeles River, off-site drainage areas are tributary to the drainage systems located within the Study Area. The off-site areas tributary to the I-710 drainage systems consist mainly of commercial, residential, and vacant land parcels.

3.8.3 Environmental Consequences

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to Hydrology and Floodplains is located in Section 3.24.3.8.

3.8.3.1 Permanent Impacts

Build Alternatives.

Alternative 5C.

Floodplain Encroachments. As summarized in Table 3.8-1 and discussed in detail below, transverse (i.e., perpendicular to the direction of flow) encroachments would occur at 24 Los Angeles River locations, and eight Compton Creek and one Rio Hondo channel location under Alternative 5C. At these locations, the encroachments would result from construction of new bridge columns or piers and extension of existing piers. There would be approximately 21,225 square feet (0.487 acre) of new structure placed within the floodplain. In addition, localized channel modifications would be required to maintain the existing channel hydraulic capacity. To calculate level of risk at each crossing a 133-year flood event was used in accordance with United States Army Corps of Engineers (USACE)-authorized design discharge. For Alternative 5C, there would be no longitudinal (i.e., parallel to the direction of flow) encroachments in the Los Angeles River. A total of 52 acres of property acquisition and/or easements would be required from flood control areas. Approximately 66 percent of the acquisitions or easements would consist of aerial easements associated with the widening or creation of bridges.

Crossings Impacted By Both Alternatives 5C and 7. The following project design feature would result in transverse encroachments of the Los Angeles River 100-year floodplain for both Build Alternatives 5C and 7. All encroachments are considered low risk by location hydraulic studies performed at 133-year flood levels. Location numbers below identify encroachments from south to north and are used to clarify which encroachments occur at similar locations. These are referenced in Table 3.8-1 and displayed in Figure 3.8-1.

Location No. 1

- **Shoemaker Bridge:** The existing multi-span structure over the Los Angeles River consists of seven piers with five piers within the floodway without debris walls. The existing bridge would be replaced with a multi-span bridge, featuring six piers within the floodway approximately 400 feet downstream from the existing structure**.**

Table 3.8-1: Floodway Encroachment Impacts

Location No.	Floodway Structure	Disposition	Type of Improvement	Existing Floodway Footprint (sf)	Proposed Footprint (sf)		Net Impact (sf)	
					Alt 5C	Alt 7	Alt 5C	Alt 7
Floodway Impacts for Alternatives 5C and 7								
Los Angeles River								
1	Shoemaker Bridge	Replace	Additional piers	2,555	5,730	5,370	3,175	3,175
2	Anaheim St.	Replace	Fewer piers	1,615	3,595	3,595	1,980	1,980
3	Pacific Coast Hwy.	Replace	Fewer piers	1,242	4,252	4,252	3,010	3,010
4	Willow St.	Replace	Fewer piers	1,301	4,470	4,470	3,169	3,169
5	Wardlow Rd.	Replace	Fewer piers	2,485	3,920	3,920	1,435	1,435
6	NB I-710 to NB/SB I-405 Connectors (Crossing #1)	New	New piers	N/A	277	277	277	277
6	SB I-710 to SB I-405 Connector - Section 2 (over the Los Angeles River)	New	New piers and columns	N/A	101	101	101	101
6	NB I-710 to NB I-405 Connector (Crossing #2)	New	Replace piers/new outriggers	N/A	50	50	50	50
6	NB/SB I-710 to SB I-405 Connectors	Remove	Remove piers	3178	5,768	5,768	1,506	1,506
6	SB I-405 - Section 2 (over the Los Angeles River)	Replace	Replace piers					
6	NB I-405 - Section 2 (over the Los Angeles River)	Replace	Replace piers					
6	NB Santa Fe Off-Ramp	New	Replace piers	N/A				
6	NB I-405 to SB I-710 Connector	New	Replace piers/new outriggers	N/A				
6	NB I-405 to NB I-710 Connector(Crossing #1)	Replace	Replace piers	1,083				
8	Del Amo Blvd.	Replace	Fewer piers	1,602	2,297	2,297	695	695
10	Long Beach Blvd.	Widen	Extend bridge piers	2,463	3,558	3,558	1,095	1,095
14	Alondra Blvd.	Replace	Replace piers with fewer piers	1,855	2,858	2,858	1,004	1,004
15	Imperial Hwy.	Replace	Replace piers	2,279	2,064	2,064	-215	-215
17	NB I-710 Mainline over the Los Angeles River (north of Imperial Hwy.)	Widen	Extend bridge piers	N/A	1,118	1,118	1,118	1,118
19	Southern Ave.	New	New piers	0	1,500	1,500	1,500	1,500
20	Firestone Blvd.	Widen	Extend bridge piers	1,913	2,464	2,464	551	551
21	UP Railroad Patata Ind Lead	Replace	Replace piers	687	687	687	0	0
21a	Clara St. Pedestrian Crossing	New	New piers	N/A	341	341	341	341

Table 3.8-1: Floodway Encroachment Impacts

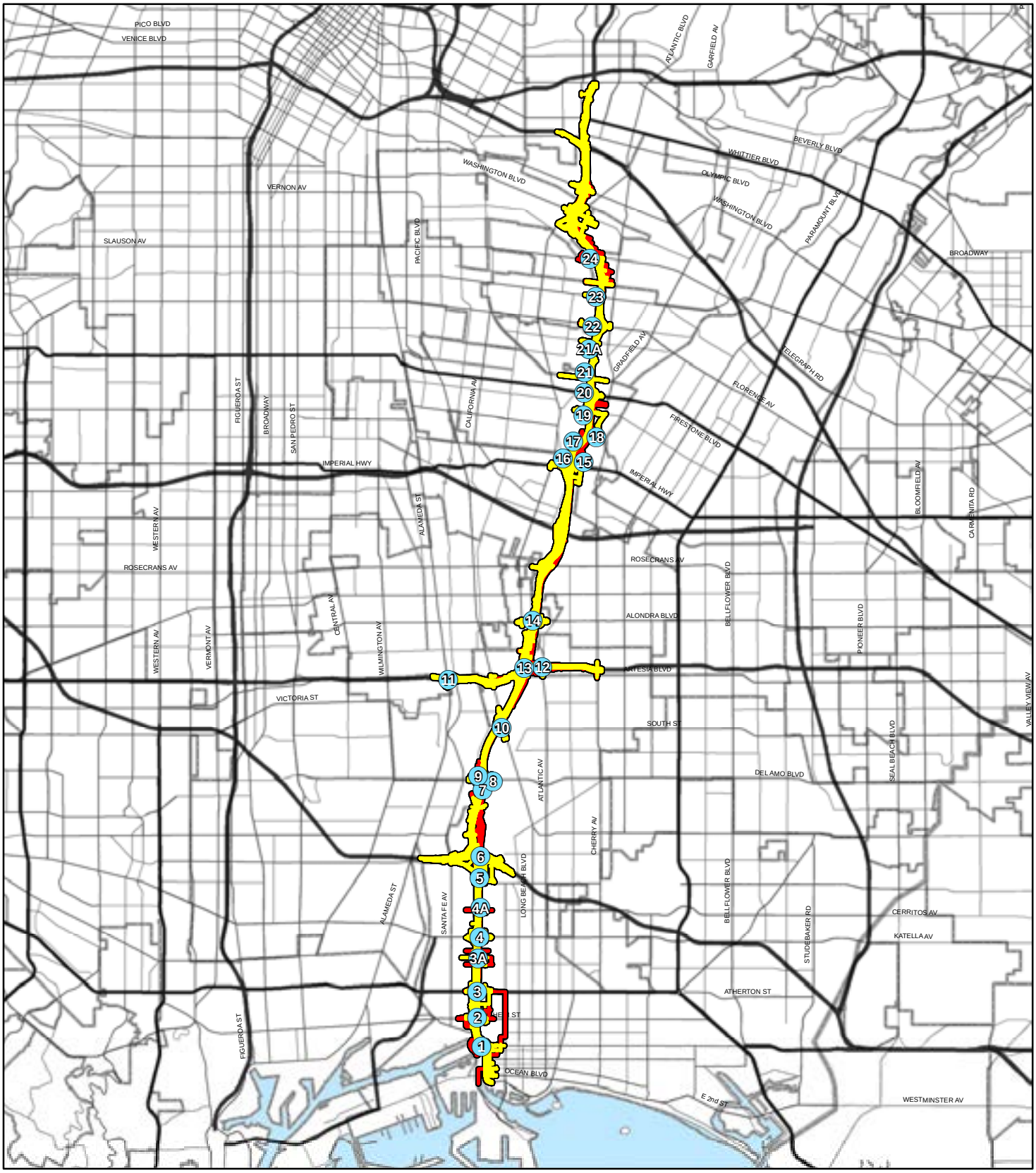
Location No.	Floodway Structure	Disposition	Type of Improvement	Existing Floodway Footprint (sf)	Proposed Footprint (sf)		Net Impact (sf)	
					Alt 5C	Alt 7	Alt 5C	Alt 7
22	Florence Ave.	Replace	Replace piers with fewer piers	555	2,132	2,132	1,577	1,577
23	UP Railroad La Habra Sub	Replace	Replace piers	495	495	495	0	0
Compton Creek								
9	Del Amo Blvd. (over Compton Creek)	Widen	Extend bridge piers	1,033	1,248	1,248	215	215
Rio Hondo Channel								
18	Garfield Ave. Bridge (over Rio Hondo)	Widen	Extend bridge piers	784	902	902	118	118
Floodway Impacts for Alternative 5C Only								
Los Angeles River								
3a	Hill St. Pedestrian Crossing	New	New piers	N/A	1,056		1,056	
4a	Spring St. Pedestrian Crossing	New	New piers	N/A	639		639	
12	Atlantic Blvd. Off-Ramp from EB SR-91 (Alternative 5C only)	Remove	Shorten bridge piers	113	N/A	N/A	-113	N/A
12	Atlantic On-Ramp to WB SR-91 (Alternative 5C only)	Remove	Shorten bridge piers	8,811	5,714	N/A	-3,097	N/A
12	Atlantic Blvd. On-Ramp to NB I-710 (Alternative 5C)	Remove	Shorten bridge piers			N/A		N/A
Compton Creek								
7	Del Amo Blvd. SB Entrance Ramp to Truck Bypass (over Compton Creek Alternative 5C only)	New	New columns/ splitter walls	N/A	250	N/A	250	N/A
7	Del Amo Blvd. NB Exit Ramp (over Compton Creek, Alternative 5C only)	New	New columns/ splitter walls	N/A	1,020	N/A	1,020	N/A
7	Truck Bypass NB - Section 4 (over Compton Creek Alternative 5C only)	New	New outriggers/ splitter walls	N/A	55	N/A	55	N/A
7	Mainline I-710 (over Compton Creek)	Replace	Replace piers	1.180	1,175	N/A	-5	N/A
7	Truck Bypass SB - Section 2 (over Compton Creek Alternative 5C only)	New	New columns/ splitter walls	N/A	565	N/A	565	N/A
11	SR-91 Mainline (over Compton Creek Alternative 5C only)	Widen	Additional piers/columns	927	1,116	N/A	189	N/A

Table 3.8-1: Floodway Encroachment Impacts

Location No.	Floodway Structure	Disposition	Type of Improvement	Existing Floodway Footprint (sf)	Proposed Footprint (sf)		Net Impact (sf)	
					Alt 5C	Alt 7	Alt 5C	Alt 7
11	Alameda St. On-ramp to EB SR-91 (over Compton Creek Alternative 5C only)	Replace	Replace columns	101	101	N/A	0	N/A
Floodway Impacts for Alternative 7 Only								
Los Angeles River								
12	Atlantic Blvd. On-ramp to NB I-710 (Alternative 7)	Remove	Removal to improve safety	8,811	N/A	9,815	N/A	1,004
13	NB FC to EB SR-91 Connector (Alternative 7 only)	New	Extend bridge piers		N/A		N/A	
13	SB I-710 to EB SR-91 Connector (Alternative 7 only)	Replace	Extend bridge piers		N/A		N/A	
13	SR-91 Mainline (Alternative 7 only)	Widen	Replace piers		N/A		N/A	
13	WB SR-91 to SB FC Connector (Alternative 7 only)	New	Extend bridge piers		N/A		N/A	
13	Atlantic Off-Ramp from EB SR-91 - Alternative 7 only	Replace	New columns		N/A	151	N/A	151
16	Freight Corridor over Los Angeles River (north of Imperial Hwy. - Alternative 7 only)	New	New piers/ columns	N/A	N/A	8,160	N/A	8,160
24	Slauson Ave. - Alternative 7 only	Replace	Existing to remain	1,150	N/A	2,665	N/A	1,515
Compton Creek								
7	Freight Corridor (over Compton Creek - Alternative 7 only)	New	New piers/ columns	N/A	N/A	322	N/A	322
7	NB I-710 to NB FC Connector (over Compton Creek - Alternative 7 only)	New	New columns/ splitter walls	N/A	N/A	151	N/A	151
7	SB FC to SB I-710 Connector (over Compton Creek - Alternative 7 only)	New	New columns/ splitter walls	N/A	N/A	9,815	N/A	9,815
Total Impact (sf)				**41,262**	**64,522**	**82,760**	**23,261**	**43,820**

Source: AECOM. *Flood Control Facilities Report* (2017).

EB = eastbound
FC = Freight Corridor
I-405 = Interstate 405
I-710 = Interstate 710
N/A = not available
NB = northbound
SB = southbound
sf = square footage
SR-91 = State Route 91
WB = westbound



LEGEND

- Bridge Crossings
- Alternative 5C/DO 1A, 2A,and 3A Footprint
- Alternative 7/DO 1B and 3B Footprint

FIGURE 3.8-1

N

0 1.25 2.5
Miles

SOURCE: Bing Maps (2014); AECOM (2016)

I:\URS0801\GIS _MOD\MXD\EIR_EIS\Chapter3\FloodplainEncroachment.mxd (6/5/2017)

I-710 Corridor Project
RDEIR/SDEIS

Floodplain Encroachment Locations
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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LOCATION NO. 2

- **ANAHEIM ST. BRIDGE:** The existing structure consists of six spans over the Los Angeles River, including five piers that do not have debris walls. The existing bridge would be replaced with a six-span structure with four piers in the floodway in approximately the same location as the existing structure**.**

LOCATION NO. 3

- **PACIFIC COAST HWY.:** The existing structure consists of seven spans over the Los Angeles River and six piers within the floodway without debris walls. The existing bridge would be removed, and the proposed structure would replace the existing bridge with a multi-span bridge featuring five piers within the floodway.

LOCATION NO. 4

- **WILLOW ST. BRIDGE:** The existing structure over the Los Angeles River is ten spans in length and has nine piers within the floodway. Seven of the piers feature extensions and pier noses. The existing bridge would be replaced with a six-span bridge featuring five piers within the floodway.

LOCATION NO. 5

- **WARDLOW RD. BRIDGE:** The existing structures over the Los Angeles River are seven spans in length and have six piers within the floodway without debris walls. The existing bridges would be replaced with a five-span bridge featuring four piers within the floodway**.**

LOCATION NO. 6

- **NORTHBOUND I-710 TO NORTHBOUND/SOUTHBOUND I-405 CONNECTORS (CROSSING NO. 1):** The northbound I-710 to northbound I-405 connector crosses the Los Angeles River twice in order to avoid impacting existing SCE transmission towers. The connector features a multi-span structure with columns in the floodway at the first crossing and columns on relocated pier walls and an outrigger on a pier wall over the northbound I-405 mainline.
- **SOUTHBOUND I-710 TO SOUTHBOUND I-405 CONNECTOR- SECTION 2:** The southbound I-710 to southbound I-405 connector crosses the Los Angeles River south of the existing interchange with a new multi-span structure with four column bents placed in the floodway.
- **NORTHBOUND I-710 TO NORTHBOUND I-405 CONNECTOR (CROSSING NOS. 1 AND 2):** The northbound I-405 to northbound I-710 connector crosses the Los Angeles River north of the northbound I-710/ southbound I-405 connector. A multi-span structure with four column bents on relocated piers walls within the floodway will replace the existing structure.

- **NORTHBOUND/SOUTHBOUND I-710 TO SOUTHBOUND I-405 CONNECTORS:** The existing northbound and southbound I-710 to southbound I-405 connector will be removed and the piers supporting the structure will be removed as well.
- **NORTHBOUND SANTA FE OFF-RAMP**: The southernmost portion of the northbound I-405 mainline structure contains an off-ramp for the northbound Santa Fe off-ramp, which becomes an independent structure as it passes over the Los Angeles River and is supported by the four replaced and relocated piers supporting the mainline I-405.
- **NORTHBOUND/SOUTHBOUND I-405 – SECTION 2:** The bridge structure over the Los Angeles River is supported by four piers within the floodway and carries both northbound and southbound traffic. The existing bridge would be reconstructed as two separate bridges, one for northbound traffic and one for southbound traffic, featuring four replaced and relocated piers within the floodway. The proposed southbound structure also contains the on-ramp section for the southbound Santa Fe on-ramp.
- **NORTHBOUND I-405 TO SOUTHBOUND I-710 CONNECTOR:** The northbound I-405 to the southbound I-710 connector crosses the Los Angeles River north of the existing interchange with a new multi-span structure with four column bents on relocated pier walls and an outrigger on a pier wall over the northbound I-405/ northbound I-710 connector.

LOCATION NO. 8

- **DEL AMO BLVD. BRIDGE:** The existing bridge structure features five piers within the floodplain and six spans over the Los Angeles River The existing bridge would be replaced with a four-span bridge with three piers within the floodway.

LOCATION NO. 10

- **LONG BEACH BLVD. BRIDGE:** The Long Beach Blvd. bridge over the Los Angeles River has seven pier walls within the river channel. The bridge would be widened approximately 25 to 53 feet to the east. The widening would require extension of the existing pier walls located in the river.

LOCATION NO. 14

- **ALONDRA BLVD. BRIDGE:** The replacement of the Alondra Blvd. bridge would require new abutments and columns in the Los Angeles River, shifted directly south of the existing bridge. The existing bridge has five pier walls with debris noses. The replacement bridge would be widened by 204 to 315 feet and would feature a four-span structure with three piers in the floodway. The piers would be approximately 100 feet longer than the existing piers.

LOCATION NO. 15

- **IMPERIAL HWY. BRIDGE:** The existing Imperial Hwy. bridge over the Los Angeles River has four pier walls with debris noses in the river channel. The replacement bridge features a four-span structure with three piers and would be widened by 38 to 100 feet.

LOCATION NO. 17

- **I-710 MAINLINE OVER THE LOS ANGELES RIVER:** The existing I-710 Bridge over the Los Angeles River to the south is a four-span structure with three piers in the floodway. The northbound side of the bridge would be widened, and the piers would be extended to a maximum of 150 feet. No improvements will be made on the southbound side of the bridge.

LOCATION NO. 19

- **SOUTHERN AVE. BRIDGE:** A new Southern Ave. bridge is proposed for the Los Angeles River channel. The new bridge would contain three new piers within the existing Los Angeles River channel.

LOCATION NO. 20

- **FIRESTONE BLVD. BRIDGE:** The Firestone Blvd. bridge over the Los Angeles River requires widening to allow for three vehicular travel lanes with one additional eastbound turning lane to the southbound on-ramp to I-710. The approximately 38-foot widening would require extension of the existing pier walls in the river. The existing bridge has three pier walls with debris noses.

LOCATION NO. 21

- **UP RAILROAD CROSSING AT PATATA:** The new UP Railroad bridge would be located north of the existing UP Railroad alignment which has three piers. The new bridge would require the construction of three replacement piers within the existing Los Angeles River channel.

LOCATION NO. 22

- **FLORENCE AVE. BRIDGE:** The Florence Ave. bridge would be replaced and would require three replacement pier walls in the river and abutments at the river's edge. The existing bridge has five piers in the river channel. The proposed widening of the bridge by approximately 70 to 130 feet on each side of the existing bridge would provide a wider median to allow for one additional turning lane approaching I-710 lanes and three lanes on each side.

LOCATION NO. 23

- **UP RAILROAD CROSSING AT LA HABRA SUB:** The existing four span UP Railroad La Habra Sub Bridge would be replaced and would require three replacement pier walls in the floodway.

The following project design feature would result in transverse encroachments of the Compton Creek 100-year floodplain for both Build Alternatives 5C and 7. The encroachment is considered low risk by the location hydraulic study performed at 133-year flood levels:

LOCATION NO. 9

- **DEL AMO BLVD. BRIDGE:** The existing four-span bridge over Compton Creek has three piers within the floodway. The proposed structure would widen the bridge by 13 feet in the eastbound direction and seven feet in the westbound direction and would require the extension of the three piers within the floodway, including special design considerations that would need to be considered due to the fact that the bridge is currently below the 100-year water surface elevation.

The following project design feature would result in transverse encroachments of the Rio Hondo Channel 100-year floodplain for both Build Alternatives 5C and 7. The encroachment is considered low risk by the location hydraulic study performed at 133-year flood levels:

LOCATION NO. 18

- **GARFIELD AVE. BRIDGE:** The Garfield Ave. bridge over the Rio Hondo Channel would be widened to provide for an additional lane on Garfield Ave. The existing three piers would be lengthened on the downstream side to accommodate the new widened structure.

CROSSINGS EXCLUSIVELY IMPACTED BY ALTERNATIVE 5C. In addition to the improvements discussed above under Impacts Related to Alternatives 5C and 7, the following improvements proposed under only Alternative 5C would result in transverse encroachments of the Los Angeles River 100-year floodplain. All encroachments are considered low risk by location hydraulic studies performed at 133-year flood levels:

LOCATION NO. 3A

- **HILL ST. PEDESTRIAN CROSSING:** Hill St. has been identified as a location that improves local community access by creating a new Los Angeles River pedestrian and bicycle crossing. The proposed new structure width is 16 feet and provides two five-foot pedestrian lanes with two-foot buffers. The conceptual design features a five-span structure with four piers in the floodway.

LOCATION NO. 4A

- **SPRING ST. PEDESTRIAN CROSSING:** Spring St. has been identified as a location that improves local community access by creating a new Los Angeles River pedestrian and bicycle crossing. The proposed new structure width is 16 feet and provides two five-foot pedestrian lanes with two-foot buffers. The conceptual design features a four-span structure with three piers in the floodway.

LOCATION NO. 12

- **ATLANTIC BLVD. OFF-RAMP FROM EASTBOUND SR-91:** The off-ramp from eastbound SR-91 to Atlantic Blvd. would be removed for safety enhancements. The piers would be shortened in this area because the off-ramp would no longer need to be supported.
- **ATLANTIC BLVD. ON-RAMP TO WESTBOUND SR-91:** The on-ramp to westbound SR-91 from Atlantic Blvd. would be removed for safety enhancements. The piers would be shortened in this area because the on-ramp would no longer need to be supported.
- **ATLANTIC BLVD. ON-RAMP TO NORTHBOUND I-710:** The on-ramp to westbound I-710 from Atlantic Blvd. would be removed for safety enhancements. The piers would be shortened in this area because the on-ramp would no longer need to be supported.

In addition to the improvements discussed above under Impacts Related to Alternatives 5C and 7, the following improvements proposed under only Alternative 5C would result in transverse encroachments of the Compton Creek 100-year floodplain. All encroachments are considered low risk by location hydraulic studies performed at 133-year flood levels:

LOCATION NO. 7

- **DEL AMO BLVD. SOUTHBOUND ENTRANCE RAMP TO TRUCK BYPASS:** The southbound truck bypass on-ramp from Del Amo Blvd. will be a new structure over Compton Creek. This would be west of the southbound truck bypass and would be supported by two new columns with splitter walls.
- **DEL AMO BLVD. NORTHBOUND EXIT RAMP:** The northbound truck bypass off-ramp from Del Amo Blvd. will be a new structure over Compton Creek. This would be east of the I-710 mainline and would be supported by two multi-column bents with splitter walls/pier walls in alignment with the mainline piers.
- **TRUCK BYPASS NORTHBOUND - SECTION 4:** The northbound truck bypass will be a new structure over the northbound off-ramp at Compton Creek. This would be supported by an outrigger off of one of the new pier walls over the northbound off-ramp structure.

- **MAINLINE I-710:** The mainline I-710 bridge over Compton Creek would be replaced with a three-span structure with two piers in the floodway to match the existing structure.
- **TRUCK BYPASS SOUTHBOUND - SECTION 2:** The new southbound truck bypass structure would be supported by two multi-column pillar bents with splitter aligning with mainline piers. This would cross over the southbound on-ramp at Compton Creek.

LOCATION NO. 11

- **SR-91 MAINLINE:** The existing mainline SR-91 structure is a multi-span structure including two column bents with splitter walls within the floodplain. The proposed widened structure features two additional column bents with splitter walls placed in line with the existing column bents within the floodway.
- **ALAMEDA ST. ON-RAMP TO EASTBOUND SR-91:** Replacement columns will replace the existing two columns within the floodway for the Alameda St. on-ramp to eastbound SR-91.

RISKS TO LIFE AND PROPERTY. Construction of the improvements discussed above within the 100-year floodplain is not anticipated to substantially increase the base flood elevation. At this time, it is anticipated that a Conditional Letter of Map Revision (CLOMR) would be required. No revisions to the FEMA FIRM maps (Letter of Map Revision [LOMR]) are anticipated. As specified below in Measure FP-1, a Final Flood Control Facilities Report/Final Location Hydraulic Study will be prepared during final project design. The *Flood Control Facilities Report* (2017) assesses the risk of the floodplain impacts. Final reports will be prepared during final design to demonstrate that the design of the proposed project provides acceptable flood protection. The change in floodplain elevations would be evaluated based on final design plans of the bridges and other structures where they encroach on the 100-year floodplain. The modeling results would be included in the application for a CLOMR and LOMR, if required, which would be processed through the Los Angeles County Flood Control District (LACFCD) and FEMA.

Alternative 5C would not result in flood-related interruption of emergency services or routes. Alternative 5C would enhance the ability to move fire protection and emergency service resources from one area to another by providing a more reliable freeway network. Operation of Alternative 5C would not result in interruption of emergency services or routes and would improve access throughout the region during a flood event. In addition, Alternative 5C would not increase the risk of flooding because it would not substantially increase the base flood elevation. Therefore, there would be no substantial flood-related risks to life or property associated with implementation of Alternative 5C. Based on the assessment of level of risk in the Location Hydraulics Study Forms provided in the *Flood Control Facilities Report* (2017), the project is considered low-risk.

INCOMPATIBLE FLOODPLAIN DEVELOPMENT. Alternative 5C includes improvements to an existing transportation facility to improve air quality and public health; improve traffic safety; modernize freeway design; address projected traffic volumes; and address projected growth in population, employment, and economic activities related to goods movement. Alternative 5C would reduce congestion by modifying existing facilities and would not promote incompatible floodplain development.

NATURAL AND BENEFICIAL FLOODPLAIN VALUES. Alternative 5C has the potential to impact natural and beneficial water resource values by impacting water quality and jurisdictional waters. As discussed in detail later in Section 3.9, Water Quality and Storm Water Runoff, Alternative 5C would result in a net increase in impervious surfaces and, therefore, an increase in runoff. The runoff from the proposed roadway improvements would have the potential to impact water quality in the Los Angeles River, the Rio Hondo Channel, and Compton Creek. However, Treatment Best Management Practices (BMPs) would be implemented during operation of Alternative 5C to reduce impacts to water quality. Improvements within the 100-year floodplain proposed under Alternative 5C would result in direct, permanent impacts to the Los Angeles River, Rio Hondo and Compton Creek, which are considered potentially jurisdictional to the USACE, the California Department of Fish and Wildlife (CDFW) and the Regional Water Quality Control Board (RWQCB). As discussed in Section 3.17, Wetlands, compensatory mitigation is proposed as part of Alternative 5C to reduce potential impacts to jurisdictional waters. Therefore, with the measures proposed in Sections 3.9 and 3.17, operation of Alternative 5C would not result in long-term adverse impacts to natural and beneficial floodplain values.

SIGNIFICANT FLOODPLAIN ENCROACHMENT. A “significant encroachment,” as defined in 23 CFR 650.105(q), is a highway encroachment that would result in (1) a significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community’s only means of evacuation, (2) a significant risk, or (3) a significant adverse impact on natural and beneficial floodplain values. Alternative 5C is a highway improvement project that would require encroachments within the 100-year floodplain in the Los Angeles River, Compton Creek, and the Rio Hondo Channel as part of the bridge and levee improvements discussed above. According to the *Flood Control Facilities Report* (2017), Alternative 5C would not change the capacity of the Los Angeles River, Compton Creek, and the Rio Hondo Channel to carry water. Alternative 5C would not result in a measurable impact to the 100-year floodplain elevation. The proposed encroachment would not result in any adverse impacts on the natural and beneficial floodplain values, would not result in a substantial change in flood risk or damage, and does not have substantial potential to cause interruption or termination of emergency services or emergency routes. Therefore, Alternative 5C does not constitute a significant floodplain encroachment as defined in 23 CFR 650.105(q).

ADDITIONAL DISCUSSION: ALTERNATIVE 7

FLOODPLAIN ENCROACHMENTS. Alternative 7 would result in greater permanent impacts to the 100-year floodplain compared to Alternative 5C because more improvements within the 100-year floodplain are proposed due to the freight corridor feature. As summarized in Table 3.8-1, transverse encroachments would occur at 34 Los Angeles River locations, four Compton Creek locations, and one Rio Hondo location under Alternative 7. At these locations, the encroachments would result from construction of new columns or piers and extension of existing piers. There would be approximately 43,479 square feet (0.998 acre) of new structure placed within the floodplain. In addition, localized channel modifications would be required to maintain the existing channel hydraulic capacity. Level of risk at each crossing was determined using the 133-year flood event in accordance with the USACE-authorized design discharge. A total of 101 acres of property acquisition and/or easements would be required from flood control areas. Approximately 56 percent of this total acreage would be utilized for aerial easements associated with the widening and creation of bridges.

CROSSINGS EXCLUSIVELY IMPACTED BY ALTERNATIVE 7. Alternative 7 would result in all of the 100-year floodplain encroachments discussed above under Impacts Related to Alternatives 5C and 7. In addition to the improvements discussed in that section, the following improvements proposed under Alternative 7 would result in transverse encroachments of the Los Angeles River 100-year floodplain. All encroachments are considered low risk by location hydraulic studies performed at 133-year flood levels:

LOCATION NO. 13

- **ATLANTIC BLVD. ON-RAMP TO NORTHBOUND I-710:** The on-ramp from Atlantic Blvd. to northbound I-710 would be removed to improve safety and traffic operations.
- **NORTHBOUND FREIGHT CORRIDOR TO EASTBOUND SR-91 CONNECTOR:** A new structure would be constructed to the south of the replaced southbound I-710 to the eastbound SR-91 Connector with four columns in the floodway in line with the existing pier walls. This would functionally extend the pier walls through the addition of the columns.
- **SOUTHBOUND I-710 TO EASTBOUND SR-91 CONNECTOR:** A new structure would replace the existing structure. This would rest on the existing bridge piers and would require extension of the piers in the floodway.
- **SR-91 MAINLINE:** The SR-91 mainline would be widened by 18 feet in the westbound direction and 34 to 38 feet in the eastbound direction, which would join with the replaced southbound I-710 to the eastbound SR-91 connector. The existing bridge piers would be replaced within the floodway.

- **WESTBOUND SR-91 TO SOUTHBOUND FREIGHT CORRIDOR CONNECTOR:** A new structure would be constructed that crosses north of the removed northbound I-710 on-ramp from Atlantic Blvd. This would feature four columns in the floodway that would be in line with the existing pier walls, functionally extending them.
- **ATLANTIC BLVD. OFF-RAMP TO EASTBOUND SR-91:** The existing off-ramp would be replaced and relocated south of the existing structure with three new columns in the floodway.

LOCATION NO. 16

- **I-710 FREIGHT CORRIDOR BRIDGE (NORTH OF IMPERIAL HWY.):** A proposed new freight corridor bridge crossing the existing channel to the south would feature a multi-span structure with four column bents on splitter walls in the floodway.

LOCATION NO. 24

- **SLAUSON AVE. BRIDGE:** The existing structure spanning the Los Angeles River at this point consists of a five-span bridge with four piers in the floodway. A proposed replacement crossing would be 37 feet wider and feature four spans and three piers in the floodway.

In addition to the improvements discussed above under Impacts Related to Alternatives 5C and 7, the following project design features for Location No. 20 proposed under Alternative 7 would result in transverse encroachments of the Compton Creek 100-year floodplain. All encroachments are considered low risk by location hydraulic studies performed at 133-year flood levels:

LOCATION NO. 7

- **FREIGHT CORRIDOR (OVER COMPTON CREEK):** A proposed new freight corridor bridge crossing the existing channel would require two multi-column-bents with splitter walls to be placed within the existing channel and in line with the mainline piers.
- **NORTHBOUND I-710 TO NORTHBOUND FREIGHT CORRIDOR CONNECTOR BRIDGE:** Construction of the new northbound freight corridor connector requires two new columns to be built within the existing channel.
- **SOUTHBOUND FREIGHT CORRIDOR TO SOUTHBOUND I-710 CONNECTOR BRIDGE:** Construction of the new southbound freight corridor connector requires two new columns to be built within the existing channel in line with the mainline piers.

The permanent impacts discussed above under Alternative 5C would be applicable to floodplain impacts to the Los Angeles River, Compton Creek, and the Rio Hondo Channel under Alternative 7. Although Alternative 7 would result in more 100-year floodplain

encroachments than Alternative 5C, permanent impacts related to emergency response, risks to life and property, incompatible floodplain development, and natural and beneficial floodplain values would be the same as those discussed above under Alternative 5C. Because the new piers would mimic the existing pier configurations upstream and downstream, there would be no substantial effects to the water surface elevation, velocity of flood flows, sedimentation, or scour in the vicinity of the new piers. Because there would be no substantial effects at the location of the modification, there would be no substantial effects to downstream locations. Final design of channel modifications and associated hydraulic analysis would require USACE approval. For the same reasons discussed above under Alternative 5C, Alternative 7 does not constitute a significant floodplain encroachment as defined in 23 CFR 650.105(q).

Similar to Alternative 5C, at this time, it is anticipated that a CLOMR would be required. No revisions to the FEMA FIRM maps are anticipated. A Final Flood Control Facilities Report/Final Location Hydraulic Study would be prepared during final project design as specified below in Measure FP-1. The change in floodplain elevations would be evaluated based on final design plans of the bridges and other structures where they encroach on the 100-year floodplain. The modeling results would be included in the application for a CLOMR and LOMR, if required, which would be processed through the LACFCD and FEMA.

SUMMARY OF FLOODPLAIN IMPACTS FOR BOTH BUILD ALTERNATIVES. Alternatives 5C and 7 consist of highway improvements that would require encroachments within the 100-year floodplain in the Los Angeles River, the Compton Creek, and the Rio Hondo Channel as part of the bridge and levee improvements and utility relocations. According to the *Flood Control Facilities Report* (2017), Alternatives 5C and 7 would not change the capacity of the Los Angeles River, Compton Creek, and the Rio Hondo Channel to carry water or result in a measurable impact to the 100-year floodplain elevation. The proposed encroachments would not result in any adverse impacts on the natural and beneficial floodplain values, would not result in a substantial change in flood risk or damage, and would not have substantial potential to cause interruption or termination of emergency services or emergency routes. Therefore, Alternatives 5C and 7 do not constitute a significant floodplain encroachment as defined in 23 CFR 650.105(q).

LEVEE ENCROACHMENTS FOR BOTH BUILD ALTERNATIVES. The sides of the Los Angeles River Channel are supported by trapezoidal-shaped earthen embankments. Levees would require modifications at several areas due to right-of-way requirements for the construction of walls and columns. The encroachments would consist of simple wall construction, complex wall construction, simple column construction, and complex column construction. Simple encroachments would not require reconstruction of the levees, and complex encroachments would require reconstruction. Encroachments for both build alternatives would be on the dry side of the levee and would not create permanent impacts on the hydraulic performance of the

floodway. The levee encroachments would not result in significant impacts to the performance of levees impacted by the project.

DRAINAGE SYSTEM ENCROACHMENTS FOR BOTH ALTERNATIVES. Most of the I-710 freeway is between existing developed areas and their respective drainage outlets to the various regional flood control facilities. In locations where there are existing pump stations that outlet to the Los Angeles River there are substantial off-site drainage areas that are tributary to each pump station. Off-site tributary areas are collected in underground storm drains and outlet to each pump station. The on-site drainage is collected in a similar manner. On-site drainage systems include inlets, paved channels, and underground storm drain systems. While the proposed freeway improvements under all build alternatives may alter the location of existing pump stations and on-site flow patterns in localized areas, the confluence locations will remain in the general vicinity, and existing Los Angeles River outlets will be utilized whenever possible to minimize impacts to the river channel. The existing inflow drainage connections will be maintained and accommodated with the proposed on-site drainage systems. Existing drainage patterns on the arterial streets will be maintained by utilizing existing underground drains wherever possible.

Because the existing alignment of the freeway will be shifted horizontally and/or vertically, most of the freeway pavement will be reconstructed on I-710, which will require reconstruction of most of the drainage systems. As discussed below, this includes both on-site systems and off-site systems within the proposed right of way. There are hundreds of existing drainage systems over the 18-mile length of the proposed project. The required drainage system improvements will be determined during final design. However, impacts to major facilities (outlets and pump stations) have been assessed and are discussed below,

There are 37 existing drainage outlets impacted by the proposed improvements. Of the 37 existing outlets identified, 29 are proposed to be protected in place under the build alternatives. This determination was made based on hydraulic sufficiency. The remaining outlets will require removal and reconstruction based on the physical impacts by the proposed improvements or based on the need to increase hydraulic capacity of the outlet. The outlets requiring removal and reconstruction are listed in Table 3.8-2 along with their locations and a short description.

There are 22 existing pump stations impacted by the build alternatives. Out of the 22 locations, 18 locations require modification including upgrading facilities to accommodate projected peak flows, relocation due to proposed improvements, or reconstruction due to freeway widening and/or profile changes. All pump stations located on the east side of the Los Angeles River will be protected-in-place during project construction. Table 3.8-3 lists the name, location and modifications for each affected pump station.

Table 3.8-2: Corridor Drainage Outlet Systems Requiring Removal and Reconstruction

Location	Description
I-405 Freeway	Caltrans Storm Drain
Del Amo Blvd.	Channel Outlet
Del Amo Blvd.	Compton Creek Outlet
Del Amo Blvd.	Over side Drain
Susana Rd.	Over side Drain
Fertile St.	Caltrans Storm Drain Outlet
Imperial Hwy.	Caltrans Storm Drain Outlet
I-710 Freeway	Caltrans Storm Drain

Caltrans = California Department of Transportation
I-405 = Interstate 405
I-710 = Interstate 710

Table 3.8-3: Corridor Drainage Pump Stations Requiring Upgrading, Relocation, or Reconstruction

Name	Cross Street	Disposition
6th St. Pump Station	6th St. and 7th St.	▪ Relocate due to conflict with all build alternative alignments. ▪ Reconstruct outlet to Los Angeles River. Remove due to conflict with all build alternative alignments. ▪ Pump station no longer in use.
Cowles Pump Station	Anaheim St.	▪ Relocate due to conflict with all build alternative alignments. ▪ Upgrade pumping capacity. ▪ Reconstruct outlet to Los Angeles River.
19th St. Pump Station	Pacific Coast Hwy.	▪ Relocate due to conflict with all build alternative alignments. ▪ Upgrade pumping capacity. ▪ Reconstruct outlet to Los Angeles River.
Willow St. Pump Station	26th Way	▪ Protect-in-place. ▪ Existing off-site hydrology to be verified during final design.
27th St. Pump Station	Willow St.	▪ Relocate due to conflict with all build alternative alignments. ▪ Upgrade pumping capacity. ▪ Reconstruct outlet to Los Angeles River.
Dominguez Pump Station	Dominguez Basin	▪ Protect in place for Alternatives 5C, 5C Option 1A, 5C Option 2A, 5C Option 3A, and Alternative 7 Option 3B. ▪ Upgrade pumping capacity for Alternative 7 and Alternative 7 Option 1B. Protect outlet to Los Angeles River in place.
Caltrans Pump Station	UP Railroad Crossing	▪ Relocate due to conflict with all build alternative alignments. ▪ Upgrade pumping capacity. ▪ Protect outlet to Los Angeles River in place.
Caltrans Pump Station	Long Beach Blvd.	▪ Relocate due to conflict with all build alternative alignments. ▪ Protect outlet to Los Angeles River in place.

Table 3.8-3: Corridor Drainage Pump Stations Requiring Upgrading, Relocation, or Reconstruction

Name	Cross Street	Disposition
Gordon St. Pump Station	Long Beach Blvd.	▪ Protect in place. Upgrade pumping capacity for Alternative 7 and Alternative 7 Option 1B. ▪ Protect outlet to Los Angeles River in place.
North Boundary Pump Station	Artesia Blvd.	▪ Protect in place. Upgrade pumping capacity for Alternative 7 and Alternative 7 Option 1B. ▪ Protect outlet to Los Angeles River in place.
Caltrans Pump Station	SR-91 Freeway - Southbound Ramp	▪ Protect in place. Upgrade pumping capacity for Alternative 7 and Alternative 7 Option 1B. ▪ Protect outlet to Los Angeles River in place.
Artesia Blvd. Pump Station	SR-91 Freeway	▪ Upgrade pumping capacity for all build alternatives. ▪ Design bridge spans in Alternative 7 to clear the existing pump station.
Caltrans Pump Station	Alondra Blvd.	▪ Relocate due to conflict with all build alternative alignments. ▪ Upgrade pumping capacity. ▪ Protect outlet to Los Angeles River in place.
County Pump Station	I-105 Freeway	▪ Protect in place for Alternative 5C, 5C Option 1A, 5C Option 2A, 5C Option 3A. ▪ Relocate or reconstruct as an underground facility for Alternatives 7, Alternative 7 Option 1B, and Alternative 7 Option 3B due to conflict with build alternative alignment. ▪ Protect outlet to Los Angeles River in place.
Caltrans Pump Station	Firestone Ave.	▪ Relocate due to conflict with all build alternative alignments. ▪ Upgrade pumping capacity. ▪ Protect outlet to Bandini Channel in place.
Caltrans Pump Station	Clara St. Over-crossing	▪ Relocate due to conflict with all build alternative alignments. ▪ Protect outlet to Los Angeles River in place.
Caltrans Pump Station	Florence Ave.	▪ Relocate due to conflict with all build alternative alignments. ▪ Upgrade pumping capacity. ▪ Protect outlet to Los Angeles River in place.
Caltrans Pump Station	Gage Ave.	▪ Protect in place for Alts 7, 7 Option 1B, and 7 Option 3B. ▪ Relocate for Alternatives 5C, 5C Option 1A, 5C Option 2A, and 5C Option 3A due to conflict with build alternative alignment. ▪ Protect outlet to Los Angeles River in place.
Caltrans Pump Station	Slauson Ave.	▪ Reconstruct underground storage to accommodate the lower vertical alignment of Alternatives 5C, 5C Option 1A, 5C Option 2A, 5C Option 3A, and Alternative 7 Option 3B. ▪ Upgrade pumping capacity for Alternative 7 and Alternative 7 Option 1B. ▪ Protect outlet to Los Angeles River in place.

Caltrans = California Department of Transportation
I-105 = Interstate 105
SR-91 = State Route 91
UP Railroad = Union Pacific Railroad

The build alternatives will require substantial reconstruction of the existing drainage systems including drainage inlets, storm drains, cross culverts, dikes, overside drains, concrete and earthen channels, pump stations, and detention basins. Most of the existing on-site drainage systems will be replaced with new facilities. Some existing facilities may be extended to accommodate the wider freeway. The existing Dominguez Gap Spreading Grounds located in the northeast quadrant of the I-710/I-405 interchange will not be impacted by the I-710 corridor improvements associated with Alternative 5C, as there are no proposed improvements adjacent to the existing basin.

However, in the Alternative 7 improvements, the existing west basin and levees of the Dominguez Spreading Grounds will be impacted by the proposed freight corridor alignment, retaining walls, and slopes which are below the Los Angeles River levee grade in the vicinity of the basin. The increase in on-site stormwater runoff contributing to the Dominguez Gap Spreading Grounds associated with the proposed improvements is inconsequential in comparison to the amount of stormwater runoff from off-site tributary watersheds and transfer flows from the basins located on the east side of the Los Angeles River. The west basin would be displaced under Alternative 7 and Caltrans will coordinate with LACFCD to identify an area for relocation or replacement. In addition, the basin relocation would also have the potential to affect plans for pollution remediation in cities along the Los Angeles River. Caltrans will coordinate with these parties as specified in Measure FP-2.

Another impact created solely under Alternative 7 occurs at the I-710/I-105 interchange. There are two existing detention basins, also referred to as the Lynwood Retention Basin, located under the I-710/I-105 interchange that retain storm flows from the Los Angeles River during peak flow events. The retention system consists of a primary basin located between the I-710 and the Los Angeles River and a secondary basin located west of the I-710 that are connected together by a series of underground pipes. The freight corridor in Alternative 7 bisects the primary basin. The capacity and functionality of the primary retention basin is impacted by the freight corridor alignment, and the basin will need to be reconfigured or relocated elsewhere in the interchange area to remain functional. Based on the existing underground piping configuration, one possible location for a new basin would be in the northwest quadrant of the I-105/I-710 interchange. As specified in Mitigation Measure FP-2, Caltrans will coordinate with the Los Angeles County Department of Public Works to identify a suitable location for replacement of the I-105 retention basin that will provide equal or greater capacity than the basin impacted by the freight corridor.

In addition, most off-site drainage systems that convey flows from the adjacent neighborhoods, cross the I-710 corridor, and receive on-site flows, will be replaced within the Caltrans right of way. Off-site systems crossing the corridor that do not receive on-site runoff will be protected-in-place where possible. During final design, existing drainage systems will be evaluated for compatibility with the proposed project. If a drainage facility does not physically conflict with the

location and function of the freeway and it provides adequate capacity and service as part of the reconstructed drainage system, it will be protected in place.

As discussed above, the Dominguez Gap Spreading Grounds would be impacted by the freight corridor in Alternative 7. As discussed in additional detail in Measure FP-2 below, Caltrans will consult with LACFCD and affected local agencies for the relocation of the Dominguez Gap Spreading Grounds that could be used to mitigate for the loss in recharge areas.

NO BUILD ALTERNATIVE. Alternative 1 would not result in the construction of any improvements that would affect the Los Angeles River or its tributaries. Therefore, Alternative 1 would not result in any adverse impacts related to hydrology and floodplains. Although Alternative 1 would not result in adverse impacts, the benefits of stormwater improvements associated with the project, including those incorporated as enhanced water quality features, would not be realized.

3.8.3.2 PUBLIC HEALTH CONSIDERATIONS

The primary public health considerations related to floodplains and hydrology would be risks to life and property as a result of flooding. As discussed above, construction of the build alternatives is not anticipated to increase the risk of flooding because the build alternatives would not substantially increase the base flood elevations of the Los Angeles River, Compton Creek, or the Rio Hondo Channel. In addition, the build alternatives would not result in flood-related interruption of emergency services or routes. Operation of the build alternatives would not result in interruption of emergency services or routes and would improve access throughout the region during a flood event. Therefore, there would be no substantial flood-related risks to life or property associated with implementation of the build alternatives.

3.8.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Measures to minimize long-term operational impacts on the natural and beneficial floodplain values related to water quality are discussed in Section 3.9, Water Quality. Measures to minimize permanent impacts to jurisdictional waters are discussed in Section 3.17, Wetlands and Other Waters of the United States. In addition, the following measures are required for impacts to the 100-year floodplain and impacts to the Lynwood Retention Basin and the Dominguez Gap Spreading Grounds.

FP-1 During final project design, and prior to the issuance of any grading permits, the California Department of Transportation (Caltrans) shall process a Conditional Letter of Map Revision and a Letter of Map Revision, if required, for the floodplain and floodway encroachments through the Los Angeles County Flood Control District (LACFCD) and Federal Emergency Management Agency (FEMA). This shall include submittal of final detailed applications, certification forms, hydraulic analyses (i.e., Final Flood Control Facilities Report, including a Location Hydraulic Study), and fee payment to FEMA to obtain a Conditional

Letter of Map Revision and a Letter of Map Revision. The portion of the project within the 100-year floodplain shall not be constructed until the Letter of Map Revision is approved by the LACFCD and FEMA.

FP-2 Prior to the completion of final design of Alternative 7, Caltrans shall coordinate with the Los Angeles County Department of Public Works and the LACFCD to identify a suitable location for replacement of the Lynwood Retention Basin and the Dominguez Gap Spreading Grounds that will provide equal or greater capacity than the facilities impacted by the freight corridor. Caltrans will consult with the LACFCD and affected local agencies to verify that the basin replacements will continue to meet water quality goals including those established for the Los Angeles River Metals Total Maximum Daily Load.

3.9 WATER QUALITY AND STORMWATER RUNOFF

3.9.1 REGULATORY SETTING

3.9.1.1 FEDERAL REQUIREMENTS: CLEAN WATER ACT

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.), from any point source[1] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA); Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S., to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The goal of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

The USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

[1] A point source is any discrete conveyance such as a pipe or a human-made ditch.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with the U.S. Environmental Protection Agency's (EPA) Section 404 (b)(1) Guidelines (EPA Code of Federal Regulations [CFR] 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that ensures a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[2] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section (Section 3.17).

3.9.1.2 STATE REQUIREMENTS: PORTER-COLOGNE WATER QUALITY CONTROL ACT

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect these uses. As a result,

[2] The U.S. Environmental Protection Agency (EPA) defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then State- listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given waterbody.

3.9.1.3 STATE WATER RESOURCES CONTROL BOARD AND REGIONAL WATER QUALITY CONTROL BOARDS

The SWRCB administers water rights, sets water pollution control, issues Water Board orders on matters of statewide application, and oversees water quality functions throughout the State by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PROGRAM.

MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4). Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water dischargers, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as any “conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water.” The SWRCB has identified the California Department of Transportation (Caltrans)as an owner/operator of an MS4 under Federal regulations. Caltrans’ MS4 permit covers all Caltrans rights-of-way, properties, facilities, and activities in the State. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans’ MS4 Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012, and became effective on July 1. The permit has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs) to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

CONSTRUCTION GENERAL PERMIT. Construction General Permit (Order No. 2009-009-DWQ as amended by Order No. 2012-0006-DWQ) adopted on July 17, 2012, became effective on July 17, 2012. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the Construction General Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Caltrans' Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

SECTION 401 PERMITTING. Under Section 401 of the CWA, any project requiring a Federal license or permit that may result in a discharge to a water of the U.S, must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common Federal permits triggering 401 Certification are CWA Section

404 permits issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

3.9.2 AFFECTED ENVIRONMENT

This information in this section is based on the following technical reports:

- *Preliminary On-Site Hydrology Report* (December 2016)
- *Storm Water Data Report* (January 2017*)*
- *Water Quality Assessment Report* (March 2017)
- *Geotechnical Final Report* (January 2010)

3.9.2.1 SURFACE WATER

Surface waters are shown in Figure 3.9-1. The Interstate 710 (I-710) Corridor Project is located within the Los Angeles Basin and discharges to two Los Angeles County watersheds: Dominguez Channel/Los Angeles Harbor and Los Angeles River. In addition, a portion of the I-710 Corridor Project is adjacent to the San Gabriel River Watershed. The primary receiving waters for runoff from the Study Area are the Los Angeles River, Compton Creek, the Rio Hondo Channel, and the Dominguez Channel. The Los Angeles River parallels the I-710 freeway throughout much of the Study Area. Compton Creek and the Rio Hondo Channel are also located within the Study Area and are tributary to the lower portion of the Los Angeles River. The Dominguez Channel flows almost parallel to I-710, approximately one mile west of I-710 between Interstate 405 (I-405) and the Pacific Ocean. Water in the Los Angeles River is fed by Bell Creek and Calabasas Creek which have headwaters in the Santa Susana and Santa Monica Mountains. Several other feeder creeks flow from the mountains and hills ringing the valley and flow into the Los Angeles River at points throughout the valley. Other major sources of water for the Los Angeles River include the Donald C. Tillman Water Reclamation Plant, which releases recycled wastewater downstream of the Sepulveda Basin; as well as the Tujunga Wash, Santa Monica Mountains and Rio Hondo Channel. Each of these areas carries

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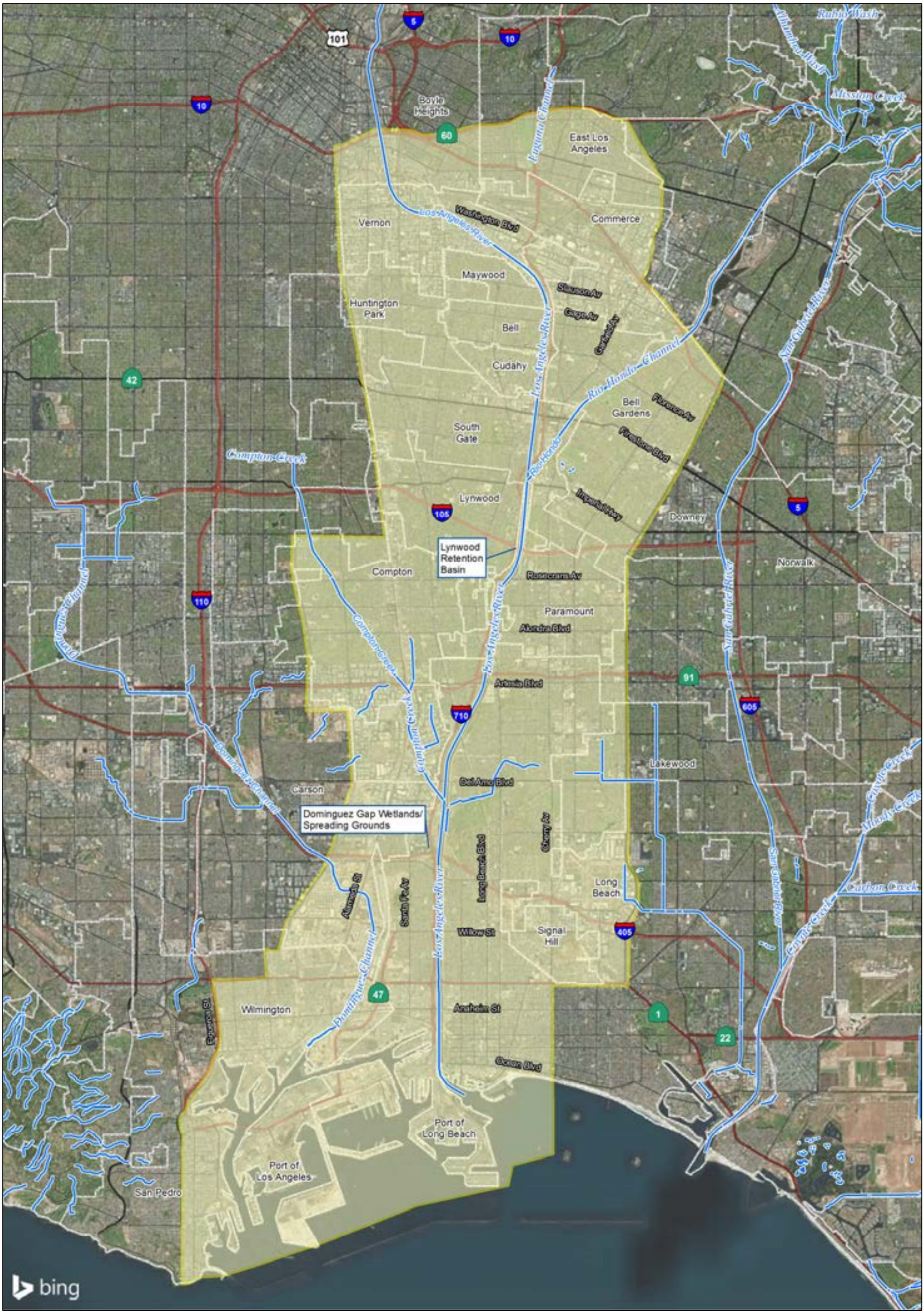

LEGEND

I-710 Study Area

Surface Waters

FIGURE 3.9-1

0 4620 9240

FEET

SOURCE: Bing Maps (2014); AECOM (2016); National Hydrography Dataset (2013)

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I-710 Corridor Project RDEIR/SDEIS

Surface Waters

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runoff from areas throughout the watershed and deposits it into the Los Angeles River (The River Project 2011,[3] Tillman Personnel and Multi-use Facility Project IS-MND 2012[4]).

LOS ANGELES RIVER. The Los Angeles River begins in Canoga Park in the City of Los Angeles and flows to the Pacific Ocean in the City of Long Beach. The Los Angeles River within the I-710 Corridor Study area is an unvegetated, concrete- and riprap-lined trapezoidal channel. A small portion of the Los Angeles River south of Willow St. in Long Beach has a natural bottom and supports riparian vegetation. The flow in the Los Angeles River varies greatly over the course of the year. During the dry season, most of the water in the river is from wastewater effluent, whereas in the wet season, the river contains runoff from large storms. In addition to variability in seasonal flow, the flow in the channel increases greatly as the river flows toward its mouth on the Pacific Ocean.

COMPTON CREEK. Compton Creek originates at the convergence of several underground storm drains in the City of Los Angeles at Main St. between 107th St. and 108th St. Compton Creek merges with the Los Angeles River just south of the I-710/Del Amo Blvd. interchange. Compton Creek flows generally south through a 5.8-mile channel reach with a concrete bottom and vertical sides. The channel widens just north of State Route 91 (SR-91) in the City of Compton and has a natural earthen bottom and armored trapezoidal sides, which extend approximately 2.7 miles to just above the confluence with the Los Angeles River. In this earthen-bottom portion, vegetation is present in the channel bottom. Flows within Compton Creek are perennial.

RIO HONDO CHANNEL. The Rio Hondo Channel originates in the City of Irwindale and merges with the Los Angeles River just north of the I-710/Imperial Hwy. interchange. Rio Hondo Channel is an unvegetated rectangular concrete channel with intermittent flows.

DOMINGUEZ CHANNEL. The Dominguez Channel extends from the Los Angeles International Airport to the Los Angeles Harbor. It is a human-made channel in the lower reach, which terminates at the Consolidated Slip within the East Basin Channel of Los Angeles Harbor.

Inner Los Angeles-Long Beach Harbor. The Los Angeles and Long Beach Harbors are located in the southern portion of the Los Angeles Basin. The harbor is highly disturbed by human activity; however, the inner harbor area supports fairly diverse fish and benthic populations and provides a protected nursery area for juvenile fish. Additionally, the outer

[3] The River Project. 2011. Website: http://www.theriverproject.org/learn/know-your-watershed/the-los-angeles-river-watershed/the-valley (accessed January 5, 2017).

[4] City of Los Angeles. Department of Public Works. Bureau of Engineering. 2016. Website: http://eng.lacity.org/techdocs/emg/docs/dc_water/Public_Draft_IS-MND.pdf (accessed January 6, 2017).

harbor, which is less disturbed, supports a large population of fish and receives larger amounts of flushing than the inner harbor (SWRCB, 2008).[5]

I-710 ON-SITE DRAINAGE. The existing on-site drainage systems consist of a series of drainage inlets along the median and shoulders, cross culverts, asphaltic concrete dikes, overside drains, concrete and earthen channels, and pump stations. The northbound and southbound I-710 mainline lanes generally sheet flow to the outside edge of the shoulder, which is then concentrated by inlets into the underground drainage system. In the superelevation portion of the I-710 Corridor Project, the stormwater runoff drains to the median, where drainage inlets convey the runoff to the cross drainage facilities.

3.9.2.2 SURFACE WATER BENEFICIAL USES

Beneficial uses form the cornerstone of water quality protection under the Los Angeles RWQCB's *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan, September 2014).[6] Appropriate water quality objectives are identified in the Basin Plan in relation to the designated beneficial uses to ensure the protection of these uses. The designated beneficial uses, together with water quality objectives, form the water quality standards. Existing beneficial uses for the Los Angeles River, Compton Creek, the estuarine portion of Dominguez Channel, the Rio Hondo Channel, and the Los Angeles/Long Beach Harbor are presented in Table 3.9-1. To preserve the beneficial uses at their current level, water quality objectives have been developed and published in the basin plans.

3.9.2.3 SURFACE WATER QUALITY

Pollutants in urban runoff from dense clusters of residential, industrial, and other urban activities have impaired water quality in the majority of the Los Angeles River Watershed. Added to this complex mixture of pollutant sources (in particular, pollutants associated with urban and stormwater runoff) is the high number of point source permits. Excessive nutrients (and their effects) and coliform are widespread problems in the watersheds, as well as excessive metals. The majority of the Los Angeles River Watershed is considered impaired due to a variety of point and nonpoint sources. The Los Angeles River, Compton Creek, the Rio Hondo Channel, and the Dominguez Channel are all listed as impaired on the 2012 CWA Section 303(d) List of Water Quality Limited Segments.

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[5] State Water Resources Control Board (SWRCB). 2008. Dominguez Channel and Los Angeles/Long Beach Harbors WMA summary sheet. Website: http://www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/Water_Quality_and_Watersheds/dominguez_channel/summary.shtml (accessed on February 28, 2017).

[6] SWRCB. 2014. Website: http://www.waterboards.ca.gov/losangeles/water_issues/ programs/basin_plan/basin_plan_documentation.shtml (accessed on February 23, 2017).

Table 3.9-1: Beneficial Uses of Inland Surface Waters and Coastal Waters Los Angeles Region Water Quality Control Plan

Surface Water Feature	Existing Beneficial Uses	Intermittent Beneficial Uses	Potential Beneficial Uses
Compton Creek	▪ Groundwater Recharge ▪ Contact Water Recreation ▪ Non-contact Water Recreation ▪ Warm Freshwater Habitat ▪ Wildlife Habitat ▪ Wetland Habitat		▪ Municipal & Domestic Supply
Dominguez Channel (in estuary)	▪ Contact Water Recreation ▪ Non-contact Water Recreation ▪ Preservation of Rare, Threatened or Endangered Species ▪ Commercial and Sport fishing ▪ Marine Habitat ▪ Estuarine Habitat ▪ Wildlife Habitat ▪ Migratory and Spawning habitat		▪ Navigation
Los Angeles River Estuary (ends at Willow St.)	▪ Contact Water Recreation ▪ Non-contact Water Recreation ▪ Marine Habitat ▪ Wildlife Habitat ▪ Marine Habitat ▪ Estuary Habitat ▪ Commercial and Sport Fishing ▪ Fish Spawning ▪ Wetland Habitat ▪ Navigation ▪ Preservation of Rare, Threatened or Endangered Species ▪ Industrial Service Supply ▪ Fish Migration ▪ Shellfish Harvesting		▪ Shellfish Harvesting
Los Angeles River Reach 1 (Estuary to Carlson St.)	▪ Groundwater Recharge ▪ Warm Freshwater Habitat ▪ Wildlife Habitat ▪ Marine Habitat ▪ Preservation of Rare, Threatened, or Endangered Species ▪ Contact Water Recreation ▪ Non-contact Water Recreation		▪ Municipal and Domestic supply ▪ Industrial Service supply ▪ Industrial Process Supply ▪ Fish Migration ▪ Fish Spawning ▪ Shellfish Harvesting
Los Angeles River Reach 2 (Carson St. to Figueroa St.)	▪ Groundwater Recharge ▪ Warm Freshwater Habitat ▪ Contact Water Recreation ▪ Non-contact Water Recreation		▪ Municipal and Domestic supply ▪ Industrial Service supply ▪ Wildlife Habitat
Inner Los Angeles – Long Beach Harbor	▪ Industrial Service Supply ▪ Navigation ▪ Noncontact Water Recreation ▪ Commercial and Sport Fishing ▪ Marine Habitat ▪ Preservation of Rare, Threatened or Endangered Species		▪ Water Contact Recreation ▪ Shellfish Harvesting

Table 3.9-1: Beneficial Uses of Inland Surface Waters and Coastal Waters Los Angeles Region Water Quality Control Plan

Surface Water Feature	Existing Beneficial Uses	Intermittent Beneficial Uses	Potential Beneficial Uses
Rio Hondo Channel Reach 1 (Los Angeles River Reach 1 to Figueroa St.)	▪ Non-contact Water Recreation	▪ Groundwater Recharge ▪ Contact Water Recreation ▪ Wildlife Habitat	▪ Municipal & Domestic Supply ▪ Warm Freshwater Habitat

Source: Los Angeles Regional Water Quality Control Board. *Basin Plan* (2014).

The Los Angeles River Estuary (Queensway Bay) is listed as impaired for chlordane (sediment), dichlorodiphenyltrichloroethane (DDT) (sediment), polychlorinated biphenyls (PCBs) (sediment), sediment toxicity, and trash. The Los Angeles River Reach 1 (Estuary to Carson St.) is listed as impaired for coliform bacteria, cyanide, cadmium, diazinon, trash, ammonia, dissolved copper, lead, nutrients (algae), pH, and dissolved zinc. The Los Angeles River Reach 2 (Carson St. to Figueroa St.) is listed as impaired for coliform bacteria, copper, nutrients (algae), oil, trash, ammonia, and lead.

Compton Creek is listed as impaired for coliform bacteria, benthic-macroinvertebrate bioassessments, trash, copper, lead, and pH. Rio Hondo Channel (Reach 1 from the confluence with the Los Angeles River to the Santa Ana Freeway) is listed as impaired for coliform bacteria, copper, lead, toxicity, trash, zinc, and pH. Dominguez Channel is listed as impaired for ammonia, benthic community effects, benzo(a)anthracene, benzo(a)pyrene (3,4-Benzopyrene—d), chlordane (tissue), Chrysene (C1-C4), coliform bacteria, DDT (tissue and sediment), dieldrin (tissue), lead (tissue), PCBs, phenanthrene, pyrene, sediment toxicity, and zinc (sediment).

The Los Angeles/Long Beach Inner Harbor is listed as impaired for beach closures, benthic community effects, benzo(a)pyrene, chrysene (C1-C4), copper, DDT, PCBs, sediment toxicity, and zinc.

TMDLs[7] must be developed for waters listed as impaired on the Section 303(d) List of Water Quality Limited Segments. Table 3.9-2 presents approved TMDLs and TMDLs being developed for water bodies affected by the I-710 Corridor Project.

[7] TMDLs are the total amount of a constituent that can be discharged while meeting water quality objectives and protecting beneficial uses. It is the sum of the individual load allocations for point-source inputs (e.g., an industrial plant), load allocations for nonpoint-source inputs (e.g., runoff from urban areas), and the natural background with a margin of safety included.

Table 3.9-2: Expected and Approved Total Maximum Daily Loads

Water Quality Limited Segment Name	Pollutant	TMDL Requirement Status	Expected TMDL Completion Date	Date of EPA Approved TMDL
Los Angeles River Estuary (Queensway Bay)	Chlordane (sediment)	A	2019	
	Dichlorodiphenyltrichloroethane (DDT) (sediment)	A	2019	
	Polychlorinated biphenyls (PCBs)	A	2019	
	Sediment Toxicity	A	2019	
	Trash	B		2016
Los Angeles River Reach 1 (Estuary to Carson St.)	Ammonia	B		2004
	Cadmium	B		2011
	Coliform Bacteria	A		2012
	Copper, Dissolved	B		2011
	Cyanide	A	2019	
	Diazinon	A	2019	
	Lead	B		2011
	Nutrients (Algae)	B		2004
	pH	B		2003
	Trash	B		2016
	Zinc, Dissolved	B		2011
Los Angeles River Reach 2 (Carson to Figueroa St.)	Ammonia	B		2004
	Coliform Bacteria	A	2019	
	Copper	B		2005
	Lead	B		2005
	Nutrients (Algae)	B		2004
	Oil	A	2019	
	Trash	B		2016
Compton Creek	Benthic-Macroinvertebrates-Bioassessments	A	2021	
	Coliform Bacteria	A	2019	
	Copper	B		2005
	Lead	B		2005
	pH	B		2004
	Trash	B		2016
Rio Hondo Channel	Coliform Bacteria	A	2019	
	Copper	B		2005
	Lead	B		2005
	pH	B		2004
	Trash	B		2016
	Toxicity	A	2021	
	Zinc	B		2005

Table 3.9-2: Expected and Approved Total Maximum Daily Loads

Water Quality Limited Segment Name	Pollutant	TMDL Requirement Status	Expected TMDL Completion Date	Date of EPA Approved TMDL
Dominguez Channel (unlined portion below S. Vermont Ave.)	Ammonia	A	2019	
	Benthic Community Effects	A	2019	
	Benzo(a)pyrene (PAHs)	A	2019	
	Benzo[a]anthracene	A	2019	
	Chlordane (tissue)	A	2019	
	Chrysene (C1-C4)	A	2019	
	Coliform Bacteria	A		2012
	DDT (sediment)	A	2019	
	Dieldrin (tissue)	A	2019	
	Lead (tissue)	A	2019	
	PCBs	A	2019	
	Phenanthrene	A	2019	
	Pyrene	A	2019	
	Sediment Toxicity	A	2021	
	Zinc (Sediment)	A	2019	
Los Angeles/ Long Beach Inner Harbor	Beach Closures	A		2004
	Benthic Community Effects	A	2019	
	Benzo(a)pyrene	A	2021	
	Chrysene (C1-C4)	A	2021	
	Copper	A	2019	
	DDT	A	2019	
	PCBs	A	2019	
	Sediment Toxicity	A		2009
	Zinc	A		2008

Source: Civil Works Engineers. *Water Quality Assessment Report.* (March 2017).
A = Required TMDL
B = Being addressed by EPA-approved TMDLs
EPA = United States Environmental Protection Agency
TMDL = total maximum daily load

3.9.2.4 GROUNDWATER

The I-710 Corridor Project is located within the Coastal Plain of the Los Angeles Groundwater Basin and is specifically underlain by the West Coast and Central subbasins. The Coastal Plain of the Los Angeles Groundwater Basin is adjacent to the Santa Monica Mountains and the Puente Hills on the north and east, on the south by the San Joaquin Hills, and on the west by the Pacific Ocean.

Groundwater in the project area migrates southerly, southwesterly, and westerly through the aquifers toward the coast. Shallow, perched aquifers recharged from local surface sources are also present in the project area.

The primary source of groundwater in the Study Area is rain and snow melt from the San Gabriel Mountains that travels through washes and creeks into the San Gabriel River and the Rio Hondo Channel, where some of the water flow is diverted into infiltration (percolation) spreading grounds or basins along those rivers to the northeast of the Study Area.

The west basin of the Dominguez Gap Spreading Grounds, located between the I-710 freeway and the Los Angeles River just north of the I-405 interchange, is one of three interconnected basins used to provide recharge to the local groundwater table. The two remaining basins are located on the east side of the Los Angeles River. The west basin is operated by the County of Los Angeles and infiltrates peak flows from storm events into the ground through a pervious surface layer. The basins also provide habitat for local species.

According to the *Geotechnical Final Report* (January 2010), groundwater has been encountered in many test borings along the project alignment during previous investigations for bridge construction by Caltrans and Los Angeles County. Groundwater encountered in the bridge test borings within the Study Area was on the order of five to 15 feet below the ground surface (bgs) at the south end of the Study Area in the vicinity of Ocean Blvd. north to Pacific Coast Hwy. (State Route 1 [SR-1]). North of this area at Wardlow Rd. and I-405, the depth to groundwater increased to approximately 45 feet bgs. In the area north to the Miller Wy. undercrossing (approximately 1.8 miles north of I-405), groundwater was encountered at all bridge locations at depths ranging from 2.9 feet bgs at the Atlantic Ave. undercrossing to approximately 71 feet bgs at the Compton Blvd. overcrossing. In the area north of this location to the north end of the project alignment, groundwater depths ranged from 2.2 feet bgs at the Gage Ave. bridge to greater than the maximum depth explored of 113 feet bgs at the Cheli Depot overhead. It is likely that some of the depths to groundwater represent local perched water tables, especially some of the shallowest depths.

3.9.2.5 GROUNDWATER BENEFICIAL USES

The following existing beneficial uses are identified in the Basin Plan for the West Coast and Central subbasins of the Coastal Plain of the Los Angeles Groundwater Basin:

West Coast Subbasin:

- Agricultural Supply
- Industrial Process Supply
- Industrial Service Supply

Central Subbasin:

- Municipal and Domestic Supply
- Agricultural Supply

- Industrial Process Supply
- Industrial Service Supply

3.9.2.6 GROUNDWATER QUALITY

The majority of the groundwater in the West Coast and Central subbasins is of high quality and requires little to no treatment before being pumped out of wells and used as potable water for the public. The subbasins' underlying gravel, sand, silt, and clay formations provide for slow fluid movement, which improves groundwater quality through a process known as geopurification.

The most commonly detected groundwater contaminants are, in order of findings: arsenic, perchloroethylene (PCE), trichloroethylene (TCE), total dissolved solids (TDS), manganese, and odor. In addition, seawater intrusion along the lower portions of both subbasins has produced deterioration of water quality over time.

3.9.3 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to water quality and stormwater runoff are located in Section 3.24.3.9.

3.9.3.1 PERMANENT IMPACTS

BUILD ALTERNATIVES.

ALTERNATIVE 5C. Alternative 5C would require replacing or extending the existing on-site drainage systems such as drainage inlets along the median and shoulders with new drainage systems that can accommodate the increased project flows.

The existing drainage systems that transfer legacy runoff from the adjacent neighborhoods through the I-710 Corridor would be modified to accommodate the improvements proposed as part of Alternative 5C while still maintaining the existing hydraulic capacity required to accommodate legacy storm flows. Existing Los Angeles River drainage outlets would be maintained in their existing location whenever hydraulically feasible and when not impacted by the proposed improvements.

In terms of the long-term effects, Alternative 5C has the potential to impact water quality because it would result in an increase in roadway surface area. The cumulative risk level for the project was determined to be Risk Level 2 through the Construction General Permit (CGP) procedure. The increase in impervious area for Alternative 5C is 156.4 acres, which results in a total post-project impervious surface area of 913.1 acres (pre-project area of

756.7 acres). This increase in impervious area brings an increase in runoff volume and pollutant loads that require treatment. Treatment BMPs have been identified and preliminarily sited for both build alternatives. Alternative 5C and all applicable design options propose to treat 74 percent of the total paved area.

The long-term surface runoff operational effects on water quality stemming from construction of Alternative 5C considers only the continuous impact on contaminant runoff throughout the life of the new facility. This typically includes the following impacts on receiving water quality:

- Incidental drippings from vehicle and accidental spills that introduce contaminant material or waste discharge from the new bridge and its approach structures
- Maintenance activities, such as bridge painting, surface treatments and surface cleaning, substructure repair, joint repair, repairing drainage structures and pavement repair, and repaving

Surface runoff would be designed to flow directly into the closest stormwater channel. Runoff from bridges would be directed to nearby drainage features via drainage inlets on the decks which then flow through the pillars. From an operational standpoint, impacts to water quality may be expected from the loading of various constituents typically associated with highway runoff into the channel. These constituents may include the following:

- Particulates from pavement wear and vehicles
- Metals, such as zinc, lead, iron, copper, cadmium, chromium, nickel, and manganese
- Bromide (from leaded gasoline exhaust)
- Diesel fuel
- Tire wear
- Auto body rusting
- Metal plating
- Brake lining wear
- Greases and lubricating oils from automobiles and trucks
- Trash discarded from vehicles and along the roadside
- Pathogenic bacteria (indicators) from soil, litter, bird droppings, and stockyard waste hauled by vehicles on the new bridge

These potential operational impacts would be addressed through the incorporation of design pollution prevention BMPs, low impact development (LID) BMPs, treatment BMPs, and

adherence to the necessary operational maintenance protocols identified in the Caltrans SWMP. These requirements are specified in Measure WQ-2 in Section 3.9.4.1, below. Selection of operational BMPs would be refined during final design and would include design pollution prevention BMPs, LID BMPs, treatment BMPs, and maintenance BMPs. Proposed design pollution prevention BMPs include consideration of downstream effects related to potentially increased flow, preservation of existing vegetation, concentrated flow conveyance systems, and slope/surface protection systems. Proposed treatment BMPs include 40 biofiltration swales, 12 media filters, 32 infiltration/detention basin, and one wet basin, as well as eight gross solids removal devices where feasible. All permanent treatment BMPs will have maintenance requirements associated with their implementation. Proposed operational maintenance BMPs include storm drain cleaning and normal roadway and bridge maintenance, in addition to maintaining all vegetated slopes. The introduction of treatment BMPs as part of Alternative 5C would represent an improvement when compared to the No Build condition, as there currently are 60 Caltrans-maintained BMPs treating freeway runoff on I-710. Existing BMPs within the project area will be removed as a result of the changing alignment and profile of the project.

In addition to the design pollution prevention and treatment BMPs, the project will feature LID features throughout the project. The final selection of features will be made once drainage, grading, and other design features are determined. Possible LID features include surface vegetation, soil amendments, subsurface storage, small detention areas, pervious materials, disconnected drainage relying on overland flow, and contour grading. These features may also be integrated as green streets measures to minimize impervious surfaces throughout the project.

The existing site runoff for a 25-year storm is 3,181 cubic feet per second (cfs) and for a 50-year storm is 3,623 cfs. The increase in peak flow associated with the 25-year storm for Alternative 5C would be 445 cfs, and the largest peak-flow increase for the 50-year storm would be 507 cfs. Therefore, the post-project stormwater runoff would be 3,626 cfs for the 25-year storm and 4,130 cfs for the 50-year storm. BMPs for the project would be designed to treat low flows from more regular storms, and BMPs would be sized according to the results of two- to ten-year peak-flow storm events which are equivalent to 85th percentile storms. The proposed BMPs would treat 74 percent of on-site runoff from the total post project impervious surface areas within the project area, which would be an improvement over the existing condition. After implementation of BMPs, Alternative 5C is not anticipated to further degrade the water quality of any receiving waters.

Stormwater discharges to Caltrans' MS4 are regulated through the Caltrans MS4 Permit. Although the Caltrans Stormwater Permit does not include a Watershed Management Program (WMP) compliance approach like the Los Angeles and Long Beach MS4 Permits, its TMDL provisions do require cooperation with agencies subject to the same TMDLs. As

such, Caltrans' participation is restricted to those sections of the WMP related to TMDL requirements. Caltrans has acknowledged their intent to participate.

Permanent impacts to the water quality of groundwater in the vicinity of the I-710 Corridor Project would be minimal upon completion of the construction because there would not be any increase in the transport of pollutants into the groundwater through infiltration during the operational life of the new structures. The sediment surface of some of the affected channels is impervious, while other locations are natural bottom. Operation of the I-710 Corridor Project would not change the nature or extent of these surfaces; therefore, no net gain or loss in infiltration is anticipated from operation of Alternative 5C. The treatment BMPs selected may provide infiltration opportunities along the alignment, which would be a positive influence to the local hydrogeology.

With the incorporation of the proposed site-specific BMPs during the operational phase of the I-710 Corridor Project, along with adherence to BMP and operational maintenance protocols, no adverse impacts to water quality due to operation of the proposed improvements are anticipated.

DESIGN OPTION 1A

Design Option 1A results in similar impacts to Alternative 5C. The increase in impervious surface associated with this design option would be 155.4 acres resulting in a total post-project impervious area of 912.1 acres. The expected runoff amounts during a 25-year storm event and a 50-year storm event under this design option would be 3,621 cfs (net change of 440 cfs) and 4,124 cfs (net change of 501 cfs), respectively.

DESIGN OPTION 2A

Design Option 1A results in similar impacts to Alternative 5C. The increase in impervious surface associated with this design option would be 161.7 acres resulting in a total post-project impervious area of 918.4 acres. The expected runoff amounts during a 25-year storm event and a 50-year storm event under this design option would be 3,640 cfs (net change of 459 cfs) and 4,146 cfs (net change of 523 cfs), respectively.

DESIGN OPTION 3A

Design Option 3A results in similar impacts to Alternative 5C. The increase in impervious surface associated with this design option would be 161.5 acres, for a total post-project impervious area of 918.2 acres. The expected runoff amounts during a 25-year storm event and a 50-year storm event under this design option would be 3,635 cfs (net change of 454 cfs) and 4,140 cfs (net change of 517 cfs), respectively.

ALTERNATIVE 7. Permanent water quality impacts during operation of Alternative 7 are similar to those discussed above under Alternative 5C. However, Alternative 7 would result

in an increase in impervious area of 256.9 acres, for a total post-project impervious area of 1013.6 acres, which is greater than the increase for Alternative 5C. The increase in impervious surface, and therefore, the increase in runoff and pollutant loading under Alternative 7, would be greater than under Alternative 5C. Alternative 7 and all applicable design options propose to treat 78.3 percent of the total paved project area.

Runoff for Alternative 7 would increase by 825 cfs for a 25-year storm and 940 cfs for a 50-year storm, which means that the total peak flow for a 25-year storm would be 4,006 cfs and for a 50-year storm would be 4,563 cfs. Proposed treatment BMPs include 36 bioswales, 30 infiltration basins, 12 media filters, and one wet basin, as well as eight gross solids removal devices where feasible. BMPs for the project would be designed to treat low flows from more regular storms, and BMPs would be sized according to the Caltrans permit requirement for BMPs to treat the 85th percentile 24-hour storm events. The BMPs would treat 78.3 percent of on-site runoff from the total impervious surface areas within the project area, which would be an improvement over the existing condition. After implementation of BMPs, Alternative 7 is not anticipated to further degrade the water quality of any receiving waters.

In addition, Alternative 7 include the construction of a freight corridor, which is not proposed under Alternative 5C. The portion of the freight corridor in the vicinity of the I-710/Interstate 105 (I-105) interchange is located at-grade and would require relocation of one of two existing retention basins that serve to meter the peak flows of the Los Angeles River channel. The freight corridor construction would also require the relocation of the Dominguez Gap Basin, located just north of the I-710/I-405 interchange. Several parcels have been identified adjacent to I-710 and the Los Angeles River for relocation of the Dominguez Gap Basin. The exact location for relocating the basin is being coordinated between the Los Angeles Department of Water and Power, Gateway Cities Council of Governments, and Caltrans. As specified in Section 3.8 in Mitigation Measure FP-2, the relocation and reconstruction of the westerly Dominguez Gap Basin will retain the basin's original recharge capacity, at a minimum. Therefore, the relocation of this basin is not anticipated to adversely impact groundwater quantity or quality.

DESIGN OPTION 1B

Design Option 1B results in similar impacts to Alternative 7. The increase in impervious surface associated with this design option would be 256.3, for a total post-project impervious area of 1,013.0 acres. The expected runoff amounts during a 25-year storm event and a 50-year storm event under this design option would be 4,009 cfs (net change of 828 cfs) and 4,566 cfs (net change of 943 cfs), respectively.

DESIGN OPTION 3B

Design Option 3B results in similar impacts to Alternative 7. The increase in impervious surface associated with this design option would be 262.2 acres for a total post-project impervious surface area of 1,018.9 acres. The expected runoff amounts during a 25-year storm event and a 50-year storm event under this design option would be 4,095 cfs (net change of 835 cfs) and 4,605 cfs (net change of 951 cfs), respectively.

DESIGN OPTION 7ZE

Design Option 7ZE features no variation in geometry from the Alternative 7 configuration and is purely operational in nature. This Design Option would have the same water quality impact as Alternative 7.

SUMMARY. Alternatives 5C and 7 would increase impervious surface areas, which would increase runoff volume and pollutant loads. Alternatives 5C and 7 would require replacement or extension of the existing drainage systems such as drainage inlets along the median and shoulders to accommodate the increased project flows. Impacts to water quality of receiving waters may be expected from the loading of various constituents typically associated with highway runoff. These potential operational impacts would be addressed through the incorporation of design pollution prevention BMPs, treatment BMPs, and adherence to the necessary operational maintenance protocols identified in the Caltrans SWMP. As described in the *Storm Water Data Report* (January 2017), proposed design pollution prevention BMPs include preserving existing vegetation wherever feasible, incorporation of concentrated flow conveyance systems with velocity-reducing outlet structures, and providing slope protection with vegetation. Proposed treatment BMPs include biofiltration swales, biofiltration strips, infiltration basins, media filters, detention basins, gross solids removal devices, and wet basins. Proposed operational maintenance BMPs include storm drain cleaning and normal roadway and bridge maintenance, in addition to maintaining all vegetated slopes.

The BMPs utilized for both alternatives have varying effectiveness when treating certain pollutants. When used together, all pollutants of concern are effectively treated. Infiltration trenches, wet basins, and infiltration basins, which include detention basins, treat all pollutants of concern with high effectiveness. Biofiltration swales treat nutrients trash and bacteria at low effectiveness and all other pollutants at medium effectiveness. Media filters treat nutrients with low effectiveness, bacteria with medium effectiveness, and all other pollutants high effectiveness. Vegetated buffer strips treat sediment, metals, and oil and grease with high effectiveness; trash, organics, and oxygen demand with medium effectiveness; and nutrients and bacteria with low effectiveness. Finally, gross solids

removal devices are highly effective at removing trash and debris.[8] These BMPs will be integrated into the corridor using enhanced landscape design techniques to draw more attention to them and enhance the aesthetics of stormwater control features.

Maintenance of BMPs will be allowed for in the project design, and coordination with and concurrence from the Caltrans Maintenance unit will occur during final design.

With the incorporation of the proposed site-specific BMPs during the operational phase of the I-710 Corridor Project, which will treat up to 75.8 percent of the total surface water runoff under Alternative 7, along with adherence to BMP and operational maintenance protocols, no adverse impacts to water quality due to operation of the proposed improvements are anticipated.

NO BUILD ALTERNATIVE. Under Alternative 1, there would not be an increase in impervious areas or changes in land uses in the Study Area. Therefore, Alternative 1 would not result in an increase in long-term pollutant loading. The existing roadway runoff in this area would be treated by the existing 60 BMPs and is undergoing BMP development in accordance with the Stormwater permit. As a result, Alternative 1 would result in an improvement to water quality based on these BMPs.

3.9.3.2 PUBLIC HEALTH CONSIDERATIONS

Water quality BMPs would be implemented to treat stormwater runoff during construction and operation of the build alternatives. As a result, the build alternatives are not anticipated to degrade the water quality of any receiving waters. Treatment BMPs would be designed to drain and eliminate standing water; therefore, vectors (such as mosquitoes) would not be of concern. Therefore, the build alternatives would not pose risks to public health related to hydrology and water quality.

3.9.3.3 MOTION 22.1

As described in Chapter 2, Section 2.2.2.1 (Community Alternative 7) of this RDEIR/SDEIS, the Metro Board of Directors passed Board Motion 22.1 in October 2015 that directed Metro and Caltrans to study a number of additional items as a part of the I-710 Corridor Project Description. For water quality, Motion 22.1 requires that, consistent with the Regional Water Quality Control Boards and their Municipal Separate Storm Sewer System permits, identify suitable locations within the State's right of way to implement additional storm water Best Management Practices (BMPs) and enhance the water quality for the Los Angeles River and its tributaries. Storm water BMPs for the I-710 build alternatives (both design pollution prevention BMPs for construction and, treatment BMPs for operation) are summarized above in Section

[8] California Stormwater Quality Association. 2003. *California Stormwater BMP Handbook*. Website: https://www.casqa.org/sites/default/files/BMPHandbooks/BMP_Municipal_Complete.pdf.

3.9.3, Environmental Consequences (Summary subsection) and described in detail in the *Storm Water Data Report* (January 2017).

3.9.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Compliance with standard requirements and permits listed in Section 3.24.4.9 would minimize short-term, construction-related impacts to water quality. Floodplain impacts from water quality, including those for relocation of basins, would be minimized by measures in 3.8.4. In addition, the following measures are required for long-term impacts to water quality and groundwater recharge.

WQ-1 The California Department of Transportation (Caltrans) shall comply with provisions identified in the National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Stormwater Permit and Waste Discharge Requirements (WDRs) Order No. 2012-0006-DWQ, NPDES No. CAS000002, or subsequent permit of the Construction General Permit (CGP). An effective Storm Water Pollution Prevention Plan (SWPPP) shall be developed and implemented. During final design, Caltrans will consult with the jurisdictions where discharges of runoff from Interstate 710 (I-710) to local jurisdictions' streets and/or stormwater drainage systems will occur during the project design development, treatment, and operational Best Management Practices (BMPs) in those local jurisdictions.

WQ-2 Caltrans shall follow the procedures outlined in the Caltrans Stormwater Quality Handbooks, Project Planning and Design Guide for implementing design pollution prevention and treatment BMPs including Low Impact Development (LIDs), for the project. Caltrans-approved treatment BMPs shall be implemented to the Maximum Extent Practicable (MEP), consistent with the requirements of the Statewide Storm Water Permit, Order No. 2012-0011-DWQ, NPDES No. CAS000003, and WDRs for Caltrans' properties, facilities, and activities, and any required MS4 Permits. This will include coordination with the Los Angeles Regional Water Quality Control Board (LARWQCB) with respect to feasibility, maintenance, and monitoring of Treatment BMPs as set forth in the Caltrans Storm Water Management Plan (SWMP).

WQ-3 Caltrans shall require the construction contractor to comply with the provisions of the Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties, Order No. R4-2013-0095, NPDES No. CAG994004, as they relate to discharge of non-stormwater dewatering wastes for the project, including monitoring and reporting requirements.

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3.10 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

The information in this section is based on the following documents:

- *Geotechnical Final Report* (January 2010)
- *Geotechnical Memorandum* (Department of Transportation Division of Engineering Services, Geotechnical Services [May 2010]), for the northern portion of the Study Area
- *Water Quality Assessment Report* (March 2017).

3.10.1 REGULATORY SETTING

For geologic and topographic features, the key Federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act (CEQA).

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The California Department of Transportation's (Caltrans) Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. Structures are designed using the Caltrans Seismic Design Criteria (SDC). The SDC provide the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see Caltrans Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

LOCAL PLANS/POLICIES. Standards related to geology were identified in the Los Angeles County General Plan, in addition to the general plans of the affected cities and communities. The following are applicable goals and policies relevant to this Geology/Soils/Seismic/Topography section of this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS):

COUNTY OF LOS ANGELES GENERAL PLAN (2015).

SAFETY ELEMENT.

- **GOAL S 1:** An effective regulatory system that prevents or minimizes personal injury, loss of life, and property damage due to seismic and geotechnical hazards.
    - **POLICY S 1.1:** Discourage development in Seismic Hazard and Alquist-Priolo Earthquake Fault Zones.

CITY OF CARSON GENERAL PLAN (2004). The following are goals and policies in the City of Carson's General Plan that are relevant to the Geology section of the Interstate 710 (I-710) Corridor Project.

SAFETY ELEMENT.

- **GOAL SAF-1:** Minimize the risk of injury, loss of life, and property damage caused by earthquake hazards.

OPEN SPACE AND CONSERVATION ELEMENT.

- **POLICY OSC-2.2:** Minimize soil erosion and siltation from construction activities through monitoring and regulation.

CITY OF COMMERCE GENERAL PLAN (2008).

SAFETY ELEMENT.

- **SAFETY POLICY 4.1:** The City of Commerce will ensure that appropriate mitigation measures relative to soil contamination and soils characteristics (subsidence, erosion, etc.) are required for development and redevelopment in order to reduce hazards.
- **SAFETY POLICY 8.1:** The City of Commerce will work to minimize hazards to public health, safety, and welfare, and prevent loss of life, bodily injury, and property damage resulting from natural and manmade phenomena.

CITY OF COMPTON DRAFT GENERAL PLAN (2014).

PUBLIC SAFETY ELEMENT.

- **PUBLIC SAFETY POLICY 1.5:** In areas with liquefaction potential, the City of Compton will require the review of soils and geologic conditions, and if-needed, on-site borings, to determine liquefaction susceptibility of the proposed site.

CITY OF CUDAHY GENERAL PLAN (2010).

PUBLIC SAFETY ELEMENT.

- **SAFETY ELEMENT POLICY 1.1:** The City of Cudahy will require geologic studies prior to the construction of critical facilities (hospitals, schools, fire stations, etc.).

CITY OF DOWNEY GENERAL PLAN (2005).

SAFETY ELEMENT.

- **GOAL 5.1:** Protect life and property from disasters and emergencies.
  - **POLICY 5.1.1:** Minimize the level of risk and exposure to disasters.
- **GOAL 5.5:** Address the potential hazards associated with seismic activity.
  - **POLICY 5.5.1:** Minimize damage in the event of a major earthquake.

CITY OF HUNTINGTON PARK GENERAL PLAN (1991).

SAFETY ELEMENT.

- **GOAL 1.0:** Protect the community from seismic hazards.
  - **POLICY 1.4:** In areas with liquefaction potential, require review of soils and geologic conditions, and if necessary, on-site borings, to determine liquefaction susceptibility of the proposed site.

CITY OF LAKEWOOD GENERAL PLAN (1996).

SAFETY ELEMENT.

- **GOAL 1:** To protect the health, welfare, and safety of the City's residents.
- **GOAL 4:** Minimize personal and property damage from earthquakes.
  - **POLICY 1.4:** In areas with liquefaction potential, require review of soils and geologic conditions, and if necessary, on-site borings, to determine liquefaction susceptibility of the proposed site.

CITY OF LONG BEACH GENERAL PLAN.

CONSERVATION ELEMENT.

- **SOIL MANAGEMENT GOAL NO. 3:** To minimize those activities which will have a critical or detrimental effect on geologically unstable areas and soils subject to erosion.

OPEN SPACE AND RECREATION ELEMENT.

- **GOAL/OBJECTIVE:** Provide for and maintain sufficient open space for adequate protection of lives and property against natural and man-made safety hazards.

PUBLIC SAFETY ELEMENT.

- **DEVELOPMENT GOAL 6:** Encourage transportation systems, utilities, industries, and similar uses to locate and operate in a manner consistent with public safety goals.

SEISMIC SAFETY ELEMENT.

- **MANAGEMENT GOAL 1:** Develop implementable mechanisms for a more stringent review of the earthquake potential associated with various projects.
- **DEVELOPMENT GOAL 2:** Provide an urban environment which is as safe as possible from seismic risk.
- **PROTECTION GOAL 1:** Reduce public exposure to seismic risks.

CITY OF LOS ANGELES GENERAL PLAN (2001).

CONSERVATION ELEMENT.

- **MINERAL RESOURCES MANAGEMENT (SAND AND GRAVEL) OBJECTIVE:** Conserve sand and gravel resources and enable appropriate environmentally sensitive extraction of sand and gravel deposits.
    - **POLICY 2:** Continue to encourage the reuse of sand and gravel products, such as concrete, and of alternative materials use in order to reduce the demand for extraction of natural sand and gravel.

SAFETY ELEMENT.

- **GOAL 1:** A City where potential injury, loss of life, property damage and disruption of the social and economic life of the City due to fire, water-related hazard, seismic event, geologic conditions, or release of hazardous materials disasters is minimized.
    - **POLICY 1.1.5:** Risk reduction. Reduce potential risk hazards due to natural disaster to the greatest extent feasible within the resources available, including provision of information and training.
    - **POLICY 1.1.6:** State and Federal regulations. Assure compliance with applicable State and Federal planning and development regulations, e.g., Alquist-Priolo Earthquake Fault Zoning Act, State Mapping Act and the Cobey-Alquist Flood Plain Management Act.

CITY OF LYNWOOD GENERAL PLAN (2003).

PUBLIC HEALTH AND SAFETY ELEMENT.

- **GOAL GEO-1:** Protect the public health, safety, and welfare and minimize the damage to structures, property, and infrastructure as a result of seismic activity.
    - **POLICY GEO-1.4:** Ensure that all new construction is designed to meet current safety regulations.

CITY OF MAYWOOD GENERAL PLAN (1993).

PUBLIC SAFETY ELEMENT.

- **GOAL 1:** Protect the lives, health, and property of the residents of the City of Maywood from flooding, fire, and geologic hazards.
    - **POLICY 1.1:** Continue to implement and enforce stringent site and safety criteria for new construction in the City, and require existing structures be brought up to standards.

CITY OF PARAMOUNT GENERAL PLAN (2007).

HEALTH AND SAFETY ELEMENT.

- **HEALTH AND SAFETY ELEMENT POLICY 1:** The City of Paramount will strive to minimize damage to life and property in the event of a major disaster.
- **HEALTH AND SAFETY ELEMENT POLICY 8:** The City of Paramount will strive to prevent serious structural damage to critical facilities and structures, particularly where large numbers of people are apt to congregate.
- **HEALTH AND SAFETY ELEMENT POLICY 12:** The City of Paramount will require special soils and structural investigations for all larger structures or development involving large groups of people pursuant to State requirements.

CITY OF SIGNAL HILL GENERAL PLAN.

SAFETY ELEMENT.

- **GOAL 1:** Strive to prevent man-made disasters and minimize the potential for natural disasters to impact the community.
    - **POLICY 1.D:** Maintain, revise, and enforce appropriate standards and codes to minimize seismic and geologic risks.

- **POLICY 1.K:** Regulate development in Alquist-Priolo Earthquake Fault Zones consistent with levels of acceptable risk.
- **POLICY 1.L:** Recognize the need for greater protection and safety of critical use facilities through careful site selection and comprehensive geotechnical evaluation that considers seismic and other geological hazards.

CITY OF VERNON GENERAL PLAN (2007).

SAFETY ELEMENT.

- **GOAL S-1:** Minimize the risk to public health, safety, and welfare associated with the presence of natural and human-caused hazards.
- **GOAL S-4:** Provide a high degree of protection for all workers and residents in the event of any disaster.

EAST LOS ANGELES COMMUNITY PLAN (1988).

PHYSICAL ENVIRONMENT GOALS.

- To protect the community health, safety, and general welfare.

3.10.2 AFFECTED ENVIRONMENT

3.10.2.1 GEOLOGY/TOPOGRAPHY

The Study Area is located at the north end of the Peninsular Ranges physiographic province in the central and south-central coastal plain area of the Los Angeles Basin. The Los Angeles Basin is an alluviated coastal plain of low relief that slopes gradually seaward toward the south, southwest, and west. The basin is bordered on the north by the Santa Monica Mountains, Elysian Repetto, and Puente Hills, and is bordered on the east and southeast by the Santa Ana Mountains and San Joaquin Hills. The relatively flat surface of the Los Angeles Basin is interrupted by a locally trending northwest alignment of low hills and mesas that extend from Newport Beach on the south to Beverly Hills on the north. With the exception of embankments associated with the existing freeways and the embankments and levees of the Los Angeles River, the Study Area is relatively flat, with elevations ranging from approximately seven feet above mean sea level at the south end, to approximately 165 feet above mean sea level at the north end.

The northern portion of the Study Area will encounter older surficial sediments (Qoa) consisting of remnants of older weakly consolidated alluvial deposits of gravel, sand, and silt.

SURFICIAL AND SUBSURFACE SOILS. The vast majority of the surficial soils in the immediate vicinity of the Study Area consist of sand, sandy and fine-sand loam, silty loam, clay loam, clay, and gravel. The area within the northern portion of the project limits consists mainly of alluvial gravel, sand, and clay deposits with some cobbles.

The area in the vicinity of the Study Area is underlain by sandy alluvial soils containing silts, clays, and gravels deposited by the Los Angeles River, the San Gabriel River, and the Rio Hondo River. The recent deposits overlie older alluvium in some areas and overlie older bedrock in other areas. The depth to bedrock beneath the Study Area ranges from at least 80 feet and ranges to 200 feet or greater.

Artificial fill consisting primarily of fine sand and silt overlies older deposits at the southerly end of the Study Area south of Shoemaker Bridge in the City of Long Beach.

EXPANSIVE AND COLLAPSIBLE SOILS. Expansive soils are fine-grained soils (clay) that can undergo a substantial increase in volume with an increase in water content and a substantial decrease in volume with a decrease in water content. Changes in the water content of an expansive soil can result in severe distress to structures constructed upon the soil. No laboratory data is available regarding the expansion potential of site soils; however, based on review of the existing bridge Logs of Test Borings (LOTBs) for sites within the project area, the soils consist generally of coarse-grained materials that are not highly expansive, but some fine-grained soils susceptible to high degrees of expansion do exist.

Collapsible soils are characterized by having metastable soil structures that are susceptible to collapse upon saturation. Collapse typically occurs in relatively dry granular soils in arid climates or under dry conditions. Naturally occurring unsaturated sandy and silty alluvium and compacted granular fill materials with moisture content below optimum are considered collapsible. Since no laboratory data is available regarding the collapsibility of soils in the area, it is not known if collapsible soils are present; however, the area is not known from existing mapping to have collapsible soils.

OIL AND GAS RESOURCES. Oil and gas resources can be a concern from a geologic standpoint because of the potential for land subsidence to occur in areas where extraction of these resources occurs. The Study Area traverses four oil fields. The Bandini field is located near the City of Commerce. The Dominguez, Long Beach, and Wilmington fields are located near the City of Long Beach. The Wilmington is the largest oil field in the Los Angeles Basin. Oil is extracted from reservoirs in semi- and unconsolidated Pliocene- and Miocene-age sandstone strata.

There are numerous active, abandoned, and plugged oil wells in the immediate vicinity of the southern part of the Study Area where it crosses the Wilmington field. The majority of these wells are located on the west side of the Los Angeles River, from the south end of the Study

Area north to the Shoemaker Bridge in the City of Long Beach. As discussed in Section 3.4, Utilities and Emergency Services, there are two active oil extraction operations (Oxy Oil and Long Beach Gas & Oil) adjacent to Interstate 710 (I-710) in the City of Long Beach. There are only a few scattered wells in the vicinity of the Study Area where it crosses the other three oil fields.

SUBSIDENCE. Land subsidence due to oil extraction in the Wilmington-Long Beach Harbor area of the Wilmington field began in the 1940s. The center of the subsidence area is located approximately one mile west of the southern limits of the Study Area. The center of the subsidence area dropped 29 feet before it was halted by injection water in the oil reservoirs in the 1950s. The south end of the Study Area was also affected, with approximately ten feet of subsidence. Ground surface elevation monitoring and water injection continues today to counteract the effects of oil extraction.

3.10.2.2 WATER

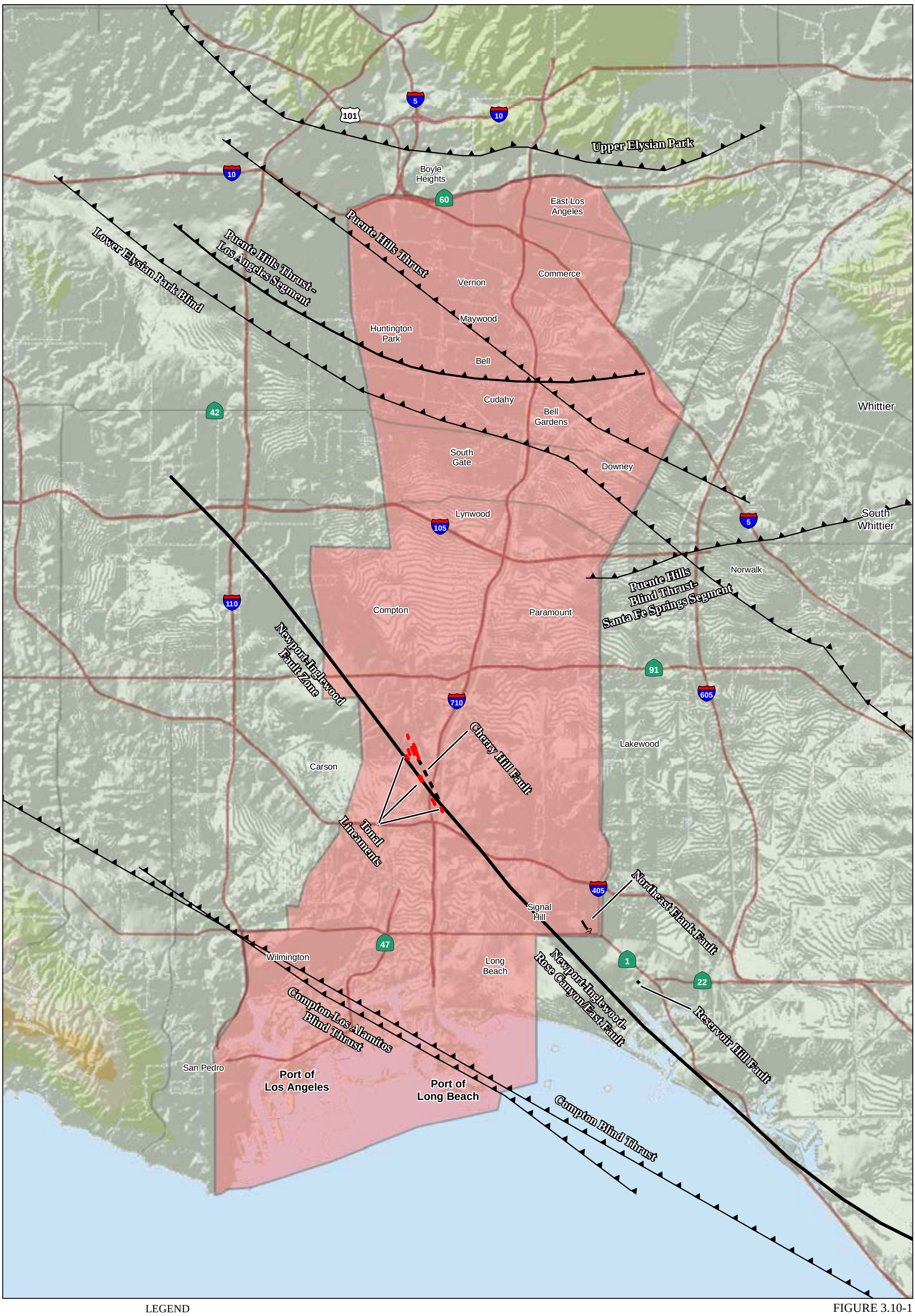
GROUNDWATER. The primary source of groundwater in the project area is rain and snow melt from the San Gabriel Mountains, which travels through washes and creeks into the San Gabriel and Rio Hondo Rivers where some of the water flow is diverted by infiltration into spreading ground basins along those rivers to the northeast of the Study Area. The 15-acre west basin of the Dominguez Gap spreading basins is located between the Los Angeles River and the I-710 Corridor, immediately north of the I-710/Interstate 405 (I-405) interchange.

The depth of groundwater in the Study Area ranges from 2.2 feet below the ground surface (bgs) to greater than 113 feet bgs. In general, the groundwater is shallow at the south end of the Study Area and deepens to the north. Groundwater levels in the project vicinity are influenced by seasonal fluctuations. Fluctuations in groundwater levels due to water district practices and long-term climatic conditions may lead to future changes in the water levels.

3.10.2.3 FAULTING AND SEISMICITY

The entire southern California region is seismically active due to the influence of several earthquake fault systems resulting from the interaction between the Pacific and North American crustal plates.

The Study Area is located within a seismically active region that will be subjected to future seismic effects from earthquakes occurring along local or regional faults. Active faults within the Study Area are shown in Figure 3.10-1. The sources listed in Table 3.10-1, and described below, are known primary seismic sources that are capable of producing seismic shaking that could be damaging to bridges and other structures and, therefore, would influence the seismic design of the I-710 Corridor Project. The distances in Table 3.10-1 are the closest distance from the Study Area to the surface trace of the fault or top of the rupture plane.



LEGEND

I-710 Study Area

Alquist-Priolo Zones

Fault

Blind Thrust Fault

Tonal Lineaments

Faults considered to have been active during Holocene time and to have a relatively high potential for surface rupture.

Inferred

Approximately Located

N

0 1 2
MILES

SOURCE: ESRI (2015); AECOM (2016)

I:\URS0801\GIS _MOD\MXD\EIR_EIS\Chapter3\Faults.mxd (12/12/2016)

FIGURE 3.10-1

I-710 Corridor Project
RDEIR/SDEIS

Fault Zones

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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Table 3.10-1: Potential Seismic Sources

Fault	Approximate Closest Distance to the Study Area (miles)	Fault Type	Maximum Credible Earthquake Moment Magnitude[1]
Newport-Inglewood (Cherry Hill Fault)	0[2]	RLSS	7.5
Puente Hills Blind Thrust	2.6[3]	R	7.3
Compton Blind Thrust	5.4[4]	R	6.8
Palos Verdes	6.9[2]	RLSS	7.3
Elsinore Fault Zone (Whittier Section)	10.5[2]	RLSS	7.6
Upper Elysian Park Blind Thrust	6.5[3]	R	6.4

Source: URS. *I-710 Corridor Project Geotechnical Final Report* (January 2010).

[1] Maximum moment magnitude earthquake reported by Caltrans (2009 ARS Online Website).

[2] Distance noted is the closest distance to the surface trace of the fault as measured from Caltrans (2009 ARS Online).

[3] This fault is a blind thrust fault that does not rupture the ground surface. The distance noted is the closest distance to the upper limit of the rupture plane in the subsurface calculated using the fault location from Shaw et al. (2002) and the depth to top of rupture plane from Wills et al. (2008).

[4] This fault is a blind thrust fault that does not rupture the ground surface. The distance noted is the closest distance to the rupture plane in the subsurface calculated using the fault location provided in the Community Fault Model (2004) and the depth to top of rupture plane from Wills et al. (2008).

Caltrans = California Department of Transportation
I-710 = Interstate 710
R = Reverse fault
RLSS = Right Lateral Strike-Slip fault

The maximum earthquake magnitudes and other fault parameters shown in Table 3.10-1 are those currently being considered for seismic design of the I-710 Corridor Project.

The Newport-Inglewood Fault Zone extends approximately 41 miles from Newport Mesa in the south to the Baldwin Hills in the north and consists of a series of northwest-trending faults and folds that form an alignment of hills in the western Los Angeles Basin. The Newport-Inglewood Fault Zone consists of several fault segments and branch faults, four of which are in the project area: the Cherry Hill, the Pickler, the Northeast Flank, and the Reservoir Hill. The Cherry Hill Fault crosses the Study Area near the I-710/I-405 intersection.

The Puente Hills Fault is a northerly dipping blind thrust fault that extends for more than 25 miles from downtown Los Angeles east to Brea in northern Orange County. The fault consists of three distinct segments: Los Angeles, Santa Fe Springs, and Coyote Hills. An area of the Los Angeles segment trends beneath the Study Area, approximately 3.8 miles north of the I-710/ Interstate 105 (I-105) interchange. At its western end, the Santa Fe Springs segment is located approximately 1.8 miles east of the I-710/I-105 interchange.

The Compton Fault extends northwest-southeast for approximately 25 miles along the western edge of the Los Angeles Basin. At its closest point, this fault is less than one mile southwest of the southern end of the Study Area.

The Palos Verdes Fault is a northwesterly trending fault that extends from Santa Monica Bay southeasterly across the Palos Verdes Peninsula and then offshore along the coast for approximately 46 miles. At its closest point, the Palos Verdes Fault is approximately four miles southwest of the south end of the Study Area.

3.10.2.4 LIQUEFACTION

Soil liquefaction occurs when saturated, loose soils lose their strength due to excess water within the soils. The space between soil particles is completely filled with water, which exerts pressure on the soil particles, influencing how tightly the soil particles are pressed together. Prior to an earthquake, the water pressure is relatively low. However, the shaking caused by an earthquake can cause the water pressure to increase to the point where the soil particles can readily move with respect to each other. When liquefaction occurs, the strength of the soil decreases and the ability of the soil to support building and bridge foundations are reduced. Liquefied soils also exert pressure on retaining walls, which can cause them to tilt or slide.

The primary factors affecting the possibility of liquefaction in a soil deposit are: (1) intensity and duration of earthquake shaking, (2) soil type and relative density, (3) overburden pressures, and (4) depth to groundwater. Soils most susceptible to liquefaction are clean, loose, uniformly graded, and fine-grained sands and nonplastic silts that are saturated. Silty sands have also been proven to be susceptible to liquefaction.

With the exception of the northernmost 0.8 mile of the Study Area and portions of some proposed on-ramp/off-ramp/transitions on the east side of the Los Angeles River between Ocean Blvd. and I-405, the entire Study Area is located in an area identified as having the potential for liquefaction. Based on subsurface soil conditions and groundwater elevation, the liquefaction potential in the Study Area ranges from low to high. In the north of the Study Area, low liquefaction potential exists from approximately Hobart Yard, north, until the northern limits of the Study Area (Cities of Vernon and Commerce, including the communities of Boyle Heights and East Los Angeles). Moderate liquefaction potential exists south of Hobart Yard until approximately 1,600 feet south of Florence Ave. (Cities of Maywood, Vernon, Bell, and Bell Gardens); approximately 2,000 feet south of I-710/Martin Luther King exit until I-710/Compton Creek (Cities of South Gate, Lynwood, Paramount, Compton, East Compton, and Long Beach); and east near the N405-S-710 Connector and N-710/S405 Connector (East of the Los Angeles River in the City of Long Beach). High liquefaction potential exists approximately 1,600 feet south of Florence Ave. until approximately 2,000 feet south of I-710/Martin Luther King exit (in the Cities of Bell, Bell Gardens, Cudahy, South Gate, Downey, Lynwood, and Paramount); and from I-710/Compton Creek until the southern limits of the Study Area (the Cities of Long Beach and Carson).

During the last two major earthquakes in the Southern California area, liquefaction did not occur within the limits of the northern portion of the Study Area. In addition, based on a regional study

conducted by the United States Geological Survey, the relative liquefaction susceptibility along this portion of the Study Area is considered to be low to very low.

3.10.2.5 LANDSLIDES

Landslides are rock, earth, or debris flows on slopes due to gravity. They can occur on any terrain given the right conditions of soil, moisture, and angle of slope.

3.10.2.6 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to Geology/Soils/Seismic/Topography are located in Section 3.24.3.10.

BUILD ALTERNATIVES. The roadway, structures, and other features of the I-710 Corridor Project build alternatives could be impacted by ground motion and liquefaction and possible ground rupture (deformation), to some degree. Design and construction of the proposed project to current highway and structure design standards, including applicable seismic standards, would minimize the potential impacts on the build alternatives. No natural landmarks and/or landforms have been identified that would be impacted by the build alternatives, given the relative flatness of the Study Area.

The primary geologic and geotechnical constraints affecting the design and construction of the build alternatives include:

- Moderate to high ground accelerations due to the presence of nearby active faults and fault zones, including the Newport-Inglewood (Cherry Hills Fault), Puente Hills, Compton, and Palos Verdes Faults.
- Fault rupture associated with the Cherry Hill segment of the Newport-Inglewood Fault Zone.
- Liquefaction and seismically induced settlement in areas of shallow groundwater and loose alluvial soils. Most of the Study Area is within an area identified as having the potential for liquefaction.
- Earthquake-induced slope instability associated with liquefaction in areas of moderate to high liquefaction potential and near slopes such as the Los Angeles River.

FAULTING/SEISMICITY. Moderate to severe seismic shaking is likely to occur in the Study Area during the life of the I-710 Corridor improvements under all build alternatives. The Study Area is in the seismically active southern California region and within the influence area of several fault systems that are considered active. In general, the project facilities can

be designed to accommodate the expected ground accelerations through compliance with applicable building and seismic codes. As a result, the potential for structural damage can be substantially reduced or avoided through seismic engineering design.

LIQUEFACTION AND SEISMICALLY INDUCED SETTLEMENT. Under the build alternatives, facilities and structures could not influence and/or increase the severity of liquefaction or seismically induced settlement. However,, facilities and structures could potentially be affected by liquefaction and seismically induced settlement, which could occur where liquefaction potential exists. Section 3.10.2.4 identified locations where there is liquefaction potential in the Study Area. The potential impacts to facilities and structures can be substantially reduced based on design and construction, consistent with the recommendations of the detailed geotechnical investigations prepared during final design.

LANDSLIDES. With the exception of the freeway embankment and embankments and levees of the Los Angeles River, the topography in the Study Area is relatively flat with no natural slopes. Earthquake-induced slope instability is not a major factor in the design or operation of the I-710 Corridor Project, except in areas where there is a potential for liquefaction, as described previously.

NO BUILD ALTERNATIVE. Under Alternative 1, the permanent impacts discussed above for the build alternatives would not occur for the I-710 Corridor Project itself, but earthquake and seismic safety concerns would be issues that would be analyzed as part of the environmental and engineering studies for the other transportation improvement projects included in Alternative 1.

3.10.2.7 PUBLIC HEALTH CONSIDERATIONS

The primary public health consideration related to geology is seismic safety. All new and modified bridge structures included in the build alternatives would be designed and constructed in accordance with Caltrans' latest seismic design criteria, thus minimizing public health risk concerns associated with structure collapses during an earthquake.

3.10.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

While implementation of standard design will reduce the I-710 Corridor Project's risk for geologic hazards such as soil erosion and slope instability, Measure GEO-1 listed below will also reduce potential impacts to liquefaction, seismic shaking, surface fault rupture, slope instability, and erosion. The following measure would apply to all build alternatives.

GEO-1 Prior to completion of final design, the California Department of Transportation (Caltrans) will prepare a design-level geotechnical report in accordance with the *Guidelines for Preparing Geotechnical Design Reports* (Caltrans 2006). Design-level geotechnical reports precede development of grading and/or construction

plans, and they provide detailed, site-specific design recommendations. Studies at this stage shall provide specific design recommendations to mitigate geologic hazards as they relate to grading and construction of the project.

A geotechnical design report will document soil-related constraints and hazards such as slope instability, settlement liquefaction, or related secondary seismic impacts that may be present. The report shall also include:

- Evaluation of expansive soils and recommendations regarding construction procedures and/or design criteria to minimize the effect of these soils on development of the project.
- Identification of potential liquefiable areas within the project limits and recommendations for mitigation.
- Demonstration that the design of all proposed retaining walls is geotechnically suitable for project area soils.

The Caltrans Project Engineer will incorporate the measures recommended in the design level geotechnical report in the final design and project specifications. The Caltrans Resident Engineer will require the construction contractor to implement the measures recommended in the design-level geotechnical report as included in the project specifications.

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3.11 PALEONTOLOGY

The information in this section is based on the following document:

- *Final Paleontological Identification Report and Paleontological Evaluation Report* (June 2017)

3.11.1 REGULATORY SETTING

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of Federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of Federally authorized projects. Under 23 United States Code (USC) 305, mitigation of impacts to paleontological resources during development of this project may be an eligible Federal project cost provided the necessary documentation is submitted to the Federal Highway Administration (FHWA). Under 23 USC 1.9(a) the use of Federal-aid funds must be in conformity with Federal and State law. As California law addresses paleontological resources, these resources must be properly addressed in order to receive Federal-aid funds.

3.11.2 PALEONTOLOGICAL SENSITIVITY

Paleontological resources (fossils) are defined as any trace of a past life form. While wood, bones, teeth, and shells are the most common fossils, under certain conditions soft tissues, traces, and trails may be preserved as fossils. Fossils are most commonly found in sedimentary rock layers. Generally, scientifically significant paleontological resources are fossils, assemblages of fossils, or fossiliferous deposits that are unique or unusual, are stratigraphically important, and add to the existing body of knowledge in specific areas stratigraphically, taxonomically, or regionally. All vertebrate fossils are classified as “significant.” Those fossils found undisturbed and not subjected to disturbance after their initial burial and fossilization are particularly important as they provide information for interpretation of tectonic events, past climates, the relationship between aquatic and terrestrial species, and evolution in general. In addition to vertebrate fossils, invertebrate and plant fossils, as well as other environmental indicators associated with vertebrate fossils, are also considered significant. Certain invertebrate and plant fossils that are regionally rare or uncommon, or that help to define stratigraphy, age, or taxonomic relationships, are also considered significant.

Paleontological sensitivity is often stated as “potential” because in most cases, decisions about how to manage paleontological resources must be based on the potential to encounter fossils as the actual situation cannot be known until construction excavation for the project is underway. Paleontological sensitivity may be stated for a particular rock unit, predicated on the research potential of fossils suspected to occur in that unit. The California Department of Transportation (Caltrans) uses the following scale:

- **HIGH POTENTIAL:** Rock units that, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to: sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive. High sensitivity includes the potential for containing: (1) abundant vertebrate fossils; (2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; (3) areas that may contain datable organic remains older than Recent, including *Neotoma* (sp.) middens; and/or (4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.
- **LOW POTENTIAL:** This category includes sedimentary rock units that (1) are potentially fossiliferous but have not yielded significant fossils in the past; (2) have not yet yielded fossils but possess a potential for containing fossil remains; or (3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category. Rock units designated as low potential generally do not require mitigation monitoring. However, as excavation for construction gets underway, it is possible that new and unanticipated paleontological resources may be encountered. If this occurs, a Construction Change Order must be prepared in order to have a qualified Principal Paleontologist evaluate the resource. If the resource is determined to be significant, monitoring and mitigation are required.
- **NO POTENTIAL:** Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. For projects encountering only these types of rock units, paleontological resources can generally be eliminated as a concern prior to the environmental document phase and no further action taken.

A formation or geologic unit has paleontological sensitivity if it previously has produced or has characteristics conducive to the preservation of vertebrate fossils, has environmental indicators associated with vertebrate fossils, or has produced regionally uncommon invertebrate and plant fossils. All sedimentary rocks and certain volcanic and mildly metamorphosed rocks are considered to have sensitivity for paleontological resources.

3.11.3 AFFECTED ENVIRONMENT

The area studied for paleontological resources is the Area of Potential Disturbance (APD), which included a 100-foot buffer around areas of the I-710 Corridor Project, including all areas of proposed and existing right-of-way, utility relocations, lay-down areas, construction staging, and construction easements. In order to determine the geologic units within the APD and their paleontological sensitivities and whether project-related activities may affect significant paleontological resources, the following tasks were conducted: (1) a review of pertinent geological and paleontological literature; (2) fossil locality searches through the a Natural History Museum of Los Angeles County (LACM); and (3) field surveys of the APD. As geologic formations and units may extend over large geographic areas and contain similar lithologies and fossils, the literature review and fossil locality search includes areas well beyond the APD.

The Interstate 710 (I-710) Corridor Project is located at the northern end of the Peninsular Ranges Geomorphic Province, a 900-mile-long northwest-southeast-trending structural block that extends from the tip of Baja California to the Transverse Ranges and includes the Los Angeles Basin. The total width of the province is approximately 225 miles, with a maximum landbound width of 65 miles. The province contains extensive pre-Cenozoic (more than 66 million years ago) igneous and metamorphic rocks covered by limited exposures of Cenozoic (less than 66 million years ago) sedimentary deposits. The I-710 Corridor Project runs along the course of the Los Angeles River, crossing the Los Angeles Basin from north to south. Geologic mapping (Saucedo, et al., 2003; Yerkes and Campbell, 2005) indicates that sediments from the latest Quaternary are mapped within the APD; however, the two maps covering the APD differ slightly (Figure 3.11-1). At the northern end of the APD, Yerkes and Campbell (2005) distinguished between Holocene Alluvial Fan Deposits and Holocene to late Pleistocene Alluvial Fan Deposits. However, over the majority of the APD, Saucedo et al. (2003) grouped the alluvial fan deposits of Holocene to late Pleistocene age into the same unit, called Young Alluvial Fan and Valley Deposits, Undivided. Table 3.11-1 lists the ages for the geologic units mapped within the APD. These units are described below.

3.11.3.1 ARTIFICIAL FILL (AF)

Artificial fill is mapped throughout the APD. This is consistent with the fact that the I-710 Corridor Project is located in a developed area that has been substantially altered by human activity. Artificial fill consists of sediments that have been removed from one location and transported to another by humans. The transportation distance can range from a few feet to dozens of miles. Composition of artificial fill is dependent on its source. When it is compacted and dense, it is known as “engineered fill,” but it can be unconsolidated and loosely compacted. Artificial fill will sometimes contain modern debris such as asphalt, wood, bricks, concrete, metal, glass, plastic, and even plant material. Depending on the area, thickness can be less than one foot or several hundred feet.

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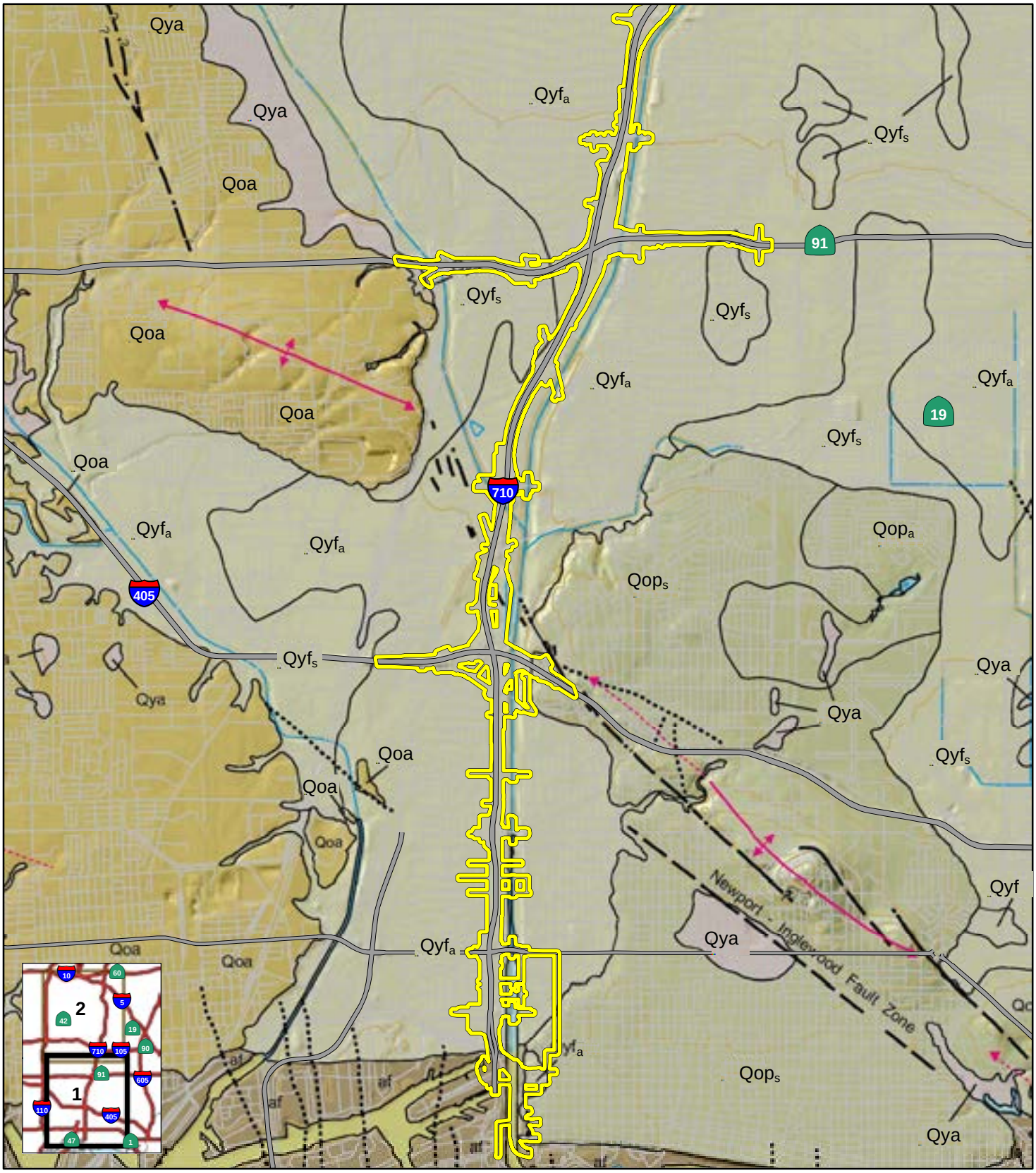

Area of Potential Disturbance (APD)

Geologic Units

Af - Artificial Fill

Qf - Alluvial Fan Deposits

Qyf - Young Alluvial Fan and Valley Deposits, Undivided

Qya - Young Alluvial Flood Plain Deposits

Qof - Old Alluvial Fan Deposits, Undivided

Qof$_3$ - Old Alluvial Fan Deposits, Unit 3

Qoa - Old Alluvial Flood Plain Deposits, Undivided

Qop - Old Paralic Deposits, Undivided

* (a = sandy, s = silty, g = gravel)

0 3000 6000
FEET

SOURCE: Saucedo, et al. (2003); Yerkes and Campbell (2005)

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FIGURE 3.11-1
Sheet 1 of 2

I-710 Corridor Project
RDEIR/SDEIS

Geologic Map
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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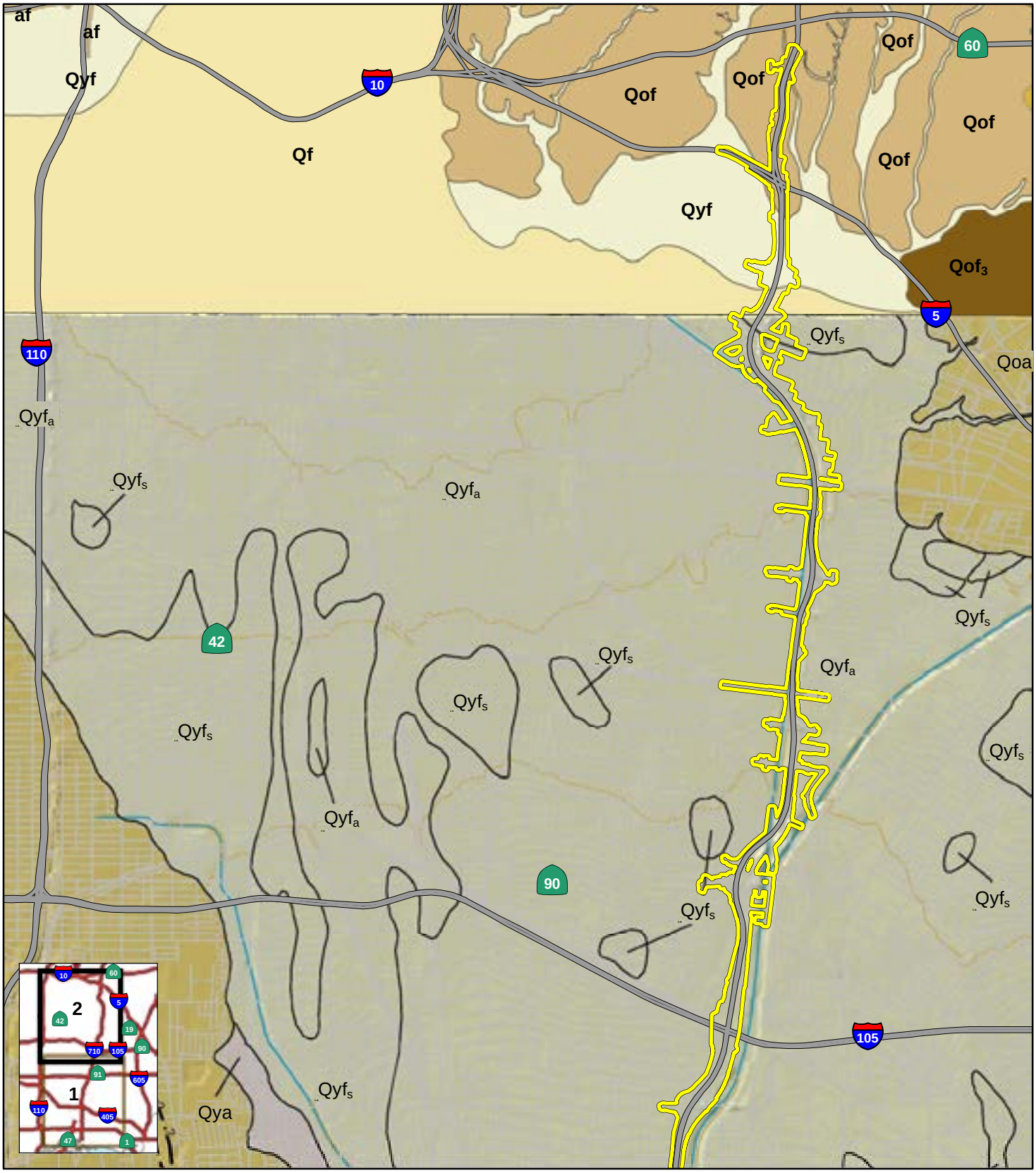

Area of Potential Disturbance (APD)

Geologic Units

Af - Artificial Fill

Qf - Alluvial Fan Deposits

Qyf - Young Alluvial Fan and Valley Deposits, Undivided

Qya - Young Alluvial Flood Plain Deposits

Qof - Old Alluvial Fan Deposits, Undivided

Qof$_3$ - Old Alluvial Fan Deposits, Unit 3

Qoa - Old Alluvial Flood Plain Deposits, Undivided

Qop - Old Paralic Deposits, Undivided

* undivided (a = sandy, s = silty, g = gravel)

N

0 3000 6000

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SOURCE: Saucedo, et al. (2003); Yerkes and Campbell (2005)

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FIGURE 3.11-1

Sheet 2 of 2

I-710 Corridor Project
RDEIR/SDEIS

Geologic Map

07-LA-710- PM 5.4/24.5

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Table 3.11-1: Geologic Units and Ages within the I-710 Corridor Project APD

Geologic Unit	Map Symbol[1]	Epoch	Age (years)
Artificial Fill	af	Holocene	Less than 100
Alluvial Fan Deposits	Qf	Holocene	Less than 11,700
Young Alluvial Fan and Valley Deposits, Undivided	Qyf, Qyfa, Qyfs	Holocene to late Pleistocene	Less than 126,000
Young Alluvial Flood Plain Deposits	Qya	Holocene to late Pleistocene	Less than 126,000
Old Alluvial Fan Deposits, Undivided	Qof	Late to middle Pleistocene	11,700 to 781,000
Old Paralic Deposits, Undivided	Qop	Late to middle Pleistocene	11,700 to 781,000

Source: LSA Associates, Inc. *Final Paleontological Identification Report and Paleontological Evaluation Report* (2017).
I-710 = Interstate 710

Artificial fill can contain fossils, but these fossils have been removed from their original location and are, therefore, out of context. They are not considered important for scientific study and have no paleontological sensitivity. It should be noted that these deposits can overlie older sediments that do have the potential to contain paleontological resources.

3.11.3.2 ALLUVIAL FAN DEPOSITS (QF)

The Alluvial Fan Deposits mapped at the northern end of the APD consist of unconsolidated mixtures of boulders, cobbles, gravel, sand, and silt (Yerkes and Campbell, 2005). They are found in active and recently active alluvial fans, as well as the upstream portions of some connected channels (Yerkes and Campbell, 2005). These deposits accumulated during the Holocene and are less than 11,700 years old (Yerkes and Campbell, 2005); however, they likely overlie older, Pleistocene (11,700–2.588 million years ago) deposits at undetermined depths and, as such, may be considered to be equivalent to the deposits of Holocene age within the Young Alluvial Fan and Valley Deposits as mapped by Saucedo et al. (2003) over the majority of the APD.

Although Holocene (less than 11,700 years ago) deposits, such as the Alluvial Fan Deposits in the APD, can contain remains of plants and animals, only those from the middle to early Holocene (4,200 to 11,700 years ago; Walker et al., 2012) are considered scientifically important (Society of Vertebrate Paleontology [SVP], 2010). Scientifically important fossils from middle to early Holocene deposits are not very common, and the Natural History Museum of Los Angeles County (LACM) has no records of vertebrate fossil localities from middle to early Holocene deposits within or surrounding the APD.

These Holocene deposits likely overlie older, Pleistocene deposits, which have produced scientifically important fossils elsewhere in the County and the region (Jefferson, 1991a, 1991b; Miller, 1971; Reynolds and Reynolds, 1991; Springer et al., 2009). These older deposits span the end of the Rancholabrean North American Land Mammal Age (NALMA), which dates from 11,000 to 240,000 years ago (Sanders et al., 2009) and was named for the Rancho La Brea fossil site in central Los Angeles. The presence of *Bison* defines the beginning of the

Rancholabrean NALMA (Bell et al., 2004), but fossils from this time also include other large and small mammals, reptiles, fish, invertebrates, and plants (Jefferson, 1991a, 1991b; Miller, 1971; Reynolds and Reynolds, 1991; Springer et al., 2009). These older deposits may be encountered at depths as shallow as 15 feet below the surface (see below). As such, these sediments are assigned a low paleontological sensitivity from the surface to depths of 15 feet and a high paleontological sensitivity once a depth of 15 feet is reached.

3.11.3.3 YOUNG ALLUVIAL FAN AND VALLEY DEPOSITS, UNDIVIDED (QYF, QYFA, QYFS)

The Young Alluvial Fan and Valley Deposits, Undivided, consist of unconsolidated gravel, sand, and silt with occasional cobbles and boulders near mountain fronts (Saucedo et al., 2003; Yerkes and Campbell, 2005). These sediments were deposited by flooding streams and debris flows coming down from higher elevations and generally form a fan or lobe shape at the base of hills and mountains (Yerkes and Campbell, 2005). In some areas, the surfaces can show slight to moderate soil development (Saucedo et al., 2003; Yerkes and Campbell, 2005). These sediments cover the majority of the APD. The Young Alluvial Fan Deposits, undivided, are Holocene to late Pleistocene in age (less than 126,000 years ago) (Saucedo et al., 2003; Yerkes and Campbell, 2005). In general, the age of these sediments increases with depth; once a depth of approximately 15 feet is reached, the sediments will likely be from the Pleistocene and at least 11,700 years old. The deposits of Holocene age within this geologic unit may be considered equivalent to the Holocene Alluvial Fan Deposits mapped by Yerkes and Campbell (2005) at the northern end of the APD.

The Young Alluvial Fan and Valley Deposits, Undivided, are Holocene and late Pleistocene in age (less than 126,000 years ago). Although Holocene (less than 11,700 years ago) deposits can contain remains of plants and animals, only those from the middle to early Holocene (4,200 to 11,700 years ago; Walker et al., 2012) are considered scientifically important (SVP 2010). As noted above, scientifically important fossils from middle to early Holocene deposits are not very common, and the LACM has no records of vertebrate fossil localities from Holocene deposits within or surrounding the APD. The older, Pleistocene deposits in this geologic unit have produced scientifically important fossils elsewhere in the County and the region (see discussion above on Alluvial Fan Deposits). Although the exact depth of the Holocene/Pleistocene boundary is not known throughout the APD, based on the depths at which Pleistocene fossils were found near the APD, it is inferred that Pleistocene deposits may be encountered beginning at a depth of approximately 15 feet. Therefore, these deposits are assigned low paleontological sensitivity from the surface to a depth of 15 feet and high paleontological sensitivity below that mark.

3.11.3.4 YOUNG ALLUVIAL FLOOD PLAIN DEPOSITS (QYA)

Young Alluvial Flood Plain Deposits are generally found adjacent to stream and river channels and represent deposition by streams and rivers during flood events. They consist of poorly

consolidated, poorly sorted, permeable deposits of sand, silt, and clay that accumulated during the Holocene to Late Pleistocene (less than 126,000 years ago) (Saucedo et al., 2003). Within the APD, these deposits are mapped in a small area along SR-91 west of I-710.

The Young Alluvial Flood Plain Deposits are Holocene and late Pleistocene in age (less than 126,000 years ago). Although Holocene (less than 11,700 years ago) deposits can contain remains of plants and animals, only those from the middle to early Holocene (4,200 to 11,700 years ago; Walker et al., 2012) are considered scientifically important (SVP 2010). As noted above, scientifically important fossils from middle to early Holocene deposits are not very common, and the LACM has no records of vertebrate fossil localities from Holocene deposits within or surrounding the APD. The older, Pleistocene deposits in this geologic unit have produced scientifically important fossils elsewhere in the County and the region (see discussion above on Alluvial Fan Deposits). Although the exact depth of the Holocene/Pleistocene boundary is not known throughout the APD, based on the depths at which Pleistocene fossils were found near the APD, it is inferred that Pleistocene deposits may be encountered beginning at a depth of approximately 15 feet. Therefore, these deposits are assigned low paleontological sensitivity from the surface to a depth of 15 feet and high paleontological sensitivity below that mark.

3.11.3.5 Old Alluvial Fan Deposits, Undivided (Qof)

The Old Alluvial Fan Deposits, Undivided, are late to middle Pleistocene in age (11,700–781,000 years ago) and consist of unconsolidated silt, sand, and gravel (Yerkes and Campbell, 2005). These sediments were deposited by flooding streams and debris flows coming down from higher elevations and generally form a fan or lobe shape at the base of hills and mountains. In some areas, these deposits are dissected by erosional gullies and have surfaces of moderately to well-developed soils (Yerkes and Campbell, 2005). The Old Alluvial Fan Deposits are found at the northern end of the APD.

The late to middle Pleistocene Old Alluvial Fan Deposits, Undivided, span the latest two NALMAs: the Rancholabrean (11,700 to 240,000 years ago) and the Irvingtonian (240,000 years to approximately 2 million years ago) (Martin et al., 2008; Sanders et al., 2009). Fossils are known from similar Rancholabrean and Irvingtonian deposits from excavations for roads, housing developments, and quarries, as well as scientific investigations in the County and the region (Jefferson, 1991a, 1991b; Miller, 1971; Pajak et al., 1996; Reynolds and Reynolds, 1991; Springer et al., 2009). These fossils include mammoths, mastodons, horses, bison, camels, saber-toothed cats, coyotes, deer, and sloths, as well as smaller animals like rodents, rabbits, birds, reptiles, and bony fish (Barrie et al., 1992; Conkling, 1988, 1997; Jefferson, 1991a, 1991b; Lander, 2000; Miller, 1971; Pajak et al., 1996; Reynolds and Reynolds, 1991; Springer et al., 2009). As such, these deposits are considered to have high paleontological sensitivity.

3.11.3.6 OLD PARALIC DEPOSITS, UNDIVIDED (QOP)

The late to middle Pleistocene (11,700–781,000 years ago) Old Paralic Deposits, Undivided, are composed of marine and non-marine sediments deposited at or near sea level in environments such as deltas, estuaries, tidal flats, beaches, lagoons, and shallow subtidal shelves. As described by Saucedo et al. (2003), they are mostly poorly sorted, moderately permeable, reddish-brown, interfingered strandline, beach, estuarine, and colluvial deposits. These deposits can be composed of siltstone, sandstone, and conglomerate; however, within the project they are mapped as being primarily silty (Saucedo et al., 2003). The Old Alluvial Deposits, Undivided, are mapped at the southern end of the APD.

The late to middle Pleistocene Old Paralic Deposits, Undivided, span the latest two NALMAs: the Rancholabrean (11,700 to 240,000 years ago) and the Irvingtonian (240,000 years to approximately 2 million years ago) (Martin et al., 2008; Sanders et al., 2009). Fossils are known from similar Rancholabrean and Irvingtonian deposits from excavations for roads, housing developments, and quarries, as well as scientific investigations in the County and the region (Jefferson, 1991a, 1991b; Miller, 1971; Pajak et al., 1996; Reynolds and Reynolds, 1991; Springer et al., 2009). These fossils include mammoths, mastodons, horses, bison, camels, saber-toothed cats, coyotes, deer, and sloths, as well as smaller animals like rodents, rabbits, birds, reptiles, and bony fish (Barrie et al., 1992; Conkling, 1988, 1997; Jefferson, 1991a, 1991b; Lander, 2000; Miller, 1971; Pajak et al., 1996; Reynolds and Reynolds, 1991; Springer et al., 2009). As such, these deposits are considered to have high paleontological sensitivity.

3.11.3.7 FOSSIL LOCALITY SEARCHES

A total of 34 fossil localities were identified within and near the APD during two fossil locality searches conducted at the LACM in 2009 and 2016. Of the 28 localities identified in the 2009 fossil locality search and the 20 localities in the 2016 fossil locality search, only 11 are the same. This discrepancy may be due to new localities appearing since the 2009 results were obtained or may be due to slightly different areas being searched and the overall distance from the fossil localities to the APD. However, the results of both fossil locality searches reinforce the fact that numerous fossil localities have been recovered from sediments similar to those within the APD. The results of both fossil locality searches are included in Appendices A and B of the *Paleontological Identification and Paleontological Evaluation Report* (2017) and summarized below.

The LACM has collections from two vertebrate fossil localities that are present within the boundaries of the current APD. The two localities are LACM 7701–7702, both situated just south of the City of Commerce and north of the Los Angeles River near the intersection of Atlantic Ave. and I-710. These localities contained fossil specimens of threespine stickleback (*Gasterosteus aculeatus)*, salamander (*Batrachoseps)*, lizard (Lacertilia), snake (Colubridae),

rabbit (*Sylvilagus)*, pocket mouse (*Microtus*), harvest mouse (*Reithrodontomys*), and pocket gopher (*Thomomys*), at depths ranging from 11 to 34 feet below grade.

Within approximately 6 miles along the west side of the length of the APD, the LACM has specimens from 19 localities collected from depths of approximately 5 to 30 feet. below the surface. These localities include LACM 1157, 1158, 1163, 1165, 1225, 1295, 1344, 1919, 2029, 3260, 3266, 3319, 3365, 3382, 3823, 4129, 4206, 4685, and 6705. Collectively, these localities yielded specimens of pond turtle (*Emys*), puffin (*Mancalla*), turkey (*Parapavo*), ground sloth (*Paramylodon* sp.), mammoth (*Mammuthus*), mastodon (*Mammut americanum*), dire wolf (*Canis dirus*), coyote (*Canis latrans*), rabbit (*Sylvilagus*), squirrel (Sciuridae), ground squirrel (*Spermophilus beecheyi*), deer mouse (*Microtus*), pocket gopher (*Thomomys*), horse (*Equus*), deer (*Cervus*), pronghorn antelope (*Capromeryx minor*), camel (Camelidae), and bison (*Bison*).

To the east, along the length of the APD and within approximately five miles, the LACM has 11 localities recovered from depths of approximately 16 to 100 feet. LACM localities 1005, 1021, 1022, 1144, 3245, 3363, 3550, 3660, 6746, 6802, and 6896 collectively produced specimens of horse (*Equus*), mammoth (*Mammuthus*), camel, (*Camelops*), bison (*Bison*), sea lion (*Zalophus*), whale (Cetacea), birds (Aves), speckled sanddab (*Citharichthys stigmaeus*), Pacific sanddab (*C. sordidus*), California halibut (*Paralichthys californicus*), English sole (*Parophrys vetulus*), slender sole (*Lyopsetta exilis*), lanternfish (*Electrona rissoi*), bay gobi (*Lepidogobius lepidus*), and many species of invertebrates.

The LACM also knows of two fossil localities near the APD from other institutions. The first of these localities is from the San Bernardino County Museum (SBCM), which has locality SBCM 9.3.2 that produced sloth (*Paramylodon*), pocket gopher (*Thomomys bottae*), mammoth (*Mammuthus*), horse (*Equus*), and bison (*Bison latifrons*). The second locality is from the San Diego Museum of Natural History (SDMNH), which has locality SDMNH 3246 from the Naval Fuel Reserve Quarry. This locality produced rabbits (*Sylvilagus*, *Lepus*), pocket gopher (*Thomomys*), kangaroo rate (*Dipodomys*), pack rat (*Neotoma*), cat (*Felis*), horse (*Equus*), bison (*Bison*), and deer (*Odocoileus*).

The LACM believes that shallow excavations in the uppermost few feet of the younger Quaternary Alluvium exposed in portions of the APD are not likely to uncover significant fossil vertebrate remains. Any excavations in the older sediments below or within the Alluvial Fan Deposits; Young Alluvial Fan and Valley Deposits, Undivided; Young Alluvial Flood Plain Deposits; Old Alluvial Fan Deposits; or Old Paralic Deposits, Undivided, may encounter significant vertebrate fossils. Therefore, the LACM believes that, except for recent Quaternary Alluvium that is present in the upper several feet across much of the proposed project, the paleontological sensitivity of the APD is rated high. The LACM believes that any substantial excavations should be closely monitored to quickly and professionally collect any specimens

without impeding development. Any fossils recovered during construction should be deposited in a permanent scientific institution for the benefit of current and future generations.

3.11.3.8 FIELD SURVEYS

The pedestrian surveys confirmed much of the geology as it has been mapped. In localized areas, artificial fill has been added and some limited exposures of subsurface bedrock are located within the APD south of State Route 91 (SR-91). Field surveys were conducted from June through August 2009, during May 2011, and on August 17, 2015.

3.11.4 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project as impacts to paleontological resources are considered permanent and not temporary.

3.11.4.1 PERMANENT IMPACTS

BUILD ALTERNATIVES. Fossils and their associated contextual data are significant nonrenewable scientific resources, and the loss of these resources resulting from construction of the I-710 Corridor Project would be the primary impact on paleontological resources. Earthmoving operations could result in the destruction of fossils and fossiliferous rock units within the construction disturbance limits. It is often not possible to completely eliminate impacts to fossil resources. It is understood that earthmoving activity could, unavoidably, destroy some fossils. These types of impacts can be mitigated by collecting and preserving a representative sample of the entire fossil assemblage and associated geological information in the areas disturbed by project construction.

Permanent impacts from the I-710 Corridor Project build alternatives on paleontological resources would include:

- Destruction of paleontological resources;
- Damage to paleontological resources during grading;
- Destruction of rock units that may contain paleontological resources;
- Loss of contextual data associated with paleontological resources; and
- Loss of associations between paleontological resources.

Table 3.11-2 summarizes the specific sensitivities for units within the APD. This table uses the Paleontological Sensitivity Scale used by Caltrans. Artificial fill is usually assigned a sensitivity of "None." The Alluvial Fan Deposits; Young Alluvial Fan and Valley Deposits, Undivided; and Young Alluvial Flood Plain Deposits have a sensitivity of "low" in the uppermost 15 feet as they are too young to contain significant paleontological resources. However, once a depth of 15 feet is reached, there is a potential to encounter sediments from the middle Holocene or older, at which point the paleontological sensitivity in that area will change to "high." Paleontological sensitivity (i.e., potential) for Old Alluvial Fan Deposits, Undivided, and Old Paralic Deposits, Undivided, is high, based on the presence of significant fossil remains that have been recovered from these units in other areas. It is likely that similar significant resources may be encountered if these units are encountered during excavation associated with the I-710 Corridor Project.

Table 3.11-2: Geologic Units and Potential Paleontological Sensitivity within the I-710 Corridor APD

Geologic Unit	Paleontological Potential Sensitivity (Caltrans)
Artificial Fill	None
Alluvial Fan Deposits	Low: Surface to 15 feet High: Below 15 feet
Young Alluvial Fan and Valley Deposits, Undivided	Low: Surface to 15 feet High: Below 15 feet
Young Alluvial Flood Plain Deposits	Low: Surface to 15 feet High: Below 15 feet
Old Alluvial Fan Deposits, Undivided	High
Old Paralic Deposits, Undivided	High

Source: LSA Associates, Inc. *Final Paleontological Identification Report and Paleontological Evaluation Report* (2017).
Caltrans = California Department of Transportation
I-710 = Interstate 710

BUILD ALTERNATIVES. Alternative 7 involves more bridge construction work, mainly due to the separate freight corridor, than Alternative 5C and therefore requires more excavation. Therefore, Alternative 7 has a greater likelihood of impacting paleontological resources than Alternative 5C. Construction of the I-710 Corridor Project build alternatives is not anticipated to impact special paleontological situations that would require project redesign to avoid critical localities or strata. However, because there are areas of high paleontological sensitivity within the APD, a Paleontological Mitigation Plan (PMP) will be prepared.

NO BUILD ALTERNATIVE. Under Alternative 1, the permanent impacts to paleontological resources discussed above for the I-710 Corridor Project build alternatives would not occur.

3.11.4.2 PUBLIC HEALTH CONSIDERATIONS

No public health considerations were identified relative to project impacts on paleontological resources.

3.11.5 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Concurrently with development of the final design, a PMP will be prepared to reduce impacts to paleontological resources. The PMP will follow guidelines provided by Caltrans and the SVP and will be specifically tailored to the resources and sedimentary formations that may be encountered during excavation within the APD. Mitigation to address impacts on paleontological resources that may be encountered during construction is required for all build alternatives. Measure PAL-1 addresses potential impacts to nonrenewable paleontological resources. The following measure would be required for all build alternatives. More project-specific measures may need to be developed during preparation of the PMP to refine these measures during final project design.

PAL-1 Concurrently with development of the final design, a qualified Principal Paleontologist shall prepare a Paleontological Mitigation Plan (PMP) following the guidelines of the California Department of Transportation (Caltrans) and the Society of Vertebrate Paleontology. The PMP will provide a description of the project, describe the geologic units in the project area and their paleontological sensitivities, describe the scope of work, determine decision thresholds, provide cost estimates and schedules, identify and establish a draft curation agreement with an appropriate museum repository, and include the following measures:

- A preconstruction field survey shall be conducted in areas identified as having high paleontological sensitivity after vegetation and paving have been removed, followed by salvage of any observed surface paleontological resources prior to the beginning of additional grading.
- A qualified Principal Paleontologist or representative shall attend the preconstruction meeting. At this meeting, the Principal Paleontologist will explain the likelihood for encountering paleontological resources, what resources may be discovered, and the methods of recovery that will be employed.
- During construction excavation, a qualified vertebrate paleontological monitor shall initially be present on a full-time basis whenever excavation will occur within the sediments that have a high paleontological sensitivity rating and on a spot-check basis for excavation in sediments that have a low sensitivity rating. Monitoring may be reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating

(monitoring reductions, when they occur, will be determined by the qualified Principal Paleontologist in consultation with the Caltrans Resident Engineer [RE]). The monitor shall inspect fresh cuts and/or spoils piles to recover paleontological resources. With the RE's approval, the monitor shall temporarily divert construction equipment away from the immediate area of the discovery. The monitor shall be equipped to rapidly stabilize and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, Caltrans shall consider using heavy equipment on site to assist in the removal and collection of large materials.

- Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, these sediments occasionally spot-screened on site through one-eighth- to one-twentieth-inch mesh screens determines whether microfossils are present during monitoring. If microfossils are encountered, sediment samples (up to three cubic yards or 6,000 pounds) shall be collected and processed through one-twentieth-inch mesh screens to recover additional fossils.
- Recovered specimens shall be prepared to the point of identification and permanent preservation. Preparation includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume of storage for the repository and storage cost, and the addition of approved chemical hardeners/stabilizers to fragile specimens.
- Specimens shall be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institution usually charges a one-time fee based on volume, so removing surplus sediment is important. The repository institution may be a local museum or university with a curator who can retrieve the specimens on request. Caltrans requires that a draft curation agreement be in place with an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities.
- A Paleontological Mitigation Report (PMR) documenting completion of the monitoring program for the Lead Agency (Caltrans) shall be prepared and submitted.

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3.12 HAZARDOUS WASTE/MATERIALS

The information in this section is based on the *Initial Site Assessment* (ISA) (February 2017). Based on a mutual agreement between the Los Angeles County Metropolitan Transportation Authority (Metro) and the California Department of Transportation (Caltrans), the ISA prepared for the project was not required to identify impacts related to site conditions. The ISA was intended as a prescreening process to identify the potential environmental concerns associated with each alternative. A Parcel Specific ISA including detailed site reconnaissance[1], interviews, file reviews, and a subsequent Phase II parcel specific site investigation would be conducted once a preferred alternative is identified prior to completion of the Final EIR/EIS.

3.12.1 REGULATORY SETTING

Hazardous materials and hazardous wastes are regulated by many state and Federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health, and land use.

The primary Federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for "cradle to grave" regulation of hazardous wastes. Other Federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)

[1] As part of the ISA, in May and June 2016, a visual windshield survey of the majority of the parcels within the ISA Study Area was conducted along the I-710 Corridor. Access to the properties was not permitted; therefore, observations were made from public rights-of-way and/or other publicly accessible areas. However, since observations were made from rights-of-way and/or other publicly accessible areas, conditions have the potential to exist on the site that were not visible at the time of the windshield survey.

- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
- Hazardous Materials Transportation Act
- Hazardous Materials Transportation Uniform Safety Act of 1990
- Emergency Planning and Community Right-to-Know Act

In addition to the acts listed above, Executive Order (EO) 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when Federal activities or Federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the Federal government to implement RCRA in the State. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22, Division 4.5, Environmental Health Standards for the Management of Hazardous Waste, Title 23, Waters, and Title 27, Environmental Protection. The specific acts within the California Code of Regulations (CCR) include:

- Well Safety Devices for Critical Wells (CCR, Title 14, Section 1724.3)
- Gas Monitoring and Control at Active and Closed Disposal Sites (CCR, Title 27, Section 20917)
- Closure and Post-Closure Maintenance of Landfills (CCR, Title 27, Subchapter 5)
- California Public Resources Code (PRC) Section 21151.4
- Hazardous Materials Release Response Plans and Inventory Law (California Health and Safety Code, Section 25500)
- Hazardous Waste Control Act (California Health and Safety Code, Section 25100)
- Safe Drinking Water and Toxic Enforcement Act (Proposition 65, California Health and Safety Code, Section 25249.5)
- Cortese List Statute (California Gov. Code, Section 65962.5)

California Senate Bill (SB) 1082, passed in 1993, created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The California Environmental Protection Agency (Cal-EPA and other state agencies set the standards for their programs, while local governments implement the standards. These local implementing

agencies are called Certified Unified Program Agencies (CUPA). CUPAs regulate/and oversee the following:

- Hazardous materials business plans
- California accidental release prevention plans or Federal risk management plans)
- Operation of underground storage tanks and aboveground storage tanks
- Universal waste and hazardous waste generators/handlers
- On-site hazardous waste treatment
- Inspections, permits, and enforcement of facilities generating or transporting hazardous materials and waste
- Proposition 65 reporting
- Emergency response

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous materials is vital if they are encountered, disturbed, or generated during project construction.

3.12.2 Affected Environment

The ISA was prepared to determine whether construction of the Interstate 710 (I-710) Corridor Project would be affected by any recorded or visible hazardous waste problems within the I-710 Corridor Project ISA Study area. The ISA Study Area includes the portion of I-710 from Ocean Blvd. in Long Beach to State Route 60 (SR-60), a distance of approximately 19 miles. The ISA Study area extends up to 1.5 miles east and west of the I-710 freeway at the freeway-to-freeway interchanges: Interstate 405 (I-405), State Route 91 (SR-91), Interstate 105 (I-105), and Interstate 5 (I-5).

The ISA included a search of government records to obtain a listing of properties or known incidents from State, Federal, or local regulatory databases for hazardous waste sites within the ISA Study Area, review of reasonably ascertainable historical information sources (aerial photographs, fire insurance maps, oil and gas maps, and topographic maps), and a site survey of the proposed right-of-way for the build alternatives to identify readily visible contamination. Environmental Data Resources, Inc. (EDR) was subcontracted to conduct a search limited to within a one-mile radius (i.e., ASTM International [ASTM] standard) of the I-710 Corridor Project for facilities listed by regulatory agencies as potentially having environmental concerns. Due to the amount of properties identified in the records search (over 1,000 properties), no file reviews were conducted at the various State, Federal, or local regulatory agencies. Given the stage of project development, in lieu of file reviews, all full, partial and TCE properties considered to be “high risk” are included in Tables 3.12-1 through 3.12-3, which identify properties of

environmental concern (Tables 3.12-1 through 3.12-4 are provided at the end of this section). Once the preferred alternative has been identified, parcel-by-parcel investigations will be performed for properties that have been identified as environmental concerns and have the potential to impact the initial phase of the project. The recommendations for further evaluation of high and medium risk sites include one or more of the following, in this order:

- Review current regulatory status through online databases;
- Conduct file reviews at the oversight regulatory agency, if necessary;
- Parcel specific historical summary using one or more of the following resources: Sanborn maps, historical city directories, chain of title, or building department records;
- Perform a site reconnaissance including on-site interviews with persons knowledgeable about site operations; and
- If warranted, perform a subsurface investigation based on the findings of the previous recommendations or if the findings are inconclusive.

A summary table of all sites identified in the database search is provided in Appendix P of this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS. Additional readily accessible agency online databases were reviewed, including the California Department of Resources Recycling and Recovery (CalRecycle); Solid Waste Information System (SWIS); the California Department of Toxic Substance Control (DTSC) ENVIROSTOR database; and the State Water Resources Control Board‘s (SWRCB) GeoTracker database. A visual windshield survey of the majority of the parcels within the ISA study area was conducted in May and June 2016, in addition to windshield surveys conducted for the Draft EIR/EIS in 2009 and 2011. Access to the properties within the ISA study area was not permitted; therefore, observations were made from public rights-of-way and/or other publicly accessible areas. During the windshield survey, no visual evidence of spills, accidental releases, or illegal dumping of hazardous materials or hazardous wastes were observed. Land uses commonly affiliated with hazardous releases were observed throughout the I-710 ISA Study Area and include on-site hazardous substance use and storage; on-site hazardous waste disposal; on-site aboveground/underground storage tanks; and on-site pole-mounted transformers. A variety of Federal, State, and local laws, regulations, and orders provide oversight for the management and clean-up of these materials and wastes to minimize risks to facility employees, public health, and the environment.

ISAs have a limited lifespan and findings and recommendations within an ISA are typically valid for one year from the date the initial ISA is completed. Therefore, due to the additional design refinements that may occur in the future for the project, an updated ISA may be required to identify impacts related to site conditions before design activities commence.

Because access to the individual properties and parcels was not permitted at the time of the ISA, and given the large amount of parcels potentially impacted, only a pre-screening and risk assessment for each parcel was completed for inclusion in this RDEIR/SDEIS. File reviews and additional assessment and preliminary site investigations (PSIs) for properties identified as having the potential to create an environmental concern to the I-710 Corridor Project will occur prior to completion of the Final EIR/EIS. The avoidance, minimization, and/or mitigation measures discussed below under Section 3.12.4 will be refined based on the file review and parcel investigations, and will be included in the Final EIR/EIS.

Based on the ISA, the following hazardous materials are expected to be encountered within the ISA Study Area.

3.12.2.1 AERIALLY DEPOSITED LEAD

Aerially deposited lead (ADL) is a byproduct of internal combustion engines burning lead-containing fuels. Aerially deposited lead is deposited on the sides of roads and highways by passing cars and is often found in the soil adjacent to highways and roads. Elevated concentrations of aerially deposited lead may be present along existing roadways throughout the ISA study area.

3.12.2.2 ASBESTOS

The use of asbestos in many building products was banned by the United States Environmental Protection Agency (EPA) by the late 1970s; however, many asbestos-containing product categories not previously banned (prior to 1989) may still be in use today. Asbestos-containing material (ACM) represents a concern when it is subject to damage that results in the release of fibers. Several sites within the ISA study area were constructed prior to 1980 and have the potential to contain ACM. In addition, the bridges, overpasses, interchanges, and on- and off-ramps of the I-710 freeway also have the potential to contain ACM.

According to the Los Angeles County Office of the Assessor, several of the parcels within the ISA Study Area were developed prior to 1980 and, therefore, have the potential to contain ACM. The presence of ACM would pose a potential hazardous waste risk if demolition occurs on any parcel of land within the ISA Study Area. In addition, the bridges, overpasses, interchanges, entrance and exit ramps, and other features of I-710 also have the potential to contain ACM, which would also impact demolition activities.

3.12.2.3 LEAD-BASED PAINT

Structures constructed prior to 1978 are presumed to have lead-based paint (LBP). In addition, yellow paints made prior to 1995 may exceed hazardous waste criteria under Title 22, CCR, and require disposal to a Class I disposal site. Several sites within the ISA study area were constructed prior to 1980 and have the potential to contain LBP. In addition, the bridges,

overpasses, interchanges, and on- and off-ramps of the I-710 freeway also have the potential to contain LBP.

According to the Los Angeles County Office of the Assessor, several of the parcels within the ISA Study Area were developed prior to 1980 and, therefore, have the potential to contain LBP. The presence of LBP would pose a potential hazardous waste risk if demolition occurs on any parcel of land within the ISA Study Area. In addition, the bridges, overpasses, interchanges, entrance and exit ramps, and other features of I-710 also have the potential to contain LBP, which would also impact demolition activities.

3.12.2.4 POLYCHLORINATED BIPHENYLS

Polychlorinated biphenyls (PCBs) are known hazardous materials that are found in coolants or lubricating oils used in some electrical transformers, light ballasts, electrical panels, or other similar equipment prior to 1976. Pole-mounted electrical transformers, which were observed along major thoroughfares within the ISA Study Area, may contain PCBs.

3.12.2.5 THERMOPLASTIC PAINT

Thermoplastic paint and yellow painted traffic stripes/pavement markings contain lead chromate. In addition, yellow traffic paints made prior to 1995 may exceed hazardous waste criteria under Title 22, CCR, and require disposal to a Class I disposal site. Residue produced when yellow thermoplastic and yellow traffic paint are removed may contain heavy metals in concentrations that exceed established thresholds and may produce toxic fumes when heated. Yellow thermoplastic paint has been used for marking within the project area, and as such will require special removal, handling, and disposal.

3.12.2.6 UTILITY LINES

Numerous local and regional underground and aboveground utilities parallel and cross the I-710 and the Los Angeles River including power distribution and transmission systems, natural gas distribution and transmission pipelines, petroleum pipelines, telephone systems, cable television (CATV) systems, water distribution mains, water aqueducts, sanitary sewer mains, sewer interceptors, and city telecommunication systems. In addition, two high-voltage electrical transmission corridors (SCE and LADWP) parallel the I-710.

3.12.2.7 POTENTIALLY CONTAMINATED SOILS AND/OR GROUNDWATER

Encountering contaminants in soils, groundwater, and surface water can increase worker health and safety requirements, result in project delays, and increase construction costs due to remediation and disposal. These contaminants can indirectly impact nearby residents, workers, and the environment if appropriate steps to mitigate and contain them are not taken. The sites listed in Table 3.12-1 and shown in Appendix P-1 are additional sites that were

identified as high risk that will either be disturbed by full and partial acquisitions or by temporary construction easements (TCEs) under Alternative 5C, as identified in the ISA as properties of potential environmental concern. Detailed summary of on-site and off-site hazardous waste listings are included in Appendix P of this environmental document.

The sites listed in Table 3.12-2 and shown in Appendix P-2 are additional sites that were identified as high risk that will either be disturbed by full and partial acquisitions or by TCEs under Alternative 7, as identified in the ISA as properties of potential environmental concern. The sites listed in Table 3.12-1 apply to Alternative 7 as well. Detailed summary of on-site and off-site hazardous waste listings are included in Appendix P of this environmental document.

The sites listed in Table 3.12-3 and shown in Figure 3.12-1 are adjoining properties of potential concern and were identified in the ISA as posing a potential environmental concern to the area within the proposed project limits.

The findings presented in the ISA relative to the potential for hazardous materials or petroleum products to exist within the ISA study area were based upon information derived from various historic mapping sources, site observations made from public right-of-way and other publicly accessible areas in 2009, 2011, and the most recent survey completed in 2016. The conclusions of the ISA are based on the conditions and features of the properties as they existed at the time of the observations from right-of-way, other publicly accessible areas, and reasonably foreseeable conditions. Access to the properties within the ISA study area was not permitted; therefore, it is possible that unidentified contamination may currently exist at the properties within the ISA study area. Hazardous materials or petroleum products not readily observable during the initial reconnaissance have the potential to become observable at a later date when access onto the properties is permitted (e.g., during property appraisals that would occur prior to right-of-way acquisition). In addition, due to natural processes or human work on site or on adjacent properties, changes in the conditions to the properties have the potential to occur over time.

Lead in soil along the freeways and interchanges to certain depths can be expected and sampling, analysis, and possibly removal will be required. It is Caltrans' standard practice to conduct a soil investigation prior to any soil excavation within a project's footprint. The purpose of such an investigation would be to assess the potential presence of hazardous contaminants and to determine disposal options if necessary for the contaminated soil. The soil investigation would consist of an ADL investigation and investigation for other contaminants of concern due to impacts from adjoining properties.

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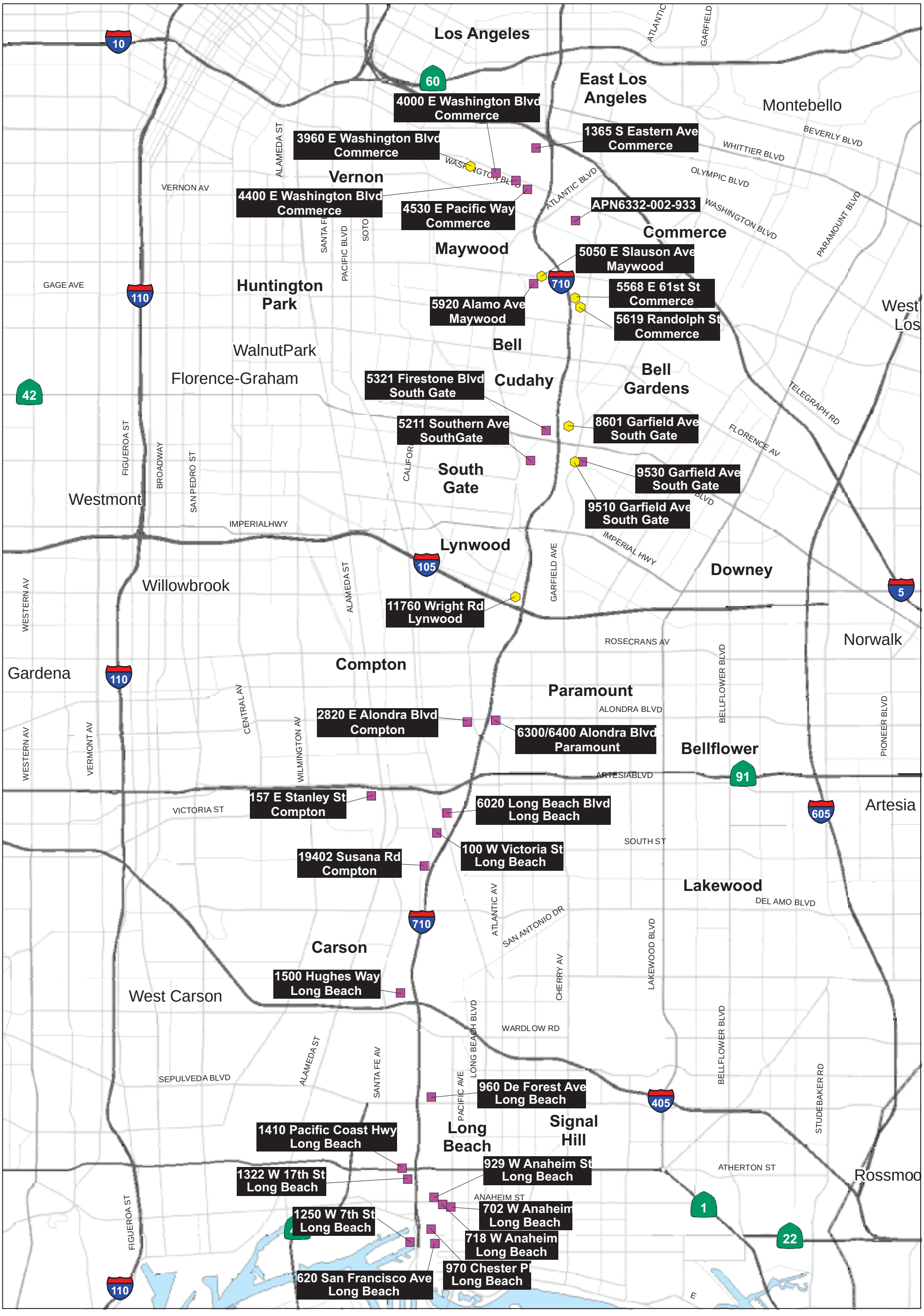

FIGURE 3.12-1

LEGEND

Reviewed Information Online

Sites That Require Additional Information (i.e., File Reviews)

0 3600 7200
Feet

SOURCE: TBM (2007)

I-710 Corridor Project RDEIR/SDEIS

Adjoining Properties of Potential Concern

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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Each parcel within the buffer zone along the I-710 Corridor was categorized into high, medium, or low based on risk using a conservative approach. The criteria for these risk categorizations were based on land use and conditions that have the potential to produce or cause site contamination and materials that require special handling. The basis for determining each parcel's risk was based upon its use, regulatory status, visual observations, and the example sites for risk analysis.

Sites of Potential Environmental Concern under Alternative 5C are listed in Table 3.12-1, and Sites of Potential Environmental Concern under Alternative 7 are listed in Table 3.12-2, and are generally associated with high risk categorization.

3.12.2.8 LANDFILLS

Based on the information provided from the online CalRecycle SWIS was reviewed to supplement the information provided in the EDR Reports. A review of this database and the EDR Reports identified ten solid waste sites within or potentially within the proposed I-710 Corridor Project. Seven of the sites are considered to have high-risk waste issues, one of the sites needs additional information, and two of the sites are not expected to be of environmental concern. The sites are listed in Table 3.12-4 and are shown in Figure 3.12-2. Under current regulations, all operating and most closed landfills are required to have landfill gas migration control systems and monitoring programs. Additionally, most active and many closed landfills have landfill gas capture and treatment and destruction systems. Therefore, the likelihood of methane landfill gas affecting an area beyond the landfill property is low.

3.12.2.9 RAILROADS

Soils along the railroad tracks within the project disturbance limits should be assumed to be impacted by polynuclear aromatic hydrocarbons (PNAs). Sources of PNAs include diesel fuel spills from trains, kerosene used to heat rails during rail replacement activities, and wood preservatives used for switch ties. Soils surrounding railroad tracks and ballasts may also be contaminated with ACMs; chlorinated hydrocarbons (e.g., perchloroethylene [PCE] and trichloroethylene) from cargo spills; creosote and pentachlorophenol, which are used as a wood preservative for switch ties; and pesticides and herbicides, which are used around the railroad tracks and ballasts for pest and weed control.

3.12.2.10 TREATED WOOD WASTE

Other treated wood waste materials may be encountered during construction. Any wooden utility poles, railroad ties, or other wood-treated waste material associated with existing roadway structures that would be removed or relocated during project construction should be tested for the presence of wood treatments. Contaminants that are usually found in wood waste include

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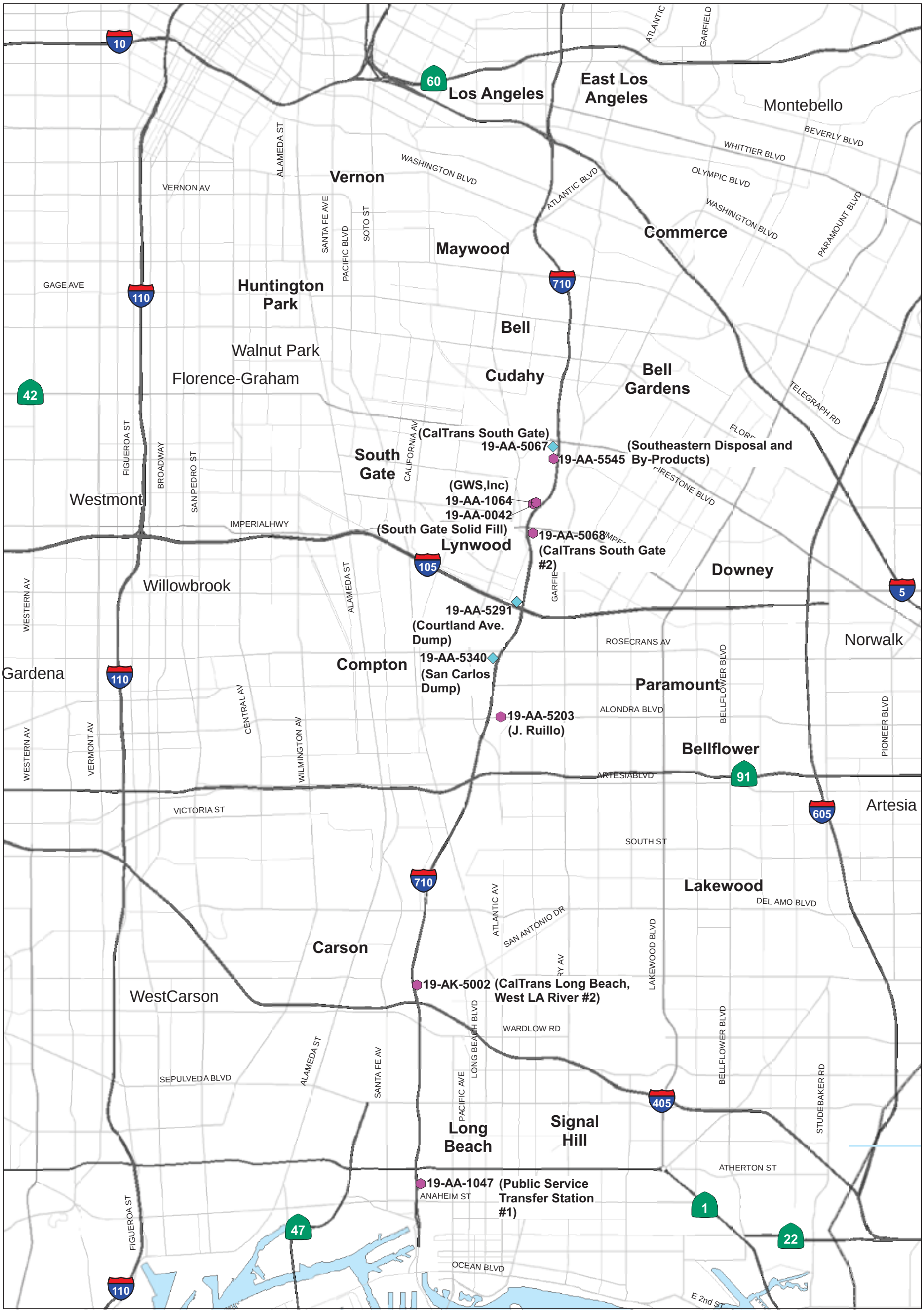

LEGEND

- Sites Considered To Have High Risk Waste Issues.
- Sites Not Expected To Have Created An Environmental Concern To The Proposed I-710 Corridor Project.
- **19-AA-1047** Solid Waste Information System (SWIS) Number

N

0 3600 7200
Feet

SOURCE: TBM (2007)

FIGURE 3.12-2

I-710 Corridor Project RDEIR/SDEIS

Solid Waste Disposal Sites

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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creosote, pentachlorophenol, arsenic, copper, and chromium; treatment compounds such as copper azole, alkaline copper quaternary, chromated copper arsenate; and other associated compounds. Soils adjacent to railroad ties should also be tested for the presence of wood treatments/preservatives. All contaminated soil by wood treatments/preservatives will be considered hazardous waste and be removed and properly disposed of at an off-site Class I landfill facility. In addition, all wood-treated material that will be removed and disposed as part of the project will be tested for wood treatments/preservatives. The wood-treated material will be managed in compliance with Alternative Management Standards for Wood Treated Waste in Section 67386.6(a)(2)(B) 3 of the CCR and will be properly disposed at landfills that are identified by the RWQCB as appropriate for the wood treatments/preservatives.All the parcels listed in Alternative 5C are also within the project footprint of Alternative 7. The parcel numbers that are listed below are additional parcels impacted under Alternative 7.

3.12.3 Environmental Consequences

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to hazardous waste and materials are located in Section 3.24.3.12.

3.12.3.1 Build Alternatives.

Permanent Impacts. Operation and maintenance of the facilities proposed as part of Alternatives 5C and 7 would not introduce new sources of hazardous materials/waste. Routine maintenance activities would be required to follow applicable regulations with respect to handling and disposal of potentially hazardous materials. Vehicles traveling on the I-710 freeway would continue to transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources. However, the purpose of the I-710 Corridor Project is to improve traffic safety, which could reduce traffic accidents that could result in hazardous waste spills. In addition, transport of hazardous materials is subject to strict regulations. Caltrans, the California Hwy. Patrol, and local police and fire departments are trained in emergency response procedures for safely responding to accidental spills of hazardous substances on public roads, which further reduces impacts. For these reasons, implementation of Alternatives 5C and 7 would not result in a substantial permanent adverse impact related to hazardous waste and materials.

Temporary Impacts. Hazardous waste risks associated with the build alternatives are related to property acquisitions, project construction, and project operation. Hazardous waste risks related to construction are discussed in Section 3.24, Construction. Parcels that would be potentially impacted by the proposed right-of-way requirements associated with Alternatives 5C and 7 were identified in the *Draft Right-Of-Way Study Report* (March 2016). As previously

indicated, Tables 3.12-1, 3.12-2, 3.12-3, and 3.12-4 list properties with high risk hazardous waste concerns that would be fully or partially acquired to provide the right-of-way for the build alternatives. To ensure that no risk is posed to project construction workers and the general public during construction, any property acquired must be free of hazardous wastes prior to the start of construction. Thus, if a build alternative is selected for implementation, each property to be acquired will require testing in order to characterize specific soil and/or groundwater contaminants on the property. If contaminated soils and/or groundwater contaminants are identified through site characterization, then a site-specific hazardous waste remediation plan would be developed for the appropriate removal and disposal of contaminated soil and/or groundwater. In addition, a remediation plan and site closure plan, if required, will be implemented to clean up the site and provide for any subsequent monitoring of the site to ensure that the contamination has been remediated below environmental regulatory thresholds. Off-site accidents could also occur during temporary shipment of hazardous materials (e.g. gasoline, diesel, or compressed gases) and waste (e.g. welding materials, containers for fuel, lubricant, including ACM and LBP, solvents, and cement products containing strong basic or acidic chemicals) generated during construction or the cleanup of existing contaminated sites before construction occurs, thereby exposing individuals, and the environment, to off-site risks.

DESIGN OPTIONS FOR ALTERNATIVE 5C

Additional information is required (i.e., file review) to evaluate potential impacts to the I-710 Corridor Project from the remaining ten EDR listings identified associated with the parcels within Alternative 5C.

During the agency database review, 134 EDR listings were identified associated with 248 of the parcels within Alternative 5C Design Options, which are summarizes in Appendix P. Subsets of these listings were determined to be common to the three design options applicable to the alternative. Eighteen of these EDR listings are considered to represent an environmental concern to the I-710 Corridor Project. On-line file information was available to review for eight of these 18 EDR listings. Additional information is required (i.e., file review) to evaluate potential impacts to the I-710 Corridor Project from the remaining ten EDR listings identified associated with the parcels within Alternative 5C.

DESIGN OPTIONS FOR ALTERNATIVE 7

Additional information is required (i.e., file review) to evaluate potential impacts to the ISA Study Area from the remaining nine listings identified associated with the parcels within Alternative 7.

During the agency database review, 133 EDR listings were identified associated with 284 of the parcels within Alternative 7 Design Options, which are summarized in Appendix P. Subsets of these listings were determined to be common to the two design options applicable to the alternative. A total of 21 of these EDR listings are considered to represent an environmental concern to the I-710 Corridor Project. Online file information was available to review for 11 of

these 21 EDR listings. Additional information is required (i.e., file review) to evaluate potential impacts to the I-710 Corridor Project from the remaining ten EDR listings identified associated with the parcels within Alternative 7.

ADJOINING PROPERTIES AND SOLID WASTE SITES

Additional information is required (i.e., file review) to determine the potential impact from 24 of the adjoining properties of known or potential concern.

The agency database review and online SWIS database identified 24 solid waste sites within or potentially within the proposed I-710 Corridor Project. Waste materials may be encountered during construction and/or excavation activities at those properties that operated as waste disposal sites and, therefore, these sites are considered have high risk issues.

Measures HW-1 through HW-8 under Section 3.12.4, Avoidance, Minimization, and Mitigation Measures, describe efforts that will be made to avoid, minimize, or mitigate involvement with known or suspected hazardous material contamination sites during construction. With the implementation of Measures HW-1 through HW-8, Alternatives 5C and 7 would not result in a substantial temporary adverse impact related to hazardous waste and materials.

3.12.3.2 NO BUILD ALTERNATIVE

Alternative 1 would not change the existing physical environment and therefore would not result in permanent impacts related to hazardous wastes, including permanent acquisition of properties with hazardous waste concerns and the beneficial effect of improved traffic safety. As with the build alternatives, routine maintenance activities would continue and would be required to follow applicable regulations with respect to the handling and disposal of potentially hazardous materials. Vehicles utilizing the I-710 Corridor would continue to transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources.

PUBLIC HEALTH CONSIDERATIONS. The primary public health consideration is human exposure to hazardous materials during either operation or construction of the proposed project. Operation and maintenance of the facilities proposed as part of the build alternatives would not introduce new sources of hazardous materials/waste. Vehicles utilizing the I-710 Corridor would continue to transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources; however, the modern design of the project under any of the build alternatives will result in reduced risk of traffic accidents, including those that could result in hazardous waste spills. Alternative 7 would further reduce the public health risk of hazardous waste spills by separating truck traffic from automobile traffic as a result of the freight corridor component of the alternative. Any contamination encountered during construction and excavation activities for the build alternatives would be properly handled, removed, remediated, and/or disposed of according to all applicable regulations. For these reasons, implementation of the build alternatives would not increase public health risks related to hazardous waste and materials in

the short term and would decrease these risks in the long term as a result of the cleanup and remediation of any hazardous waste contamination on properties that would be acquired for the project.

3.12.4 Avoidance, Minimization, and/or Mitigation Measures

The measures below would substantially reduce adverse impacts related to hazardous materials and hazardous wastes during construction of the build alternatives. Additional information is required (i.e., file review) to determine the potential impact of parcels within the two build alternatives. Sufficient evidence was not gathered or completed at every parcel to fully characterize the potential presence of hazardous materials or contaminants, as access was not permitted to conduct thorough investigations.

Depending on which agency is responsible for administration of the construction contract, another party or agency may be identified as the responsible agency for the measures listed below. It is anticipated that these roles and responsibilities will be identified and governed through the execution of a Cooperative Agreement between Metro and Caltrans at the time a project is funded.

Additional avoidance, minimization, and/or mitigation measures will be identified following file review and physical investigation of the parcels previously identified. The current property owners must mitigate any hazardous waste/materials present prior to acquisition. If contamination is present at the parcels that cannot be mitigated, the limits of acquisition may be adjusted to avoid the residual contamination. If the limits of acquisition cannot be adjusted, minimization measures may include indemnification, reduction in price, or acquisition as highway easements instead of in fee.

HW-1 Prior to completion of acquisition of any property with existing buildings, a predemolition survey for asbestos-containing material (ACM) and lead-based paint (LBP) will be conducted. If ACMs and/or LBP are detected, a licensed contractor will remove the ACMs and/or LBP materials prior to demolition.

HW-2 During preparation of Plans, Specifications, and Estimates, utility pole-mounted transformers within the project area will be inspected for leaks. Leaking transformers will be considered a polychlorinated biphenyl (PCB) hazard unless tested and will be handled accordingly.

HW-3 Prior to soil excavation, a soil investigation for aerially deposited lead (ADL) and other contaminants of concern will be conducted. The analytical results of the soil sampling will assess the potential presence of hazardous contaminants and determine the appropriate handling of the soil and disposal of surplus materials. The soil investigation will consist of an ADL investigation (along Interstate 710 [I-710]) and investigation for other contaminants of concern due to impacts from

adjoining properties. Ultimately, soil investigation and soils sampling will be conducted as defined in the Cooperative Agreement between the Los Angeles County Metropolitan Transportation Authority (Metro) and the California Department of Transportation (Caltrans).

HW-4 During preparation of Plans, Specifications, and Estimates, a groundwater evaluation will be conducted to assess disposal alternatives for groundwater encountered during construction and to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) permitting process.

HW-5 During preparation of Plans, Specifications, and Estimates, soils within and immediately adjacent to existing railroads that will disturbed as part of the railroad relocation under the I-710 Corridor Project, will be tested for contaminants commonly found in association with railroads. The soil investigation will include, but not be limited to the following constituents, total petroleum hydrocarbons, lead, and arsenic.

HW-6 During the Plans, Specifications, and Estimates phase, a Construction Contingency Plan (CCP) in accordance with Caltrans' Unknown Hazards Procedures for Construction will be prepared. The CCP will include provisions for emergency response in the event that unidentified underground storage tanks (USTs), hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes are discovered during construction activities. The CCP will address UST decommissioning, field screening, contaminant materials testing methods, mitigation and contaminant management requirements, and health and safety requirements for construction workers.

The CCP is required to be implemented during all construction activities.

During construction, work will cease immediately if an unexpected release of hazardous substances is found in reportable quantities. If an unexpected release of hazardous substances is found in reportable quantities, the National Response Center will be notified by calling 1-800-424-8802. Cleanup of unexpected releases under the appropriate Federal, State, or local agency oversight will be required.

HW-7 During final design, prior to any ground disturbance, all treated wood waste will be properly disposed of, in accordance with Alternative Management Standards for Treated Wood Waste in Section 67386.6(a)(2)(B) 3 of the California Code of Regulations (CCR). In addition, any personnel who come in contact with treated wood waste or contaminated soils will be required to follow all applicable requirements under Section 67386.6(a)(2)(B) 3 of the CCR and be trained in the proper identification, disposal, and safe handling of treated wood waste and contaminated soils.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
81553	622-703-4802	Rail Ops Cudahy, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81553 as Railroad Use, owned by SOU PAC CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81553 consists of APN 6227-034-802. Based on a review of online maps and photographs, Parcel No. 81553 consists of a segment of land adjacent to the north of the Southern Pacific Railroad, east of the I-710, and parallel to south of Shull St. See Parcel No. 81552 for an EDR discussion of potential environmental concerns.
81552	623-200-2800	Rail Ops Cudahy, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81552 as Railroad Use, owned by SOU PAC TRANS CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81552 consists of APN 6232-002-800. Based on a review of online maps and photographs, Parcel No. 81552 consists of a segment of Southern Pacific Railroad, perpendicular to the east of the I-710 and parallel to south of Shull St. An adjacent property at 5614 Shull St. was identified in the EDR Report as Bell Gardens Redevelopment Department (EDR ID No. 837) in the CA HIST UST database; as City of Bell Gardens (Berk Oil) (EDR ID No. 837) in the CA LOS ANGELES CO. HMS, FINDS, and US BROWNFIELDS databases; as Berk Oil (EDR ID No. 837) in the CA HIST CORTESE, CA LUST, CA SLIC, and CA ENVIROSTOR databases. According to the online GeoTracker database, Berk Oil is listed as “Open - Site Assessment as of October 19, 2015.” The site is currently owned by the City of Bell Garden and resides in one of its redevelopment areas. The site is a 4.33-acre parcel that consisted of two former industrial facilities: Berk Oil and PMC. The Berk Oil facility operated from 1965 through 1989 mainly as an asphalt mixing and oil distribution facility. The PMC was located on the eastern half and operated from 1953 through 1996 as a metal and fabrication facility. Environmental site investigations began in 1985 and included soil borings to a maximum of 80 feet bgs, groundwater sampling using hydropunch and installation of eight monitoring wells. In 1989, six underground storage tanks for asphalt, diesel, and waste oil were removed from the site. Analytical results confirmed that both soil and groundwater are impacted with petroleum hydrocarbons, metals, and volatile organic chemicals (VOCs). During investigations in 2010, groundwater was encountered in two saturated zones at 20 feet and 60 feet bgs. The groundwater flow of the shallower zone was toward the southwest and the deeper zone flows to the south. As of January 2015, due to financial hardship, the City of Bell Garden was still looking for potential developers to handle the investigations and cleanup

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				of the site. No further information was available on the GeoTracker database. Therefore, based on the groundwater flow direction and impacts to groundwater and soil, this property presents a potential environmental concern to the proposed I-710 Corridor Project.
51518	6222-001-801	Long Beach Fwy and Firestone Blvd. South Gate, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 51518 as Utility Use, owned by SO CALIF EDISON CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 51518 consists of APN 6222-001-801. Based on a review of online maps and photographs, Parcel No. 51518 consists of a segment of land east of the Los Angeles River, west of I-710 on-ramp from Firestone Blvd., and north of Southern Ave. According to the online SWIS database, Caltrans South Gate (SWIS No. 19-AA-5067) is located north of Firestone Blvd. between I-710 and the Los Angeles River. However, the database also states that the parcel number for this facility was confirmed in 2014 to be 6222-001-801, which is located south of Firestone Blvd. This facility was not identified in the EDR Report. The online SWIS database reports that this facility is a closed solid waste disposal site (formerly operated by the State of California) and the regulatory status is listed as "pre-regulations." This land is currently owned by SCE for use as a utility corridor and annual inspections are performed by the County of Los Angeles. The most recent inspection was completed on February 5, 2016, and no violations or area of concern were reported. The inspection report indicates that the site was inaccessible due to perimeter fence and locked gates at the time of the inspection. A 2009 inspection report identifies SWIS No. 19-AA-5067 as "Caltrans, South Gate No. 1" located at 5212 E. Imperial Hwy., southeast of the NB I-710 off-ramp and north of Imperial Hwy.; however, no sites were identified at this location in the mapping feature in the online SWIS database. The 2007 and 2008 inspection reports indicate that Caltrans, South Gate No. 1 was formerly a landfill for street and highway sweepings that operated from 1955 until 1972 and at the time of the inspections was an unpaved dirt land used as a nursery and composting site. No design improvements are proposed in this area as it will only be used for a temporary construction easement and therefore, this former solid waste disposal site is not expected to have created an environmental concern to the proposed I-710 Corridor Project.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
81901	5243-013-802	Commerce, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81901 as Railroad Use, owned by A T AND S F RY CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81901 consists of APN 5243-013-802. Based on a review of online maps and photographs, Parcel No. 81901 consists of a portion of the BNSF Hobart Yard located adjacent to the west of the I-710 and north of 26th St. Several listings was identified in the EDR Report as 4650 East 26th St., Lot 11, Row 11, Spot 420 (EDR ID No. 296) in the CA CHMIRS database; as Agrashell Inc. (EDR ID No. 296) in the CA HIST UST, CA SWEEPS UST, FINDS, and CA EMI databases; and as 4650 E. 26th St. (EDR ID No. 296) in the ERNS database. Based on the lack of listing in other databases indicating violations and/or a release, this listing is not expected to have created an environmental concern to the ISA Study Area.
81902	5243-013-800	Commerce, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81902 as Railroad Use, owned by A T&S F RY CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81902 consists of APN 5243-013-800. Based on a review of online maps and photographs, Parcel No. 81902 consists of a segment of railroad adjacent to the west of the I-710 and north of 26th St. Adjacent to the northwest of this parcel is the BNSF Hobart Yard. See Parcel No. 81901 for a discussion on nearby EDR listings.
81903	5243-013-803	Commerce, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81903 as Railroad Use, owned by A T&S F RY CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81903 consists of APN 5243-014-803. Based on a review of online maps and photographs, Parcel No. 81903 consists of a segment of railroad adjacent to the west of the I-710 and north of 26th St. Adjacent to the west of this parcel is the BNSF Hobart Yard. See Parcel No. 81901 for a discussion on nearby EDR listings.
81904	5243-013-807	Commerce, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81904 as Railroad Use, owned by FORD MOTOR CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81904 consists of APN 5243-014-807. Based on a review of online maps and photographs, Parcel No. 81904 consists of a segment of railroad underneath the I-710 and adjacent to the south of Sheila St. West of this parcel is the BNSF Hobart Yard. See Parcel No. 81901 for a discussion on nearby EDR listings.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
40105	7271-003-902	Los Angeles River Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 40105 as Flood Control Use. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 40105 consists of a portion of APN 7271-003-902. Based on a review of online maps and photographs, Parcel No. 40105 consists of vacant land along the Los Angeles River channel and Anaheim St. Parcel No. 40105 is located adjacent to property occupied by Occidental Petroleum Corporation (Oxy Oil) along the west side of the flood control channel, which contains numerous ASTs and oil wells. Several database listings were identified associated with oil wells operated by Oxy Oil in this area. Based on the use, the adjacent Oxy Oil property is considered to represent an environmental concern to the ISA Study Area and a file review is recommended.
40106	7436-004-920	Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 40106 as Flood Control Use. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 40106 consists of APN 7436-004-920. Based on a review of online maps and photographs, Parcel No. 40106 appears to be part of the Oxy Oil facilities, which is leased from the City of Long Beach. Several database listings were identified associated with oil wells operated by Oxy Oil in this area. Based on the use, Parcel No. 40106 is considered to represent an environmental concern to the ISA Study Area and a file review is recommended.
40116	7271-002-002	Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 40116 as Flood Control Use owned by Kempner, James M and Cynthia A. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 40116 consists of APN 7271-002-002. Based on a review of online maps and photographs, Parcel No. 40116 consists of a strip of land adjacent to the east of the I-710, in between Anaheim St. and Pacific Coast Hwy. The EDR Report identified Public Service Transfer Station No. 1 (EDR ID No. 76-8) in this location, which is listed in the SWF/LF database. This facility is located between the I-710 and the Los Angeles River, north of Anaheim St. and south of Pacific Coast Hwy. According to the online SWIS database (SWIS No. 19-AA-1047), the City of Long Beach operates an active limited volume transfer operation for green materials at this location. The facility permit was issued in October 2001 and it is permitted to handle up to 3,000 tons of green waste per year. The facility is inspected quarterly by the County of Los Angeles and the last inspection was performed on October 7, 2015. No significant violations of State Minimum Standards observed at time of inspection and all records were reported to be in order. The most recent inspection reported that this facility is not open to

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				the public and is currently reserved for street cleaning operations. No enforcement action records were reported in the SWIS database. Based on the use of this property, there is potential for waste materials to exist which may be encountered during construction and/or excavation activities and therefore, this property is considered to have high risk waste issues.
01419	7432-019-049	1234 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01419 as Business Use owned by Exedra Properties LTD (same as Parcel No. 01420). A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01419 consists of a portion of APN 7432-019-023. Based on a review of online maps and photographs, Parcel No. 01419 consists of a southwestern portion of the property occupied by Speedy Fuel (1234 W Cowles St.), see Parcel No. 01420 for EDR listings and information.
01420	7432-019-043	1234 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01420 as Business Use, owned by Exedra Properties LTD (same as Parcel No. 01419). This address was identified as MICOR Energy LLC (EDR ID No. S104406362) in the CA LUST database; as MICOR Energy LLC (EDR ID No. S103976836) in the CA HIST CORTESE database; as 1234 WEST COWLES ST. in the HMIRS database; as Jerry and Kathleen Glikesman (EDR ID No. S101587013) in the CA FID UST and CA SWEEPS UST databases; as MICOR Long Beach LLC (EDR ID No. S113076397) in the CA HAZNET database; as MICOR Long Beach (EDR ID No. U003779459) in the CA UST database; as McMullen Oil Inc. (EDR ID No. S112876293) in the CA HAZNET database; and as Delta Auto Service Inc. (EDR ID No. S113113356) in the HAZNET database; as MICOR Energy LLC (EDR ID No. S114650987) in the RGA LUST database; as Speedy Fuel (EDR ID No. U004220378) in the UST database; as Speedy Fuel (EDR No. S113122600) in the CA HAZNET database as 1234 W. COWLES ST. (EDR No. 1015189711) in the EDR Hist Auto database. The status of the MICRO Energy LLC LUST case is listed as “Completed - Case Closed” as of July 1, 2015. The RWQCB is the lead agency on this case. The RWQCB issued a “Direction to Take Corrective Action in Response to Unauthorized Underground Storage Tank Release” in a letter dated March 20, 2009. This letter states that the property was a former gasoline/diesel service station and in 2000 three groundwater monitoring wells were installed at the site. These wells were sampled in 2000 and no petroleum hydrocarbon constituents or oxygenates were detected. The RWQCB stated that in order to evaluate current groundwater quality at the site additional sampling was required. In 2014, the three monitoring wells were sampled and no

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				petroleum hydrocarbon constituents or oxygenates were detected. Based on the regulatory agency closure status, available groundwater data, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
01421	7432-020-028	1235 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01421 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01421 consists of APN 743-202-0028. Based on a review of online maps and photographs, Parcel No. 01421 consists of a property occupied by Neil Aircraft (1235 W Cowles St.), see Parcel No. 01425 for EDR listings and information.
01422	7432-020-029	1233 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01422 as Business Use owned by Pogue, Clarence W. and Margit M. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01422 consists of APN 743-202-0029. Based on a review of online maps and photographs, Parcel No. 01422 consists of a property occupied by an unknown lessee (1233 W Cowles St.). No EDR listings were identified associated with this address.
01423	7432-020-030	1231 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01423 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01423 consists of APN 743-202-0030. Based on a review of online maps and photographs, Parcel No. 01423 consists of a property occupied by an Neill Aircraft Co. (1231 W Cowles St.), see Parcel No. 01425 for EDR listings and information.
01424	7432-020-031	1229 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01424 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01424 consists of APN 743-202-0031. Based on a review of online maps and photographs, Parcel No. 01424 consists of a property occupied by Neil Aircraft (1229 W. Cowles St.), see Parcel No. 01425 for EDR listings and information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01425	7432-020-032	1227 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01425 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01425 consists of APN 7432-020-032. Based on a review of online maps and photographs, Parcel No. 01425 consists of a property occupied by Neill Aircraft Co. (1227 W Cowles St.) which also occupies the entire block bounded by 15th St. to the north, Cowles St. to the south, I-710 to the east, and Fashion Ave. to the west. Neill Aircraft was also identified at 1260 W 15th St. in the UST (EDR ID No. U003660595), RCRA-SQG (EDR ID No. 1000287667), FINDS (EDR No. 1000287667), HAZNET (EDR ID No. S113016249), NPDES (EDR ID No. S108751634) and LUST (EDR No. 1000287667) databases. The LUST status is listed as "Completed - Case Closed" as of July 1, 2015. The RWQCB is the lead agency on this case. The online GeoTracker database indicates that groundwater impacted with gasoline was detected in grab groundwater samples at this property in 1997. The online database indicates that semi-annual groundwater monitoring is required and a "Soil and Groundwater Investigation Report" was prepared in 2009. In 2012, four groundwater monitoring wells were installed and sampled as well as additional soil sampling; high concentrations of TPHg and benzene were detected in both groundwater and soil samples. In September 2013, soil borings were taken to delineate the extent of soil contamination. The most recent groundwater monitoring data from March 2014 showed high concentrations of TPHg and benzene in one of the four monitoring wells while the remaining three wells showed non-detectable concentrations of TPHg, BTEX, MTBE, and TBA. In August 2014, remedial excavation of the former UST area was performed with 214.12 tons of soil removed and transported off-site for disposal. Based on the regulatory agency closure status, available groundwater and soil data, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01426	7432-020-020	15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01426 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01426 consists of APN 7432-020-020. Based on a review of online maps and photographs, Parcel No. 01426 consists of a property occupied by Neill Aircraft Co. (W 15th St.), see Parcel No. 01425 for EDR listings and information.
01427	7432-020-021	1226 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01427 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01427 consists of APN 7432-020-021. Based on a review of online maps and photographs, Parcel No. 01427 consists of a property occupied by Neill Aircraft Co. (1226 W 15th St.), see Parcel No. 01425 for EDR listings and information.
01428	7432-020-022	1230 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01428 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01428 consists of APN 7432-020-022. Based on a review of online maps and photographs, Parcel No. 01428 consists of a property occupied by Neill Aircraft Co. (1230 W 15th St.), see Parcel No. 01425 for EDR listings and information.
01429	7432-020-023	15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01429 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01429 consists of APN 7432-020-023. Based on a review of online maps and photographs, Parcel No. 01429 consists of a property occupied by Neill Aircraft Co. (W 15th St.), see Parcel No. 01425 for EDR listings and information.
01430	7432-020-024	1240 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01430 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01430 consists of APN 7432-020-024. Based on a review of online maps and photographs, Parcel No. 01430 consists of a property occupied by Neill Aircraft Co. (1240 W 15th St.), see Parcel No. 01425 for EDR listings and information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01431	7432-021-005	1239 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01431 as Business Use owned by Neil Properties LLC. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 01431 consists of APN 7432-021-005. Based on a review of online maps and photographs, Parcel No. 01431 consists of a property occupied by Neill Aircraft Co.(1239 W. 15th St.), see Parcel No. 01425 for EDR listings and information.
01432	7432-021-006	1233 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01432 as Business Use owned by Neill Aircraft Company. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 01432 consists of APN 7432-021-006. Based on a review of online maps and photographs, Parcel No. 01432 consists of a property occupied by Neill Aircraft Co. (1233 W. 15th St.), see Parcel No. 01425 for EDR listings and information.
01433	7432-021-007	1231 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01433 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 01433 consists of APN 7432-021-007. Based on a review of online maps and photographs, Parcel No. 01433 consists of a property occupied by Neill Aircraft Co. (1231 W. 15th St.), see Parcel No. 01425 for EDR listings and information.
01434	7432-021-008	1229 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01434 as Business Use owned by Neill Aircraft Company. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 01434 consists of APN 7432-021-008. Based on a review of online maps and photographs, Parcel No. 01434 consists of a property occupied by Neill Aircraft Co. (1229 W. 15th St.), see Parcel No. 01425 for EDR listings and information.
01435	7432-021-001	1238 Gaylord St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01435 as Business Use owned by Neill Aircraft Company. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 01435 consists of APN 7432-021-001. Based on a review of online maps and photographs, Parcel No. 01435 consists of a property occupied by Neill Aircraft Co. (1238 W. Gaylord St.), see Parcel No. 01425 for EDR listings and information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01436	7432-021-002	Gaylord St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01436 as Business Use owned by Neill Aircraft Company. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 01436 consists of APN 7432-021-002, a portion of APN 7432-021-001. Based on a review of online maps and photographs, Parcel No. 01436 consists of a property occupied by Neill Aircraft Co., see Parcel No. 01425 for EDR listings and information.
80417	7140-014-936	E. 208th St. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 80417 as Railroad Use. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 80417 consists of APN 7140-014-936. Based on a review of online maps and photographs, Parcel No. 80417 consists of a segment of the Metro Blue Line/ Pacific Electric Railroad track and the Metro Blue Line Yard (4350 208th St.). Metro Division 11 and Rapid Transit District Metro (EDR ID No. 2484) were identified associated with this address in the RCRA-SQG, FINDS, WDS, NPDES, LUST databases. According to the GeoTracker database, the facility is listed with a status of "completed-case closed" as of September 8, 2010, for a release of "waste oil/motor/hydraulic/lubricating" to soil. No other information was available online or in the EDR Report. Based on the regulatory status, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
04425	7310-016-806	Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 04425 as Public Use. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 04425 consists of APN 7310-016-806. Based on a review of online maps and photographs, Parcel No. 04425 appears to be occupied by transmission power lines located within the onramp turnaround from I-405 to I-710. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
06101	7140-014-019	Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 06101 as Business Use, owned by CRG Properties LTD. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps revealed that Parcel No. 06101 consists of APN 7140-014-019. Based on a review of online maps and photographs, Parcel No. 06101 is associated with the former Long Beach Golf Learning Center (3701 & 4021 Pacific Place) property. Long Beach Industrial Park (EDR ID No. 2752, 2767) was identified associated with this address in the VCP, ENVIROSTOR, SLIC, and FINDS databases; as CRG Properties in the HAZNET, UST, database; Petro Resources Inc. in the CERCLIS-NFRAP, FINDS, RGA LUST, and EMI databases. This parcel is associated with an 18-acre site formerly used as a central brine treatment facility from 1926 until the mid-1950s. Former activities consisted of pumping oil brine, drilling mud, and other waste materials generated from nearby oil production into unlined sumps. For the past five years, the site has been used as a golf practice range. Under the DTSC oversight, investigations are being conducted to evaluate the presence and extent of hazardous substances in the subsurface including benzene, benzo(a)pyrene, metals and TPH as gasoline. The case is also identified in the RWQCB's online GeoTracker database as Long Beach Industrial Park at 4021 Pacific Place. According to the GeoTracker and ENVIROSTOR online databases, the DTSC is the lead agency for the case. The cleanup status on the online ENVIROSTOR database is reported as "Inactive – Action Required" as of January 26, 2009; however, the database reports that a Remedial Action Completion Report was due to DTSC on April 30, 2011. Based on the regulatory status and former use, this site is considered to represent an environmental concern to the ISA Study Area and a file review is recommended. It should be noted that soil and groundwater contamination may exist in the area of this property impacted by the proposed right-of-way, which could be encountered during construction and/or excavation activities.
06102	7140-014-032	Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 06102 as Business Use, owned by CRG Properties LTD. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps revealed that Parcel No. 06102 consists of APN 7140-014-032. Based on a review of online maps and photographs, Parcel No. 06102 is associated with Parcel No. 06101.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
06103	7140-014-025	4021 Amebco Rd. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 06103 as Business Use, owned by Tookey, Victor R and Evelyn M. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps revealed that Parcel No. 06103 consists of APN 7140-014-032. Based on a review of online maps and photographs, Parcel No. 06103 is associated with Parcel No. 06101.
06108	7140-014-023	3916 Amebco Rd Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 01608 as Business Use, owned by MCDONALD,JOHN B CO TR ET AL. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps revealed that Parcel No. 01608 consists of APN 7140-014-023. Based on a review of online maps and photographs, Parcel No. 01608 is a an unpaved strip of land located adjacent to the east of North Pacific Place and adjacent to the west of MTA railroad tracks. No EDR listings were identified in this area.
06206	7203-002-001	701 Baker St. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 06206 as Business Use, owned by Oil Operators Inc. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 06206 consists of APN 7203-002-001. Based on a review of online maps and photographs, Parcel No. 06206 is currently vacant land. No EDR listings were identified associated with 701 W Baker St. Oil Operators Inc. was identified at 712 W Baker St. (EDR ID No. 2797) in the UST, SLIC, CERCLIS, CHMIRS, HIST UST, CA FID UST, EMI, and SWEEPS UST databases and at 714 W Baker St. (EDR ID No.2797 in the ENVIROSTOR database. The ENVIROSTOR database referred the case the RWQCB as of January 1, 2011. The RWQCB remains the lead agency on the case. The ENVIROSTOR database indicates that the US EPA is also involved in cleanup oversight for this case. The online GeoTracker database identifies the case at 712 W Baker St. and lists the facility status as “Open – Site Assessment” as of January 2, 2015. According to the online GeoTracker database, the Oil Operators, Inc. (OOI) property covers 20 acres located east of I-710 and is bounded on the north by the 405 freeway, on the south by Wardlow Rd., and on the east by Golden Ave. Baker St. divides the property into northern and southern parts. The Los Angeles River is located immediately to the west. OOI operated water treatment facilities at this property from 1926 to 1998 to treat production brines and other fluids recovered during oil production. Processed included removal of oil and sediment from the water, recovering low-grade oil for recycling, and disposal of the treated water off-site. Multiple basins that were used to settle oily solids/sludge and to hold treated water were located on the property. The facilities were

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				decommissioned in phases beginning in 1998 and the property is currently vacant. The primary area of concern is identified as Basin 1, which held untreated oil production fluids for settling of oily solids/sludge. Cleanup criteria have been established for chemicals of concern in Basin 1, including TPH as gasoline, BTEX, and heavy metals. Soil remediation has been underway at the property since March 2010, consisting of in-situ enhanced biodegradation, and quarterly groundwater monitoring is conducted. Based on information reviewed on the online GeoTracker database, it appears that additional investigations and remediation are required at this property. Based on the regulatory status and on-going remedial conditions, this site is considered to represent an environmental concern to the ISA Study Area.
70721	7140-001-4900	E 208th St. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 70721 as Public Use, owned by the US Government. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 70721 consists of APN 7140-014-900. Based on a review of online maps and photographs, Parcel No. 70721 consists of the northern-most portion of the Metro Blue Line maintenance facility. No EDR listings were identified in this area.
50806	7306-022-803	Southern California Edison (SCE) Corridor Compton, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 50806 as Utility Use, owned by So Calif Edison Co. A review of the I-710 EIR/EIS Right-of-Way Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50806 consists of APN 7306-022-803. This parcel is located adjacent to the west of I-710 and northeast of the intersection of East Maria St. and South Susana Rd. An EDR listing of potential concern was identified (see Parcel No. 08110). This land parcel is considered high risk.
50807	7306-022-802	SCE Corridor Long Beach, CA	Partial	The Right-of-Way Impact Report identifies Parcel No. 50807 as Utility Use, owned by SO CALIF EDISON CO. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50807 consists of APN 7306-022-802. This parcel consists of two strips of land located adjacent to the west of the Long Beach Blvd. on-ramp to I-710 South. A nearby EDR listing of potential concern was identified (see Parcel No. 08127).

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
50808	7306-022-801	SCE Corridor Long Beach, Ca,	Partial	The Right-of-Way Impact Report identifies Parcel No. 50808 as Utility Use, owned by SO CALIF EDISON CO. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50808 consists of APN 7306-022-801. This parcel consists of a strip of land located adjacent to the west of the Long Beach Blvd. on-ramp to I-710 South. An EDR listing of potential concern was identified (see Parcel No. 08110).
08110	7306-022-033	88 Victoria St. Long Beach, CA	Partial	The Right-of-Way Impact Report identifies Parcel No. 08110 as Business Use, owned by BELL BUSINESS CENTER LP. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 08110 consists of APN 7306-022-033. This parcel consists of a strip of land adjacent to southwest corner of Victoria St. and Long Beach Blvd. Based on a review of the EDR Report and online maps and photographs, it appears that this parcel is part of a large property (Bell Business Center), which includes APNs 7306-022-055 and 7306-022-054 (adjacent to the west). These two parcels are not impacted by the proposed project, but since APN 7306-022-033 is part of this larger property, which was identified in the EDR Report, they are discussed. 100 W. Victoria St. at APN 7306-022-055 was identified as Former Robert Shaw Controls (EDR ID No. 2131) in the ENVIROSTOR, UST, LUST, HIST CORTESE, SLIC, RCRA-SQG, FIND, HAZNET, CA FID UST, HIST UST, EMI, CA WDS, HIST FTTS, VCP, ENF and SWEEPS UST databases; as Bell Business Center in the NPDES and HAZNET database; as Invensys Controls in the FINDS and HAZNET database; and as 100 West Victoria Waste Treatment Area in the CA CHMIRS database. Site investigations began at this property in 1991. Phased site investigations and remediation activities have continued to the present time, to assess and remediate chemical impacts to soils and groundwater from past manufacturing operations. Potential contaminants of concern include chlorinated solvents such as benzene, PCE, TCE, vinyl chloride, and xylenes. A groundwater remediation and monitoring system as well as a soil vapor extraction system are currently being operated at the property. The DTSC referred the case to the RWQCB on February 2, 2009. The online GeoTracker lists the status as “Open – Remediation” as of December 22, 2014. Based on information reviewed in the online GeoTracker database, it appears that additional investigations and remediation are required at this property. Based on the regulatory status and on-going remedial conditions, this site is considered to represent an environmental concern to the ISA Study Area .

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
08109	7306-022-038	5951 Long Beach Blvd Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 08109 as Business Use, owned by 5951 LONG BEACH LLC. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 08109 consists of APN 7306-022-038. This parcel consists of a strip of land adjacent to southwest corner of Victoria St. and Long Beach Blvd. An adjacent EDR listing of potential concern was identified (see Parcel No. 08110).
50814	7132-001-808	SCE Corridor Long Beach, CA	Partial	The Right-of-Way Impact Report identifies Parcel No. 50814 as Utility Use, owned by SO CALIF EDISON CO. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50814 consists of APN 7132-001-808. This parcel is located adjacent to east of I-710 north off-ramp to Long Beach Blvd and is occupied by high power transmission lines. No EDR listings were identified in this area.
50815	7132-001-807	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 50815 as Utility Use, owned by SO CALIF EDISON CO. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50815 consists of APN 7132-001-807. This parcel is located adjacent to east of I-710 north off-ramp to Long Beach Blvd and is occupied by high power transmission lines. No EDR listings were identified in this area.
50816	7132-001-806	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 50816 as Utility Use, owned by SO CALIF EDISON CO. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50816 consists of APN 7132-001-806. This parcel is located adjacent to east of I-710 north off-ramp to Long Beach Blvd and is occupied by high power transmission lines. No EDR listings were identified in this area.
40818	7132-004-901	Los Angeles River Long Beach	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 40818 as Flood Control, owned by LA CO FLOOD CONTROL DISTRICT. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 40818 consists of APN 7132-004-901. This parcel consists of a strip of land adjacent to the south of Long Beach Blvd and north of the Los Angeles River and is occupied by high power transmission lines. No EDR listings were identified in this area.

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Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
40817	7132-004-900	Los Angeles River Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 40817 as Flood Control, owned by LA CO FLOOD CONTROL DISTRICT. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 40817 consists of APN 7132-004-900. This parcel consists of a strip of land adjacent to the south of Long Beach Blvd and west of the Los Angeles River and is occupied by high power transmission lines. No EDR listings were identified in this area.
50820	7125-037-801	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 50820 as Utility Use, owned by SO CALIF EDISON CO. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50820 consists of APN 7132-037-801. This parcel consists of a strip of land located adjacent to east of I-710, west of the Los Angeles River, and north of Long Beach Blvd. and is occupied by high power transmission lines. No EDR listings were identified in this area.
40819	7126-008-902	Los Angeles River Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 40819 as Flood Control, owned by LA CO FLOOD CONTROL DISTRICT. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 40819 consists of APN 7126-008-902. This parcel consists of a strip of land adjacent to the north of Long Beach Blvd and south of the Los Angeles River and is occupied by high power transmission lines. No EDR listings were identified in this area.
50902	7115-027-800	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 50902 as Utility Use, owned by SCE. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50902 consists of APN 7115-027-800 and located adjacent to the east of I-710. Based on a review of online maps and photographs, Parcel No. 50902 is occupied by transmission power lines and utilized for storage of power poles and equipment. No EDR listings were identified in this area.
50903	7115-027-801	SCE Corridor Long Beach, CA	Full	The Right-of-Way Impact Report identified Parcel No. 50903 as Utility Use, owned by SCE. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50903 consists of APN 7115-027-801 and located adjacent to the east of I-710. Based on a review of online maps and photographs, Parcel No. 50903 is occupied by transmission power lines and utilized for storage of power poles and equipment. No EDR listings were identified in this area.

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Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
50905	7116-018-813	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 50905 as Utility Use, owned by SCE. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50905 consists of APN 7116-018-813 and located adjacent to the east of I-710. Based on a review of online maps and photographs, Parcel No. 50905 is occupied by transmission power lines. No EDR listings were identified in this area.
50906	7116-018-802	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 50906 as Utility Use, owned by SCE. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50906 consists of APN 7116-018-802 and located adjacent to the east of I-710. Based on a review of online maps and photographs, Parcel No. 50906 is occupied by transmission power lines. No EDR listings were identified in this area.
50907	7116-018-804	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 50907 as Utility Use, owned by SCE. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50907 consists of APN 7116-018-804 and located adjacent to the east of I-710. Based on a review of online maps and photographs, Parcel No. 50907 is occupied by transmission power lines. No EDR listings were identified in this area.
50908	7116-018-801	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 50908 as Utility Use, owned by SCE. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50908 consists of APN 7116-018-801 and located adjacent to the east of I-710. Based on a review of online maps and photographs, Parcel No. 50908 is occupied by transmission power lines. This parcel was identified in the EDR Report (S114693651) as Southern California Edison in the LUST database. According to the GeoTracker online database, the status of the site is listed as “Completed-Case closed” as of 10/08/96 for a release of gasoline to an aquifer used for drinking water supply. Based on the regulatory agency closure status, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual contamination to exist which may be encountered during construction and/or excavation activities.

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Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
50909	7116-018-803	SCE Corridor Long Beach, CA	Full	The Right-of-Way Impact Report identified Parcel No. 50909 as Utility Use, owned by SCE. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50909 consists of APN 7116-018-803 and located adjacent to the east of I-710. Based on a review of online maps and photographs, Parcel No. 50909 is occupied by transmission power lines. No EDR listings were identified in this area.
50910	7116-018-800	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 50910 as Utility Use, owned by SCE. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 50910 consists of APN 7116-018-800 and located adjacent to the east of I-710. Based on a review of online maps and photographs, Parcel No. 50910 is occupied by transmission power lines. No EDR listings were identified in this area.
12109	7301-003-011	2820 Alondra Blvd. Compton, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 12109 as Business Use (unknown owner). Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12109 consists of APN 7301-003-011. Based on review of online maps and photographs, Parcel No. 12109 consists of an ARCO gas station (2820 E. Alondra Blvd.), located at the southwest corner of East Alondra Blvd. and Atlantic Ave., west of I-710. This parcel was identified in the EDR Report (EDR ID No.1622) as 7 Days Food Store in the UST, SWEEPS UST, LUST, and Los Angeles County HMS databases; as B&B Petroleum in the Los Angeles County HMS and HAZNET databases; as Alondra AM/PM in the Los Angeles County HMS database; as PMM Alondra Inc. in the HAZNET database; as Hang Yeol Jung Shan in the HAZNET database; and as Mr. Farza Nouri in the HAZNET database. According the GeoTracker database, the status is listed as “open-remediation” as of June 8, 2006 for a release of gasoline to “aquifer used for drinking water supply.” According to the third quarter 2015 monitoring report, groundwater is flowing to the southwest. Based on the regulatory status and on-going remediation, this site is considered to represent an environmental concern to the ISA Study Area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
12210	7101-015-003	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12210 as Business Use owned by Fernando Perez. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12210 consists of APN 7101-015-003. Based on a review of online maps and photographs, Parcel No. 12210 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12211	7101-015-002	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12211 as Business Use owned by Fernando Perez. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12211 consists of APN 7101-015-002. Based on a review of online maps and photographs, Parcel No. 12211 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12212	7101-015-004	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12212 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12212 consists of APN 7101-015-004. Based on review of online maps and photographs, Parcel No. 12212 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12213	7101-013-018	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12213 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12213 consists of APN 7101-013-018. Based on a review of online maps and photographs, Parcel No. 12213 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12214	7101-013-019	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12214 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12214 consists of APN 7101-013-019. Based on a review of online maps and photographs, Parcel No. 12214 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
12215	7101-013-021	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12215 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12215 consists of APN 7101-013-021. Based on a review of online maps and photographs, Parcel No. 12215 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12216	7101-013-020	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12216 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12216 consists of APN 7101-013-020. Based on a review of online maps and photographs, Parcel No. 12216 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12217	7101-013-022	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12217 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12217 consists of APN 7101-013-022. Based on a review of online maps and photographs, Parcel No. 12217 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12218	7101-013-023	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12218 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 12218 consists of APN 7101-013-023. Based on a review of online maps and photographs, Parcel No. 12218 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
14115	6194-004-037	11000 Atlantic Ave. Lynwood, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 14115 as Business use, owned by Northwest Dealerco Holdings LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 14115 consists of APN 6194-004-037. Based on review of online maps and photographs, Parcel No. 14115 consists of a 76 gas station (11000 Atlantic Ave.) located in the southeast corner of the intersection of E. Imperial Hwy. and Atlantic Ave., west of I-710. This parcel was identified in the EDR report (EDR ID No.927) as Lees Union 76 Service in the EDR Historical Auto Station database for the years 2001, 2003-2005, and 2011; as Lynwood 76 in the FINDS database; Lees Unocal Service Station in the HAZNET database; Tosco Corporation Station No. 30442 in the HAZNET database; Conoco Phillips No. 252474 in the HAZNET database; Western Fuel Group in the HAZNET database; 76 Products Station No. 2474 in the Hist Cortese, ENF, HAZNET, and Los Angeles County HMS databases; Union Oil Service Station No. 2474 in the HIST UST database; Unocal Corp SS 2474 in the SWEEPS UST and Los Angeles County HMS databases; Tosco 76 Station 2474 in the LUST, UST, and HIST UST databases. According to GeoTracker, the site is listed with a status of “completed-case closed” as of January 22, 2015 for a release gasoline to “aquifer used for drinking water supply.” Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
41421	6234-012-002	Los Angeles River Lynwood, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 41421 as Flood Control Use owned by Chevron USA Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 41421 consists of APN 6234-012-002. Based on a review of online maps and photographs, Parcel No. 41421 consists of a vacant strip of land indicative of a subsurface pipeline. This parcel is located between I-710 and the Los Angeles River, south of Imperial Hwy. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
41432	6233-032-010	Los Angeles River South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 41432 as Flood Control Use owned by the State of California. Based on review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 41432 consists of APN 6233-032-010. Based on a review of online maps and photographs, Parcel No. 41432 consists of a vacant strip of land indicative of a subsurface pipeline. This parcel is located between I-710 and the Los Angeles River, north of Imperial Hwy. No EDR listings were identified in this area.
14448	6194-002-025	5201 Imperial Hwy. South Gate, CA	Full	The Right-of-Way Impact Report identified Parcel No. 14448 as Business Use, owned by Frys 710 freeway Investment Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 14448 consists of APN 6194-002-025. Based on review of online maps and photographs, Parcel No. 14448 consists of an ARCO gas station (5201 E. Imperial Hwy.) located at the northeast corner of E. Imperial Hwy. and Wright Rd. This parcel was identified in the EDR Report (EDR ID No. 927) as Copper Wash LLC in the Los Angeles County HMS database; as Shell in the LUST, HIST UST, and HAZNET databases; Chang's Shell in the LUST and UST databases; YM Shell in the HAZNET database; Shell Service Station in the ERNS, SWEEPS UST, Los Angeles County HMS, RCRA-SQG, FINDS, and HAZNET databases; SIM Shell in the RCRA-SQG database; and JK Shell in the EDR Historical Auto station database for the years 2001-2003. According to GeoTracker, the following two cases are associated with this parcel: Shell is listed with a status of "completed-case closed" as of October 24, 1996 for a release of gasoline to soil; and Chang's Shell is listed with a status of "completed-case closed" as of July 17, 2013 for a release of gasoline to "an aquifer used for drinking water supply." Additionally, each of the 16 wells located on-site are reportedly being sampled for post-remedial action verification monitoring to evaluate remediation system performance. Based on the post-remedial action sampling that is ongoing at the site, this site is considered to represent an environmental concern to the ISA Study Area and a file review is recommended. Additionally, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15107	6222-036-005	5310 Southern Ave. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15107 as Business Use, owned by BORK CORP. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15107 consists of APN 6222-036-005. Based on a review of online maps and photographs, Parcel No. 15107 consists of a segment of land adjacent to the south of Southern Ave., east of the Los Angeles River, and west of Salt Lake Ave. This parcel was identified in the EDR Report as Southern California Edison Shred Substation (EDR ID No. 944) in the RCRA-SQG, FINDS, CA NPDES, CA WDS, CA LUST, CA HIST UST, CA SWEEPS UST, CA HAZNET, CA EMI, and CA ENVIROSTOR databases; as Bell Foundry Co. (EDR ID No. 944) in the CA LOS ANGELES CO. HMS, CA RGA LUST, FTTS, and HIST FTTS databases. The LUST cleanup status is reported as "Completed – Case Closed" as of September 30, 1999. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
71527	6232-017-906	9830 Miller Way South Gate, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 71527 as Public Use, owned by SOUTH GATE CITY. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 71527 consists of APN 6232-017-906. Based on a review of online maps and photographs, Parcel No. 71527 is located at 9830 Miller Way which consists of a segment of land adjacent to the south of Miller Way and Garfield Ave., and east of I-710. The address was identified as Fiola International (EDR No. 1010) in the CA LOS ANGELES CO. HMS database; and as VACANT (EDR No. 1010) in the CA SWEEPS UST database. Fiola International was also identified at 9850 Frontage Rd. E in the RGA LUST database; at 9858 Miller Way in the CA LUST and CA HIST UST database. The status of the LUST case at 9850 Frontage Rd. E is reported as "Completed – Case Closed" as of 7/23.1996. The status of the LUST case at 9858 Miller Way is reported as "Completed – Case Closed" as of January 29, 2010. According to information available on the online GeoTracker database, this facility was formerly a forklift repair facility and was vacant as of January 2010. In 2006, three 550-gallon hydraulic fluid and waste oil USTs were removed from the site. A fourth UST, a 1,000-gallon tank with unknown contents, was closed in place in 1983. At the time of the 2006 removal, soil impacted with low concentrations of benzene, MTBE, acetone, TBA, and MEK

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				were identified. Groundwater monitoring wells were not required by the RWQCB due to the low concentrations detected, and the case was closed in January 2010. Based on the closed status, this property is not considered an environmental concern for the ISA Study Area. It should be noted that residual soil contamination and a former UST closed in place may exist in the area of this property impacted by the proposed right-of-way, which could be encountered during construction and/or excavation activities.
15232	6232-015-005	5730 Southern Ave. South Gate, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 15232 as Business Use, owned by WORLD OIL CORP. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15232 consists of APN 6232-015-005. Based on a review of online maps and photographs, Parcel No. 15232 consists of a segment of land at 5730 Southern Ave., adjacent to the south of Southern Ave., west of Garfield Ave., and east of I-710. The address was identified as Lunday Thagard Company (EDR No. 969) in the CA HAZNET database and as Pan Pacific Petroleum Co. (EDR No. 969) in the CA WDS database. Parcels No. 15231, 15232, and 15233 were formerly part of a large refinery (see Parcel No. 15233 for EDR discussion)
15231	6232-015-004	5630 Southern Ave. South Gate, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 15231 as Business Use, owned by WORLD OIL CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15231 consists of APN 6232-015-004. Based on a review of online maps and photographs, Parcel No. 15231 consists of a segment of land at 5630 Southern Ave., adjacent to the south of Southern Ave., west of Garfield Ave., and east of I-710. No EDR listings were identified associated with 5630 Southern Ave. Parcel No. 15231 appears to be associated with Parcel No. 15233 and was identified as Lunday Thagard Company (EDR No. 969) in the CA HAZNET database and as Pan Pacific Petroleum Co. (EDR No. 969) in the CA WDS database. Parcels Nos. 15231, 15232, and 15233 were formerly part of a large refinery (see Parcel No. 15233 for EDR discussion)

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15230	6232-015-003	5532 Southern Ave. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15230 as Business Use, owned by J B HUNT TRANSPORT INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15230 consists of APN 6232-015-003 Based on a review of online maps and photographs, Parcel No. 15230 consists of a segment of land adjacent to the south of Southern Ave., west of Garfield Ave., and east of I-710. No EDR listings were identified associated with 5440 Southern Ave.
15115	6222-001-021	South Gate, CA	Full	The Right-of-Way Impact Report identified Parcel No. 15115 as Business Use, owned by KUDOCO DIVERSIFIED INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15115 consists of APN 6222-001-021. Based on a review of online maps and photographs, Parcel No. 15115 consists of a segment of vacant land adjacent to the north of the intersection of Southern Ave. and Frontage Rd., and east of I-710. No EDR listings were identified in this area.
15116	6222-001-020	South Gate, CA	Full	The Right-of-Way Impact Report identified Parcel No. 15116 as Business Use, owned by KUDOCO DIVERSIFIED INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15116 consists of APN 6222-001-020. Based on a review of online maps and photographs, Parcel No. 15116 consists of a segment of vacant land north of the intersection of Southern Ave. and Frontage Rd., and east of I-710. No EDR listings were identified in this area.
71514	6222-001-916	South Gate, CA	Full	The Right-of-Way Impact Report identified Parcel No. 71514 as Public Use, owned by COMMUNITY DEV COMMISION OF. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 71514 consists of APN 6222-001-916. Based on a review of online maps and photographs, Parcel No. 71514 consists of vacant land adjacent to the north of Southern Ave. and east of I-710. No EDR listings were identified in this area.
41513	6222-001-904	Los Angeles River South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 41513 as Flood Control Use. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 41513 consists of APN 6222-001-904. Based on a review of online maps and photographs, Parcel No. 41513 consists of a segment of land east of the Los Angeles River and adjacent to the north of Southern Ave. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
61512	6222-001-278	LADWP South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 61512 as Utility Use, owned by LA CITY DEPT OF WATER AND POWER . Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 61512 consists of APN 6222-001-278. Based on a review of online maps and photographs, Parcel No. 61512 consists of a segment of land east of the Los Angeles River, west of I-710, and north of Southern Ave. No EDR listings were identified in this area.
61517	6222-001-276	LADWP South Gate, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 61517 as Utility Use, owned by LA CITY DEPT OF WATER AND POWER . Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 61517 consists of APN 6222-001-276. Based on a review of online maps and photographs, Parcel No. 61517 consists of a segment of land east of the Los Angeles River, west of I-710, and north of Southern Ave. This parcel was part of a former landfill associated with Parcel No. 51518, 61512, and 51518 (see Parcel No. 51518 for EDR discussion).
61522	6222-001-277	LADWP South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 61522 as Utility Use, owned by LA CITY DEPT OF WATER AND POWER. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 61522 consists of APN 6222-001-277. Based on a review of online maps and photographs, Parcel No. 61522 consists of a segment of land east of the Los Angeles River, west of I-710, and south of Firestone Blvd. No EDR listings were identified in this area.
15233	6232-010-016	9301 Garfield Ave. South Gate, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 15233 as Business Use, owned by INNOVATE INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15233 consists of APN 6232-010-016. Based on a review of online maps and photographs, Parcel No. 15233 consists of a segment of land adjacent to the north of Southern Ave. and west of I-710. The parcel was identified in the EDR Report as 9301 Garfield Ave. (EDR ID No. 948) in the ERNS and HMIRS databases; as Lunday-Thagard Refinery (EDR ID No. 948) in the RCRA-LQG, CA NPDES, CA SLIC, CA CHMIRS, CA EMI, TRIS, RMP, CA WDS, CA HIST UST, and CA HAZNET databases; as Asphalt Refinery (EDR ID No. 948) in the CA CHMIRS database; as Herbert Malarkey Roofing Company (EDR ID No. 948) in the CA EMI, FINDS, CA WDS database; as G S Roofing Products Inc. (EDR ID No. 948) in the CA EMI and CA HAZNET databases. The Lundy-Thagard

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				Refinery received violations, which subsequently achieved compliance. According to the SLIC database, a release of fuel oxygenates and gasoline was discovered in 2002 that impacted soil and groundwater. This facility is under the supervision of the RWQCB. The online GeoTracker database reports the cleanup status as "Open – Remediation" as of January 22, 2009. A semi-annual groundwater monitoring program has been implemented at this property and an additional groundwater monitoring well to further investigate down-gradient impacts was installed in October 2010. In 2015, groundwater was reported between 62 and 65 feet bgs and flow direction ranged from south-southeast to southeast. Based on the information reviewed online, it appears that additional remediation and site assessment activities are required at this property and a file review is recommended. Therefore, this property represents an environmental concern to the proposed I-710 Corridor Project. It should be noted that soil contamination may exist in the area of this property impacted by the proposed right-of-way, which could be encountered during construction and/or excavation activities.
15234	6232-010-008	5625 Southern Ave South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15234 as Business Use, owned by SULLY-MILLER CONTRACTING CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15234 consists of APN 6232-010-008. Based on a review of online maps and photographs, Parcel No. 15234 consists of a segment of land adjacent to the north of Southern Ave. and west of I-710. The parcel was identified in the EDR Report Sully Miller Construction (EDR ID No. 969) in the FINDS, CA LOS ANGELES CO. HMS, ERNS, CHMIRS, CA LUST, CA EMI, CA HAZNET, and CA UST databases; as South Gate HMA Plant (EDR ID No. 969) in the CA HIST UST and CA SWEEPS UST databases; and as Blue Diamond Materials (EDR ID No. 969) in the CA HAZNET and CA AST databases. According to the online GeoTracker database, Sully-Miller Contracting Co. is listed in the LUST database with a cleanup status of "Open – Site Assessment" as of November 4, 2009. The RWQCB is the lead agency for the case and contaminants of concern include BTEX, diesel, and fuel oxygenates. No additional information is accessible online. Based on the open case status and lack of data available online, this property represents an environmental concern to the proposed I-710 Corridor Project and a file review is recommended.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15235	6232-010-011	5601 Southern Ave. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15235 as Business Use, owned by Californian South Gate. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15234 consists of APN 6232-010-008. Based on a review of online maps and photographs, Parcel No. 15234 consists of a segment of land adjacent to the north of Southern Ave. and west of I-710 and is associated with Parcel ID No.15234. See Parcel ID No. 15234 for EDR listings and information.
15237	6232-009-009	5700 Firestone Blvd. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15237 as Business Use, owned by MANN ENTERPRISES INC, currently occupied by Target. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15237 consists of APN 6232-009-009. Based on a review of online maps and photographs, Parcel No. 15237 consists of two segments of land adjacent to the south of Firestone Blvd. and adjacent to the east of the I-710 off-ramp to Firestone Blvd. The parcel was identified in the EDR Report as Target Store T0190 at 5700 Firestone Blvd. (EDR ID No. 905) in the FINDS, CA HAZNET, and RCRA-SQG databases; and as South Gate Town Center (EDR ID No. 905) in the LA CO. SITE MITIGATION database. A review of the GeoTracker database identified that groundwater underneath Parcel No. 15237 is impacted by the ARCO-Vinvale Tank Farm at 8601 Garfield Ave. Based on the information available online, this property represents an environmental concern to the proposed I-710 Corridor Project.
15339	6232-002-005	5625 Firestone Blvd. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15339 as Business Use, owned by ALUM LANDLORD QRS 16 105 INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15339 consists of APN 6232-002-005. Based on a review of online maps and photographs, Parcel No. 15339 consists of a segment of land along the northwest corner of the intersection of National Ave. and Firestone Blvd. International Window Corp was identified at 5625 Firestone Blvd. in this area in the CA UST, CA LUST, CA SLIC, CA HIST UST, CA SWEEPS UST, CA LOS ANGELES CO. HMS MITIGATION, CA ENF, CA HIST CORTESE, and CA HAZNET database. Reportedly, a release was discovered in 1990 that affected the groundwater at the site. The site is under the jurisdiction of the RWQCB. According to the online GeoTracker database, the cleanup status is reported as “Completed – Case Closed” as of August 30, 2001. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities. Groundwater beneath this property has been impacted by the ARCO-Vinvale Tank Farm at 8601 Garfield Ave.
61544	6233-001-275	South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 61544 as Utility Use, owned by L A CITY DEPT OF WATER AND POWER. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 61544 consists of APN 6233-001-275. Based on a review of online maps and photographs, Parcel No. 61544 consists of a segment of the Rio Hondo River, bound to the west by the I-710 and to the south by Meadow Rd. This parcel was formerly part of a landfill associated with Parcel No. 41543, No. 15268, No. 61544, No. 41520, and No. 71570 (see Parcel No. 41543 for EDR discussion).
15245	6233-002-900	South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15245 as Business Use, owned by SOUTH GATE CITY. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15245 consists of APN 6233-002-900. Based on a review of online maps and photographs, Parcel No. 15245 consists of a segment of land east of the Los Angeles River, adjacent to the south of the I-710, and west of the Rio Hondo River. No EDR listings were identified in this area.
16443	6315-031-002	Bell, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 16443 as Utility Use, owned by Chevron USA Inc. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 16443 consists of APN 6315-031-002 and located adjacent to the west of I-710, east of the Los Angeles River. Based on a review of online maps and photographs, Parcel No. 16443 is occupied by a strip of vacant land located adjacent to the west of I-710, bound to the south by E. Gage Ave. and to north by Southern Pacific Railroad. No EDR listings were identified in this area.
16443	6315-031-001	Bell, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 16442 as Utility Use, owned by Chevron USA Inc. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 16442 consists of APN 6315-031-001 and located adjacent to the west of I-710, east of the Los Angeles River. Based on a review of online maps and photographs, Parcel No. 16442 is occupied by a strip of vacant land located adjacent to the west of I-710, bound to the south by E. Gage Ave. and to north by Southern Pacific Railroad. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
17353	6332-002-036	5600 Rickerbacker Rd Bell, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 17335 as Business Use, owned by The Salvation Army. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 17335 consists of APN 6332-002-036. Review of online maps and photographs, Parcel No. 17335 consists of a large commercial facility (5600 Rickenbacker Rd.) occupied by The Salvation Army Wellness Center located adjacent to the east of I-710. This parcel was identified in the EDR Report (EDR ID No.419) as LAUSD Bell Education and Career Center in the HAZNET, SCH, NPDES, ENVIROSTOR, FINDS, RCRA-LQG databases; as FBI Warehouse in the HAZNET database; as Salvation Army in the HAZNET database; as Jet Propulsion Lab in the HAZNET database; as Bell Federal Building in the HAZNET database; as Shelter Partnership in the HAZNET database; as General Service Administration in the HAZNET database; as Bell Armed Forces Reserve Center in the HAZNET and NPDES databases; and as Federal Service Center in the HIST UST and Los Angeles County HMS databases. The ENVIROSTOR database lists the cleanup status as "Certified as of October 11, 2012." This site comprises over 13 acres and during the PEA, elevated levels of PAHs and arsenic were found in soils to a depth of four feet bgs, which required removal (approximately 1,000 cubic yards were removed). Based on the certified status, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
61603	6226-034-270	LADWP Bell, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 61603 as Utility Use, owned by LA City Department of Water and Power (LADWP). A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 61603 consists of APN 6226-034-270 and located adjacent to the east of the Los Angeles River and west of I-710. Based on a review of online maps and photographs, Parcel No. 61603 is occupied by transmission power lines. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
61640	6327-039-270	LADWP Bell, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 61640 as Utility Use, owned by LADWP. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 61640 consists of APN 6327-039-270 and located adjacent to the east of the Los Angeles River, west of I-710. Based on a review of online maps and photographs, Parcel No. 61640 is occupied by transmission power lines bound to the south by E. Florence Ave. and to north by E. Gage Ave., west of I-710. No EDR listings were identified in this area.
17206	6332-014-025	5568 61st St. City of Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 17206 as Business Use owned by Sheldon Appel Co Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 17206 consists of APN 6332-014-025. Based on review of online maps and photographs, Parcel No. 17206 consists of a large commercial building (5568 E. 61st St.) occupied by Regal Trading Company (5560 E. 61st St.) and Ivy Enterprises (5564 E. 61st St.). This facility is located south of E. 61st St., east of I-710. This parcel was identified in the EDR Report (EDR ID No. 516) as Henkel Corp in the CHMIRS and EMI databases; and as Cognis Corp in the LUST, RCRA-SQG, EMI, HAZNET, FINDS, DEED, ENVIROSTOR, and Los Angeles County HMS databases. According to the ENVIROSTOR database, from 1938 to 1999, this 11-acre site was occupied by various chemical manufacturing companies and a steel foundry. Some of the former operators included Crayola, Vegetable Oil Company, Emery Industries, Wulff Processing, California Carbonic, National Distillers, and Apex Steel. Henkel, the last facility operator, was an oleochemical manufacturing facility that refined vegetable and animal fats. In 1994, Henkel was granted a Conditional Authorization for the on-site treatment. In 1997, Henkel submitted a Phase I Environmental Assessment Checklist indicating further investigation was needed. DTSC conducted a Phase I Environmental Checklist verification inspection on the site and concurred further investigation was needed. Identified SWMUs included nickel storage, sulfuric acid storage, stormwater impound, wastewater sumps, wastewater pre-treatment sump, Southland Oil (State Super Fund site) property border, steel foundry, and excavations from Underground Storage Tanks (USTs) formerly containing Acetone, Methanol, Gasoline, Dowtherm A, and Therminol. Cognis Corporation took over Henkel and demolished the above ground structures in the spring 2000. In June 2000, Cognis Corporation entered into a Corrective Action Consent Agreement (CACA) with DTSC to investigate and remediate potential soil and groundwater contamination. During

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				the fiscal year 2004/2005, DTSC oversaw implementation of an interim measure removal of lead contaminated soil in Area 2. Corrective Measures Plan, dated March 29, 2007 for Cognis Facility, was public noticed and approved by DTSC on June 29, 2007. Cognis implemented Soil Vapor Extraction (SVE) and removal of ten cubic yards of contaminated soil with arsenic concentrations above the local background levels in one area (Area 3). In addition, the Corrective Measures Plan proposed to place a cap and additional restriction on the border with Southland Oil Site (Area 6). The restriction prohibits re-development except for the removal of the existing concrete structures and construction of a parking lot. The facility submitted Corrective Measures Completion report in July 2010. A Land Use Covenant was filed with the Los Angeles County Assessor's Office in 2012. The site returned to industrial/commercial use, with "Land use restrictions only" as of May 16, 2012. According the GeoTracker database, the facility is listed with a status of "Completed-case closed" as of February 18, 2009, for a release of gasoline to soil. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
17207	6332-014-028	-	Partial	The Right-of-Way Impact Report identified Parcel No. 17207 as Business Use owned by Sheldon Appel Co Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 17207 consists of APN 6332-014-028. Based on review of online maps and photographs, Parcel No. 17207 consists of a segment of E. 61st St., located east of I-710. No EDR listings were identified in this area.
17208	6332-013-015	-	Partial	The Right-of-Way Impact Report identified Parcel No. 17208 as Business Use owned by Newark Group Industries Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 17208 consists of APN 6332-013-015. Based on review of online maps and photographs, Parcel No. 17208 consists of a strip of land bordering the north side of E. 61st St., east of I-710. No EDR listings were identified in this area

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
17209	6332-013-033	-	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 17209 as Business Use owned by Newark Group Industries Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 17209 consists of APN 6332-013-033. Based on review of online maps and photographs, Parcel No. 17209 consists of the Golden State Fibers Recycling facility (5585 E. 61st St.) located north E. 61st St., east of I-710. This parcel was identified in the EDR Report (EDR ID No. 516) as Baker Castor Oil in the CERCLIS-NFRAP, NPDES, LA County Site Mitigation, Los Angeles County HMS, and ENVIROSTOR databases. According to the ENVIROSTOR database, the facility is listed with a status of "No further action" as of January 17, 1984. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
17210	6332-013-014	-	Full	The Right-of-Way Impact Report identified Parcel No. 17210 as Business Use owned by Newark Group Industries Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 17210 consists of APN 6332-013-014. Based on review of online maps and photographs, Parcel No. 17210 consists of a vacant strip of land located the Golden State Fibers Recycling facility (5585 E. 61st St.) located at the terminus of E. 61st St., east of I-710. This parcel is associated with Parcel No. 17209, refer for EDR listings and information.
17211	6332-013-001	-	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 17211 as Business Use owned by Newark Group Industries Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 17211 consists of APN 6332-013-001. Based on review of online maps and photographs, Parcel No. 17211 consists of a portion of Parcel No. 17209, refer for EDR listings and information.
17335	6332-002-036	5600 Rickenbacker Rd. Bell, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 17335 as Business Use, owned by The Salvation Army. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 17335 consists of APN 6332-002-036. Based on review of online maps and photographs, Parcel No. 17335 consists of a large commercial facility (5600 Rickenbacker Rd.) occupied by The Salvation Army Wellness Center located adjacent to the east of I-710. This parcel was identified in the EDR Report (EDR ID No.419) as LAUSD Bell

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				Education and Career Center in the HAZNET, SCH, NPDES, ENVIROSTOR, FINDS, RCRA-LQG databases; as FBI Warehouse in the HAZNET database; as Salvation Army in the HAZNET database; as Jet Propulsion Lab in the HAZNET database; as Bell Federal Building in the HAZNET database; as Shelter Partnership in the HAZNET database; as General Service Administration in the HAZNET database; as Bell Armed Forces Reserve Center in the HAZNET and NPDES databases; and as Federal Service Center in the HIST UST and Los Angeles County HMS databases. The ENVIROSTOR database lists the cleanup status as "Certified as of October 11, 2012." This site comprises over 13 acres and during the PEA, elevated levels of PAHs and arsenic were found in soils to a depth of 4-feet bgs, which required removal (approximately 1,000 cubic yards were removed). Based on the certified status, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
18212	6332-002-035	5600 Rickenbacker Rd. Bell, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18212 as Business use, owned by Shelter Partnership Inc. (Salvation Army). Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18212 consists of APN 6332-002-035. Based on review of online maps and photographs, Parcel No. 18212 consists of a large commercial facility (5600 Rickenbacker Rd.) occupied by The Salvation Army Wellness Center located east of I-710. This parcel was identified in the EDR Report (EDR ID No.419) as LAUSD Bell Education and Career Center in the HAZNET,SCH, NPDES, ENVIROSTOR, FINDS, RCRA-LQG databases; as FBI Warehouse in the HAZNET database; as Salvation Army in the HAZNET database; as Jet Propulsion Lab in the HAZNET database; as Bell Federal Building in the HAZNET database; as Shelter Partnership in the HAZNET database; as General Service Administration in the HAZNET database; as Bell Armed Forces Reserve Center in the HAZNET and NPDES databases; Federal Service Center in the HIST UST and Los Angeles County HMS databases. The ENVIROSTOR database lists the cleanup status as "Certified as of October 11, 2012" indicating that the DTSC-approved response action has been completed. This site comprises over 13 acres and during the PEA, in 2009, elevated levels of PAHs and arsenic were found in soils to a depth of 4-feet bgs, which required removal. Approximately 1,000 cubic yards of contaminated soil was subsequently removed and documented in a report dated 2010.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				Based on the certified status, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
18218	6332-002-021	5350 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18218 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18218 consists of APN 6332-002-021. Based on review of online maps and photographs, Parcel No. 18218 consists of a large commercial building occupied by Vernon Sanitary Supply (5350 Lindbergh Lane) and Allied Plastics (5380 Lindbergh Lane) located west of Lindbergh Lane and east of I-710. No EDR listings were identified in this area. This parcel was identified in the EDR Report (EDR ID No.345) as Individual Food Service in the VCP and ENVIROSTOR databases. According to the ENVIROSTOR database, the site is a slab on grade tilt up building comprised of about a 146,000-square-foot structure located on a 255,101-square-foot lot. The building is divided into different suites, used for warehousing and distribution. This Site is located near what was formerly the Cheli Air Force Base. To the west and south are the 710 freeway and the Los Angeles River. The nearest residential land use is on the opposite side of the Los Angeles River, about 0.25 mile from the site. Based on the information available to DTSC and Proponent, the site is or may be contaminated with hazardous substances, including poly-aromatic hydrocarbons (PAHs), volatile organic compounds, and petroleum hydrocarbons. The site is listed with a status of “Certified O&M-Land Use Restrictions Only” as of March 17, 2016. Based on the regulatory agency status, these listings are expected to have created an environmental concern to the ISA Study Area. Additionally, there is potential for soil contamination to exist which may be encountered during construction and/or excavation activities.
18219	6332-002-039	5300 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18219 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18219 consists of APN 6332-002-039, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18220	6332-002-040	5300 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18220 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18220 consists of APN 6332-002-040, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18221	6332-002-041	5304 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18221 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18221 consists of APN 6332-002-041,which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18222	6332-002-042	5304 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18222 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18222 consists of APN 6332-002-042, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18223	6332-002-043	5306 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18223 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18223 consists of APN 6332-002-043, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18224	6332-002-044	5306 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18224 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18224 consists of APN 6332-002-044, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18225	6332-002-045	5306 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18225 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18225 consists of APN 6332-002-045, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18226	6332-002-046	5310 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18226 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18226 consists of APN 6332-002-046, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18227	6332-002-920	5300 Bandini Blvd. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18227 as Business use, owned by US Government (Dept. of the Army). Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18227 consists of APN 6332-002-920. Based on review of online maps and photographs, Parcel No. 18227 consists of the Department of the Army facility located adjacent to the east of the S. Atlantic Blvd. off-ramp of I-710, south of Bandini Blvd. This parcel was listed in the EDR Report (EDR ID No.322) in the FINDS database; as Office of Adjutant General in the UST database; as US Government in the HIST CORTESE, LUST, SWEEPS UST databases; as CA Army National Guard in the LUST, Los Angeles County HMS; as Bell Organizational Maintenance No. 6 in the CERLIS, HAZNET, and RCRA-LQG databases. According to GeoTracker, three cases are associated with the site. Patton US Army Reserve Center (5340 Bandini Blvd.) is listed with a status of "Completed-case closed" as of November 14, 1999 for a release of diesel to soil. US Government (5300 Bandini Blvd.) is listed with a status of "Completed-case closed" as of February 5, 2009 for a release of gasoline to soil. CA Army National Guard is listed with a status of "Completed-case closed" as of March 3, 2015, for a release of diesel, gasoline, MTBE/TBA/other fuel oxygenates, toluene, waste oil/motor/hydraulic/lubricating, xylenes. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
18228	6332-002-934	Bandini Blvd. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18228 as Business use, owned by US Government. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18228 consists of APN 6332-002-934. This parcel is the eastern half of Parcel No. 18227. See Parcel No. 18227 for EDR information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18243	6332-002-047	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18243 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18243 consists of APN 6332-002-047, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18244	6332-002-048	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18244 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18244 consists of APN 6332-002-048, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18245	6332-002-049	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18245 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18245 consists of APN 6332-002-049, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18246	6332-002-050	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18246 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18246 consists of APN 6332-002-050, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18247	6332-002-051	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18247 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18247 consists of APN 6332-002-051, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18248	6332-002-052	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18248 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18248 consists of APN 6332-002-052, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18249	6332-002-053	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18249 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18249 consists of APN 6332-002-053, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18250	6332-002-054	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18250 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18250 consists of APN 6332-002-054, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18251	6332-002-055	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18251 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18251 consists of APN 6332-002-055, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18252	6332-002-056	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18252 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18252 consists of APN 6332-002-056, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18253	6332-002-057	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18253 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18253 consists of APN 6332-002-057, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18254	6332-002-058	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18254 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18254 consists of APN 6332-002-058, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18255	6332-002-059	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18255 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18255 consists of APN 6332-002-059, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18256	6332-002-060	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18256 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18256 consists of APN 6332-002-060, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18257	6332-002-061	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18257 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18257 consists of APN 6332-002-061, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18258	6332-002-062	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18258 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18258 consists of APN 6332-002-062, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18259	6332-002-063	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18259 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18259 consists of APN 6332-002-063, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18260	6332-002-064	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18260 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18260 consists of APN 6332-002-064, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18261	6332-002-065	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18261 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18261 consists of APN 6332-002-065, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18262	6332-002-066	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18262 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18262 consists of APN 6332-002-066, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18263	6332-002-067	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18263 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18263 consists of APN 6332-002-067, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18264	6332-002-068	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18264 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18264 consists of APN 6332-002-068, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18265	6332-002-069	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18265 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18265 consists of APN 6332-002-069, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18266	6332-002-070	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18266 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18266 consists of APN 6332-002-070, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18267	6332-002-071	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18267 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18267 consists of APN 6332-002-071, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18268	6332-002-072	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18268 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18268 consists of APN 6332-002-072, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
19105	5243-029-023	4651 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19105 as Business Use, owned by Lyman H Johnson Et Al. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19106 consists of APN 5243-029-023. Based on a review of online maps and photographs, Parcel No. 19105 consists of the Ceramic Decorating Company (4651 Sheila St.) located north of Sheila St. and adjacent to the west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Ceramic Decorating Co Inc. in the Los Angeles County HMS, FINDS, HAZNET, and HIST UST databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19106	5243-029-024	4635 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19106 as Business Use, owned by PARKER, JOSEPH AND BERNICE TRS. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19106 consists of APN 5243-029-024. Based on a review of online maps and photographs, Parcel No. 19106 consists of land currently occupied by American Allied Trucking at 4635 Sheila St., adjacent to the north of Sheila St. and west of the I-710. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
81907	5243-029-816	4621 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 81907 as Railroad Use, owned by BNSF RAILWAY COMPANY. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81907 consists of APN 5243-029-816. Based on a review of online maps and photographs, Parcel No. 81907 consists of paved vacant parking lot at 4621 Sheila St., adjacent to the north of Sheila St. and west of the I-710. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19108	5243-029-030	4621 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19108 as Business Use, owned by NEIMAN, WILLIAM L. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19108 consists of APN 5243-029-030. Based on a review of online maps and photographs, Parcel No. 19108 consists of land currently occupied by Columbia Trophy & Metal Products at 4621 Sheila St., adjacent to the north of Sheila St. and west of the I-710. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
81910	5243-029-804	Rail OPS Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 81910 as Railroad Use, owned by UNION PACIFIC RR CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81910 consists of APN 5243-029-804. Based on a review of online maps and photographs, Parcel No. 81910 consists of a strip of land occupied by several businesses that runs parallel in between Sheila St. and Washington Blvd., west of the I-710, and east Ayers Ave. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern. This land parcel is considered high risk.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
81911	5243-029-812	Rail OPS Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 81911 as Railroad Use and owned by UNION PACIFIC RR CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81911 consists of APN 5243-029-812. Based on a review of online maps and photographs, Parcel No. 81911 consists of a strip of land occupied by several businesses that runs parallel in between Sheila St. and Washington Blvd., west of the I-710, and east Ayers Ave. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19112	5243-029-018	4650 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19112 as Business use, owned by Lyman H Johnson. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19112 consists of APN 5243-029-018. Based on review of online maps and photographs, Parcel No. 19112 consists of Auto Dec Inc. (2402 Dennis Ave.) located south of E. Washington Blvd. and adjacent to the west of I-710. This parcel was identified in the EDR Report as USS Bestway Inc. in the HAZNET database. Based on the lack of violations and/or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area.
19113	5243-029-019	4646 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19113 as Business Use, owned by Kenneth W Busch Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19113 consists of APN 5243-029-019. Based on review of online maps and photographs, Parcel No. 19113 consists of Rodger's Trucking & Equipment Repair (4646 E. Washington Blvd.) located south of E. Washington Blvd. and west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Rodger's Trucking and Equipment in the Los Angeles County HMS database. Based on the lack of violations and/or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19114	5243-029-002	4642 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19114 as Business Use, owned by Larry Patapoff. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19114 consists of APN 5243-029-002 located south of E. Washington Blvd. and west of I-710. Based on review of online maps and photographs, Parcel No. 19114 composes the western portion of Parcel No. 19113. See Parcel No. 19113 for EDR information. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19115	5243-029-003	4638 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19115 as Business Use, owned by Kenneth W Busch Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19115 consists of APN 5243-029-003. Based on review of online maps and photographs, Parcel No. 19115 consists of RDD USA (4638 E. Washington Blvd.) located south of E. Washington Blvd. and west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as KW Busch Electric in the HAZNET database. Based on the lack of violations and/or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19116	5243-029-020	2414 Connor Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19116 as Business Use, owned by David M Throgmorton. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19116 consists of APN 5243-029-003. Based on review of online maps and photographs, Parcel No. 19116 consists of Throgmorton's Frame Clinic (2414 Conner Ave.) located east of Conner Ave., south of E. Washington Blvd., west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Certified Coatings Prod Co in the RCRA-SQG, FINDS, Los Angeles County HMS, EMI, CA FID UST, SLIC, LUST, UST,HIST UST, HIST CORETESE, and SWEEPS UST databases; and as Throgmortons Frame Clinic in the Los Angeles County HMS and HAZNET databases. According to the GeoTracker database, two cases are associated with this parcel. Certified Coatings Products is listed with a status of "Completed-case closed" as of June 27, 1991, for a release of acetone to soil. Throgmorton's Frame Clinic is listed with a status of "open-inactive" as of January 29, 2015. A Phase II Environmental Assessment Report dated May 2008 indicated that fifteen (15) soil borings were advanced on-site to delineate the extent of soil contamination resulting from

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				existing USTs. The report concluded that petroleum hydrocarbon and VOC contamination is generally located between 20 and 105 feet bgs. The consultant then recommended that all existing USTs be removed, and all residual contamination be treated by vapor extraction. No additional information was available on the GeoTracker website. Based on the regulatory status, this listing has the potential to create an environmental concern to the ISA Study Area and a file review is recommended.
19117	5243-029-004	4630 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19117 as Business Use, owned by Kenneth W Busch Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19117 consists of APN 5243-029-004. Based on review of online maps and photographs, Parcel No. 19117 consists of a commercial property (4630 E. Washington Blvd.) located at the southeast corner of Connor Ave. and E. Washington Blvd., west of I-710. No EDR listings were identified associated with this address. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19118	5243-029-021	2415 Conner Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19118 as Business Use, owned by Criterion Enterprises. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19118 consists of APN 5243-029-021. Based on review of online maps and photographs, Parcel No. 19118 consists of a vacant commercial property (2415 Connor Ave.) located west of Connor Ave. and south of E. Washington Blvd., west of I-710. No EDR listings were identified associated with this address. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19119	5243-029-007	4614 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19119 as Business Use, owned by Criterion Enterprises. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19119 consists of APN 5243-029-007. Based on review of online maps and photographs, Parcel No. 19119 consists of Pacific Signs & Supplies (4618 E. Washington Blvd.) located at the southwest corner of the intersection of E. Washington Blvd. and Connor Ave., west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Criterion Gates and Mfg Co in the Los Angeles HMS database. Based on the lack of violations and/or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19120	5243-029-008	4614 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19120 as Business Use, owned by Criterion Enterprises. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19120 consists of APN 5243-029-007. Based on review of online maps and photographs, Parcel No. 19120 consists of Universal Neon Plus (4614 E. Washington Blvd.) located south of E. Washington Blvd., west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Criterion Gate in the UST database; as Criterion Products Inc. in the HAZNET, EMI, and FINDS databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19121	5243-029-009	4600 Washington Blvd. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19121 as Business Use, owned by4600 Washington LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19121 consists of APN 5243-029-009. Based on review of online maps and photographs, Parcel No. 19121 consists of J R's Tire Service (4600 E. Washington Blvd.) located south of E. Washington Blvd., west of I-710.This parcel was identified in the EDR Report (EDR ID No.214) as 4600 Super Service in the SWEEPS UST, CA FID UST, Los Angeles County HMS, LUST, HIST CORTESE, HIST UST databases; as 1xHarrison Gas & Oil in the HAZNET database. According to the GeoTracker database, this site is listed with a status of "Completed-case closed" as of October 21, 2009, for a release of gasoline to an aquifer used for drinking water supply. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
19122	5243-026-024	4560 Washington Blvd. Commerce, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 19122 as Business Use, owned by Ron M Sarake Et Al Lessee. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19122 consists of APN 5243-026-024. Based on review of online maps and photographs, Parcel No. 19122 consists of Commerce Truck Stop (4650 E. Washington Blvd.) located south of E. Washington Blvd., east of Ayers Ave., west of I-710.This parcel was identified in the EDR Report (EDR ID No.214) as Commerce Truck Stop in the Los Angeles County HMS, LUST, UST, and HAZNET databases. According to the GeoTracker database, this site is listed with a status of "Completed-case closed" as of

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				February 6, 2012 for a release of gasoline to other groundwater. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
19123	5243-004-011	4546 Washington Blvd. Commerce, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 19123 as Business Use, owned by Aron Laufer. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19123 consists of APN 5243-004-011. Based on review of online maps and photographs, Parcel No. 19123 consists of Quality Diesel Parts (4648 E. Washington Blvd.) located south of E. Washington Blvd., west of Ayers Ave., west of I-710. No EDR listings were identified associated with this address.
19234	5244-033-018	4815 Sheila St. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19234 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19234 consists of APN 5224-033-018. Based on review of online maps and photographs, Parcel No. 19234 consists of Best Premium Logistics Inc. facility (4817 Sheila St.). According to the ENVIROSTOR database, Gatwick Group LLC owns 19 buildings in the area that are under investigation for historical uses. In 2014, DTSC entered into a VCP with Gatwick Group to oversee investigation and any cleanup work. To date, the sites have gone through soil matrix, soil vapor and groundwater remedial investigation. The properties owned By Gatwick Group are located in area bounded by Atlantic Ave., Sheila St., Washington Blvd., and I-710 and include the addresses 4720, 4814, 4900, 4920, 5010-5020 WASHINGTON BLVD., 2451 HEPWORTH AVE., 4817, 4915 SHEILA ST., and 2448 COUTES AVE. Based on this information, this site is considered to represent an environmental concern to the proposed I-710 Corridor Project. Other parcels associated with Gatwick Group include Parcel Nos. 19235, 19242-19244, and 19246-19248.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19235	5244-033-019	4801 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19235 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19235 consists of APN 5224-033-019. Based on review of online maps and photographs, Parcel No. 19235 consists of western portion of Parcel No. 19234, which is one of the parcels owned by Gatwick Group under DTSC investigation. See Parcel No. 19234 for additional information.
19242	5244-033-013	4900 Washington Blvd. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19242 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19242 consists of APN 5244-033-013. Based on review of online maps and photographs, Parcel No. 19242 consists of Continental Chemical (4920 E. Washington Blvd.) and a vacant commercial building (4900 E. Washington Blvd.) located south of E. Washington Blvd., between Ransom St. and Couts Ave., east of I-710. This parcel is listed in the EDR Report (EDR ID No. 214) as HJB Inc. DBA Continental Chemical in the FINDS, EMI, Los Angeles County HMS, FTTS, and HAZNET databases; and as DK Cabel in the SWEEPS UST and Los Angeles County HMS databases. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19243	5244-033-002	4814 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19243 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19243 consists of APN 5244-033-002. Based on review of online maps and photographs, Parcel No. 19243 consists of Nikko Marketing Association (4814 E. Washington Blvd.) located south of E. Washington Blvd. and west of Ransom St., east of I-710. This parcel is listed in the EDR Report (EDR ID No. 214) as Zauss Trucking Company in the SWEEPS UST and Los Angeles County HMS databases; and as Fast Deer Bus Charter in the HAZNET database. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19244	5244-033-003	4814 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19244 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19244 consists of APN 5244-033-003. Based on review of online maps and photographs, Parcel No. 19244 consists of the western portion of Parcel No. 19244 located south of E. Washington Blvd. and west of Ransom St., east of I-710. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19245	5244-033-900	4800 Washington Blvd. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19245 as Business Use, owned by the Agency of Redevelopment. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19245 consists of APN 5244-033-900. Based on review of online maps and photographs, Parcel No. 19245 consists of a vacant parcel of land located at the southeast corner of Hepworth Ave. and E. Washington Blvd. and west of Ransom St., east of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Triangle Cold in the RCRA-SQG, FINDS, and the Los Angeles County HMS databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19246	5244-033-016	2451 Hepworth Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19246 as Business use owned by the Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19246 consists of APN 5244-033-016. Based on review of online maps and photographs, Parcel No. 19246 consists of a commercial property that appears to be associated with Parcel No. 19247, located west of Hepworth Ave. and east of I-710. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19247	5244-033-007	4720 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19247 as Business use owned by the Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19247 consists of APN 5244-033-007. Based on review of online maps and photographs, Parcel No. 19247 consists of the Dura Flooring facility (4720 E. Washington Blvd.) located south of E. Washington Blvd., east of I-710 and west of Hepworth Ave. This parcel was identified in the EDR Report (EDR ID No.214) by street address in the CDL database; and as Kraloy Plastic Pipe Co. in the Los Angeles County HMS

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				database. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19248	5244-033-008	4720 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19248 as Business use owned by the Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19248 consists of APN 5244-033-008. Based on review of online maps and photographs, Parcel No. 19248 consists of the western portion of Parcel No. 19247. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19349	5244-032-900	Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19349 as Business Use, owned by the Agency of Redevelopment. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19349 consists of APN 5244-032-900. Based on review of online maps and photographs, Parcel No. 19349 consists of a vacant parcel of land located in the northwest corner of E. Washington Blvd. and Couts Ave., east of I-710. No EDR listings were identified in this area.
19350	5244-032-901	Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19350 as Business Use, owned by the Agency of Redevelopment. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19350 consists of APN 5244-032-901. Based on review of online maps and photographs, Parcel No. 19350 consists of a vacant parcel of land located in the northwest corner of E. Washington Blvd. and Couts Ave., east of I-710. No EDR listings were identified in this area.
19351	5244-032-902	4909 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19351 as Business Use, owned by the Commission of Community Development. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19351 consists of APN 5244-032-902. Based on review of online maps and photographs, Parcel No. 19351 consists of Advanced Welder Repair (4903 E. Washington Blvd.) and Cal-Best Portable Welder Repair Inc. (4909 E. Washington Blvd.) located north of E. Washington Blvd. and east of Ransom St., east of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Advanced Welder Repair in the EMI database; as Cal-Best Portable Welder Repair Inc. in the

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				HAZNET database. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19352	5244-032-029	4821 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19352 as Business Use, owned by David and Julia Shuken Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19352 consists of APN 5244-032-029. Based on review of online maps and photographs, Parcel No. 19352 consists of a vacant commercial building (4821 E. Washington Blvd.) located north of E. Washington Blvd. and west of Ransom St., east of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as B&O Body Paint Shop in the EMI database; as Jensan Body Paint Shop in the HAZNET database. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19353	5244-032-030	4809 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19353 as Business Use, owned by Arturo and Maria E Montano. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19353 consists of APN 5244-032-030. Based on review of online maps and photographs, Parcel No. 19353 consists of El Relampago (4809 E. Washington Blvd.) located north of E. Washington Blvd. and east of Hepworth Ave., east of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Maria Esther Montano in the Los Angeles County HMS database; as Tune-up Masters in the Los Angeles County HMS database; as Montano Auto Center in the Los Angeles County HMS database. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19459	5243-028-001	4645 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19459 as Business Use, owned by James H and Lucy L Hiland Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19459 consists of APN 5243-028-001. Based on review of online maps and photographs, Parcel No. 19459 consists of US Roofing Supply (4647 E. Washington Blvd.) located north of E. Washington Blvd. and adjacent to the west of I-710. No EDR listings were identified associated with this address.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19460	5243-027-001	4615 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19460 as Business Use, owned by Jesus and Nancy M Ocegueda Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19460 consists of APN 5243-027-001. Based on review of online maps and photographs, Parcel No. 19460 consists of a paved parking lot associated with Parcel No. 19461 located north of E. Washington Blvd. and adjacent to the west of the E. Washington Blvd. off-ramp of I-710. No EDR listings were identified associated with this address.
19461	5243-027-025	4615 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19461 as Business Use, owned by Jesus and Nancy M Ocegueda Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19461 consists of APN 5243-027-025. Based on review of online maps and photographs, Parcel No. 19461 consists of Magic Truck Supply/ Chrome Shop (4615 E. Washington Blvd.) located north of E. Washington Blvd. and west of I-710. No EDR listings were identified associated with this address.
19462	5243-027-026	4601 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19462 as Business Use, owned by Dennis and Bonnie Bethel Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19462 consists of APN 5243-027-026. Based on review of online maps and photographs, Parcel No. 19462 consists of Speedo Electric (4601 E. Washington Blvd.) located north of E. Washington Blvd. and west of I-710. No EDR listings were identified associated with this address.
19463	5243-025-030	4575 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19463 as Business Use, owned by Annette Lafranchi Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19463 consists of APN 5243-025-030. Based on review of online maps and photographs, Parcel No. 19463 consists of Commerce Hose & Industrial Product Supply (4575 E. Washington Blvd.) located north of E. Washington Blvd., west of I-710.This parcel was identified in the EDR Report (EDR ID No.214) as WCP Color Graphics Inc. in the HAZNET and Los Angeles County HMS databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19464	5243-025-031	4559 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19464 as Business Use, owned by Annette Lafranchi Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19464 consists of APN 5243-025-031. Based on review of online maps and photographs, Parcel No. 19464 consists of Lift Parts Service Corporation (4559 E. Washington Blvd.) located north of E. Washington Blvd., west of I-710. This parcel was identified in the EDR Report (EDRID No. 214) as Reborn Forklift in the HAZNET database; and as James P Kinney Co in the HAZNET database. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19465	5243-024-903	4545 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19465 as Business Use, owned by Suzanne R Mahoney Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19465 consists of APN 5243-024-903. Based on review of online maps and photographs, Parcel No. 19465 consists of Drake Supply (4545 E. Washington Blvd.) located north of E. Washington Blvd. and east of Ayers Ave., west of I-710. This parcel was identified in the EDR Report (EDR ID No. 214) as Well Color Pres Inc. in the RCRA-SQG and FINDS databases; as Colorex Lithographers in Los Angeles County HMS database; and as Service Gas Oil Company in the EDR Historical Auto Station database for the year 1942. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
81966	5243-001-812	Rail OPS Commerce, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 81966 as Railroad Use, owned by Union Pac RR Co. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 81966 consists of APN 5243-001-812. Based on a review of online maps and photographs, Parcel No. 81966 consists of railroad tracks within the Union Pacific East Los Angeles rail yard located west of I-710. No EDR listings were identified in this area.
19489	5241-030-011	1549 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19489 as Business Use, owned by Emigdio Gamboa Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19489 consists of APN 5241-030-011. Based on a review of online maps and photographs, Parcel No. 19489 consists of the Universal Lift

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				Gate Service (1549 S. Sydney Dr.) located west of S. Sydney Dr., west of I-710.This parcel was identified in the EDR Report (EDR ID No. 170) as Yaky Welding Shop in the EMI database; as Universal Liftgte Service in the HAZNET database. Based on the lack of violations and/or listings in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19490	5241-030-012	1545 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19490 as Business Use, owned by Jesus C and Blanca L Barraza. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19490 consists of APN 5241-030-012. Based on a review of online maps and photographs, Parcel No. 19490 consists of Barraza & Sons (1545 S. Sydney Dr.) located west of S. Sydney Dr., west of I-710. This parcel was identified in the EDR Report (EDR ID No.170) as Barraza & Sons Inc. in the HAZNET, HAULERS, and FINDS databases. Based on the lack of violations and/or listings in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19491	5241-030-024	1538 Eastern Ave. City of Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19491 as Business Use (unknown owner). A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19491 consists of APN 5241-030-024. Based on a review of online maps and photographs, Parcel No. 19491 consists of the Remco Wholesale Hardware Co. (1538 S. Eastern Ave.) located east of S. Eastern Ave., west of I-710. This parcel was identified in the EDR Report (EDR ID No. 170) as Gobe of California in the Los Angeles County HMS database. Based on the lack of violations and/or listings in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19492	5241-030-014	1535 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 19492 as Residential Use (1535 S. Sydney Dr.). A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps revealed that Parcel No. 19492 consists of APN 5241-030-014. Based on a review of online maps and photographs, Parcel No. 19492 consists of a residential structure located west of S. Sydney Dr., west of I-710. No EDR listings were identified associated with this address.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19493	5241-030-015	1531 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19493 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19493 consists of APN 5241-030-015. Based on a review of online maps and photographs, Parcel No. 19493 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19493 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19494	5241-030-016	1527 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19494 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19494 consists of APN 5241-030-016. Based on a review of online maps and photographs, Parcel No. 19494 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19494 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19495	5241-030-017	1525 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19495 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19495 consists of APN 5241-030-017. Based on a review of online maps and photographs, Parcel No. 19495 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19495 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19496	5241-030-018	1517 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19496 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19496 consists of APN 5241-030-018. Based on a review of online maps and photographs, Parcel No. 19496 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19496 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19497	5241-030-025	Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19497 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19497 consists of APN 5241-030-025. Based on a review of online maps and photographs, Parcel No. 19497 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19497 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19498	5241-030-026	1511 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19498 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19498 consists of APN 5241-030-026. Based on a review of online maps and photographs, Parcel No. 19498 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19498 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19499	5241-030-021	1507 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19499 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19499 consists of APN 5241-030-021. Based on a review of online maps and photographs, Parcel No. 19499 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19499 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19501	5241-030-006	1528 Eastern Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19501 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19501 consists of APN 5241-030-021. Based on a review of online maps and photographs, Parcel No. 19501 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19501 is located east of S. Eastern Ave., west of I-710. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19502	5241-030-005	1522 Eastern Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19502 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19502 consists of APN 5241-030-005. Based on a review of online maps and photographs, Parcel No. 19502 is developed with a residential structure associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19502 is located east of S. Eastern Ave., west of I-710. No EDR listings were identified associated with this address.
19516	5241-013-018	45 Triggs St. Commerce, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 19503 as Residential Use (1459 S. Sydney Dr.). A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps revealed that Parcel No. 09503 consists of APN 5241-029-001. Based on a review of online maps and photographs, Parcel No. 09503 consists of a residential structure located west of S. Sydney Dr., west of I-710. No EDR listings were identified associated with this address.
19517	5241-013-019	1350 Eastern Ave. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19517 as Business Use, owned by LOS JARDINES LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19517 consists of APN 5241-013-019. Based on review of online maps and photographs, Parcel No. 19517 consists of a strip of vacant land (1350 S. Eastern Ave.) located adjacent to the south of the I-5 and I-710 interchange and a portion of the I-5 South to I-710 South ramp. A review of the EDR Report identified Specific Plating Co. Inc. (1350 S. Eastern Ave.) (EDR ID No. 161) in the RCRA-SQG, CA HIST UST, CA VCP, CA ENVIROSTOR, CA UST, CA SWEEPS UST, CA LOS ANGELES CO. HMS, and CA EMI databases. According the online GeoTracker database, the CA VCP status is listed as "ACTIVE AS OF December 12, 2013." The site was occupied by Specific Plating, an electroplating company from the 1960s. In February 2012, DTSC conducted soil and soil gas sampling at the site as part of a discovery project. Sampling data indicated elevated levels of volatile organic compounds (PCE and TCE). DTSC determined that additional sampling and remediation is required at this Site. The site is undergoing litigation currently to identify the legal owner, causing a delay in evaluation and cleanup of the site. Based on the active regulatory status and on-going investigations, this site is considered to represent an environmental concern to the proposed I-710 Corridor Project.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19520	-	Read Site Listing	Full	The Right-of-Way Impact Report identified Parcel No. 19520 as Business Use, owned by STATE OF CALIFORNIA. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19520 consists of unknown APN. Based on review of online maps and photographs, Parcel No. 19520 consists of land currently occupied by multiple businesses (4711-4727 E. Washington Blvd.) located south of Hepworth Ave. and adjacent to the east of I-710. No EDR listings were identified in this area. See Parcel No. 19517 for an EDR discussion of nearby potential environmental concerns.
18106	6304-030-002	Los Angeles, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18106 as Business use, owned by FedEx National LTL INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18106 consists of APN 6304-030-002. Based on review of online maps and photographs, Parcel No. 18106 composes the western portion of the FedEx Freight facility (Parcel No. 18107-4500 Bandini Blvd.). EDR listings associated with this parcel are discussed in Parcel No. 18107.
18107	6304-030-001	3939 S Atlantic Blvd. Los Angeles, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18107 as Business use, owned by FedEx National LTL INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18106 consists of APN 6304-030-002. Based on review of online maps and photographs, Parcel No. 18107 consists of the FedEx Freight facility (4500 Bandini Blvd.) located north of S. Atlantic Blvd., west of I-710. This parcel was identified in the EDR Report (EDR ID No. 311) as 4500 Bandini Blvd. in the CHMIRS database; as FedEx Freight Inc. in the RCRA-SQG, WDS, SWEEPS UST, NPDES, HIST CORTESE, and LUST databases; as Watkins Motor Lines, Inc. in the LUST and FINDS databases. According to GeoTracker, the facility is listed with a status of “Completed-case closed” as of September 1, 1999, for a release of gasoline to soil. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01310	7271-007-004	-	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 01310 as Business Use. A review of the I-710 EIR/EIS ROW Exhibit – Alternative 5C Maps revealed that Parcel No. 01310 consists of a portion of APN 7271-007-005 along Anaheim St. Based on a review of online maps and photographs, APN 7271-007-005 is occupied by Petros Tubular Services Inc. (929 W. Anaheim St.) for use as a storage yard. The 929 W. Anaheim St. address was not identified in the EDR Report. The online GeoTracker database indicates that the address 901 W. Anaheim St. is also associated with parcel, which is identified as Long Beach City Tow Yard (EDR ID No. 3265) in the LUST database with a Closed Case status as of July 6, 2011. Based on the closed case status, available soil and groundwater data, removal of the source (UST), location of the release on the property (north end), and groundwater flow direction (ESE), this release is not expected to represent an environmental concern to the ISA Study Area.
01438	7432-020-033	1243 W Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identified Parcel No. 01438 as Business use owned by Neil Properties LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 5C Maps and County Assessor website revealed that Parcel No. 01438 consists of APN 7432-020-033. Based on a review of online maps and photographs, Parcel No. 01438 consists of a property occupied by a Neill Aircraft Co. (1243 W. Cowles St.) located west of I-710. This parcel was identified in the EDR Report (EDR ID No. 3141) as Speedy Fuel Inc. and Delta Auto Service Inc. in the Historical Auto Stations database for the years 2004-2012; as Micor Energy LLC in the HIST CORTESE and UST databases; as Delta Auto Service Inc. in the HAZNET database; as Speedy Fuel in the HAZNET database. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
01440	7432-020-025	1248 W 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01440 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01440 consists of APN 7432-020-025. Based on a review of online maps and photographs, Parcel No. 01440 consists of consists of a property occupied by Neill Aircraft Co. (1248 W 15th St.). No EDR listings were identified associated with this portion of the Neill Aircraft property.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01439	7432-020-026	1260 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01439 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01439 consists of APN 7432-020-026. Based on a review of online maps and photographs, Parcel No. 01439 consists of a property occupied by Neill Aircraft Co. (1260 W 15th St.). No EDR listings were identified associated with this address.
01441	7432-021-004	1241 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01441 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 5C Maps revealed that Parcel No. 01441 consists of APN 7432-021-004. Based on a review of online maps and photographs, Parcel No. 01441 consists of a property occupied by Neill Aircraft Co. (1241 W 15th St.). No EDR listings were identified associated with this portion of the Neill Aircraft property.
70149	-	-	Full	The Right-of-Way Impact Report identifies Parcel No. 70149 as Business Use owned by Tidelands Oil Production Company. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 70149 consists of approximately 6.7112 acres of land within the existing right-of-way (no APN is associated with this area), east of I-710 between Anaheim St. and PCH. According to a review of online database, multiple active oil wells and petroleum pipelines are located in this area. This area was identified in the EDR Report as Public Service Transfer Station No. 1 (EDR ID No. 30-3240) in the CA SWF/LF database, which is discussed in detail. Reportedly, the City of Long Beach has an active limited volume transfer operation for green materials at this location. Based on the materials processed, frequent inspections and lack of reported violations or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area. However, the oil production use and petroleum pipelines on this parcel of land are considered to represent an environmental concern to the ISA Study Area.
40415	7203-001-901	Los Angeles River Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 40415 as Flood Control Use. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 40415 consists of APN 7203-001-900. Based on a review of online maps and photographs, Parcel No. 40415 consists of a segment of the Los Angeles River, adjacent to the east of I-710, between W. 34th St. to the south and I-405 to the north. No EDR listings were identified in this area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
41434	6233-028-026	Los Angeles River South Gate, CA	Full	The Right-of-Way Impact Report identified Parcel No. 41434 as Flood Control Use owned by the State of California. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 41434 consists of APN 6233-028-026. Based on a review of online maps and photographs, Parcel No. 41434 consists of a vacant strip of land indicative of a subsurface pipeline. This parcel is located between I-710 and the Los Angeles River, north of Imperial Hwy. No EDR listings were identified in this area.
15110	6222-001-013	South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15110 as Business Use, owned by CHEVRON USA INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15110 consists of APN 6222-001-013. Based on a review of online maps and photographs, Parcel No. 15110 consists of a segment of land adjacent to the north of Southern Ave., west of the Los Angeles River, and east of Burtis St. No EDR listings were identified in this area.
16105	6226-005-011	Florence Ave. Bell, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 16105 as Residential Use, owned by Chevron USA Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 16105 consists of APN 6226-005-011. Based on a review of online maps and photographs, Parcel No. 16105 consists of a portion of a road located within the Florence Village Mobile Home Park, adjacent to the west of the Los Angeles River, West of I-710. No EDR listings were identified in this area.
18329	6332-002-078	5553 Bandini Blvd. Bell, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18329 as Business use, owned by Bandini XC LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18329 consists of APN 6332-002-078. Based on review of online maps and photographs, Parcel No. 18329 consists of a paved parking area associated with the California Post office (27 Yeager Way) located east of I-710 and north of Bandini Blvd. This parcel was identified in the EDR Report (EDR ID No.364) as US Postal Service LA East Bell in the NPDES and WDS databases; as US Postal Service East Garage in the UST, HAZNET, and Los Angeles County HMS databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.

Table 3.12-1: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 5C

Appendix P-1 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18330	6332-002-077	5553 Bandini Blvd. Bell, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18330 as Business use, owned by Bandini XC LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 18330 consists of APN 6332-002-077. Based on review of online maps and photographs, Parcel No. 18330 consists of a paved parking area associated with the California Post office (27 Yeager Way). See Parcel No. 18329 for EDR information.

Source: *Initial Site Assessment* (February 2017).

[1] These are the addresses that were identified by the Los Angeles County Office of the Assessor for each Assessor's Site Number. Website: http://assessor.lacounty.gov/extranet/DataMaps/pais.aspx

[2] State Water Resources Control Board GeoTracker database. Website: http://www.geotracker.swrcb.ca.gov/

[3] CalRecycle, SWIS. Website: http://www.calrecycle.ca.gov/SWFacilities/Directory/.

[4] California DTSC ENVIROSTOR database. Website: http://www.envirostor.dtsc.ca.gov/public/

Refer to the following page for acronym definitions.

Acronym definitions for Table 3.12-1:

AFS = Air Force Station
APN = Assessor's Parcel Number
AST = aboveground storage tank
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, and xylenes
CA FID = California Facility Inventory Database
CA LUST =California leaking underground storage tank
CA WDS = California Waste Discharge System Database
CalRecycle = California Department of Resources Recycling and Recovery
Caltrans = California Department of Transportation
CCR = California Code of Regulations
CERC-NFRAP = CERCLIS No Further Remedial Action Planned List
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System
CHMIRS = California Hazardous Material Incident Reporting System
Cortese = California Environmental Protection Agency Hazardous Waste and Substances Sites (List)
DCE = dichloroethene
DHS = Department of Health Services
DTSC = Department of Toxic Substances Control
EDR = Environmental Data Record
EMI = Emission Inventory Data
EPA = Environmental Protection Agency
EPS = Engineered Polymer Solutions Inc.
FINDS = Facility Index Systems
GSA = General Services Administration
HAZNET = Hazardous Waste Manifests System
HIST-UST = historical underground storage tank
HMIRS = Hazardous Materials Information Resource System
HMS = Health Management Systems
I-405 = Interstate 405
I-710 = Interstate 710
ISA = Initial Site Assessment
LADWP = Los Angeles Department of Water and Power
LAUSD = Los Angeles Unified School District
LBDHHS = City of Long Beach, Department of Health and Human Services
LUST = leaking underground storage tank
µg/L = micrograms per liter
MEK = methyl ethyl ketone
Metro = Los Angeles County Metropolitan Transportation Authority
MTBE = methyl tertiary-butyl ether
OOI = Oil Operators, Inc.
PAH = polycyclic aromatic hydrocarbon
PCE = tetrachloroethylene
RCRA-SQG = Resource Conservation and Recovery Act Small-Quantity Generator Database
RGA LUST = Recovered Government Archive Leaking Underground Storage Tank
RWQCB = Regional Water Quality Control Board
SCE = Southern California Edison
SLIC = SWRCB Spills, Leaks, Investigations, and Cleanups
SWAT = Solid Waste Assessment Test
SWEEPS = Statewide Environmental Evaluation and Planning System
SWF/LF = Solid Waste Facility/Landfill
SWIS = Solid Waste Information System
SWMU = Solid Waste Management Unit
TBA = tertiary butyl alcohol
TCE = trichloroethylene
TPH = total petroleum hydrocarbons
TPHg = total petroleum hydrocarbons gasoline
TRIS = Toxic Release Inventory System
USPS = United States Postal Service
UST = underground storage tank
VCP = Voluntary Cleanup Program
VOC = volatile organic compounds
WDS = Waste Discharge System
WMDUS = State Waste Management Unit Database System

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
81553	622-703-4802	Rail Ops Cudahy, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81553 as Railroad Use, owned by SOU PAC CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 81553 consists of APN 6227-034-802. Based on a review of online maps and photographs, Parcel No. 81553 consists of a segment of land adjacent to the north of the Southern Pacific Railroad, east of the I-710, and parallel to south of Shull St. See Parcel No. 81552 for an EDR discussion of potential environmental concerns.
81552	623-200-2800	Rail Ops Cudahy, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81552 as Railroad Use, owned by SOU PAC TRANS CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 81552 consists of APN 6232-002-800. Based on a review of online maps and photographs, Parcel No. 81552 consists of a segment of Southern Pacific Railroad, perpendicular to the east of the I-710 and parallel to south of Shull St. An adjacent property at 5614 Shull St. was identified in the EDR Report as Bell Gardens Redevelopment Department (EDR ID No. 837) in the CA HIST UST database; as City of Bell Gardens (Berk Oil) (EDR ID No. 837) in the CA LOS ANGELES CO. HMS, FINDS, and US BROWNFIELDS databases; as Berk Oil (EDR ID No. 837) in the CA HIST CORTESE, CA LUST, CA SLIC, and CA ENVIROSTOR databases. According to the online GeoTracker database, Berk Oil is listed as “Open - Site Assessment as of October 19, 2015.” The site is currently owned by the City of Bell Garden and resides in one their redevelopment areas. The site is a 4.33-acre parcel that consisted of two former industrial facilities: Berk Oil and PMC. The Berk Oil facility which operated from 1965 through 1989 mainly as an asphalt mixing and oil distribution facility. The PMC was located on the eastern half and operated from 1953 through 1996 as a metal and fabrication facility. Environmental site investigations began in 1985 and included soil borings to a maximum of 80 feet bgs, groundwater sampling using hydropunch and installation of eight monitoring wells. In 1989, six underground storage tanks for asphalt, diesel, and waste oil were removed from the site. Analytical results confirmed that both soil and groundwater are

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				impacted with petroleum hydrocarbons, metals, and volatile organic chemicals (VOCs). During investigations in 2010, groundwater was encountered in two saturated zones at 20 feet and 60 feet bgs. The groundwater flow of the shallower zone was toward the southwest and the deeper zone flows to the south. As of January 2015, due to financial hardship, the City of Bell Garden is still looking for potential developers to handle the investigations and cleanup of the site. No further information was available on the GeoTracker database. Therefore, based on the groundwater flow direction and impacts to groundwater and soil, this property presents a potential environmental concern to the proposed I-710 Corridor Project.
51518	6222-001-801	Long Beach Fwy and Firestone Blvd. South Gate, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 51518 as Utility Use, owned by SO CALIF EDISON CO . Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 51518 consists of APN 6222-001-801. Based on a review of online maps and photographs, Parcel No. 51518 consists of a segment of land east of the Los Angeles River, west of I-710 on-ramp from Firestone Blvd., and north of Southern Ave. According to the online SWIS database, Caltrans South Gate (SWIS No. 19-AA-5067) is located north of Firestone Blvd. between I-710 and the Los Angeles River. However, the database also states that the parcel number for this facility was confirmed in 2014 to be 6222-001-801 which is located south of Firestone Blvd. This facility was not identified in the EDR Report. The online SWIS database reports that this facility is a closed solid waste disposal site (formerly operated by the State of California) and the regulatory status is listed as “pre-regulations.” This land is currently owned by SCE for use as a utility corridor and annual inspections are performed by the County of Los Angeles. The most recent inspection was completed on February 5, 2016 and no violations or area of concern were reported. The inspection report indicates that the site was inaccessible due to perimeter fence and locked gates at the time of the inspection. A 2009 inspection report identifies SWIS No. 19-AA-5067 as “Caltrans, South Gate No. 1” located at 5212 E. Imperial Hwy., southeast of the NB I-710 off-ramp and north of Imperial Hwy; however, no sites were identified at this location in the mapping feature in the online SWIS database. The 2007 and 2008 inspection

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				reports indicate that Caltrans, South Gate No. 1 was a formerly a landfill for street and highway sweepings that operated from 1955 until 1972 and at the time of the inspections was an unpaved dirt land used as a nursery and composting site. No design improvements are proposed in this area as it will only be used for a temporary construction easement and therefore this former solid waste disposal site is not expected to have created an environmental concern to the proposed I-710 Corridor Project.
81901	5243-013-802	Commerce, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81901 as Railroad Use, owned by A T AND S F RY CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 81901 consists of APN 5243-013-802. Based on a review of online maps and photographs, Parcel No. 81901 consists of a portion of the BNSF Hobart Yard located adjacent to the west of the I-710 and north of 26th St. Several listings was identified in the EDR Report as 4650 East 26th S., Lot 11, Row 11, Spot 420 (EDR ID No. 296) in the CA CHMIRS database; as Agrashell Inc. (EDR ID No. 296) in the CA HIST UST, CA SWEEPS UST, FINDS, and CA EMI databases; and as 4650 E. 26th St. (EDR ID No. 296) in the ERNS database. Based on the lack of listing in other databases indicating violations and/or a release, this listing is not expected to have created an environmental concern to the ISA Study Area.
81902	5243-013-800	Commerce, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81902 as Railroad Use, owned by A T&S F RY CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 81902 consists of APN 5243-013-800. Based on a review of online maps and photographs, Parcel No. 81902 consists of a segment of railroad adjacent to the west of the I-710 and north of 26th St. Adjacent to the northwest of this parcel is the BNSF Hobart Yard. See Parcel No. 81901 for a discussion on nearby EDR listings.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
81903	5243-013-803	Commerce, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81903 as Railroad Use, owned by A T&S F RY CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 81903 consists of APN 5243-014-803. Based on a review of online maps and photographs, Parcel No. 81903 consists of a segment of railroad adjacent to the west of the I-710 and north of 26th St. Adjacent to the west of this parcel is the BNSF Hobart Yard. See Parcel No. 81901 for a discussion on nearby EDR listings.
81904	5243-013-807	Commerce, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 81904 as Railroad Use, owned by FORD MOTOR CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 81904 consists of APN 5243-014-807. Based on a review of online maps and photographs, Parcel No. 81904 consists of a segment of railroad underneath the I-710 and adjacent to the south of Sheila St. West of this parcel is the BNSF Hobart Yard. See Parcel No. 81901 for a discussion on nearby EDR listings.
19501	5241-030-006	1528 Eastern Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19501 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19501 consists of APN 5241-030-021. Based on a review of online maps and photographs, Parcel No. 19501 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19501 is located east of S. Eastern Ave., west of I-710. No EDR listings were identified in this area.
19502	5241-030-005	1522 Eastern Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19502 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19502 consists of APN 5241-030-005. Based on a review of online maps and photographs, Parcel No. 19502 is developed with a residential structure associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19502 is located east of S. Eastern Ave., west of I-710. No EDR listings were identified associated with this address.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18259	6332-002-063	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18259 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18259 consists of APN 6332-002-063, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18260	6332-002-064	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18260 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18260 consists of APN 6332-002-064, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18261	6332-002-065	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18261 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18261 consists of APN 6332-002-065, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18262	6332-002-066	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18262 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18262 consists of APN 6332-002-066, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18263	6332-002-067	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18263 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18263 consists of APN 6332-002-067, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18264	6332-002-068	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18264 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18264 consists of APN 6332-002-068, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18265	6332-002-069	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18265 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18265 consists of APN 6332-002-069, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18266	6332-002-070	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18266 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18266 consists of APN 6332-002-070, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18267	6332-002-071	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18267 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18267 consists of APN 6332-002-071, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18268	6332-002-072	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18268 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 18268 consists of APN 6332-002-072, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
19113	5243-029-019	4646 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19113 as Business Use, owned by Kenneth W Busch Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19113 consists of APN 5243-029-019. Review of online maps and photographs, Parcel No. 19113 consists of Rodger's Trucking & Equipment Repair (4646 E. Washington Blvd.) located south of E. Washington Blvd. and west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Rodger's Trucking and Equipment in the Los Angeles County HMS database. Based on the lack of violations and/or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area. See Parcel No. 19116 for

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				a discussion on nearby EDR listings of potential environmental concern.
19114	5243-029-002	4642 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19114 as Business Use, owned by Larry Patapoff. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19114 consists of APN 5243-029-002 located south of E. Washington Blvd. and west of I-710. Based on review of online maps and photographs, Parcel No. 19114 composes the western portion of Parcel No. 19113. See Parcel No. 19113 for EDR information. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19115	5243-029-003	4638 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19115 as Business Use, owned by Kenneth W Busch Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19115 consists of APN 5243-029-003. Based on review of online maps and photographs, Parcel No. 19115 consists of RDD USA (4638 E. Washington Blvd.) located south of E. Washington Blvd. and west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as KW Busch Electric in the HAZNET database. Based on the lack of violations and/or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19116	5243-029-020	2414 Connor Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19116 as Business Use, owned by David M Throgmorton. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19116 consists of APN 5243-029-003. Based on review of online maps and photographs, Parcel No. 19116 consists of Throgmorton's Frame Clinic (2414 Conner Ave.) located east of Conner Ave., south of E. Washington Blvd., west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Certified Coatings Prod Co in the RCRA-SQG, FINDS, Los Angeles County HMS, EMI, CA FID UST, SLIC, LUST, UST, HIST UST, HIST CORETESE, and SWEEPS UST databases; and as Throgmortons Frame Clinic in the Los Angeles County HMS and HAZNET

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				databases. According to the GeoTracker database, two cases are associated with this parcel. Certified Coatings Products is listed with a status of "Completed-case closed" as of Jun3 27, 1991 for a release of acetone to soil. Throgmorton's Frame Clinic is listed with a status of "open-inactive" as of January 29, 2015. A Phase II Environmental Assessment Report dated May 2008 indicated that fifteen (15) soil borings were advanced on-site to delineate the extent of soil contamination resulting from existing USTs. The report concluded that petroleum hydrocarbon and VOC contamination is generally located between 20 and 105 feet bgs. The consultant then recommended that all existing USTs be removed, and all residual contamination be treated by vapor extraction. No additional information was available on the GeoTracker website. Based on the regulatory status, this listing has the potential to create an environmental concern to the ISA Study Area and a file review is recommended.
19117	5243-029-004	4630 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19117 as Business Use, owned by Kenneth W Busch Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19117 consists of APN 5243-029-004. Based on review of online maps and photographs, Parcel No. 19117 consists of a commercial property (4630 E. Washington Blvd.) located at the southeast corner of Connor Ave. and E. Washington Blvd., west of I-710. No EDR listings were identified associated with this address. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19118	5243-029-021	2415 Conner Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19118 as Business Use, owned by Criterion Enterprises. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19118 consists of APN 5243-029-021. Based on review of online maps and photographs, Parcel No. 19118 consists of a vacant commercial property (2415 Connor Ave.) located west of Connor Ave. and south of E. Washington Blvd., west of I-710. No EDR listings were identified associated with this address. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19119	5243-029-007	4614 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19119 as Business Use, owned by Criterion Enterprises. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19119 consists of APN 5243-029-007. Based on review of online maps and photographs, Parcel No. 19119 consists of Pacific Signs & Supplies (4618 E. Washington Blvd.) located at the southwest corner of the intersection of E. Washington Blvd. and Connor Ave., west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Criterion Gates and Mfg Co in the Los Angeles HMS database. Based on the lack of violations and/or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area.
19120	5243-029-008	4614 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19120 as Business Use, owned by Criterion Enterprises. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19120 consists of APN 5243-029-007. Based on review of online maps and photographs, Parcel No. 19120 consists of Universal Neon Plus (4614 E. Washington Blvd.) located south of E. Washington Blvd., west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Criterion Gate in the UST database; as Criterion Products Inc. in the HAZNET, EMI, and FINDS databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19121	5243-029-009	4600 Washington Blvd. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19121 as Business Use, owned by4600 Washington LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19121 consists of APN 5243-029-009. Based on review of online maps and photographs, Parcel No. 19121 consists of J R's Tire Service (4600 E. Washington Blvd.) located south of E. Washington Blvd., west of I-710.This parcel was identified in the EDR Report (EDR ID No.214) as 4600 Super Service in the SWEEPS UST, CA FID UST, Los Angeles County HMS, LUST, HIST CORTESE, HIST UST databases; as 1xHarrison Gas & Oil in the HAZNET database. According to the GeoTracker

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				database, this site is listed with a status of "Completed-case closed" as of October 21, 2009 for a release of gasoline to an aquifer used for drinking water supply. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
19122	5243-026-024	4560 Washington Blvd. Commerce, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 19122 as Business Use, owned by Ron M Sarake Et Al Lessee. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19122 consists of APN 5243-026-024. Based on review of online maps and photographs, Parcel No. 19122 consists of Commerce Truck Stop (4650 E. Washington Blvd.) located south of E. Washington Blvd., east of Ayers Ave., west of I-710.This parcel was identified in the EDR Report (EDR ID No.214) as Commerce Truck Stop in the Los Angeles County HMS, LUST, UST, and HAZNET databases. According to the GeoTracker database, this site is listed with a status of "Completed-case closed" as of February 6, 2012 for a release of gasoline to other groundwater. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
19493	5241-030-015	1531 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19493 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19493 consists of APN 5241-030-015. Based on a review of online maps and photographs, Parcel No. 19493 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19493 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19494	5241-030-016	1527 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19494 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19494 consists of APN 5241-030-016. Based on a review of online maps and photographs, Parcel No. 19494 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19494 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19495	5241-030-017	1525 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19495 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19495 consists of APN 5241-030-017. Based on a review of online maps and photographs, Parcel No. 19495 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19495 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19496	5241-030-018	1517 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19496 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19496 consists of APN 5241-030-018. Based on a review of online maps and photographs, Parcel No. 19496 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19496 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19497	5241-030-025	Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19497 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19497 consists of APN 5241-030-025. Based on a review of online maps and photographs, Parcel No. 19497 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19497 is

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19498	5241-030-026	1511 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19498 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19498 consists of APN 5241-030-026. Based on a review of online maps and photographs, Parcel No. 19498 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19498 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19499	5241-030-021	1507 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19499 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19499 consists of APN 5241-030-021. Based on a review of online maps and photographs, Parcel No. 19499 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19499 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19546	5244-033-017	4915 Sheila St Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19546 as Business use owned by, Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19546 consists of APN 5244-033-017. Based on review of online maps and photographs, Parcel No. 19546 consists of the Premiere Compliance facility (4915 Sheila St.) located north of Sheila St., east of I-710. This parcel was identified in the EDR Report (EDR ID No. 214) as Angeles Metao Systems in the HAZNET database. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19521	5244-033-014	4814 E Washington Blvd Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19521 as Business use owned by, Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19521 consists of APN 5244-033-014. Based on review of online maps and photographs, Parcel No. 19521 consists of a paved lot with a metal structure (4814 E. Washington Blvd.), located west of Ransom St. and south of E. Washington Blvd., east of I-710. This parcel was identified in the EDR Report (EDR ID No. 214) as Zauss Trucking Co in the SWEEPS UST and Los Angeles County HMS databases; and as Fast Deer Bus Charter in the HAZNET database. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19522	5244-033-004	N/A	Full	The Right-of-Way Impact Report identified Parcel No. 19522 as Business use owned by, Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19522 consists of APN 5244-033-004. Based on review of online maps and photographs, Parcel No. 19522 consists of a paved lot, located west of Ransom St. and south of E. Washington Blvd., east of I-710. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
80010	7278-011-808	Rail OPS Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 80010 as Railroad Use, owned by Sou Pac Trans Co. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 80010 consists of APN 7278-011-808. Based on a review of online maps and photographs, Parcel No. 80010 consists of a strip of land occupied with numerous petroleum pipelines, ASTs, and oil wells located adjacent to the west of the Los Angeles River and east of I-710 (Seaside freeway).

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
70157	7436-013-903	1250 7th St. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 70157 as Public Use, owned by the City of Long Beach. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 70157 consists of a portion of APN 7436-013-903. Based on a review of online maps and photographs, Parcel No. 70157 is listed at 1250 W. 7th St. but appears to consist of strips of land adjacent to the south of the on and off-ramps to the I-710 from W. 9th St., west of the Los Angeles River, and north of W. 7th St. No EDR listings were identified associated with this address.
70158	7436-008-904	Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 70158 as Public Use, owned by the City of Long Beach. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 70158 consists of a portion of APN 7436-008-904. Based on a review of online maps and photographs, Parcel No. 70158 consists of strips of land adjacent to the south of the on and off-ramps to the I-710 from W. 9th St., west of the Los Angeles River, and north of W. 7th St. No EDR listings were identified in the area.
70159	7436-008-902	Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 70159 as Public Use, owned by the City of Long Beach. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 70159 consists of a portion of APN 7436-008-902. Based on a review of online maps and photographs, Parcel No. 70159 consists of strips of land in between the on and off-ramps to the I-710 from W. 9th St., a section of the I-710 off-ramp, and a segment of railroad track, west of the Los Angeles River, and north of W. 7th St. No EDR listings were identified in the area.
70160	7436-008-917	1215 7th St. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 70160 as Public Use, owned by the City of Long Beach. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 70160 consists of a portion of APN 7436-008-917. Based on a review of online maps and photographs, Parcel No. 70160 consists of strips of land in between the on and off-ramps to the I-710 from W. 9th St., a section of the I-710 off-ramp, west of the Los Angeles River, and north of W. 7th St. No EDR listings were identified in the area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
70161	7436-008-918	-	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 70161 as Public Use, owned by the City of Long Beach. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 70161 consists of a portion of APN 7436-008-918. Based on a review of online maps and photographs, Parcel No. 70161 consists of a strip of land adjacent to the west of the I-710 on-ramp from Pier B St., west of the I-710. No EDR listings were identified in the area.
01174	7436-004-017	1275 W 11th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01174 as Business Use, owned by SCHROEDER,BRYAN L TR. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01174 consists of a portion of APN 7436-004-017. Based on a review of online maps and photographs, Parcel No. 01174 is part of the address 1275 W. 11th St. and consists of asphalt paved land west of I-710, bounded to the south by 11th St., to the west by Fashion Ave., and to the north by W. 12th St. No EDR listings were identified associated with this address.
01175	7436-004-016	Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01175 as Business Use, owned by SCHROEDER,BRYAN L TR. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01175 consists of a portion of APN 7436-004-016. Based on a review of online maps and photographs, Parcel No. 01175 consists of land west of I-710, bounded to the south by 11th St., to the west by Fashion Ave., and to the north by W. 12th St. No EDR listings were identified in the area.
01176	7436-004-014	1301 W 11th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01176 as Business Use, owned by TILLEY, LOUIS E. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01176 consists of a portion of APN 7436-004-014. Based on a review of online maps and photographs, Parcel No. 01174 is a part of the address 1301 W. 11th St. and consists of asphalt paved land west of I-710, bounded to the south by 11th St., to the east by Fashion Ave., and to the north by W. 12th St. See Parcel No. 01186 for a discussion on EDR listings of potential concern.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01177	7436-004-911	1315 W 11th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01177 as Business Use, owned by LONG BEACH CITY. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01177 consists of a portion of APN 7436-004-911. Based on a review of online maps and photographs, Parcel No. 01177 is a part of the address 1315 W. 11th St. and consists of asphalt paved land west of I-710, bounded to the south by 11th St., to the east by Fashion Ave., and to the north by W. 12th St. See Parcel No. 01186 for a discussion on EDR listings of potential concern.
01178	7436-004-915	1325 W 11th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01178 as Business Use, owned by LONG BEACH CITY. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01178 consists of a portion of APN 7436-004-915. Based on a review of online maps and photographs, Parcel No. 01178 is a part of the address 1325 W. 11th St. and consists of asphalt paved land west of I-710, bounded to the south by 11th St., to the east by Fashion Ave., and to the north by W. 12th St. See Parcel No. 01186 for a discussion on EDR listings of potential concern.
01179	7436-004-032	1335 W 11th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01179 as Business Use, owned by ALLIED PACKING AND RUBBER INC. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01179 consists of a portion of APN 7436-004-032. Based on a review of online maps and photographs, Parcel No. 01179 is a part of the address 1335 W. 11th St. and consists of asphalt paved land west of I-710, bounded to the south by 11th St., to the east by Fashion Ave., and to the north by W. 12th St. See Parcel No. 01186 for a discussion on EDR listings of potential concern.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01180	7436-004-917	Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01180 as Business Use, owned by LONG BEACH CITY. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01180 consists of a portion of APN 7436-004-917. Based on a review of online maps and photographs, Parcel No. 01180 consists of land west of I-710, bounded to the south by 11th St., to the east by Fashion Ave., and to the north by W. 12th St. See Parcel No. 01186 for a discussion on EDR listings of potential concern.
01181	7436-004-918	1355 W 11th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01181 as Business Use, owned by LONG BEACH CA. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01179 consists of a portion of APN 7436-004-918. Based on a review of online maps and photographs, Parcel No. 01181 is a part of the address 1355 W. 11th St. and consists of asphalt paved land west of I-710, bounded to the south by 11th St., to the east by Fashion Ave., and to the north by W. 12th St. See Parcel No. 01186 for a discussion on EDR listings of potential concern.
01182	7436-004-909	Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01182 as Business Use, owned by LONG BEACH CITY. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01182 consists of a portion of APN 7436-004-909. Based on a review of online maps and photographs, Parcel No. 01182 consists of land west of I-710, bounded to the south by 11th St., to the east by Fashion Ave., and to the north by W. 12th St. See Parcel No. 01186 for a discussion on EDR listings of potential concern.
01185	7436-004-033	1280 W 12th St Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01185 as Business Use, owned by SCHROEDER,BRYAN L TR. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01185 consists of a portion of APN 7436-004-033. Based on a review of online maps and photographs, Parcel No. 01185 is a part of the address 1280 W. 12th St. and consists of asphalt paved land west of I-710, bounded to the south by 11th St., to the west by Harbor Ave., and to the north by W. 12th St. No EDR listings were identified associated with this address.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01186	7436-004-007	1326 W 12th St Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01186 as Business Use, owned by HARRISON,BRUCE L. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01186 consists of a portion of APN 7436-004-008. Based on a review of online maps and photographs, Parcel No. 01186 is a part of the address 1326 W. 12th St. and consists of asphalt paved land west of I-710, bounded to the south by 11th St., to the west by Harbor Ave., to the east by Fashion Ave., and to the north by W. 12th St. The address was identified in the EDR Report as Intersa USA DBA Techno Chem (EDR ID No. 3141) in the CA WDS database; as Containment & Recovery Systems (EDR ID No. 3141) in the CA HAZNET database; as George C Mitchell (EDR ID No. 3141) in the CA HAZNET database; as Technochem (EDR ID No. 3141) in the CA UST database; and as Harrison Property (EDR ID No. 3141) in the CA HIST CORTESE and CA LUST databases. A review of the GeoTracker online database lists the address as a LUST Cleanup site with a regulatory status of "Open - Site Assessment" as of October 29, 2007. The site maintained a 1,000 gallon gasoline UST and 7,500 gallon diesel UST from the 1960s to 1980s. The USTs were reportedly removed in 1984 when a gasoline release was discovered that impacted groundwater. The RWQCB is lead cleanup oversight agency for this case. A Preliminary assessment was completed in 1999 and a pollution characterization was completed in 2003. Semi-annual groundwater monitoring is required at this property. The latest groundwater monitoring report from November 2015 shows groundwater was encountered at approximately eight feet bgs with a flow direction to the west. Analytical results identified high levels of TPHg, benzene, and TBA in groundwater on the west-central portion of the property. In addition, soil samples were taken along the south and southwestern portion of the property. Relatively high concentrations of TPHg and BTEX were identified in soil borings on the southwestern portion of the property. Based on the cumulative results, the extent of impacted soil and groundwater has not been adequately defined in the area south and west of the site. Based on the regulatory status and on-going remedial conditions, this site is considered to represent an environmental concern to the ISA

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				Study Area. It should be noted that soil and groundwater contamination may exist in the area of this property impacted by the proposed right-of-way, which could be encountered during construction and/or excavation activities.
01187	7436-004-036	1336 W 12th St Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01187as Business Use, owned by STAPLETON,RICHARD CO TR. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01187 consists of a portion of APN 7436-004-036. Based on a review of online maps and photographs, Parcel No. 01187 is a part of the address 1336 W. 12th St. and consists of land west of I-710, bounded to the south by 11th St., to the west by Harbor Ave., and to the north by W. 12th St. See Parcel No. 01186 for a discussion on EDR listings of potential concern.
40105	7271-003-902	Los Angeles River Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 40105 as Flood Control Use. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 40105 consists of a portion of APN 7271-003-902. Based on a review of online maps and photographs, Parcel No. 40105 consists of vacant land along the Los Angeles River channel and Anaheim St. Parcel No. 40105 is located adjacent to property occupied by Occidental Petroleum Corporation (Oxy Oil) along the west side of the flood control channel, which contains numerous ASTs and oil wells. Several database listings were identified associated with oil wells operated by Oxy Oil in this area. Based on the use, the adjacent Oxy Oil property is considered to represent an environmental concern to the ISA Study Area and a file review is recommended.
40106	7436-004-920	Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 40106 as Flood Control Use. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 40106 consists of APN 7436-004-920. Based on a review of online maps and photographs, Parcel No. 40106 appears to be part of the Oxy Oil facilities, which is leased from the City of Long Beach. Several database listings were identified associated with oil wells operated by Oxy Oil in this area. Based on the use, Parcel No. 40106 is considered to represent an environmental concern to the ISA Study Area and a file review is recommended.

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Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
40116	7271-002-002	Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 40116 as Flood Control Use owned by Kempner, James M and Cynthia A. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 40116 consists of APN 7271-002-002. Based on a review of online maps and photographs, Parcel No. 40116 consists of a strip of land adjacent to the east of the I-710, in between Anaheim St. and Pacific Coast Hwy. The EDR Report identified Public Service Transfer Station No. 1 (EDR ID No. 76-8) in this location, which is listed in the SWF/LF database. This facility is located between the I-710 and the Los Angeles River, north of Anaheim St. and south of Pacific Coast Hwy. According to the online SWIS database (SWIS No. 19-AA-1047), the City of Long Beach operates an active limited volume transfer operation for green materials at this location. The facility permit was issued in October 2001 and it is permitted to handle up to 3,000 tons of green waste per year. The facility is inspected quarterly by the County of Los Angeles and the last inspection was performed on October 7, 2015. No significant violations of State Minimum Standards observed at time of inspection and all records were reported to be in order. The most recent inspection reported that this facility is not open to the public and is currently reserved for street cleaning operations. No enforcement action records were reported in the SWIS database. Based on the use of this property, there is potential for waste materials to exist which may be encountered during construction and/or excavation activities and therefore, this property is considered to have high risk waste issues.
01419	7432-019-049	1234 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01419 as Business Use owned by Exedra Properties LTD (same as Parcel No. 01420). A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01419 consists of a portion of APN 7432-019-023. Based on a review of online maps and photographs, Parcel No. 01419 consists of a southwestern portion of the property occupied by Speedy Fuel (1234 W Cowles St.), see Parcel No. 01420 for EDR listings and information.

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Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19105	5243-029-023	4651 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19105 as Business Use, owned by Lyman H Johnson Et Al. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19106 consists of APN 5243-029-023. Based on a review of online maps and photographs, Parcel No. 19105 consists of the Ceramic Decorating Company (4651 Sheila St.) located north of Sheila St. and adjacent to the west of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Ceramic Decorating Co Inc. in the Los Angeles County HMS, FINDS, HAZNET, and HIST UST databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19106	5243-029-024	4635 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19106 as Business Use, owned by PARKER, JOSEPH AND BERNICE TRS. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 19106 consists of APN 5243-029-024. Based on a review of online maps and photographs, Parcel No. 19106 consists of land currently occupied by American Allied Trucking at 4635 Sheila St., adjacent to the north of Sheila St. and west of the I-710. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
81907	5243-029-816	4621 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 81907 as Railroad Use, owned by BNSF RAILWAY COMPANY. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 81907 consists of APN 5243-029-816. Based on a review of online maps and photographs, Parcel No. 81907 consists of paved vacant parking lot at 4621 Sheila St., adjacent to the north of Sheila St. and west of the I-710. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19494	5241-030-016	1527 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19494 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19494 consists of APN 5241-030-016. Based on a review of online maps and photographs, Parcel No. 19494 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19494 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19495	5241-030-017	1525 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19495 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19495 consists of APN 5241-030-017. Based on a review of online maps and photographs, Parcel No. 19495 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19495 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19496	5241-030-018	1517 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19496 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19496 consists of APN 5241-030-018. Based on a review of online maps and photographs, Parcel No. 19496 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19496 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19497	5241-030-025	Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19497 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19497 consists of APN 5241-030-025. Based on a review of online maps and photographs, Parcel No. 19497 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19497 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19498	5241-030-026	1511 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19498 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19498 consists of APN 5241-030-026. Based on a review of online maps and photographs, Parcel No. 19498 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19498 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.
19499	5241-030-021	1507 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19499 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19499 consists of APN 5241-030-021. Based on a review of online maps and photographs, Parcel No. 19499 is used for storage associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19499 is located west of S. Sydney Dr., west of I-710. No EDR listings were identified in this area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19108	5243-029-030	4621 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19108 as Business Use, owned by NEIMAN, WILLIAM L. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19108 consists of APN 5243-029-030. Based on a review of online maps and photographs, Parcel No. 19108 consists of land currently occupied by Columbia Trophy & Metal Products at 4621 Sheila St., adjacent to the north of Sheila St. and west of the I-710. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
81910	5243-029-804	Rail OPS Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 81910 as Railroad Use, owned by UNION PACIFIC RR CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 81910 consists of APN 5243-029-804. Based on a review of online maps and photographs, Parcel No. 81910 consists of a strip of land occupied by several businesses that runs parallel in between Sheila St. and Washington Blvd., west of the I-710, and east Ayers Ave. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern. This land parcel is considered high risk.
81911	5243-029-812	Rail OPS Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 81911 as Railroad Use and owned by UNION PACIFIC RR CO. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 81911 consists of APN 5243-029-812. Based on a review of online maps and photographs, Parcel No. 81911 consists of a strip of land occupied by several businesses that runs parallel in between Sheila St. and Washington Blvd., west of the I-710, and east Ayers Ave. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01420	7432-019-043	1234 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01420 as Business Use, owned by Exedra Properties LTD (same as Parcel No. 01419). This address was identified as MICOR Energy LLC (EDR ID No. S104406362) in the CA LUST database; as MICOR Energy LLC (EDR ID No. S103976836) in the CA HIST CORTESE database; as 1234 WEST COWLES ST. in the HMIRS database; as Jerry and Kathleen Glikesman (EDR ID No. S101587013) in the CA FID UST and CA SWEEPS UST databases; as MICOR Long Beach LLC (EDR ID No. S113076397) in the CA HAZNET database; as MICOR Long Beach (EDR ID No. U003779459) in the CA UST database; as McMullen Oil Inc. (EDR ID No. S112876293) in the CA HAZNET database; and as Delta Auto Service Inc. (EDR ID No. S113113356) in the HAZNET database; as MICOR Energy LLC (EDR ID No. S114650987) in the RGA LUST database; as Speedy Fuel (EDR ID No. U004220378) in the UST database; as Speedy Fuel (EDR No. S113122600) in the CA HAZNET database as 1234 W. COWLES ST. (EDR No. 1015189711) in the EDR Hist Auto database. The status of the MICRO Energy LLC LUST case is listed as “Completed - Case Closed” as of July 1, 2015. The RWQCB is the lead agency on this case. The RWQCB issued a “Direction to Take Corrective Action in Response to Unauthorized Underground Storage Tank Release” in a letter dated March 20, 2009. This letter states that the property was a former gasoline/diesel service station and in 2000 three groundwater monitoring wells were installed at the site. These wells were sampled in 2000 and no petroleum hydrocarbon constituents or oxygenates were detected. The RWQCB stated that in order to evaluate current groundwater quality at the site additional sampling was required. In 2014, the three monitoring wells were sampled and no petroleum hydrocarbon constituents or oxygenates were detected. Based on the regulatory agency closure status, available groundwater data, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01438	7432-020-033	1243 W Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identified Parcel No. 01438 as Business use owned by Neil Properties LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 01438 consists of APN 7432-020-033. Based on a review of online maps and photographs, Parcel No. 01438 consists of a property occupied by a Neill Aircraft Co. (1243 W. Cowles St.) located west of I-710. This parcel was identified in the EDR Report (EDR ID No. 3141) as Speedy Fuel Inc. and Delta Auto Service Inc. in the Historical Auto Stations database for the years 2004-2012; as Micor Energy LLC in the HIST CORTESE and UST databases; as Delta Auto Service Inc. in the HAZNET database; as Speedy Fuel in the HAZNET database. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
12109	7301-003-011	2820 Alondra Blvd. Compton, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 12109 as Business Use (unknown owner). Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12109 consists of APN 7301-003-011. Based on review of online maps and photographs, Parcel No. 12109 consists of an ARCO gas station (2820 E. Alondra Blvd.), located at the southwest corner of East Alondra Blvd. and Atlantic Ave., west of I-710. This parcel was identified in the EDR Report (EDR ID No.1622) as 7 Days Food Store in the UST, SWEEPS UST, LUST, and Los Angeles County HMS databases; as B&B Petroleum in the Los Angeles County HMS and HAZNET databases; as Alondra AM/PM in the Los Angeles County HMS database; as PMM Alondra Inc. in the HAZNET database; as Hang Yeol Jung Shan in the HAZNET database; and as Mr. Farza Nouri in the HAZNET database. According the GeoTracker database, the status is listed as “open-remediation” as of June 8, 2006, for a release of gasoline to “aquifer used for drinking water supply.” According to the third quarter 2015 monitoring report, groundwater is flowing to the southwest. Based on the regulatory status and on-going remediation, this site is considered to represent an environmental concern to the ISA Study Area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
12210	7101-015-003	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12210 as Business Use owned by Fernando Perez. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12210 consists of APN 7101-015-003. Based on review of online maps and photographs, Parcel No. 12210 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12211	7101-015-002	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12211 as Business Use owned by Fernando Perez. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12211 consists of APN 7101-015-002. Based on review of online maps and photographs, Parcel No. 12211 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12212	7101-015-004	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12212 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12212 consists of APN 7101-015-004. Based on review of online maps and photographs, Parcel No. 12212 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12213	7101-013-018	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12213 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12213 consists of APN 7101-013-018. Based on review of online maps and photographs, Parcel No. 12213 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
12214	7101-013-019	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12214 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12214 consists of APN 7101-013-019. Based on review of online maps and photographs, Parcel No. 12214 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12215	7101-013-021	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12215 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12215 consists of APN 7101-013-021. Based on review of online maps and photographs, Parcel No. 12215 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12216	7101-013-020	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12216 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12216 consists of APN 7101-013-020. Based on review of online maps and photographs, Parcel No. 12216 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
12217	7101-013-022	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12217 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12217 consists of APN 7101-013-022. Based on review of online maps and photographs, Parcel No. 12217 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
12218	7101-013-023	S Atlantic Ave Compton, CA	Full	The Right-of-Way Impact Report identified Parcel No. 12218 as Business Use owned by Nicolas E. Martin. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 12218 consists of APN 7101-013-023. Based on review of online maps and photographs, Parcel No. 12218 consists of a portion of the Martin Container Inc. property (1400 Atlantic Ave.), located north of Atlantic Ave. and adjacent to the east of I-710. No EDR listings were identified in this area.
01421	7432-020-028	1235 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01421 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01421 consists of APN 743-202-0028. Based on a review of online maps and photographs, Parcel No. 01421 consists of a property occupied by Neil Aircraft (1235 W Cowles St.), see Parcel No. 01425 for EDR listings and information.
01422	7432-020-029	1233 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01422 as Business Use owned by Pogue, Clarence W. and Margit M. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01422 consists of APN 743-202-0029. Based on a review of online maps and photographs, Parcel No. 01422 consists of a property occupied by an unknown lessee (1233 W Cowles St.). No EDR listings were identified associated with this address.
01423	7432-020-030	1231 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01423 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01423 consists of APN 743-202-0030. Based on a review of online maps and photographs, Parcel No. 01423 consists of a property occupied by an Neill Aircraft Co. (1231 W Cowles St.), see Parcel No. 01425 for EDR listings and information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01424	7432-020-031	1229 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01424 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01424 consists of APN 743-202-0031. Based on a review of online maps and photographs, Parcel No. 01424 consists of a property occupied by Neil Aircraft (1229 W. Cowles St.), see Parcel No. 01425 for EDR listings and information.
01425	7432-020-032	1227 Cowles St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01425 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01425 consists of APN 7432-020-032. Based on a review of online maps and photographs, Parcel No. 01425 consists of a property occupied by Neill Aircraft Co. (1227 W Cowles St.) which also occupies the entire block bounded by 15th St. to the north, Cowles St. to the south, I-710 to the east, and Fashion Ave. to the west. Neill Aircraft was also identified at 1260 W 15th St. in the UST (EDR ID No. U003660595), RCRA-SQG (EDR ID No. 1000287667), FINDS (EDR No. 1000287667), HAZNET (EDR ID No. S113016249), NPDES (EDR ID No. S108751634) and LUST (EDR No. 1000287667) databases. The LUST status is listed as “Completed - Case Closed” as of July 1, 2015. The RWQCB is the lead agency on this case. The online GeoTracker database indicates that groundwater impacted with gasoline was detected in grab groundwater samples at this property in 1997. The online database indicates that semi-annual groundwater monitoring is required and a “Soil and Groundwater Investigation Report” was prepared in 2009. In 2012, four groundwater monitoring wells were installed and sampled as well as additional soil sampling; high concentrations of TPHg and benzene were detected in both groundwater and soil samples. In September 2013, soil borings were taken to delineate the extent of soil contamination. The most recent groundwater monitoring data from March 2014 showed high concentrations of TPHg and benzene in one of the four monitoring wells while the remaining three wells showed non-detectable concentrations of TPHg, BTEX, MTBE, and TBA. In August 2014, remedial excavation of the former UST area was performed with 214.12 tons of soil removed and transported off site for disposal. Based on the regulatory agency closure status,

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				available groundwater and soil data, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
01426	7432-020-020	15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01426 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01426 consists of APN 7432-020-020. Based on a review of online maps and photographs, Parcel No. 01426 consists of a property occupied by Neill Aircraft Co. (W 15th St.), see Parcel No. 01425 for EDR listings and information.
01427	7432-020-021	1226 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01427 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01427 consists of APN 7432-020-021. Based on a review of online maps and photographs, Parcel No. 01427 consists of a property occupied by Neill Aircraft Co. (1226 W 15th St.), see Parcel No. 01425 for EDR listings and information.
01428	7432-020-022	1230 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01428 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01428 consists of APN 7432-020-022. Based on a review of online maps and photographs, Parcel No. 01428 consists of a property occupied by Neill Aircraft Co. (1230 W 15th St.), see Parcel No. 01425 for EDR listings and information.
01429	7432-020-023	15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01429 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01429 consists of APN 7432-020-023. Based on a review of online maps and photographs, Parcel No. 01429 consists of a property occupied by Neill Aircraft Co. (W 15th St.), see Parcel No. 01425 for EDR listings and information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01430	7432-020-024	1240 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01430 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS Row Exhibit - Alternative 7 Maps revealed that Parcel No. 01430 consists of APN 7432-020-024. Based on a review of online maps and photographs, Parcel No. 01430 consists of a property occupied by Neill Aircraft Co. (1240 W 15th St.), see Parcel No. 01425 for EDR listings and information.
01431	7432-021-005	1239 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01431 as Business Use owned by Neil Properties LLC. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01431 consists of APN 7432-021-005. Based on a review of online maps and photographs, Parcel No. 01431 consists of a property occupied by Neill Aircraft Co. (1239 W. 15th St.), see Parcel No. 01425 for EDR listings and information.
01432	7432-021-006	1233 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01432 as Business Use owned by Neill Aircraft Company. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01432 consists of APN 7432-021-006. Based on a review of online maps and photographs, Parcel No. 01432 consists of a property occupied by Neill Aircraft Co. (1233 W. 15th St.), see Parcel No. 01425 for EDR listings and information.
01433	7432-021-007	1231 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01433 as Business Use owned by Neill Properties LLC. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01433 consists of APN 7432-021-007. Based on a review of online maps and photographs, Parcel No. 01433 consists of a property occupied by Neill Aircraft Co. (1231 W. 15th St.), see Parcel No. 01425 for EDR listings and information.
01434	7432-021-008	1229 15th St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01434 as Business Use owned by Neill Aircraft Company. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01434 consists of APN 7432-021-008. Based on a review of online maps and photographs, Parcel No. 01434 consists of a property occupied by Neill Aircraft Co. (1229 W. 15th St.), see Parcel No. 01425 for EDR listings and information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
01435	7432-021-001	1238 Gaylord St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01435 as Business Use owned by Neill Aircraft Company. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01435 consists of APN 7432-021-001. Based on a review of online maps and photographs, Parcel No. 01435 consists of a property occupied by Neill Aircraft Co. (1238 W. Gaylord St.), see Parcel No. 01425 for EDR listings and information.
01436	7432-021-002	Gaylord St. Long Beach, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 01436 as Business Use owned by Neill Aircraft Company. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 01436 consists of APN 7432-021-002, a portion of APN 7432-021-001. Based on a review of online maps and photographs, Parcel No. 01436 consists of a property occupied by Neill Aircraft Co. see Parcel No. 01425 for EDR listings and information.
80417	7140-014-936	E. 208th St. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 80417 as Railroad Use. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 80417 consists of APN 7140-014-936. Based on a review of online maps and photographs, Parcel No. 80417 consists of a segment of the Metro Blue Line/ Pacific Electric Railroad track and the Metro Blue Line Yard (4350 208th St.). Metro Division 11 and Rapid Transit District Metro (EDR ID No. 2484) were identified associated with this address in the RCRA-SQG, FINDS, WDS, NPDES, LUST databases. According to the GeoTracker database, the facility is listed with a status of "completed-case closed" as of September 8, 2010 for a release of "waste oil/motor/hydraulic/lubricating" to soil. No other information was available online or in the EDR Report. Based on the regulatory status, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
06101	7140-014-019	Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 06101 as Business Use, owned by CRG Properties LTD. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps revealed that Parcel No. 06101 consists of APN 7140-014-019. Based on a review of online maps and photographs, Parcel No. 06101 is associated with the former Long Beach Golf Learning Center (3701 & 4021 Pacific Place) property. Long Beach Industrial Park (EDR ID No. 2752, 2767) was identified associated with this address in the VCP, ENVIROSTOR, SLIC, and FINDS databases; as CRG Properties in the HAZNET, UST, database; Petro Resources Inc. in the CERCLIS-NFRAP, FINDS, RGA LUST, and EMI databases. This parcel is associated with an 18-acre site formerly used as a central brine treatment facility from 1926 until the mid-1950s. Former activities consisted of pumping oil brine, drilling mud, and other waste materials generated from nearby oil production into unlined sumps. For the past five years, the site has been used as a golf practice range. Under the DTSC oversight, investigations are being conducted to evaluate the presence and extent of hazardous substances in the subsurface including benzene, benzo(a)pyrene, metals and TPH as gasoline. The case is also identified in the RWQCB's online GeoTracker database as Long Beach Industrial Park at 4021 Pacific Place. According to the GeoTracker and ENVIROSTOR online databases, the DTSC is the lead agency for the case. The cleanup status on the online ENVIROSTOR database is reported as "Inactive – Action Required" as of January 26, 2009; however, the database reports that a Remedial Action Completion Report was due to DTSC on April 30, 2011. Based on the regulatory status and former use, this site is considered to represent an environmental concern to the ISA Study Area and a file review is recommended. It should be noted that soil and groundwater contamination may exist in the area of this property impacted by the proposed right-of-way, which could be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
06102	7140-014-032	Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 06102 as Business Use, owned by CRG Properties LTD. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps revealed that Parcel No. 06102 consists of APN 7140-014-032. Based on a review of online maps and photographs, Parcel No. 06102 is associated with Parcel No. 06101.
06103	7140-014-025	4021 Amebco Rd. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 06103 as Business Use, owned by Tookey, Victor R and Evelyn M. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps revealed that Parcel No. 06103 consists of APN 7140-014-032. Based on a review of online maps and photographs, Parcel No. 06103 is associated with Parcel No. 06101.
06108	7140-014-023	3916 Amebco Rd. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 01608 as Business Use, owned by MCDONALD,JOHN B CO TR ET AL. A review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps revealed that Parcel No. 01608 consists of APN 7140-014-023. Based on a review of online maps and photographs, Parcel No. 01608 is a an unpaved strip of land located adjacent to the east of North Pacific Place and adjacent to the west of MTA railroad tracks. No EDR listings were identified in this area.
06206	7203-002-001	701 Baker St. Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 06206 as Business Use, owned by Oil Operators Inc. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 06206 consists of APN 7203-002-001. Based on a review of online maps and photographs, Parcel No. 06206 is currently vacant land. No EDR listings were identified associated with 701 W Baker St. Oil Operators Inc. was identified at 712 W Baker St. (EDR ID No. 2797) in the UST, SLIC, CERCLIS, CHMIRS, HIST UST, CA FID UST, EMI, and SWEEPS UST databases and at 714 W Baker St. (EDR ID No.2797) in the ENVIROSTOR database. The ENVIROSTOR database referred the case the RWQCB as of January 1, 2011. The RWQCB remains the lead agency on the case. The ENVIROSTOR database indicates that the US EPA is also involved in cleanup oversight for this case. The online GeoTracker database identifies the case at 712 W Baker St. and lists the facility status as “Open – Site Assessment” as of January 2,

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				2015. According to the online GeoTracker database, the Oil Operators, Inc. (OOI) property covers 20 acres located east of I-710 and is bounded on the north by the 405 freeway, on the south by Wardlow Rd., and on the east by Golden Ave. Baker St. divides the property into northern and southern parts. The Los Angeles River is located immediately to the west. OOI operated water treatment facilities at this property from 1926 to 1998 to treat production brines and other fluids recovered during oil production. Processed included removal of oil and sediment from the water, recovering low-grade oil for recycling, and disposal of the treated water off-site. Multiple basins that were used to settle oily solids/sludge and to hold treated water were located on the property. The facilities were decommissioned in phases beginning in 1998 and the property is currently vacant. The primary area of concern is identified as Basin 1, which held untreated oil production fluids for settling of oily solids/sludge. Cleanup criteria have been established for chemicals of concern in Basin 1, including TPH as gasoline, BTEX, and heavy metals. Soil remediation has been underway at the property since March 2010, consisting of in-situ enhanced biodegradation, and quarterly groundwater monitoring is conducted. Based on information reviewed on the online GeoTracker database, it appears that additional investigations and remediation are required at this property. Based on the regulatory status and on-going remedial conditions, this site is considered to represent an environmental concern to the ISA Study Area. It should be noted that soil and groundwater contamination may exist in the area of this property impacted by the proposed right-of-way, which could be encountered during construction and/or excavation activities.
50807	7306-022-802	SCE Corridor Long Beach, CA	Partial	The Right-of-Way Impact Report identifies Parcel No. 50807 as Utility Use, owned by SO CALIF EDISON CO. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 50807 consists of APN 7306-022-802. This parcel consists of two strips of land located adjacent to the west of the Long Beach Blvd. on-ramp to I-710 South. A nearby EDR listing of potential concern was identified (see Parcel No. 08127).

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
50808	7306-022-801	SCE Corridor Long Beach, Ca,	Partial	The Right-of-Way Impact Report identifies Parcel No. 50808 as Utility Use, owned by SO CALIF EDISON CO. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 50808 consists of APN 7306-022-801. This parcel consists of a strip of land located adjacent to the west of the Long Beach Blvd. on-ramp to I-710 South. An EDR listing of potential concern was identified (see Parcel No. 08110).
08110	7306-022-033	88 Victoria St. Long Beach, CA	Partial	The Right-of-Way Impact Report identifies Parcel No. 08110 as Business Use, owned by BELL BUSINESS CENTER LP. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 08110 consists of APN 7306-022-033. This parcel consists of a strip of land adjacent to southwest corner of Victoria St. and Long Beach Blvd. Based on a review of the EDR Report and online maps and photographs, it appears that this parcel is part of a large property (Bell Business Center), which includes APNs 7306-022-055 and 7306-022-054 (adjacent to the west). These two parcels are not impacted by the proposed project, but since APN 7306-022-033 is part of this larger property, which was identified in the EDR Report, they are discussed. 100 W. Victoria St. at APN 7306-022-055 was identified as Former Robert Shaw Controls (EDR ID No. 2131) in the ENVIROSTOR, UST, LUST, HIST CORTESE, SLIC, RCRA-SQG, FIND, HAZNET, CA FID UST, HIST UST, EMI, CA WDS, HIST FTTS, VCP, ENF and SWEEPS UST databases; as Bell Business Center in the NPDES and HAZNET database; as Invensys Controls in the FINDS and HAZNET database; and as 100 West Victoria Waste Treatment Area in the CA CHMIRS database. Site investigations began at this property in 1991. Phased site investigations and remediation activities have continued to the present time, to assess and remediate chemical impacts to soils and groundwater from past manufacturing operations. Potential contaminants of concern include chlorinated solvents such as benzene, PCE, TCE, vinyl chloride, and xylenes. A groundwater remediation and monitoring system as well as a soil vapor extraction system are currently being operated at the property. The DTSC referred the case to the RWQCB on February 2, 2009. The online GeoTracker lists the status as “Open – Remediation” as of December 22,

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				2014. Based on information reviewed in the online GeoTracker database, it appears that additional investigations and remediation are required at this property. Based on the regulatory status and on-going remedial conditions, this site is considered to represent an environmental concern to the ISA Study Area .
08109	7306-022-038	5951 Long Beach Blvd Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identifies Parcel No. 08109 as Business Use, owned by 5951 LONG BEACH LLC. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 08109 consists of APN 7306-022-038. This parcel consists of a strip of land adjacent to southwest corner of Victoria St. and Long Beach Blvd. An adjacent EDR listing of potential concern was identified (see Parcel No. 08110).
14115	6194-004-037	11000 Atlantic Ave. Lynwood, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 14115 as Business use, owned by Northwest Dealerco Holdings LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 14115 consists of APN 6194-004-037. Based on review of online maps and photographs, Parcel No. 14115 consists of a 76 gas station (11000 Atlantic Ave.) located in the southeast corner of the intersection of E. Imperial Hwy. and Atlantic Ave., west of I-710. This parcel was identified in the EDR report (EDR ID No.927) as Lees Union 76 Service in the EDR Historical Auto Station database for the years 2001, 2003-2005, and 2011; as Lynwood 76 in the FINDS database; Lees Unocal Service Station in the HAZNET database; Tosco Corporation Station No. 30442 in the HAZNET database; Conoco Phillips No. 252474 in the HAZNET database; Western Fuel Group in the HAZNET database; 76 Products Station No. 2474 in the Hist Cortese, ENF, HAZNET, and Los Angeles County HMS databases; Union Oil Service Station No. 2474 in the HIST UST database; Unocal Corp SS 2474 in the SWEEPS UST and Los Angeles County HMS databases; Tosco 76 Station 2474 in the LUST, UST, and HIST UST databases. According to GeoTracker, the site is listed with a status of “completed-case closed” as of January 22, 2015, for a release gasoline to “aquifer used for drinking water supply.” Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				contamination to exist which may be encountered during construction and/or excavation activities.
41421	6234-012-002	Los Angeles River Lynwood, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 41421 as Flood Control Use owned by Chevron USA Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 41421 consists of APN 6234-012-002. Based on a review of online maps and photographs, Parcel No. 41421 consists of a vacant strip of land indicative of a subsurface pipeline. This parcel is located between I-710 and the Los Angeles River, south of Imperial Hwy. No EDR listings were identified in this area.
41432	6233-032-010	Los Angeles River South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 41432 as Flood Control Use owned by the State of California. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 41432 consists of APN 6233-032-010. Based on a review of online maps and photographs, Parcel No. 41432 consists of a vacant strip of land indicative of a subsurface pipeline. This parcel is located between I-710 and the Los Angeles River, north of Imperial Hwy. No EDR listings were identified in this area.
14448	6194-002-025	5201 Imperial Hwy. South Gate, CA	Full	The Right-of-Way Impact Report identified Parcel No. 14448 as Business Use, owned by Frys 710 freeway Investment Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 14448 consists of APN 6194-002-025. Based on review of online maps and photographs, Parcel No. 14448 consists of an ARCO gas station (5201 E. Imperial Hwy.) located at the northeast corner of E. Imperial Hwy. and Wright Rd. This parcel was identified in the EDR Report (EDR ID No. 927) as Copper Wash LLC in the Los Angeles County HMS database; as Shell in the LUST, HIST UST, and HAZNET databases; Chang's Shell in the LUST and UST databases; YM Shell in the HAZNET database; Shell Service Station in the ERNS, SWEEPS UST, Los Angeles County HMS, RCRA-SQG, FINDS, and HAZNET databases; SIM Shell in the RCRA-SQG database; and JK Shell in the EDR Historical Auto station database for the years 2001-2003. According to GeoTracker, the following two cases are associated with this parcel: Shell is listed with a status of "completed-case closed"

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				as of October 24, 1996, for a release of gasoline to soil; and Chang's Shell is listed with a status of "completed-case closed" as of July 17, 2013, for a release of gasoline to "an aquifer used for drinking water supply." Additionally, each of the 16 wells located on site are reportedly being sampled for post-remedial action verification monitoring to evaluate remediation system performance. Based on the post-remedial action sampling that is ongoing at the site, this site is considered to represent an environmental concern to the ISA Study Area and a file review is recommended. Additionally, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
15105	6222-036-002	Southern Ave. NA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15105 as Business Use, owned by CHEVRON USA INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 15105 consists of APN 6222-036-003. Based on a review of online maps and photographs, Parcel No. 15105 consists of a segment of land adjacent to the south of Southern Ave., east of the Los Angeles River, and west of Salt Lake Ave. No EDR listings were identified in this area.
15106	6222-036-004	5310 Southern Ave South Gate, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 15106 as Business Use, owned by BORK CORP. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15106 consists of APN 6222-036-004. Based on a review of online maps and photographs, Parcel No. 15106 consists of a segment of land adjacent to the south of Southern Ave., east of the Los Angeles River, and west of Salt Lake Ave. No EDR listings were identified in this area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19502	5241-030-005	1522 Eastern Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19502 as Business Use, owned by Marvin A and Ricki C Ring Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19502 consists of APN 5241-030-005. Based on a review of online maps and photographs, Parcel No. 19502 is developed with a residential structure associated with the California Charcoal & Firewood business located at 1518 S. Eastern Ave. Parcel No. 19502 is located east of S. Eastern Ave., west of I-710. No EDR listings were identified associated with this address.
15107	6222-036-005	5310 Southern Ave. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15107 as Business Use, owned by BORK CORP. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 15107 consists of APN 6222-036-005. Based on a review of online maps and photographs, Parcel No. 15107 consists of a segment of land adjacent to the south of Southern Ave., east of the Los Angeles River, and west of Salt Lake Ave. This parcel was identified in the EDR Report as Southern California Edison Shred Substation (EDR ID No. 944) in the RCRA-SQG, FINDS, CA NPDES, CA WDS, CA LUST, CA HIST UST, CA SWEEPS UST, CA HAZNET, CA EMI, and CA ENVIROSTOR databases; as Bell Foundry Co. (EDR ID No. 944) in the CA LOS ANGELES CO. HMS, CA RGA LUST, FTTS, and HIST FTTS databases. The LUST cleanup status is reported as “Completed – Case Closed” as of September 30, 1999. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15110	6222-001-013	South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15110 as Business Use, owned by CHEVRON USA INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 15110 consists of APN 6222-001-013. Based on a review of online maps and photographs, Parcel No. 15110 consists of a segment of land adjacent to the north of Southern Ave., west of the Los Angeles River, and east of Burtis St. No EDR listings were identified in this area.
15339	6232-002-005	5625 Firestone Blvd. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15339 as Business Use, owned by ALUM LANDLORD QRS 16 105 INC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 15339 consists of APN 6232-002-005. Based on a review of online maps and photographs, Parcel No. 15339 consists of a segment of land along the northwest corner of the intersection of National Ave. and Firestone Blvd. International Window Corp was identified at 5625 Firestone Blvd. in this area in the CA UST, CA LUST, CA SLIC, CA HIST UST, CA SWEEPS UST, CA LOS ANGELES CO. HMS MITIGATION, CA ENF, CA HIST CORTESE, and CA HAZNET database. Reportedly, a release was discovered in 1990 that affected the groundwater at the site. The site is under the jurisdiction of the RWQCB. According to the online GeoTracker database, the cleanup status is reported as “Completed – Case Closed” as of August 30, 2001. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities. Groundwater beneath this property has been impacted by the ARCO-Vinvale Tank Farm at 8601 Garfield Ave.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15356	6232-002-002	8601 Garfield Ave South Gate, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 15365 as Business Use, owned by BP WEST COAST PRODUCTS LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15365 consists of APN 6232-002-002. Based on a review of online maps and photographs, Parcel No. 15365 consists of the Tesoro Vinvale Terminal 6 facility (ARCO-Vinvale) located adjacent to the east of the I-710., and west of Garfield Ave. (8601 Garfield Ave.). This address was identified in the EDR Report (EDR ID No.656) in the FINDS, EMI, LUST, HAZNET, TRIS, NPDES, SLIC, SWEEPS UST, Los Angeles County HMS, CHMIRS, UST, EDR Historical Auto station, AST, and ENVIROSTOR databases. According to the GeoTracker database, this site is listed with a cleanup status of "Open-Site Remediation" since June 30, 2001. GeoTracker states that the site is an approximately 35-acre fuel terminal currently used for storage and loading of gasoline and diesel fuel products for delivery by tanker trucks to various local retail outlets in the Los Angeles metropolitan area since 1977. Approximately 34 million gallons of fuel are stored and processed at the facility. The site previously operated as a refinery from approximately 1923 to 1957 under the ownership of Rio Grande Oil Company. In 1957, all the refining equipment was removed to accommodate the construction of the 710 freeway. The site operated as a storage and distribution facility for Richfield's Watson Refinery until 1977. The site lies within the Central Basin Pressure Area and is underlain by three major water-bearing zones: shallow hydrostratigraphic zone (SHZ): 50-90 feet bgs); middle hydrostratigraphic zone (MHZ): 100-175 feet bgs; and deep hydrostratigraphic zone (DHZ): 270-320 feet bgs. In addition, upper and lower subzones have been identified and reported in the SHZ and MHZ. Localized perched zones also occur within the shallow unsaturated zone (SUZ), which extends from the surface to approximately 50 feet bgs. The SHZ is the shallowest continuously saturated water-bearing zone and occurs as extensive lenses of sandy and/or gravelly fine-grained material within the Bellflower aquitard. The confined MHZ and DHZ correspond with the Exposition and Hollydale aquifers, respectively. These water-bearing zones are separated by low-permeability zones. All three water-bearing zones are monitored quarterly for

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				dissolved-phase petroleum hydrocarbons in groundwater. In addition, the SHZ is monitored quarterly for light non-aqueous phase liquids (LNAPL), herein referred to as separate phase hydrocarbons (SPH) for consistency with the workplan and prior reports. SPH thickness is measured quarterly and SPH transmissivities are calculated from select recovery wells. No SPH has been detected within the MHZ or DHZ. Stantec is currently conducting SPH recovery from a series of groundwater remediation wells specifically designed for fluid and product recovery. From July 28 to 31, 2014, Stantec provided field oversight for the advancement of 15 CPT-UVOST borings (CPT-UV43 thorough CPT-UV57). The CPT-UVOST borings were drilled to approximately 88 feet bgs to obtain additional lithologic and qualitative hydrocarbon distribution data to determine optimum locations and construction specifications for the proposed additional remediation wells. Borings CPT-UV43 to CPT-UV46 were installed in the former diesel AST area and previously addressed in the workplan addendum. Remaining borings CPT-UV47 to CPT-UV57 were installed within the four target remediation areas on-site and off-site. Data from these borings were evaluated along with those of prior CPT-UVOST borings, historical product recovery data, the distribution of existing remedial wells and their estimated radius of influence, and the approximate current extent of SPH to identify optimum locations for additional remediation wells. Based on these criteria, additional remedial wells were proposed to fill observed gaps within the remediation well network and increase the effectiveness of SPH recovery across the site. From January through March 2015, Stantec installed 15 additional remediation wells in select areas on-site and off-site to expand the remediation well network and enhance the conceptual site model. The additional remedial wells were installed as a phased approach. Further expansion of the well network may be necessary once their effectiveness has been determined. Based on regulatory status, this property presents an environmental concern to the proposed I-710 Corridor Project.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
61544	6233-001-275	South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 61544 as Utility Use, owned by L A CITY DEPT OF WATER AND POWER. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 61544 consists of APN 6233-001-275. Based on a review of online maps and photographs, Parcel No. 61544 consists of a segment of the Rio Hondo River, bound to the west by the I-710 and to the south by Meadow Rd. This parcel was formerly part of a landfill associated with Parcel No. 41543, No. 15268, No. 61544, No. 41520, and No. 71570 (see Parcel No. 41543 for EDR discussion).
15245	6233-002-900	South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15245 as Business Use, owned by SOUTH GATE CITY. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15245 consists of APN 6233-002-900. Based on a review of online maps and photographs, Parcel No. 15245 consists of a segment of land east of the Los Angeles River, adjacent to the south of the I-710, and west of the Rio Hondo River. No EDR listings were identified in this area.
16443	6315-031-002	Bell, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 16443 as Utility Use, owned by Chevron USA Inc. A review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 16443 consists of APN 6315-031-002 and located adjacent to the west of I-710, east of the Los Angeles River. Based on a review of online maps and photographs, Parcel No. 16443 is occupied by a strip of vacant land located adjacent to the west of I-710, bound to the south by E. Gage Ave. and to north by Southern Pacific Railroad. No EDR listings were identified in this area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
16443	6315-031-001	Bell, CA	TCE	The Right-of-Way Impact Report identified Parcel No. 16442 as Utility Use, owned by Chevron USA Inc. A review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 16442 consists of APN 6315-031-001 and located adjacent to the west of I-710, east of the Los Angeles River. Based on a review of online maps and photographs, Parcel No. 16442 is occupied by a strip of vacant land located adjacent to the west of I-710, bound to the south by E. Gage Ave. and to north by Southern Pacific Railroad. No EDR listings were identified in this area.
17353	6332-002-036	5600 Rickerbacker Rd Bell, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 17335 as Business Use, owned by The Salvation Army. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 17335 consists of APN 6332-002-036. Based on review of online maps and photographs, Parcel No. 17335 consists of a large commercial facility (5600 Rickenbacker Rd.) occupied by The Salvation Army Wellness Center located adjacent to the east of I-710. This parcel was identified in the EDR Report (EDR ID No.419) as LAUSD Bell Education and Career Center in the HAZNET, SCH, NPDES, ENVIROSTOR, FINDS, RCRA-LQG databases; as FBI Warehouse in the HAZNET database; as Salvation Army in the HAZNET database; as Jet Propulsion Lab in the HAZNET database; as Bell Federal Building in the HAZNET database; as Shelter Partnership in the HAZNET database; as General Service Administration in the HAZNET database; as Bell Armed Forces Reserve Center in the HAZNET and NPDES databases; and as Federal Service Center in the HIST UST and Los Angeles County HMS databases. The ENVIROSTOR database lists the cleanup status as “Certified as of October 11, 2012.” This site comprises over 13 acres and during the PEA, elevated levels of PAHs and arsenic were found in soils to a depth of 4-feet bgs, which required removal (approximately 1,000 cubic yards were removed). Based on the certified status, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15230	6232-015-003	5532 Southern Ave. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15230 as Business Use, owned by J B HUNT TRANSPORT INC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15230 consists of APN 6232-015-003 Based on a review of online maps and photographs, Parcel No. 15230 consists of a segment of land adjacent to the south of Southern Ave., west of Garfield Ave., and east of I-710. No EDR listings were identified associated with 5440 Southern Ave.
15231	6232-015-004	5630 Southern Ave. South Gate, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 15231 as Business Use, owned by WORLD OIL CO. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15231 consists of APN 6232-015-004. Based on a review of online maps and photographs, Parcel No. 15231 consists of a segment of land at 5630 Southern Ave., adjacent to the south of Southern Ave., west of Garfield Ave., and east of I-710. No EDR listings were identified associated with 5630 Southern Ave. Parcel No. 15231 appears to be associated with Parcel No. 15233 and was identified as Lunday Thagard Company (EDR No. 969) in the CA HAZNET database and as Pan Pacific Petroleum Co. (EDR No. 969) in the CA WDS database. Parcels No. 15231, 15232, and 15233 were formerly part of a large refinery (see Parcel No. 15233 for EDR discussion)
15232	6232-015-005	5730 Southern Ave. South Gate, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 15232 as Business Use, owned by WORLD OIL CORP. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15232 consists of APN 6232-015-005. Based on a review of online maps and photographs, Parcel No. 15232 consists of a segment of land at 5730 Southern Ave., adjacent to the south of Southern Ave., west of Garfield Ave., and east of I-710. The address was identified as Lunday Thagard Company (EDR No. 969) in the CA HAZNET database and as Pan Pacific Petroleum Co. (EDR No. 969) in the CA WDS database. Parcels No. 15231, 15232, and 15233 were formerly part of a large refinery (see Parcel No. 15233 for EDR discussion)

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15233	6232-010-016	9301 Garfield Ave. South Gate, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 15233 as Business Use, owned by INNOVATE INC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15233 consists of APN 6232-010-016. Based on a review of online maps and photographs, Parcel No. 15233 consists of a segment of land adjacent to the north of Southern Ave. and west of I-710. The parcel was identified in the EDR Report as 9301 Garfield Ave. (EDR ID No. 948) in the ERNS and HMIRS databases; as Lunday-Thagard Refinery (EDR ID No. 948) in the RCRA-LQG, CA NPDES, CA SLIC, CA CHMIRS, CA EMI, TRIS, RMP, CA WDS, CA HIST UST, and CA HAZNET databases; as Asphalt Refinery (EDR ID No. 948) in the CA CHMIRS database; as Herbert Malarkey Roofing Company (EDR ID No. 948) in the CA EMI, FINDS, CA WDS database; as G S Roofing Products Inc. (EDR ID No. 948) in the CA EMI and CA HAZNET databases. The Lundy-Thagard Refinery received violations, which subsequently achieved compliance. According to the SLIC database, a release of fuel oxygenates and gasoline was discovered in 2002 that impacted soil and groundwater. This facility is under the supervision of the RWQCB. The online GeoTracker database reports the cleanup status as “Open – Remediation” as of January 22, 2009. A semi-annual groundwater monitoring program has been implemented at this property and an additional groundwater monitoring well to further investigate down-gradient impacts was installed in October 2010. In 2015, groundwater was reported between 62 and 65 feet bgs and flow direction ranged from south-southeast to southeast. Based on the information reviewed online, it appears that additional remediation and site assessment activities are required at this property and a file review is recommended. Therefore, this property represents an environmental concern to the proposed I-710 Corridor Project. It should be noted that soil contamination may exist in the area of this property impacted by the proposed right-of-way, which could be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15234	6232-010-008	5625 Southern Ave South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15234 as Business Use, owned by SULLY-MILLER CONTRACTING CO. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15234 consists of APN 6232-010-008. Based on a review of online maps and photographs, Parcel No. 15234 consists of a segment of land adjacent to the north of Southern Ave. and west of I-710. The parcel was identified in the EDR Report Sully Miller Construction (EDR ID No. 969) in the FINDS, CA LOS ANGELES CO. HMS, ERNS, CHMIRS, CA LUST, CA EMI, CA HAZNET, and CA UST databases; as South Gate HMA Plant (EDR ID No. 969) in the CA HIST UST and CA SWEEPS UST databases; and as Blue Diamond Materials (EDR ID No. 969) in the CA HAZNET and CA AST databases. According to the online GeoTracker database, Sully-Miller Contracting Co. is listed in the LUST database with a cleanup status of "Open – Site Assessment" as of November 4, 2009. The RWQCB is the lead agency for the case and contaminants of concern include BTEX, diesel, and fuel oxygenates. No additional information is accessible online. Based on the open case status and lack of data available online, this property represents an environmental concern to the proposed I-710 Corridor Project and a file review is recommended.
15235	6232-010-011	5601 Southern Ave. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15235 as Business Use, owned by Californian South Gate Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15234 consists of APN 6232-010-008. Based on a review of online maps and photographs, Parcel No. 15234 consists of a segment of land adjacent to the north of Southern Ave. and west of I-710 and is associated with Parcel ID No.15234. See Parcel ID No. 15234 for EDR listings and information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15237	6232-009-009	5700 Firestone Blvd. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15237 as Business Use, owned by MANN ENTERPRISES INC, currently occupied by Target. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15237 consists of APN 6232-009-009. Based on a review of online maps and photographs, Parcel No. 15237 consists of two segments of land adjacent to the south of Firestone Blvd. and adjacent to the east of the I-710 off-ramp to Firestone Blvd. The parcel was identified in the EDR Report as Target Store T0190 at 5700 Firestone Blvd. (EDR ID No. 905) in the FINDS, CA HAZNET, and RCRA-SQG databases; and as South Gate Town Center (EDR ID No. 905) in the LA CO. SITE MITIGATION database. A review of the GeoTracker database identified that groundwater underneath Parcel No. 15237 is impacted by the ARCO-Vinvale Tank Farm at 8601 Garfield Ave. Based on the information available online, this property represents an environmental concern to the proposed I-710 Corridor Project.
15439	6232-002-005	5625 Firestone Blvd. South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15339 as Business Use, owned by ALUM LANDLORD QRS 16 105 INC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 15339 consists of APN 6232-002-005. Based on a review of online maps and photographs, Parcel No. 15339 consists of a segment of land along the northwest corner of the intersection of National Ave. and Firestone Blvd. International Window Corp was identified at 5625 Firestone Blvd. in this area in the CA UST, CA LUST, CA SLIC, CA HIST UST, CA SWEEPS UST, CA LOS ANGELES CO. HMS MITIGATION, CA ENF, CA HIST CORTESE, and CA HAZNET database. Reportedly, a release was discovered in 1990 that affected the groundwater at the site. The site is under the jurisdiction of the RWQCB. According to the online GeoTracker database, the cleanup status is reported as “Completed – Case Closed” as of August 30, 2001. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities. Groundwater beneath this property has been impacted by the ARCO-Vinvale Tank Farm at 8601 Garfield Ave. (see Parcel No. 15365).
16105	6226-005-011	Florence Ave. Bell, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 16105 as Residential Use, owned by Chevron USA Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 16105 consists of APN 6226-005-011. Based on a review of online maps and photographs, Parcel No. 16105 consists of a portion of a road located within the Florence Village Mobile Home Park, adjacent to the west of the Los Angeles River, West of I-710. No EDR listings were identified in this area.
18106	6304-030-002	Los Angeles, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18106 as Business use, owned by FedEx National LTL INC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18106 consists of APN 6304-030-002. Based on review of online maps and photographs, Parcel No. 18106 composes the western portion of the FedEx Freight facility (Parcel No. 18107-4500 Bandini Blvd.). EDR listings associated with this parcel are discussed in Parcel No. 18107.
18107	6304-030-001	3939 S Atlantic Blvd. Los Angeles, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18107 as Business use, owned by FedEx National LTL INC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18106 consists of APN 6304-030-002. Based on review of online maps and photographs, Parcel No. 18107 consists of the FedEx Freight facility (4500 Bandini Blvd.) located north of S. Atlantic Blvd., west of I-710. This parcel was identified in the EDR Report (EDR ID No. 311) as 4500 Bandini Blvd. in the CHMIRS database; as FedEx Freight Inc. in the RCRA-SQG, WDS, SWEEPS UST, NPDES, HIST CORTESE, and LUST databases; as Watkins Motor Lines, Inc. in the LUST and FINDS databases. According to GeoTracker, the facility is listed with a status of “Completed-case closed“ as of September 1, 1999 for a release of gasoline to soil. Based on the

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
18212	6332-002-035	5600 Rickenbacker Rd. Bell, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18212 as Business use, owned by Shelter Partnership Inc. (Salvation Army). Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18212 consists of APN 6332-002-035. Based on review of online maps and photographs, Parcel No. 18212 consists of a large commercial facility (5600 Rickenbacker Rd.) occupied by The Salvation Army Wellness Center located east of I-710. This parcel was identified in the EDR Report (EDR ID No.419) as LAUSD Bell Education and Career Center in the HAZNET,SCH, NPDES, ENVIROSTOR, FINDS, RCRA-LQG databases; as FBI Warehouse in the HAZNET database; as Salvation Army in the HAZNET database; as Jet Propulsion Lab in the HAZNET database; as Bell Federal Building in the HAZNET database; as Shelter Partnership in the HAZNET database; as General Service Administration in the HAZNET database; as Bell Armed Forces Reserve Center in the HAZNET and NPDES databases; Federal Service Center in the HIST UST and Los Angeles County HMS databases. The ENVIROSTOR database lists the cleanup status as “Certified as of October 11, 2012“ indicating that the DTSC-approved response action has been completed. This site comprises over 13 acres and during the PEA, in 2009, elevated levels of PAHs and arsenic were found in soils to a depth of 4-feet bgs, which required removal. Approximately 1,000 cubic yards of contaminated soil was subsequently removed and documented in a report dated 2010. Based on the certified status, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19516	5241-013-018	45 Triggs St. Commerce, CA	Full	The Right-of-Way Impact Report identifies Parcel No. 19503 as Residential Use (1459 S. Sydney Dr.). A review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps revealed that Parcel No. 09503 consists of APN 5241-029-001. Based on a review of online maps and photographs, Parcel No. 09503 consists of a residential structure located west of S. Sydney Dr., west of I-710. No EDR listings were identified associated with this address.
19517	5241-013-019	1350 Eastern Ave. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19517 as Business Use, owned by LOS JARDINES LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 19517 consists of APN 5241-013-019. Based on review of online maps and photographs, Parcel No. 19517 consists of a strip of vacant land (1350 S. Eastern Ave.) located adjacent to the south of the I-5 and I-710 interchange and a portion of the I-5 South to I-710 South ramp. A review of the EDR Report identified Specific Plating Co. Inc. (1350 S. Eastern Ave.) (EDR ID No. 161) in the RCRA-SQG, CA HIST UST, CA VCP, CA ENVIROSTOR, CA UST, CA SWEEPS UST, CA LOS ANGELES CO. HMS, and CA EMI databases. According the online GeoTracker database, the CA VCP status is listed as “ACTIVE AS OF December 12, 2013.” The site was occupied by Specific Plating, an electroplating company from the 1960s. In February 2012, DTSC conducted soil and soil gas sampling at the site as part of a discovery project. Sampling data indicated elevated levels of volatile organic compounds (PCE and TCE). DTSC determined that additional sampling and remediation is required at this Site. The site is undergoing litigation currently to identify the legal owner, causing a delay in evaluation and cleanup of the site. Based on the active regulatory status and on-going investigations, this site is considered to represent an environmental concern to the proposed I-710 Corridor Project.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18218	6332-002-021	5350 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18218 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18218 consists of APN 6332-002-021. Based on review of online maps and photographs, Parcel No. 18218 consists of a large commercial building occupied by Vernon Sanitary Supply (5350 Lindbergh Lane) and Allied Plastics (5380 Lindbergh Lane) located west of Lindbergh Lane and east of I-710. No EDR listings were identified in this area. This parcel was identified in the EDR Report (EDR ID No.345) as Individual Food Service in the VCP and ENVIROSTOR databases. According to the ENVIROSTOR database, the site is a slab on grade tilt up building comprised of about a 146,000-square-foot structure located on a 255,101-square-foot lot. The building is divided into different suites, used for warehousing and distribution. This Site is located near what was formerly the Cheli Air Force Base. To the west and south are the 710 freeway and the Los Angeles River. The nearest residential land use is on the opposite side of the Los Angeles River, about 0.25 mile from the site. Based on the information available to DTSC and Proponent, the site is or may be contaminated with hazardous substances, including poly-aromatic hydrocarbons (PAHs), volatile organic compounds, and petroleum hydrocarbons. The site is listed with a status of “Certified O&M-Land Use Restrictions Only“ as of March 17, 2016. Based on the regulatory agency status, these listings are expected to have created an environmental concern to the ISA Study Area. Additionally, there is potential for soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19520	-	Read Site Listing	Full	The Right-of-Way Impact Report identified Parcel No. 19520 as Business Use, owned by STATE OF CALIFORNIA. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 19520 consists of unknown APN. Based on review of online maps and photographs, Parcel No. 19520 consists of land currently occupied by multiple businesses (4711-4727 E. Washington Blvd.) located south of Hepworth Ave. and adjacent to the east of I-710. No EDR listings were identified in this area. See Parcel No. 19517 for an EDR discussion of nearby potential environmental concerns.
18219	6332-002-039	5300 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18219 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18219 consists of APN 6332-002-039, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18220	6332-002-040	5300 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18220 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18220 consists of APN 6332-002-040, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18221	6332-002-041	5304 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18221 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18221 consists of APN 6332-002-041, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18222	6332-002-042	5304 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18222 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18222 consists of APN 6332-002-042, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18223	6332-002-043	5306 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18223 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18223 consists of APN 6332-002-043, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18224	6332-002-044	5306 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18224 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18224 consists of APN 6332-002-044, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18225	6332-002-045	5306 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18225 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18225 consists of APN 6332-002-045, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18226	6332-002-046	5310 Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18226 as Business use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18226 consists of APN 6332-002-046, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18227	6332-002-920	5300 Bandini Blvd. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18227 as Business use, owned by US Government (Dept. of the Army). Review of the I-710 EIR/EIS ROW Exhibit – Alternative 5C Maps and County Assessor website revealed that Parcel No. 18227 consists of APN 6332-002-920. Based on review of online maps and photographs, Parcel No. 18227 consists of the Department of the Army facility located adjacent to the east of the S. Atlantic Blvd. off-ramp of I-710, south of Bandini Blvd. This parcel was listed in the EDR Report (EDR ID No.322) in the FINDS database; as Office of Adjutant General in the UST database; as US Government in the HIST CORTESE, LUST, SWEEPS UST databases; as CA Army National Guard in the LUST, Los Angeles County HMS; as Bell Organizational Maintenance No. 6 in the CERLIS, HAZNET, and RCRA-LQG databases. According to GeoTracker, three cases are associated with the site. Patton US Army Reserve Center (5340 Bandini Blvd.) is listed with a status of "Completed-case closed" as of November 14, 1999 for a release of diesel to soil. US Government (5300 Bandini Blvd.) is listed with a status of "Completed-case closed" as of February 5, 2009 for a release of gasoline to soil. CA Army National Guard is listed with a status of "Completed-case closed" as of March 3, 2015, for a release of diesel, gasoline, MTBE/TBA/other fuel oxygenates, toluene, waste oil/motor/hydraulic/lubricating, xylenes. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
18228	6332-002-934	Bandini Blvd. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18228 as Business use, owned by US Government. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18228 consists of APN 6332-002-934. This parcel is the eastern half of Parcel No. 18227. See Parcel No. 18227 for EDR information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18243	6332-002-047	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18243 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18243 consists of APN 6332-002-047, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18244	6332-002-048	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18244 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18244 consists of APN 6332-002-048, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
81966	5243-001-812	Rail OPS Commerce, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 81966 as Railroad Use, owned by Union Pac RR Co. A review of the I-710 EIR/EIS ROW Exhibit – Alternative 5C Maps and County Assessor website revealed that Parcel No. 81966 consists of APN 5243-001-812. Based on a review of online maps and photographs, Parcel No. 81966 consists of railroad tracks within the Union Pacific East Los Angeles rail yard located west of I-710. No EDR listings were identified in this area.
18245	6332-002-049	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18245 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18245 consists of APN 6332-002-049, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18246	6332-002-050	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18246 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18246 consists of APN 6332-002-050, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18247	6332-002-051	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18247 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18247 consists of APN 6332-002-051, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18248	6332-002-052	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18248 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18248 consists of APN 6332-002-052, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18249	6332-002-053	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18249 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18249 consists of APN 6332-002-053, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18250	6332-002-054	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18250 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18250 consists of APN 6332-002-054, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18251	6332-002-055	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18251 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18251 consists of APN 6332-002-055, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18252	6332-002-056	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18252 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18252 consists of APN 6332-002-056, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18253	6332-002-057	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18253 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18253 consists of APN 6332-002-057, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18254	6332-002-058	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18254 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18254 consists of APN 6332-002-058, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18255	6332-002-059	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18255 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18255 consists of APN 6332-002-059, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18256	6332-002-060	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18256 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18256 consists of APN 6332-002-060, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18257	6332-002-061	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18257 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18257 consists of APN 6332-002-061, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.
18258	6332-002-062	Lindbergh Ln. Bell, CA	Full	The Right-of-Way Impact Report identified Parcel No. 18258 as Business Use, owned by Cheli Distribution Center Inc. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18258 consists of APN 6332-002-062, which encompasses the same property boundary as Parcel No. 18218. See Parcel No. 18218 for EDR information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19244	5244-033-003	4814 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19244 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 19244 consists of APN 5244-033-003. Based on review of online maps and photographs, Parcel No. 19244 consists of western portion of Parcel No. 19244 located south of E. Washington Blvd. and west of Ransom St., east of I-710. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19245	5244-033-900	4800 Washington Blvd. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19245 as Business Use, owned by the Agency of Redevelopment. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 5C Maps and County Assessor website revealed that Parcel No. 19245 consists of APN 5244-033-900. Based on review of online maps and photographs, Parcel No. 19245 consists of a vacant parcel of land located at the southeast corner of Hepworth and E. Washington Blvd. and west of Ransom St., east of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Triangle Cold in the RCRA-SQG, FINDS, and the Los Angeles County HMS databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19246	5244-033-016	2451 Hepworth Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19246 as Business use owned by the Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 19246 consists of APN 5244-033-016. Based on review of online maps and photographs, Parcel No. 19246 consists of a commercial property that appears to be associated with Parcel No. 19247, located west of Hepworth Ave. and east of I-710. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19247	5244-033-007	4720 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19247 as Business use owned by the Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 19247 consists of APN 5244-033-007. Based on review of online maps and photographs, Parcel No. 19247 consists of the Dura Flooring facility (4720 E. Washington Blvd.) located south of E. Washington Blvd., east of I-710 and west of Hepworth Ave. This parcel was identified in the EDR Report (EDR ID No.214) by street address in the CDL database; and as Kraloy Plastic Pipe Co. in the Los Angeles County HMS database. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19248	5244-033-008	4720 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19248 as Business use owned by the Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 19248 consists of APN 5244-033-008. Based on review of online maps and photographs, Parcel No. 19248 consists of the western portion of Parcel No. 19247. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
18329	6332-002-078	5553 Bandini Blvd. Bell, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18329 as Business use, owned by Bandini XC LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18329 consists of APN 6332-002-078. Based on review of online maps and photographs, Parcel No. 18329 consists of a paved parking area associated with the California Post office (27 Yeager Way) located east of I-710 and north of Bandini Blvd. This parcel was identified in the EDR Report (EDR ID No.364) as US Postal Service LA East Bell in the NPDES and WDS databases; as US Postal Service East Garage in the UST, HAZNET, and Los Angeles County HMS databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
18330	6332-002-077	5553 Bandini Blvd. Bell, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 18330 as Business use, owned by Bandini XC LLC. Review of the I-710 EIR/EIS ROW Exhibit – Alternative 7 Maps and County Assessor website revealed that Parcel No. 18330 consists of APN 6332-002-077. Based on review of online maps and photographs, Parcel No. 18330 consists of a paved parking area associated with the California Post office (27 Yeager Way). See Parcel No. 18329 for EDR information.
19234	5244-033-018	4815 Sheila St. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19234 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19234 consists of APN 5224-033-018. Based on review of online maps and photographs, Parcel No. 19234 consists of Best Premium Logistics Inc. facility (4817 Sheila St.). According to the ENVIROSTOR database, Gatwick Group LLC owns 19 buildings in the area that are under investigation for historical uses. In 2014, DTSC entered into a VCP with Gatwick Group to oversee investigation and any cleanup work. To date, the sites have gone through soil matrix, soil vapor and groundwater remedial investigation. The properties owned By Gatwick Group are located in area bounded by Atlantic Ave., Sheila St., Washington Blvd., and I-710 and include the addresses 4720, 4814, 4900, 4920, 5010-5020 WASHINGTON BLVD., 2451 HEPWORTH AVE., 4817, 4915 SHEILA ST., and 2448 COUTES AVE. Based on this information, this site is considered to represent an environmental concern to the proposed I-710 Corridor Project. Other parcels associated with Gatwick Group include Parcel No. 19235, 19242-19244, and 19246-19248.
19235	5244-033-019	4801 Sheila St. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19235 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19235 consists of APN 5224-033-019. Based on review of online maps and photographs, Parcel No. 19235 consists of western portion of Parcel No. 19234, which is one of the parcels owned by Gatwick Group under DTSC investigation. See Parcel No. 19234 for additional information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19242	5244-033-013	4900 Washington Blvd. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19242 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19242 consists of APN 5244-033-013. Based on review of online maps and photographs, Parcel No. 19242 consists of Continental Chemical (4920 E. Washington Blvd.) and a vacant commercial building (4900 E. Washington Blvd.) located south of E. Washington Blvd., between Ransom St. and Couts Ave., east of I-710. This parcel is listed in the EDR Report (EDR ID No. 214) as HJB Inc. DBA Continental Chemical in the FINDS, EMI, Los Angeles County HMS, FTTS, and HAZNET databases; and as DK Cabel in the SWEEPS UST and Los Angeles County HMS databases. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19243	5244-033-002	4814 E Washington Blvd Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19243 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19243 consists of APN 5244-033-002. Based on review of online maps and photographs, Parcel No. 19243 consists of Nikko Marketing Association (4814 E. Washington Blvd.) located south of E. Washington Blvd. and west of Ransom St., east of I-710. This parcel is listed in the EDR Report (EDR ID No. 214) as Zauss Trucking Company in the SWEEPS UST and Los Angeles County HMS databases; and as Fast Deer Bus Charter in the HAZNET database. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19244	5244-033-003	4814 E Washington Blvd Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19244 as Business use owned by Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19244 consists of APN 5244-033-003. Based on review of online maps and photographs, Parcel No. 19244 consists of western portion of Parcel No. 19244 located south of E. Washington Blvd. and west of Ransom St., east of I-710. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19245	5244-033-900	4800 E Washington Blvd Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19245 as Business use owned by the Agency of Redevelopment. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19245 consists of APN 5244-033-900. Based on review of online maps and photographs, Parcel No. 19245 consists of a vacant parcel of land located at the southeast corner of Hepworth and E. Washington Blvd. and west of Ransom St., east of I-710. This parcel was identified in the EDR Report (EDR ID No.214) as Triangle Cold in the RCRA-SQG, FINDS, and the Los Angeles County HMS databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19246	524-033-016	2451 Hepworth Ave Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19246 as Business use owned by the Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19246 consists of APN 5244-033-016. Based on review of online maps and photographs, Parcel No. 19246 consists of a commercial property that appears to be associated with Parcel No. 19247, located west of Hepworth Ave. and east of I-710. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19247	5244-033-007	4720 E Washington Blvd Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19247 as Business use owned by the Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19247 consists of APN 5244-033-007. Based on review of online maps and photographs, Parcel No. 19247 consists of the Dura Flooring facility (4720 E. Washington Blvd.) located south of E. Washington Blvd., east of I-710 and west of Hepworth Ave. This 4720 E Washington Blvd, Commerce, CA parcel was identified in the EDR Report (EDR ID No.214) by street address in the CDL database; and as Kraloy Plastic Pipe Co. in the Los Angeles County HMS database. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
19248	5244-033-008	4720 E Washington Blvd Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19248 as Business use owned by the Gatwick Group LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19248 consists of APN 5244-033-008. Based on review of online maps and photographs, Parcel No. 19248 consists of the western portion of Parcel No. 19247. According to ENVIROSTOR, this parcel is one of the parcels owned by Gatwick Group LLC under investigation under DTSC oversight. See Parcel No. 19234 for additional information.
40416	7140-014-940	Los Angeles River Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 40416 as Flood Control Use. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 40416 consists of APN 7140-014-940. Based on a review of online maps and photographs, Parcel No. 40416 consists of a segment of the Los Angeles River, adjacent to the east of I-710, located northeast of the I-405 onramp to I-710. This parcel was is located within an area identified in the EDR Report Orphan Summary (ID Nos. S114725879 and S114725880) as Caltrans Long Beach, and West Los Angeles River No. 2 in the RGA LF database. According to the online SWIS database, the exact location of Caltrans Long Beach, West Los Angeles River No. 2 (SWIS No. 19-AK-5002) is unknown, but it is located between the I-710 and the Los Angeles River at the end of W. Carson St. This location is a closed solid waste disposal site that was operated by Caltrans and the regulatory

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				status is reported as "unpermitted." It is inspection annually by the County of Los Angeles and the most recent inspection was performed on January 28, 2016. The inspection report notes that the exact location is unknown and no new information has been obtained, but no significant land use changes were noted in the area since the last inspection. No significant violations were noted at the time of the inspection. Based on the use of this area, there is potential for waste materials to exist which may be encountered during construction and/or excavation activities.
50440	7140-014-808	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 50440 as Utility Use, owned by Southern California Edison Co Ltd. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 50440 consists of APN 7140-014-808 and located adjacent to the east of I-710. Based on a review of online maps and photographs, Parcel No. 50440 is a strip of land that is occupied by transmission power lines and stables associated with the Rancho Rio Verde Riding Club (1000 W. Carson St.). No EDR listings were identified in this area. This parcel was is located within an area identified in the EDR Report Orphan Summary (ID Nos. S114725879 and S114725880) as Caltrans Long Beach, and West Los Angeles River No. 2 in the RGA LF database, see Parcel No. 40416 for EDR listing information.
40441	7140-014-939	Los Angeles River Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 40441 as Flood Control Use, owned by LA Flood Control District. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 40441 consists of APN 7140-014-939. Based on a review of online maps and photographs, Parcel No. 40441 consists of the Dominguez Basin, a segment of the Los Angeles River, and a strip of vacant land located adjacent to the east of the Los Angeles River. This parcel was located within an area identified in the EDR Report Orphan Summary (ID Nos. S114725879 and S114725880) as Caltrans Long Beach, and West Los Angeles River No. 2 in the RGA LF database, see Parcel No. 40416 for EDR listing information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
40445	7140-014-942	Rail OPS Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 40445 as Flood Control Use, owned by LA County Metro Tans. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 40445 consists of APN 7140-014-942. Based on a review of online maps and photographs, Parcel No. 40445 consists of the northern portion of the Dominguez Basin. This parcel is located within an area identified in the EDR Report Orphan Summary (ID Nos. S114725879 and S114725880) as Caltrans Long Beach, and West Los Angeles River No. 2 in the RGA LF database, see Parcel No. 40416 for EDR listing information.
40447	7140-014-910	Los Angeles River Long Beach, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 40447 as Flood Control Use, owned by LA County Flood Control District. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 40447 consists of APN 7140-014-910. Based on a review of online maps and photographs, Parcel No. 40447 consists of a storage yard (leasee unknown) located adjacent to the west of the Los Angeles River. This parcel is located within an area identified in the EDR Report Orphan Summary (ID Nos. S114725879 and S114725880) as Caltrans Long Beach, and West Los Angeles River No. 2 in the RGA LF database, see Parcel No. 40416 for EDR listing information.
40449	7140-014-909	Los Angeles River Long Beach, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 40449 as Flood Control Use, owned by LA County Flood Control District. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 40449 consists of APN 7140-014-909. Based on a review of online maps and photographs, Parcel No. 40449 consists of a segment of the Los Angeles River and the Dominguez Gap Wetlands located south of Dominguez St. This parcel is located within an area identified in the EDR Report Orphan Summary (ID Nos. S114725879 and S114725880) as Caltrans Long Beach, and West Los Angeles River No. 2 in the RGA LF database, see Parcel No. 40416 for EDR listing information.

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Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
80450	7140-014-943	Rail OPS Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 80450 as Railroad Use, owned by LA Co Metro Trans. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 80450 consists of APN 7140-014-943. Based on a review of online maps and photographs, Parcel No. 80450 consists of a paved lot used for parking and storage associated with the adjoining Metro facility. This parcel is located within an area identified in the EDR Report Orphan Summary (ID Nos. S114725879 and S114725880) as Caltrans Long Beach, and West Los Angeles River No. 2 in the RGA LF database, see Parcel No. 40416 for EDR listing information.
04351	7140-014-028	Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 04351 as Business Use, owned by Harbor Land Company LLC. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 04351 consists of APN 7140-014-028. Based on a review of online maps and photographs, Parcel No. 04351 consists of a segment of the Metro Blue Line/ Pacific Electric Railroad tracks. This parcel is located within an area identified in the EDR Report Orphan Summary (ID Nos. S114725879 and S114725880) as Caltrans Long Beach, and West Los Angeles River No. 2 in the RGA LF database, see Parcel No. 40416 for EDR listing information.
50452	7140-014-804	SCE Corridor Long Beach, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 50452 as Utility Use, owned by SCE. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 50452 consists of APN 7140-014-804. Based on a review of online maps and photographs, Parcel No. 50452 is a storage yard (leasee unknown) located adjacent to the west of the Los Angeles River. This parcel is located within an area identified in the EDR Report Orphan Summary (ID Nos. S114725879 and S114725880) as Caltrans Long Beach, and West Los Angeles River No. 2 in the RGA LF database, see Parcel No. 40416 for EDR listing information.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
08122	7306-022-043	129 Victoria St. Long Beach, CA	Partial	The Right-of-Way Impact Report identifies Parcel No. 08122 as Business Use, owned by 5951 LONG BEACH LLC. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 08122 consists of APN 7306-022-043. This parcel consists of This parcel consists of a strip of land located adjacent to the west of the Long Beach Blvd. on-ramp to I-710 South. An EDR listing of potential concern was identified (see Parcel No. 08110).
08111	7307-008-051	6001 Long Beach Blvd. Long Beach, CA	Partial	The Right-of-Way Impact Report identifies Parcel No. 08111 as Business Use, owned by WMC INC and currently occupied by an ARCO gasoline station. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 08111 consists of APN 7307-008-051. This parcel consists of a strip of land at 6001 Long Beach Blvd., adjacent to northwest corner of Victoria St. and Long Beach Blvd. This address was identified as 81956 ARCO AM/PM (EDR ID No. 2092) in the HAZNET database; as ABZ. INC. (ARCO AM/PM) (EDR ID No.2092) in the CA UST database It appears that historically the address 6015 Long Beach Blvd. was also associated with this parcel, which was identified as 92497 (EDR ID No. 2092) in the HIST UST database; as J.W. Ridell Chevron (EDR ID No. 2092) in the UST database; and as Chevron U.S.A. Inc. (EDR ID No. 2092) in the CA FID UST, SWEEPS UST , CA HIST UST databases; as Strong Roy Chevron (EDR ID No. 2092) in the EDR Hist Auto database. Based on the lack of listing in other databases indicating violations and/or a release, these listings are not expected to have created an environmental concern to the ISA Study Area. An adjacent EDR listing of potential concern was identified (see Parcel No. 08110).
14101	6194-031-008	5447 Marti Luther King Jr Blvd. Lynwood, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 14101 as Business use, owned by ERMM Corp. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 14101 consists of APN 6194-031-008. Based on review of online maps and photographs, Parcel No. 14101 consists of three commercial structures occupied by Kirk's Diesel (5447 Martin Luther King Blvd.), located north of Martin Luther King Jr. Blvd. and west of I-710.This parcel was identified in the EDR Report (EDR ID No.1274) as Diesel Mobile Service in the HAZNET database. Based on the lack of violations and/or

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area.
17206	6332-014-025	5568 61st St. City of Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 17206 as Business Use owned by Sheldon Appel Co Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 17206 consists of APN 6332-014-025. Based on review of online maps and photographs, Parcel No. 17206 consists of a large commercial building (5568 E. 61st St.) occupied by Regal Trading Company (5560 E. 61st St.) and Ivy Enterprises (5564 E. 61st St.). This facility is located south of E. 61st St., east of I-710. This parcel was identified in the EDR Report (EDR ID No. 516) as Henkel Corp in the CHMIRS and EMI databases; and as Cognis Corp in the LUST, RCRA-SQG, EMI, HAZNET, FINDS, DEED, ENVIROSTOR, and Los Angeles County HMS databases. According to the ENVIROSTOR database, from 1938 to 1999, this 11-acre site was occupied by various chemical manufacturing companies and a steel foundry. Some of the former operators included Crayola, Vegetable Oil Company, Emery Industries, Wulff Processing, California Carbonic, National Distillers, and Apex Steel. Henkel, the last facility operator, was an oleochemical manufacturing facility that refined vegetable and animal fats. In 1994, Henkel was granted a Conditional Authorization for the on-site treatment. In 1997, Henkel submitted a Phase I Environmental Assessment Checklist indicating further investigation was needed. DTSC conducted a Phase I Environmental Checklist verification inspection on the site and concurred further investigation was needed. Identified SWMUs included nickel storage, sulfuric acid storage, stormwater impound, wastewater sumps, wastewater pre-treatment sump, Southland Oil (State Super Fund site) property border, steel foundry, and excavations from Underground Storage Tanks (USTs) formerly containing Acetone, Methanol, Gasoline, Dowtherm A, and Therminol. Cognis Corporation took over Henkel and demolished the above ground structures in the spring 2000. In June 2000, Cognis Corporation entered into a Corrective Action Consent Agreement (CACA) with DTSC to investigate and remediate potential soil and groundwater contamination. During the fiscal year 2004/2005, DTSC oversaw implementation of

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
				an interim measure removal of lead contaminated soil in Area 2. Corrective Measures Plan, dated March 29, 2007 for Cognis Facility, was public noticed and approved by DTSC on June 29, 2007. Cognis implemented Soil Vapor Extraction (SVE) and removal of ten cubic yards of contaminated soil with arsenic concentrations above the local background levels in one area (Area 3). In addition, the Corrective Measures Plan proposed to place a cap and additional restriction on the border with Southland Oil Site (Area 6). The restriction prohibits re-development except for the removal of the existing concrete structures and construction of a parking lot. The facility submitted Corrective Measures Completion report in July 2010. A Land Use Covenant was filed with the Los Angeles County Assessor's Office in 2012. The site returned to industrial/commercial use, with "Land use restrictions only" as of March 16, 2012. According the GeoTracker database, the facility is listed with a status of "Completed-case closed" as of February 18, 2009 for a release of gasoline to soil. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
19489	5241-030-011	1549 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19489 as Business Use, owned by Emigdio Gamboa Trust. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19489 consists of APN 5241-030-011. Based on a review of online maps and photographs, Parcel No. 19489 consists of the Universal Lift Gate Service (1549 S. Sydney Dr.) located west of S. Sydney Dr., west of I-710.This parcel was identified in the EDR Report (EDR ID No. 170) as Yaky Welding Shop in the EMI database; as Universal Liftgte Service in the HAZNET database. Based on the lack of violations and/or listings in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19490	5241-030-012	1545 Sydney Dr. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19490 as Business Use, owned by Jesus C and Blanca L Barraza. A review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19490 consists of APN 5241-030-012. Based on a review of online maps and photographs, Parcel No. 19490 consists of Barraza & Sons (1545 S. Sydney Dr.) located west of S. Sydney Dr., west of I-710. This parcel was identified in the EDR Report (EDR ID No. 170) as Barraza & Sons Inc. in the HAZNET, HAULERS, and FINDS databases. Based on the lack of violations and/or listings in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
17209	6332-013-033	-	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 17209 as Business Use owned by Newark Group Industries Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 17209 consists of APN 6332-013-033. Based on review of online maps and photographs, Parcel No. 17209 consists of the Golden State Fibers Recycling facility (5585 E. 61st St.) located north E. 61st St., east of I-710. This parcel was identified in the EDR Report (EDR ID No. 516) as Baker Castor Oil in the CERCLIS-NFRAP, NPDES, LA County Site Mitigation, Los Angeles County HMS, and ENVIROSTOR databases. According to the ENVIROSTOR database, the facility is listed with a status of "No further action" as of January 17, 1984. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
17210	6332-013-014	-	Full	The Right-of-Way Impact Report identified Parcel No. 17210 as Business Use owned by Newark Group Industries Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 17210 consists of APN 6332-013-014. Based on review of online maps and photographs, Parcel No. 17210 consists of a vacant strip of land located the Golden State Fibers Recycling facility (5585 E. 61st St.) located at the terminus of E. 61st St., east of I-710. This parcel is associated with Parcel No. 17209, refer for EDR listings and information.
17211	6332-013-001	-	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 17211 as Business Use owned by Newark Group Industries Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 17211 consists of APN 6332-013-001. Based on review of online maps and photographs, Parcel No. 17211 consists of a portion of Parcel No. 17209, refer for EDR listings and information.
19115	5243-029-003	4638 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19115 as Business Use, owned by Kenneth W Busch Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19115 consists of APN 5243-029-003. Based on review of online maps and photographs, Parcel No. 19115 consists of RDD USA (4638 E. Washington Blvd.) located south of E. Washington Blvd. and west of I-710. This parcel was identified in the EDR Report (EDR ID No. 214) as KW Busch Electric in the HAZNET database. Based on the lack of violations and/or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19116	5243-029-020	2414 Connor Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19116 as Business Use, owned by David M Throgmorton. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19116 consists of APN 5243-029-003. Based on review of online maps and photographs, Parcel No. 19116 consists of Throgmorton's Frame Clinic (2414 Conner Ave.) located east of Conner Ave., south of E. Washington Blvd., west of I-710. This parcel was identified in the EDR Report (EDR ID No. 214) as Certified Coatings Prod Co in the RCRA-SQG, FINDS, Los Angeles County HMS, EMI, CA FID UST, SLIC, LUST, UST,HIST UST, HIST CORETESE, and SWEEPS UST databases; and as Throgmortons Frame Clinic in the Los Angeles County HMS and HAZNET databases. According to the GeoTracker database, two cases are associated with this parcel. Certified Coatings Products is listed with a status of "Completed-case closed" as of June 27, 1991, for a release of acetone to soil. Throgmorton's Frame Clinic is listed with a status of "open-inactive" as of January 19, 2015. A Phase II Environmental Assessment Report dated May 2008 indicated that 15 soil borings were advanced on-site to delineate the extent of soil contamination resulting from existing USTs. The report concluded that petroleum hydrocarbon and VOC contamination is generally located between 20 and 105 feet bgs. The consultant then recommended that all existing USTs be removed, and all residual contamination be treated by vapor extraction. No additional information was available on the GeoTracker website. Based on the regulatory status, this listing has the potential to create an environmental concern to the ISA Study Area and a file review is recommended.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19117	5243-029-004	4630 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19117 as Business Use, owned by Kenneth W Busch Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19117 consists of APN 5243-029-004. Based on review of online maps and photographs, Parcel No. 19117 consists of a commercial property (4630 E. Washington Blvd.) located at the southeast corner of Connor Ave. and E. Washington Blvd., west of I-710. No EDR listings were identified associated with this address. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19118	5243-029-021	2415 Conner Ave. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19118 as Business Use, owned by Criterion Enterprises. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19118 consists of APN 5243-029-021. Based on review of online maps and photographs, Parcel No. 19118 consists of a vacant commercial property (2415 Connor Ave.) located west of Connor Ave. and south of E. Washington Blvd., west of I-710. No EDR listings were identified associated with this address. See Parcel No. 19116 for a discussion on nearby EDR listings of potential environmental concern.
19119	5243-029-007	4614 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19119 as Business Use, owned by Criterion Enterprises. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19119 consists of APN 5243-029-007. Based on review of online maps and photographs, Parcel No. 19119 consists of Pacific Signs & Supplies (4618 E. Washington Blvd.) located at the southwest corner of the intersection of E. Washington Blvd. and Connor Ave., west of I-710. This parcel was identified in the EDR Report (EDR ID No. 214) as Criterion Gates and Mfg Co in the Los Angeles HMS database. Based on the lack of violations and/or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19120	5243-029-008	4614 Washington Blvd. Commerce, CA	Full	The Right-of-Way Impact Report identified Parcel No. 19120 as Business Use, owned by Criterion Enterprises. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19120 consists of APN 5243-029-007. Based on review of online maps and photographs, Parcel No. 19120 consists of Universal Neon Plus (4614 E. Washington Blvd.) located south of E. Washington Blvd., west of I-710. This parcel was identified in the EDR Report (EDR ID No. 214) as Criterion Gate in the UST database; as Criterion Products Inc. in the HAZNET, EMI, and FINDS databases. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
19121	5243-029-009	4600 Washington Blvd. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19121 as Business Use, owned by4600 Washington LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19121 consists of APN 5243-029-009. Based on review of online maps and photographs, Parcel No. 19121 consists of J R's Tire Service (4600 E. Washington Blvd.) located south of E. Washington Blvd., west of I-710.This parcel was identified in the EDR Report (EDR ID No. 214) as 4600 Super Service in the SWEEPS UST, CA FID UST, Los Angeles County HMS, LUST, HIST CORTESE, HIST UST databases; as 1xHarrison Gas & Oil in the HAZNET database. According to the GeoTracker database, this site is listed with a status of "Completed-case closed" as of October 21, 2009 for a release of gasoline to an aquifer used for drinking water supply. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
19121	5243-029-009	4600 Washington Blvd. Commerce, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 19121 as Business Use, owned by4600 Washington LLC. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 19121 consists of APN 5243-029-009. Based on review of online maps and photographs, Parcel No. 19121 consists of J R's Tire Service (4600 E. Washington Blvd.) located south of E. Washington Blvd., west of I-710.This parcel was identified in the EDR Report (EDR ID No. 214) as 4600 Super Service in the SWEEPS UST, CA FID UST, Los Angeles County HMS, LUST, HIST CORTESE, HIST UST databases; as 1xHarrison Gas & Oil in the HAZNET database. According to the GeoTracker database, this site is listed with a status of "Completed-case closed" as of October 21, 2009 for a release of gasoline to an aquifer used for drinking water supply. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.
19122	5243-026-024	4560 Washington Blvd. Commerce, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 19122 as Business Use, owned by Ron M Sarake Et Al Lessee. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 19122 consists of APN 5243-026-024. Based on review of online maps and photographs, Parcel No. 19122 consists of Commerce Truck Stop (4650 E. Washington Blvd.) located south of E. Washington Blvd., east of Ayers Ave., west of I-710.This parcel was identified in the EDR Report (EDR ID No. 214) as Commerce Truck Stop in the Los Angeles County HMS, LUST, UST, and HAZNET databases. According to the GeoTracker database, this site is listed with a status of "Completed-case closed" as of February 6, 2012 for a release of gasoline to other groundwater. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual soil contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
11206	7115-002-004	6685 Atlantic Ave. Long Beach, CA	Full	The Right-of-Way Impact Report identified Parcel No. 11206 as Business use owned by Mobil Oil Corp. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 11206 consists of APN 7115-002-004. Based on review of online maps and photographs, Parcel No. 11206 consists of Mobil Service Station (6685 Atlantic Ave.), located west of Atlantic Ave. and south of SR-91. This parcel was identified in the EDR Report (EDR ID No. 1944) as Condol Narciso Inc. in the RCRA-SQG and FINDS databases; as ExxonMobil Oil Corp in the RCRA-LQG and FINDS databases; as Danilo Condol in the SWEEPS UST, CA FID UST, CHMIRS, and HIST UST databases; as Chung's Mobil in the UST, HAZNET, and EDR Historical Auto station database for the years 2001-2012. Based on the lack of violations and/or listing in other databases indicating a release, these listings are not expected to have created an environmental concern to the ISA Study Area.
13304	6236-037-002	Paramount, CA	Full	The Right-of-Way Impact Report identified Parcel No. 13304 as Flood Control Use, owned by Chevron USA Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 13304 consists of APN 6236-037-002. Based on a review of online maps and photographs, Parcel No. 13304 consists of a strip of vacant land located east of I-710 and west of the Los Angeles River. No EDR listings were identified in this area.
41434	6233-028-026	Los Angeles River South Gate, CA	Full	The Right-of-Way Impact Report identified Parcel No. 41434 as Flood Control Use owned by the State of California. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 41434 consists of APN 6233-028-026. Based on a review of online maps and photographs, Parcel No. 41434 consists of a vacant strip of land indicative of a subsurface pipeline. This parcel is located between I-710 and the Los Angeles River, north of Imperial Hwy. No EDR listings were identified in this area.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15276	6232-014-023	10101 Miller Way South Gate, CA	Full	The Right-of-Way Impact Report identified Parcel No. 15276 as Business Use, owned by William A Langenhuizen Trust. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 15276 consists of APN 6232-014-023. Based on a review of online maps and photographs, Parcel No. 15276 consists of the Lange Trucking Inc. facility (10101 Miller Way) located west of Miller Way and adjacent to the east of I-710. This parcel was identified in the EDR Report (EDR ID No. 1032) as Lange Trucking in the Los Angeles County HMS and LUST databases. According to the GeoTracker online database, the site is listed with a status of "Open-Site Assessment" as of June 3, 2009 for a release of diesel. Groundwater monitoring is ongoing at this property. Based on the regulatory status, this listing has potentially created an environmental concern to the ISA Study Area. In addition, there is potential for contamination to exist which may be encountered during construction and/or excavation activities.
15277	6232-014-025	9925 Miller Way South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15277 as Business Use, owned by Fiola International. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 15277 consists of APN 6232-014-025. Based on a review of online maps and photographs, Parcel No. 15277 consists of the Cal State Express Inc. facility (9850 Miller Way) located west of Miller Way, south of Frontage Rd., and adjacent to the east of I-710. This parcel was identified in the EDR Report (EDR ID No. 1010) as Fiola International in the Los Angeles County HMS and LUST databases; as LA Express Assembly and Dist. Inc. in the FINDS and CERCLIS databases; as Vacant in the HIST CORTESE and SWEEPS UST databases. According to the GeoTracker online database, the site is listed with a status of "Completed-Case closed" as of July 23, 1996, for a release of other solvents or non-petroleum hydrocarbon to soil. Based on the regulatory agency closure status, this listing is not expected to have created an environmental concern to the ISA Study Area. However, there is potential for residual contamination to exist which may be encountered during construction and/or excavation activities.

Table 3.12-2: Sites of Potential Environmental Concern to the I-710 Corridor Project under Alternative 7

Appendix P-2 Parcel No.	APN	Address[1]	Acquisition	Site Listing
15229	6232-015-009	5440 Southern Ave South Gate, CA	Partial	The Right-of-Way Impact Report identified Parcel No. 15229 as Business Use, owned by J B Hunt Transport Inc. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 7 Maps and County Assessor website revealed that Parcel No. 15229 consists of APN 6232-015-009. Based on a review of online maps and photographs, Parcel No. 15229 is associated with Parcel No. 15230, occupied by J B Hunt Transportation (5730 Southern Ave.), located south of Southern Ave. and east of I-710. See Parcel No. 15230 for EDR information.
15268	6233-002-901	South Gate, CA	Partial, TCE	The Right-of-Way Impact Report identified Parcel No. 15268 as Business Use, owned by SOUTH GATE CITY. Review of the I-710 EIR/EIS ROW Exhibit - Alternative 5C Maps and County Assessor website revealed that Parcel No. 15268 consists of APN 6233-002-901. Based on a review of online maps and photographs, Parcel No. 15268 consists of a segment of land bounded to the northwest by I-710, northeast by the Union Pacific Railroad, southeast by the Rio Hondo Channel, and southwest by the Los Angeles River. This parcel is currently leased to GWS, Inc. for use as an active composting operation for green waste. and used to be associated with a former landfill. This parcel was formerly part of a landfill associated with Parcel Nos. 41543, 15268, 61544, 41520, and 71570 (see Parcel No. 41543 for EDR discussion).

Source: *Initial Site Assessment* (February 2017).

[1] These are the addresses that were identified by the Los Angeles County Office of the Assessor for each Assessor's Parcel Number. Website: http://assessor.lacounty.gov/extranet/DataMaps/pais.aspx

[2] State Water Resources Control Board GeoTracker database. Website: http://www.geotracker.swrcb.ca.gov/.

[3] CalRecycle, SWIS. Website: http://www.calrecycle.ca.gov/SWFacilities/Directory/.

Refer to the following page for acronym definitions.

Acronym definitions for Table 3.12-2:

AFS = Air Force Station
APN = Assessor's Parcel Number
AST = aboveground storage tank
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, and xylenes
CA FID = California Facility Inventory Database
CA WDS = California Waste Discharge System Database
CalRecycle = California Department of Resources Recycling and Recovery
Caltrans = California Department of Transportation
CCR = California Code of Regulations
CERC-NFRAP = CERCLIS No Further Remedial Action Planned List
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System
CHMIRS = California Hazardous Material Incident Reporting System
Cortese = California Environmental Protection Agency Hazardous Waste and Substances Sites (List)
DCE = dichloroethene
DHS = Department of Health Services
DTSC = Department of Toxic Substances Control
EDR = Environmental Data Record
EMI = Emission Inventory Data
EPA = Environmental Protection Agency
FINDS = Facility Index Systems
GSA = General Services Administration
HAZNET = Hazardous Waste Manifests System
HIST-UST = historical underground storage tank
HMS = Health Management Systems
I-405 = Interstate 405
I-710 = Interstate 710
ISA = Initial Site Assessment
LADWP = Los Angeles Department of Water and Power
LBDHHS = City of Long Beach, Department of Health and Human Services
LUST = leaking underground storage tank
µg/kg = micrograms per kilogram
Metro = Los Angeles County Metropolitan Transportation Authority
OOI = Oil Operators, Inc.
Oxy = Occidental Petroleum Corporation
PCE = tetrachloroethylene
RCRA-SQG = Resource Conservation and Recovery Act Small-Quantity Generator Database
RGA LF = Recovered Government Archive Solid Waste Facilities List
RWQCB = Regional Water Quality Control Board
SLIC = SWRCB Spills, Leaks, Investigations, and Cleanups
SWAT = Solid Waste Assessment Test
SWEEPS = Statewide Environmental Evaluation and Planning System
SWF/LF = Solid Waste Facility/Landfill
SWIS = Solid Waste Information System
TCE = trichloroethylene
TPH = total petroleum hydrocarbons
TRIS = Toxic Release Inventory System
USPS = United States Postal Service
UST = underground storage tank
VCP = Voluntary Cleanup Program
VOC = volatile organic compounds
WMDUS = State Waste Management Unit Database System

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
Adjacent to the east of the study area, northeast of the intersection of 6th St. and San Francisco Ave.	Nearby Parcel No. 70024, 70018	Nearby Parcel No. 70024, 70018	00-SHORELINE-7th	This address was identified in the EDR Report as City of Long Beach Redevelopment Agency (EDR ID No. 2988) in the CA RGA LUST database. This address (EDR ID No. 2998) was also identified in the UST database. Additional information was not available in the EDR Report. According the online GeoTracker database, this site formerly maintained two 3,000-gallon USTs, which were permitted for removal in 1974; however, it was unclear whether they were removed at that time or if soil testing was conducted. In 2007, a subsurface investigation was performed in the area of the former USTs and a total of 18 soil samples were collected and analyzed for fuel constituents (EPA Methods 8015M and 8260B. Maximum concentrations of 122 mg/kg total petroleum hydrocarbons (TPHg), 20.3 mg/kg total petroleum hydrocarbons as motor oil, 0.57 mg/kg benzene, 1.01 mg/kg ethylbenzene, 0.0027J toluene, 0.27 mg/kg xylenes were detected in the soil samples. Fuel oxygenates were not detected. In a letter dated November 25, 2014, the RWQCB stated that the residual concentrations of fuel constituents posed a low threat to human health, and soil and groundwater beneath the site. Therefore, no further action was required to pursue any further soil and/or groundwater investigation at the site. Based on the no further action status, these listings are not expected to have created an environmental concern to the ISA Study Area.
Adjacent to northeast of study area, near intersection of 7th St. and I-710	Nearby Parcel No. 70023, 70025, 40026, 40027	Nearby Parcel No. 70023, 70025, 40026, 40027	00-SHORELINE-7th	This address was identified as MTA Div. 12 (EDR ID No. 3292) in the RCRA-NonGen/NLR, CA LUST, CA FID UST, SWEEPS UST, HIST UST, CA NPDES, and UST databases; and as LA County Metropolitan Transit Authority (EDR No. 3292) in the FINDS, CA WDS, CA SLIC, CA EMI, CA HAZNET, and CA UST databases. This site was used as the MTA Bus Division 12 bus maintenance and fueling facility and included multiple gasoline and diesel USTs, and associated product piping and dispensers. Reportedly, a gasoline release that impacted soil was discovered in 2002. The LUST cleanup status is reported as “Open – Site Assessment” as of

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				October 28, 2015. The RWQCB is lead regulatory oversight agency. No groundwater data is available on the online GeoTracker database; however, a soil and groundwater investigation report appears to have been completed in 2010 and groundwater monitoring is ongoing (documents not available online). Based on the open case status, a file review is recommended.
Adjacent to the northeast of the study area, east of Los Angeles River, north of 7th St.	Near Parcel No. 40105, 40106, 40107, 40108	Near Parcel No. 40105, 40106, 40107, 40108	00-SHORELINE-7th	This address was identified as the Former Bulk Terminal (EDR ID No. 3292) in the FINDS, RCRA-SQG, CA HAZNET, CA RGA LUST, ERNS, CA EMI, CA UST, SLIC, CA HIST CORTESE, and LUST databases; as Union Pacific Railroad in the CA HAZNET database; and as 960 DEFOREST AVE. LONG BEACH SITE in the CERCLIS-NFRAP and RCRA-LQG database. The GeoTracker database reports that prior to 1965, the site was owned and operated by Pacific Electric Railroad Company and used for electric railroad repair, maintenance, and inspection. Southern Pacific Transportation Company acquired the site in 1965 and leased it to various entities, whose primary operations were bulk transfer and storage of liquid petroleum and chemical products. Union Pacific Railroad Company (UPRR) acquired the site in 1966, in a merger of Southern Pacific Transportation Company. Subsequently, the City of Long Beach acquired the site from the UPRR in May 2007. All structures have been removed from the property. The site is contaminated with heavy metals, petroleum distillates, volatile organic compounds (VOCs), and poly aromatic hydrocarbons (PAHs). Depth to groundwater is as shallow as 11 feet bgs and has also been impacted by some of these compounds. Soil remediation using soil vapor extraction (SVE) was completed between 2003 and 2007; when the system was decommissioned. Remaining impacted soils were approved for removal in 2008; however, based on the information available it is unclear whether this work was completed or what assessment work and/or remediation was completed to address the impacts to groundwater. The LUST cleanup status is listed as “Open - Site Assessment as of

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				February 28, 2016." Based on the open-case regulatory status, this site is considered to represent an environmental concern to the ISA Study Area and a file review is recommended. Based on the proximity to the ISA Study Area, contamination may exist and be encountered near this property during construction and/or excavation activities.
East of study area, south side of Anaheim St.	East of Parcel No. 01209	East of Parcel No. 01209	01 PICO-ANAHEIM	This address was identified as West Coast Choppers (EDR ID No. 2998) in the CA ENF and CA LUST database; as Douglas Robinson Property (EDR ID No. 2998) in the HIST CORTESE database; and as Ellis Family Trust (EDR ID No. 2998) in the SLIC database. Reportedly, a release of "naphtha distillate" was discovered in 1995 impacting groundwater. This property was formerly occupied by Ellis Paint Company. The RWQCB is the lead agency for this case. The online GeoTracker database lists the cleanup status as "Completed - Case Closed as of July 30, 2012." Prior to 1995, the USTs were used to store mineral spirits, lacquer thinner and toluene. Since 1995, it was used as a motorcycle retail sale store. In 1995, three underground storage tanks (USTs) and one clarifier were removed from the site. Total petroleum hydrocarbons as gasoline (TPHg) and total petroleum hydrocarbons as diesel (TPHd) were detected up to 1,539 mg/kg, and 9,553 mg/kg respectively. Subsurface soil and groundwater contamination was detected during investigations conducted in 1996. In 1996, seven soil borings and four hand-auger borings were advanced on-site to maximum depth of ten feet bgs. Grab groundwater samples were collected from the boreholes. Benzene was detected up to 19 ug/L. In 2006, five temporary wells TW1 through TW5 were installed on-site. Groundwater analytical data showed the TPHg and benzene were detected up to 77,000 ug/L, respectively. MTBE and TBA were not detected. On December 2, 2011, three soil borings were advanced to evaluate the current soil and groundwater condition. Three soil borings were completed. Approximately 1.5 inches of free produced was detected in boring B1. On December 21,

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				2011, the RP conducted a remedial excavation in the boring B1 area (six feet by six feet by 11.5 feet deep). The free product was removed and contaminated soil (17 cubic yards) excavated and disposed off-site. A soil sample was collected after excavation and a 12-inch diameter groundwater monitoring well W1 was installed in the excavation. TPHg, TPHd and benzene were detected up to 420 mg/kg, 2,100 mg/kg and 0.15 mg/kg, respectively in the soil sample. On January 9, 2012, groundwater samples were analyzed from the three existing wells (two are temporary wells). The groundwater flow direction was identified as flowing to the northwest and was detected between six and nine feet bgs. No free produced was detected in well W1. TPHg and benzene were detected up to 24,000 ug/L and 250 ug/L, respectively. MTBE was not detected. The results show at least 50 percent reduction in contaminant from 2006 data. The highest contamination is centered in well W1 area. RWQCB granted a No Further Action- Closure letter on July 30, 2012. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area.
East of study area, south side of Anaheim St.	East of Parcel No. 01209	East of Parcel No. 01209	01 PICO-ANAHEIM	This address was identified as in the EDR Report as Aratex Services (Aramark Uniform and Career Apparel) (EDR ID No. 2998) in the RCRA-LQG, HIST CORTESE, CA LUST, CA SLIC, CA FID UST, CA LOS ANGELES CO. HMS, and HAZNET databases; as Soft Water Laundry & Dry Cleaning Company (EDR ID No. 2998) in the EDR Hist Cleaner database; and as American Buffalo Inc in the CA UST database. Reportedly, a release of solvents impacting an aquifer used for drinking water supply was discovered in 1988. The LUST cleanup status is reported as “Open – Remediation” as of August 16, 2013. The RWQCB is lead regulatory oversight agency. The property is occupied by two buildings. Historically, the main laundry facility was located on the west and the auxiliary building was on the east. The area between the two buildings is

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				covered by asphalt pavement. Adjacent to the main building on the west, there is a sump. The past operations and uses of the sump are unknown. Three underground storage tanks (USTs) and one above-ground storage tank (AST) were present at the site prior to ARAMARK's purchase in 1986. USTs included a 6,000-gallon diesel, a 550-gallon gasoline, and a Stoddard solvent UST of unknown size. The AST contained tetrachloroethylene (PCE) and had a capacity of 1,000 gallons. In 1982, the diesel and gasoline USTs and PCE AST were removed. Later, the Stoddard solvent UST was filled with concrete and pea gravel and abandoned in-place. The exact date of the Stoddard solvent UST abandonment is unknown but occurred prior to 1986.Several soil and groundwater investigations have been conducted at the site since 1987. Soil and groundwater have been impacted with chlorinated volatile organic compounds, petroleum hydrocarbons, benzene, toluene, ethylbenzene and xylenes (BTEX). Highest historical soil concentrations include 28,000 micrograms per kilogram (ug/kg) of PCE, 1,200 ug/kg of cis-1,2-dichloroethylene (c-1,2-DCE), 2,300 ug/kg of benzene, and 12,000 ug/kg of total petroleum hydrocarbons. Initial groundwater investigations in 1988 detected concentrations of benzene, trans-1,2-DCE, and PCE up to 1,600, 7,240, and 8,350 micrograms per liter (ug/L), respectively. A groundwater pump and treat system operated at the site from 1994 to 2002, pumping groundwater through a shallow tray air stripper and two granular activated carbon units prior to discharge at the storm drain, under the National Pollutant Discharge Elimination System (NPDES) permit No. CA0063045. Groundwater monitoring has been conducted since 1987. In general, concentrations of chlorinated volatile organic compounds in groundwater have decreased due to the operation of remediation system, except for vinyl chloride. Maximum groundwater concentrations in the second quarter of 2008 include PCE at 450 ug/L, TCE at 120 ug/L, , cis-1,2-DCE at 59 ug/L, vinyl chloride at 600 ug/L, benzene at

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				33 ug/L, and chlorobenzene at 47 ug/L .There are currently seven groundwater monitoring wells on the property. Four groundwater monitoring wells are scattered around the property, across Orange Ave., and across West Anaheim St. The groundwater monitoring wells are screened differently based on when they were installed. A soil vapor extraction system is operating at the site since 2011. Amendments were injected in groundwater for cleanup in 2013-2014. Groundwater monitoring is on-going. Based on the open-case regulatory status, this site is considered to represent an environmental concern to the ISA Study Area and a file review is recommended. Based on the proximity to the ISA Study Area, contamination may exist and be encountered near this property during construction and/or excavation activities.
West of the study area, southeast corner of 17th St. and Harbor Ave	West of Parcel Nos. 01448, 01447, 01446	West of Parcel Nos. 01448, 01447, 01446	01 PICO-ANAHEIM	This address was identified as Marine Hardware (EDR ID No. 3141) in the LUST database; as Hydro Services Co (EDR ID No. 3141) RCRA-SQG, FINDS, CA HIST CORTESE and UST databases; and as Press Tech Inc (EDR ID No. 3141) in the RCRA-NonGen and FINDS databases. Reportedly, a release of other solvents or non-petroleum hydrocarbons impacting an aquifer used for drinking water supply was discovered in 1989. The LUST cleanup status is reported as "Completed - Case Closed as of October 8, 2013." The RWQCB is lead regulatory oversight agency. The site is a former marine hardware company and is now a truck maintenance facility. The case was referred to the Regional Board in November 1991 by the City of Long Beach. In November 1989, an 8,000-gallon diesel UST and a 1,000-gallon waste oil/gasoline UST was removed from the site. Hydrocarbon contamination was detected in soil samples collected from the bottom of the USTs. TPHg was detected up to 13,700 mg/kg in 1989. In September 1990, four soil borings were advanced to 30 feet bgs and the borings were converted to four groundwater monitoring wells (MW1 through MW4). TPHg and benzene were detected up to 270 mg/kg and 1.2 mg/kg,

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				respectively, in soil samples. In July 2002, two groundwater monitoring wells (MW-5 and MW-6) were installed. TPHg was detected up to 5,800 mg/kg. Benzene, MTBE, and TBA were not detected in soil samples. Groundwater monitoring began in 2002. The depth to groundwater ranges from approximately seven to 14 feet bgs. The groundwater flow direction is north. The latest groundwater monitoring data collected in June 2013 showed that TPHg and benzene were detected up to 600 ug/L, and 1.5 ug/L, respectively. MTBE and TBA were non-detectable in all six wells. The RWQCB granted a No Further Action- Closure letter on October 8, 2013. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area.
Adjacent to the west of the study area at the southwest corner of Harbor Ave. and W. Pacific Coast Hwy.	Southwest of Parcel No. 02419	Southwest of Parcel No. 02419	02 PCH	This address was identified in the EDR Report as Tosco 76 Station No. 3568 (EDR ID No. 3141) in the CA HIST CORTESE and CA LUST database; as Conoco Philips No. 253568 (EDR ID No. 3141) in the CA HAZNET database; as Pacific 76 (EDR ID No. 3141) in the CA HAZNET and CA UST database; as UNOCAL Service Station No. 3568 (EDR ID No. 3141) in the CA HAZNET database; as Service Station 3568 (EDR ID No. 3141) in the CA HIST UST database; as Tosco Corporation Station No. 30519 (EDR ID No. 3141) in the CA HAZNET database; and as Union Oil Service Station (EDR ID No. 3141) in the CA HIST UST database. According to the LUST database, in 1993, a gasoline release affected groundwater at this site. The LUST case status is listed as "Completed - Case Closed as of July 3, 2015." According to the October 2013 groundwater monitoring report, groundwater samples detected TPHg of 9,400 ug/L, benzene of 1,900 ug/L, toluene of 23 ug/L, ethylbenzene of 310 ug/L, xylenes of 28 ug/L, TBA of 2,400 ug/L and MTBE of 280 ug/L. Groundwater samples were non-detect when analyzed for VOCs in 2013. The depth to groundwater was approximately encountered at seven feet bgs with a flow direction to the northwest. According to the Low-Threat Closure

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				report dated November 2013, the following remedial actions were conducted at the site: In May 1993, approximately 80 tons of soil were removed during the tank removal and replacement activities at the site. In March 200, during a one day dual-phase extraction (DPE) pilot test at the site, approximately 110 pounds of vapor phase hydrocarbons were removed from the site. Groundwater volume extracted from the site during this event was not documented. In November 2008, another one-day DPE pilot test was conducted at the site using the same groundwater monitoring wells (MW-1, MW-2, and MW-4) in addition to BC-2. Approximately 4.26 pounds of vapor phase hydrocarbons and 5,000 gallons of groundwater were removed during this event. Benzene concentrations has decreased since March 1993 from 11,000 ug/L to 1,900 ug/L in October 2013. Two down-gradient wells (MW-8 and BC-4) reported non-detect for benzene. Benzene plume appeared to have stabilized. MTBE has also decreased since February 1999 from 120,000 ug/L to 280 ug/L in October 2013 in well MW-4, and from 48,000 ug/L to 130 ug/L in well MW-2. Both MW-2 and MW-4 are source wells. Additionally, downgradient wells MW-1, MW-9 and MW-11 detected low concentrations or non-detect for MTBE (22 ug/L, 11 ug/L, and ND, respectively). MTBE plume appeared to have stabilized. TBA has decreased since July 2002 from 390,000 ug/L to 2,400 ug/L in October 2013 in well MW-4, and form 850,000 ug/L to 900 ug/L in well MW-1 (MW-1 and MW-4 are source wells) Downgradient well MW-11 was non-detect for TBA. TBA Plume appeared to have stabilized. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area.

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
Adjacent to the west of the study area just southeast of the intersection of Susana Rd. and Reyes Ave	West of Parcel No. 80741	West of Parcel No. 80741	07 DEL AMO	This address was identified as Flo-Kem Products (EDR ID No. 2258) in the CA Los Angeles Co. HMS, CA EMI, SSTS, RCRA-SQG, CA HIST UST, CA ENVIROSTOR, TRIS, FTTS, HIST FTTS, RMP, CA ID UST, CA SWEEPS UST, FINDS, CA HAZNET, CA NPDES, CA SLIC, CA RGA LUST, CA LUST and CA HIST CORTESE databases. According to the LUST database, a release of aviation fuel affected soil at this site in 1985. The LUST status is listed as "Open – Inactive" as of January 29, 2015 and "leak being confirmed." No additional information was available on the GeoTracker database. The lead agency is listed as the County of Los Angeles. Based on the lack of data available online, a file review is recommended.
Adjacent to the study area on the northeast corner of Victoria St. and Long Beach Blvd.	Near Parcel Nos. 08421, 08109, 08111, 08110, and 50808	Near Parcel Nos. 08421, 08109, 08111, 08110, and 50808	08 LONG BEACH BLVD	This address was identified in the EDR Report as 6020 Long Beach Blvd (EDR ID No. 2092) in the ERNS database; as Fernandes Joe Texaco Station (EDR ID No. 2092) in the EDR Hist Auto database; as Paul Abrahms Living Trust (EDR ID No. 2092) in the CA HAZNET database; as Bravoil Truckstops LLC (EDR ID No. 2092) in the CA HAZNET database; as Luxavin, Inc. (EDR ID No. 2092) in the CA UST database; as Luxavia Gas Station (EDR ID No. 2092) was identified in the HAZNET, UST, and LUST databases. The LUST cleanup status is reported as "Completed - Case Closed " as of March 8, 2016. According to the UST Case Closure from the RWQCB, the release at the site was discovered in February 1999, when petroleum constituents were detected in confirmation soil samples during the removal office underground storage tanks (USTs). In April and May 2006, a Phase II investigation identified petroleum constituents between five and 45 feet bgs. The borings were constructed near the locations of former USTs and dispensers at the site. Skimming and hand bailing removed 65 gallons of free product from groundwater between February 2007 and October 2011. Measurable free product has not been reported at the site since October 2011. A SVE system was operated at the site between

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				August 2008 and July 2014. The SVE system had removed 29,992 pounds of vapor phase hydrocarbons as of July 2014. Air sparging has been used in conjunction with SVE since January 2009. The site is an active fueling facility. Groundwater was most recently measured at 45 feet bgs. The contaminant plume that exceeds water quality objectives (WQOs} is less than 250 feet in length and has been stable or decreasing since 2011 .The nearest existing public supply well is located greater than 1 ,000 feet west of the defined plume boundary. Additional corrective action will not likely change the conceptual site model. Residual petroleum constituents pose a low risk to human health, safety, and the environment. The GeoTracker database reports that a total of 13 groundwater monitoring wells are associated with this property. Groundwater is present at approximately 43 to 46 feet bgs and flows to the south (will intersect the ISA Study Area). Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area.
Adjacent to the west of the study area, south of SR-91 and on the northwest corner of Stanley St. and Manville St.	West of Parcel Nos. 41007, 41008	None	10 91 WEST	This address was identified in the EDR Report as Boeing – Parcel 3 (EDR ID No. 1998) in the CA WDS and SLIC database; as Stanley Properties Pres Special (EDR ID No. 1998) in the CA HAZNET database; as Cylinder Clinic (EDR ID No. 1998) in the CA LOS ANGELES CO HMS database; as Estate of Albert Levinson (EDR ID No. 1998) in the CA HAZNET database; and as Chemtainer Industries Inc (EDR ID No. 1998) in the FINDS database; . According to the SLIC database, groundwater was affected at this site by chlorinated hydrocarbons. The SLIC status is listed as “Open – Remediation” as of March 8, 2011. The GeoTracker database reports that a total of 52 groundwater monitoring wells are associated with this property and groundwater is present at approximately 60 to 75 feet bgs. VOCs have been found in groundwater at concentrations exceeding their MCLs. Shallow soil remediation was completed at the site in 2003. As of 2006 deep soil and groundwater remediation activities were ongoing at this

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				property; however, additional off-site assessment was necessary to define the lateral extent of the groundwater plume. No additional (or more recent) information was available on the GeoTracker database. Based on the open-case regulatory status , this site is considered to represent an environmental concern to the ISA Study Area and a file review is recommended.
West of the study area, north of I-105, west of I-710.	None	None	13 ROSECRANS	This address was identified in the EDR Report as Caltrans-Wilco Dumpsite (EDR ID No. 1380) in the CA LOS ANGELES CO. HMS database; as Willco Landfill in the CA SWEEPS UST, CA LDS, LA Co. Site Mitigation, CA RESPONSE, FINDS, CA HIST Cal-Sites, and CA ENVIROSTOR database; as Willco Disposal Company Inc. in the CA WMUDS/SWAT and CA RGA LF database. Reportedly, the landfill was bounded by the Long Beach freeway on the east, Wright Rd. on the west, a Southern Pacific Railroad right-of-way on the south, and a retaining wall along the north. Prior to 1950, the site was used as a sand quarry and excavated to a minimum elevation of 62 feet above mean sea level in the central portion of the site. From 1950 to 1956, the area was used as a dump site, and from 1956 to 1978, the site was a transfer station for Class II and Class III landfill material. Caltrans acquired the site in 1974 for the location of the Long Beach freeway and the proposed Century freeway (105). In 1983, excavation of approximately two thirds of the landfill material was completed, removing approximately 200,000 cubic yards from the western and eastern ends of the site. During the excavation of the central area soil samples indicated the presence of metals and solvents near USTs. The online ENVIROSTOR database states that the site was issued a clean-up status of “Certified” as of February 19, 1988. The online GeoTracker database lists the cleanup status as “Completed - Case Closed” as of June 3, 2013. The potential contaminants of concern are listed as acetone, lead, petroleum, and VOCs, with potential to impact “other groundwater (uses other than drinking water) and soil.”

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				Based on the proximity to the ISA Study Area, contamination may exist and be encountered near this property during construction and/or excavation activities.
Adjacent to the east of the study area, at the southeast corner of Garfield Ave. and Southern Ave	East of Parcel Nos. 15232, 71528, 71527	East of Parcel Nos. 15232, 71528, 71527	15 FIRESTONE	This address was identified in the EDR Report as Greater LA County Vector Control District (GLAVCD) (EDR ID No. 969) in the CA HAZNET, CA LOS ANGELES CO. HMS, LUST database; and as District HQ (EDR ID No. 969) in the CA HIST UST and CA SWEEPS UST database. According to the LUST database, a gasoline release affected soil at this site in 2000. The LUST case status is listed as "Completed - Case Closed" as of July 17, 2013. The GeoTracker database reports that 116 tons of soil was excavated on February 29, 2000. The RWQCB granted a Closure/No Further Action letter on July 17, 2013 but the closure package available online is for the incorrect address. Although the regulatory status is considered closed, based on the lack of information available online, a file is required to evaluate potential impacts from this property.
Adjacent to the east of the study area, at the southeast corner of Garfield Ave. and Southern Ave	East of Parcel Nos. 15232, 71528, 71527	East of Parcel Nos. 15232, 71528, 71527	15 FIRESTONE	This address was identified in the EDR Report as LA CO SAN DIST: SOUTH GATE (EDR ID No. 969) in the CA UST, FINDS, CA LOS ANGELES CO. HMS, CA AST, CA WDS, CA NPDES, CA HIST UST, CA CDL, CA HAZNET, CA SWEEPS UST, LUST and SWF/LF databases. The SWF/LF database reports that this property is a permitted large volume transfer/processing facility that accepts construction/demolition, industrial, inert, and mixed municipal wastes. The facility is inspected monthly by the County of Los Angeles. According to the CalRecycle Solid Waste Information System (SWIS) database online, the most recent inspection was performed on March 30, 2016 and no violations or areas of concern were reported. The LUST database reports that a diesel release affected this site in 1998. The potential media affected is "under investigation." The cleanup status is listed as "Completed-Case Closed" as of January 7, 2015. The lead agency is the SWRCB. According to the UST Case Closure letter on the

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				online GeoTracker database, The site is an active fueling facility. The release at the site was discovered during a subsurface soil investigation in May 1998. Petroleum constituents were detected in the vicinity of the diesel dispenser at three feet bgs. During subsurface investigation at the site in October 1998, ten soil borings were advanced to depths between five and 50 feet bgs. Petroleum constituents were detected between two and four feet bgs. Groundwater was encountered in one boring at 43 feet bgs. One groundwater grab sample was analyzed and indicated that groundwater at the site had not been affected by the release. In July 1999, the diesel dispenser and three underground storage tanks (USTs) were removed from the site, and two of the USTs were replaced. Petroleum constituents detected in the vicinity of the USTs were very low, below Policy criteria. The nearest public supply well is greater than 1,000 feet from the site. A concrete-lined channel is located less than 250 feet from the site. Additional corrective action will not likely change the conceptual site model. Any remaining petroleum constituents pose a low risk to human health, safety, and the environment. The site received a site closure letter of No Further Action on January 7, 2015. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area.
Adjacent to the west of the Union Pacific Railroad (UPRR) tracks, north of Southern Ave., and east of Rayo Ave.	East of Parcel No. 15108	East of Parcel No. 15108	15 FIRESTONE	This address was identified in the EDR Report as Best Tape Inc DBA Seam Master Ind (EDR ID No. 944) in the CA HAZNET database; as Seam Master Industries (EDR ID No. 944) in the FINDS, CA LOS ANGELES CO. HMS, CA WDS, CA NPDES, CA Cortese, CA HAZNET, and CA ENVIROSTOR databases; as Southern Ave. Industrial Area (EDR ID No. 944) in the NPL and CERCLIS database. The CERCLIS database reports that a “Combined Preliminary Assessment/Site Inspection” was completed on January 17, 2006 and as a result the property was assigned a “higher priority for further assessment.” The ENVIROSTOR database indicate that this property is in

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				the Voluntary Cleanup Program and the status is "active" as of September 13, 2014. The lead agency is the US EPA. The online ENVIRSTOR database reports that a screw manufacturer operated on the site prior to 1972 and since 1972, the site has been used for the manufacture of hot-melt adhesive tape used for carpets. Observed releases of TCE and cis-1,2-DCE to groundwater and soils has been documented. Three main Areas of Concern (AOCs) at this property include concrete liners in the northwest corner of the property, a sump in the southeast corner of the property, and a UST in the southeastern corner of the property. Since 1986, several notices of violations (NOVs) have been issued by LA County Health Services mostly for improper storage/management of hazardous waste, leaky hazardous waste containers, ponding of cutting oil on the ground, and not disposing of retrograde and unusable oils and solvents. Several environmental investigations conducted at the site included groundwater, drum, and soil sampling. In groundwater, TCE and cis-1,2-DCE were detected in groundwater at concentrations up to 16,000 ug/L and 17,000 ug/L, respectively. Drum and floor samples from a storage shed indicated the presence of several metals (cadmium up to ten milligrams per kilogram (mg/kg); total chromium up to 2,800 mg/kg; copper up to 7,000 mg/kg; lead up to 1,500 mg/kg, and zinc up to 8,400 mg/kg). Soil samples indicated the presence of 20 VOCs. The highest soil concentrations were detected in samples collected immediately down-gradient of the sump. Depth to groundwater and flow direction were not available online. A Consent Order with the DTSC was completed on January 24, 2010. On January 18, 2011, the DTSC referred the US EPA to assume lead oversight responsibilities. A Remedial Investigation Report is due in 2016; no information was available for review. Therefore, a file review is required to evaluate potential impacts from this property. Based on the proximity to the ISA Study Area, contamination may exist and be

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				encountered near this property during construction and/or excavation activities.
Adjacent to the study area, northwest of the intersection of Firestone Blvd. and Garfield Ave.	South of Parcel No. 81522	Included in the design for Alt. 7 (Parcel No. 15356)	15 FIRESTONE	This address was identified in the EDR Report as COX Petroleum Transport (EDR ID No. 656) in the CA EMI database; as the Distribution Terminal (EDR ID No. 656) in the CA CHMIRS database; as ARCO Vinvale Terminal (EDR ID No. 656) in the FINDS, CA EMI, CA LUST, CA HAZNET, CA ENF, CA WDS, CA UST, CA SLIC, and CA HIST CORTESE database; as Tesoro Vinvale Terminal (EDR ID No. 656) in the TRIS, CA NPDES, CA SLIC, CA SWEEPS UST, CA LOS ANGELES CO. HMS, and CA EMI database; and as BP West Coast Products, ARCO Vinvale (EDR ID No. 656) in the CA EMI database. According to the CERCLIS database, this facility is not listed on the NPL list and, on December 21, 1988, no further remedial action was planned (NFRAP) for the facility. RCRA violations were issued to the facility in 2007, which subsequently achieved compliance. The lead agency for the SLIC and LUST cases is the RWQCB. The online GeoTracker database reports the 35-acre site operated as a refinery under the ownership of Rio Grande Oil Company from approximately 1923 to 1957. In 1957, all of the refining equipment was removed to accommodate the construction of I-710 freeway. The site was operated as a storage and distribution facility for Richfield's Watson Refinery until 1977. In 1977, the facility was upgraded to its current configuration and has operated as a fuel storage and distribution terminal since then. The SLIC cleanup status is reported as "Open – Remediation as of June 30, 2002." Subsurface investigations at the site began in 1987. Over 160 groundwater monitoring wells have been installed at this site and in the surrounding area. Ongoing quarterly groundwater monitoring and remediation is being performed including SVE and fluid recovery of separate-phase hydrocarbon (SPH) under the supervision of the RWQCB. Since the inception of remediation in May 1994, an estimated 1,568,347 gallons of petroleum hydrocarbons have

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				been removed from beneath the site. Based on the information reviewed online, it appears that additional remediation and site assessment activities are required at this property. Therefore, this property represents an environmental concern to the ISA Study Area. Based on the proximity to the ISA Study Area, contamination may exist and be encountered near this property during construction and/or excavation activities.
Adjacent to the west of the study area at the northeast corner of Firestone Blvd. and Rayo Ave.	West of Parcel No. 41540, North of Parcel No. 15124	West of Parcel No. 41540, North of Parcel No. 15124	15 FIRESTONE	This address was identified as Shultz Steel Company (EDR ID No. 693) in the RCRA-SQG, CA WDS, CA NPDES, CA HIST UST, CA UST, TRIS, FINDS, CA HAZNET, US AIRS, CA RGA LUST, CA SWEEPS UST, CA LOS ANGELES. HMS, CA EMI, CA ENVIROSTOR, and CA LUST database. According to the LUST database, a gasoline release affected soil at this property in 1999. The LUST cleanup status is listed as "Completed - Case Closed" as of September 7, 2011. The GeoTracker database reports that the Shultz Steel Company is an operating steel and machine products business that process aluminum, stainless steel, titanium and nickel-based alloys. The site encompasses several addresses with a total of seven buildings on 23 acres of land. The site formerly contained one 10,000-gallon gasoline and one 10,000-gallon diesel underground storage tanks and two fuel dispensers which were removed in 1998. The gasoline UST was relocated to a new location on the property. In 2000, one 10,000-gallon gasoline UST located at the southeastern portion of the parking lot was removed. In 2004, one 10,000-gallon diesel UST located at the eastern end of the Resiner Way cul-de-sac was removed. In 1998, soil sampling was reportedly conducted during the UST removal. Soil samples collected to a maximum of 30 feet bgs indicated maximum concentrations of 80 mg/kg TPHg (15 feet bgs), 0.015 mg/kg benzene (15 feet bgs) and 4.2 mg/kg MTBE (15 feet bgs). In April 2000, additional soil borings were taken near the former UST. Soil samples collected indicated that maximum concentrations of 400 mg/kg TPH (10 feet bgs) and 0.41 mg/kg MTBE (20

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				feet bgs). In December 2000, one 10,000-gallon gasoline UST and associated piping were excavated. Additional soil samples were taken from the excavation area to a maximum depth of 16.5 feet bgs. soil samples collected indicated maximum concentrations of 5,0000 mg/kg TPHg (3 feet bgs), 26 mg/kg benzene (3 feet bgs) and 77 mg/kg MTBE (5 feet bgs. The excavation was backfilled with previously excavated sandy and clayey soil along with clean imported soil. Approximately 320 tons of fuel contaminated soil was removed from site. In April 2004, the 10,000-gallon diesel UST was excavated and soil samples were taken at the excavation area to a maximum depth of 15 feet bgs. Soil samples collected indicated maximum concentrations of 1,200 mg/kg of TRPH and 280 mg/kg TPHd. Between November and December 2009, soil borings were drilled in all former UST areas between 31.5 and 96.5 feet bgs. Soil samples were collected to a maximum depth of 71.5 feet bgs. Six of the soil borings were converted to monitoring wells. During the December 2009 site assessment, analysis of groundwater samples identified up to 17 ug/L of 1,1 DCA, and 13 ug/L of 1,1 DCE. TPHg, BTEX, MTBE and TBA were not detected in the groundwater. Depth to groundwater was measured at about 50 feet bgs and flow direction varied toward the southwest, northeast, and southeast. The residual VOC plume is currently under the investigation by the DTSC. The RWQCB granted a closure letter of “No Further Action” on September 7, 2011. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area.

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
North of the study area, north of UPRR and Randolph St., east of I-710	North of Parcel No. 81635	North of Parcel No. 81635	17 SLAUSON	This address was identified in the EDR Report as Southland Oil, Inc. (EDR ID No. 522) in the CA BOND EXP. PLAN, CA CORTESE, CA DEED CA RESPONSE, CA ENVIROSTOR, FINDS, CA ENF, CERCLIS-NFRAP, RCRA-SQG, CA LOS ANGELES CO. HMS, CA WDS, CA HIST Cal-Sites, and CA HAZNET databases; and as A. Ellison Co. (EDR ID No. 522 in the HIST UST database. This property is a former refinery and waste oil recycling facility. Contaminants of concern include heavy petroleum hydrocarbons, PCBs, metals (lead), halogenated hydrocarbons, aromatic and semi volatile compounds. According to the EDR Report, the use of this property has been restricted to commercial/industrial use (deed restriction) and the engineered asphalt/concrete cap and operating SVE system cannot be disturbed without approval. The ENVIROSTOR cleanup status is listed as "Certified - Operations and Maintenance as of August 16, 2002," which appears to be ongoing. The online ENVIROSTOR database reports that in 2015, the SVE system was deactivated to collect soil, soil vapor and groundwater samples, update site conditions, and investigate the source of certain oily liquid detected in one SVE well. Field operations will restart in Spring 2016. Based on the site's active remediation status, this property represents an environmental concern to the ISA Study Area. Based on the deed restriction in place for this property, approval from the DTSC will be required prior to any construction and/or excavation activities on this parcel.
West of the flood control channel at the northwest corner of Alamo Ave. and 59th Pl., currently part of Maywood Riverfront Park	None	South of Parcel No. 17452	17 SLAUSON	This address was identified as W.W . Henry (EDR ID No. NPL REGION) in the SLIC, LUST and Cortese databases. According to the LUST database, a solvents release affected groundwater at this site in 1997 and the case was deferred to SLIC. The GeoTracker database reports that the W.W. Henry site was an industrial site with a long history of manufacturing activities on about two acres and it is adjacent to the larger and more extensively contaminated site, Pemaco (see above), which is under US EPA oversight through its Superfund authority. Both sites, which have been

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				vacant for several years, have been undergoing site assessments to delineate the extents of soil, soil vapor, and groundwater contamination, and are being cleaned up for redevelopment as the Maywood Riverfront Park. The Park has been opened for use by the community since 2005 and was found to be maintained in good condition during a site visit by the RWQCB on June 19, 2008. During construction of the park, engineering controls were used including placing a layer of geo-textile liner over the site and covering the entire property with a foot of certified clean soil. A dual phase extraction (DPE) system (both soil vapor and groundwater) has been operating at the property since 2001. As of March 23, 2010, the dual phase extraction continued to operate and remediate the soils in the vadose zone and contaminated groundwater in the perched zone. The cleanup status is listed as "Open – Remediation as of October 15, 2014." Based on the semi-annual groundwater monitoring report from October 2015, the groundwater flow direction beneath the eastern portion of the site is inferred to be generally toward the south-southwest and was encountered between 105 to 114 feet above mean sea level (amsl) to 115 feet amsl. Chlorinated hydrocarbons, including 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, and VC, were detected in a number of perched zone monitoring wells across the site. On the eastern portion of the site, chlorinated hydrocarbons were detected in two wells. Chlorinated compounds detected at these well locations likely represent off-site contamination from the Pemaco Superfund site migrating onto the former W.W. Henry property. On the western portion of the site, chlorinated hydrocarbons were detected in wells two wells. The DPE system is shut down and equipment removal from the site is pending RWQCB approval. Based on the on-going remediation activities and south-southwestern flow of groundwater, this site is not expected to create an environmental concern to the ISA Study Area.

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
West of the flood control channel, south of Slauson Ave. and north of 59th Pl., currently part of Maywood Riverfront Park	None	South of Parcel No. 17452	17 SLAUSON	This address was identified as Pemaco Inc./Pemaco Former Chemical Corporation (EDR ID No. 452) in the FINDS, ICIS, CA UST, CA SWEEPS UST, NPL, CERCIS, US ENG CONTROLS, US INST CONTROL, ROD, CA LOS ANGELES CO. HMS, CA EMI, PRP, CA HIST CAL-SITES, CA CORTESE, CA ENVIROSTOR, CA HIST CORTESE, and CA LUST databases. Based on a drive-by of this property, it is currently occupied by a City park (Maywood Riverfront Park) and an active remediation system was observed within a fenced enclosure in the southern portion of the property. Pemaco is a former chemical mixing facility located in a light industrial and residential area. It is believed that Pemaco began on-site operations in the late 1940s and ended operations at the site on June 21, 1991. Hazardous substances are known to have been used at the facility, including chlorinated solvents, aromatic solvents, and flammable liquids. The site is currently undergoing cleanup of soil vapor and groundwater under the oversight of the EPA. The groundwater treatment system has been operating since April 2007; the vapor portion of the system has been operating since May 2007. According to EPA fact sheets, contaminated groundwater is reportedly located between 25 and 100 feet below surface . At the time the Maywood Riverfront Park was constructed in 2005, a layer of geo-textile liner was placed over the site and a foot of certified clean soil was used to cover the entire property (engineering control). The “source area” with the highest contamination has been fenced off while it is being remediated in the southern portion of the site. Based on the engineering control in place for this property, approval from the EPA will be required prior to any construction and/or excavation activities on this parcel.

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
Adjacent to the east of the study area and I-710, northwest of the intersection of Eastern and Bandini Blvd.	East of Parcel No. 18227, 18228, 18239, 18330	East of Parcel No. 18227, 18228, 18239, 18330	18 ATLANTIC-BANDINI, OPT1A/OPT 1B	Based on a review of the EDR Report and online maps and photographs, it appears that this parcel consists of a large U.S. Government-owned property, which was identified as US Postal Service East Garage (EDR ID No. 364) at 5553 Bandini Blvd in the CA NPDES, CA WDS, CA UST, CA LOS ANGELES CO. HMS, and CA HAZNET databases; and as US Postal Service Bulk Mail (EDR ID No. 364) at 5555 Bandini Blvd in the CA HAZNET, CA RGA LUST, CA HIST UST, FINDS, CA CHMIRS, LUST, CA HIST CORTESE, CA FID UST, and SWEEPS UST databases. The online GeoTracker database reports the LUST status for the US Postal Service Bulk Mail facility at 5555 Bandini Blvd. as "Completed – Case Closed" as of October 19, 1998. The online GeoTracker database reports that the LUST status for the US Postal Service East Garage is "Completed - Case closed as of January 16, 2015." Based on the SWRCB Closure Order from October 2014, The release at the site was discovered when four underground storage tanks (USTs), dispenser, and associated product piping were removed from the site in January 2005. Analytical results indicated concentrations of total petroleum hydrocarbons at 930 milligrams per kilogram in soil at three feet bgs near the former dispenser. A remedial excavation was conducted and impacted soil was excavated and disposed of off-Site. Another sample was collected at four feet bgs and analytical results indicated no significant level of petroleum constituents in the soil. The site is currently operated as a U.S. Postal Service (USPS) sorting facility. Groundwater was not encountered during soil sampling to the maximum depth explored (14 feet bgs). In the area of the site, depth to water is approximately 90 feet bgs. There are not sufficient mobile constituents at the site (leachate, vapors, or light non-aqueous phase liquids [LNAPL]) to cause groundwater to exceed the groundwater criteria for the Policy. The nearest public supply well and surface water body are greater than 1,000 feet from the site. Additional corrective action will not likely

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				change the conceptual site model. Any remaining petroleum constituents do not pose significant risk to human health, safety, or the environment. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area.
Adjacent to the north of the study area, south of the intersection of Pacific Way and Cobb St.	East of Parcel No. 19124, 19123, South of Parcel No. 19467, 81966, 19465	East of Parcel No. 19124, 19123, South of Parcel No. 19467, 81966, 19465	18 ATLANTIC-BANDINI, OPT1A/OPT 1B	Based on a review of the EDR Report and online maps and photographs, it appears that this parcel consists of a large U.S. Government-owned property, which was identified as US Postal Service East Garage (EDR ID No. 364) at 5553 Bandini Blvd in the CA NPDES, CA WDS, CA UST, CA LOS ANGELES CO. HMS, and CA HAZNET databases; and as US Postal Service Bulk Mail (EDR ID No. 364) at 5555 Bandini Blvd in the CA HAZNET, CA RGA LUST, CA HIST UST, FINDS, CA CHMIRS, LUST, CA HIST CORTESE, CA FID UST, and SWEEPS UST databases. The online GeoTracker database reports the LUST status for the US Postal Service Bulk Mail facility at 5555 Bandini Blvd. as "Completed – Case Closed" as of October 19, 1998. The online GeoTracker database reports that the LUST status for the US Postal Service East Garage is "Completed - Case closed as of January 16, 2015." Based on the SWRCB Closure Order from October 2014, The release at the site was discovered when four underground storage tanks (USTs), dispenser, and associated product piping were removed from the site in January 2005. Analytical results indicated concentrations of total petroleum hydrocarbons at 930 milligrams per kilogram in soil at three feet bgs near the former dispenser. A remedial excavation was conducted and impacted soil was excavated and disposed of off-site. Another sample was collected at four feet bgs and analytical results indicated no significant level of petroleum constituents in the soil. The site is currently operated as a U.S. Postal Service (USPS) sorting facility. Groundwater was not encountered during soil sampling to the maximum depth explored (14 feet bgs). In the area of the site, depth to water is approximately 90 feet bgs. There are not sufficient mobile

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				constituents at the site (leachate, vapors, or light non-aqueous phase liquids [LNAPL]) to cause groundwater to exceed the groundwater criteria for the Policy. The nearest public supply well and surface water body are greater than 1,000 feet from the site. Additional corrective action will not likely change the conceptual site model. Any remaining petroleum constituents do not pose significant risk to human health, safety, or the environment. Based on the regulatory agency closure status, these listings are not expected to have created an environmental concern to the ISA Study Area.
West of the study area, south side of Washington Blvd., just west of Arrowmill Ave.	None	None	18 WASHINGTON, OPT1A/OPT 1B	This address was identified in the EDR Report as Western Specialty Coatings (EDR ID No. 214) in the CA HIST CORTESE, CA SLIC, EDR Hist Auto, FINDS, RCRA-SQG, CA LUST, CA FID UST, CA SWEEPS UST, CA HIST UST, and CA LOS ANGELES CO.HMS databases. The LUST case status is listed as "Completed – Case Closed as of December 16, 1996" for a solvents release that affected "other groundwater" (i.e., uses other than drinking water) in 1988. The SLIC facility status is reported as "Open – Inactive as of June 27, 2014." The GeoTracker database listed the potential contaminants of concerns as "petroleum/fuels/oils, volatile organic compounds." The potential media affected is listed as "none specified." No additional information was available on the GeoTracker database. Based on the lack of information available in the EDR Report and online, a file review is required to evaluate potential impacts from this property.
West of the study area, southeast corner of Washington Blvd. and Indiana St.	None	None	18 WASHINGTON, OPT1A/OPT 1B	This address was identified in the EDR Report as Chalet Products Co (EDR ID No. 199) in the CA HAZNET and RCRA-CESQG database; as US Lubricant (EDR ID No. 199) in the TRIS database; as Sun CO. Inc. in the CA HAZNET and CA LOS ANGELES CO. HMS database; as Dendall Amalie Div (EDR ID No. 199) in the CA NPDES database; Kendall - Amalie Facility (EDR ID No. 199) in the SLIC database. The SLIC facility status is listed as "Open" and the case type as "Cleanup Program Site." The potential media affected and potential contaminants of concern are not reported. No

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				additional information was available on the GeoTracker database. Based on the lack of information available in the EDR Report and online, a file review is required to evaluate potential impacts from this property.
West of the study area, southwest corner of Washington Blvd. and Indiana St.	None	None	18 WASHINGTON, OPT1A/OPT 1B	This address was identified in the EDR Report as Laidlaw Waste Systems (EDR ID No. 199) in the CA HIST CORTESE and CA LUST database; as Sinclair Paint Co (EDR ID No. 199) in the CERCLIS, CORRACTS, RCRA-TSDF, RCRA-SQG, CA HIST UST, CA SWEEPS UST, CA LOS ANGELES CO. HMS, CA ENVIROSTOR, and CA HWP This property was formerly owned by Sinclair Paint Co. from the late 1940s until 1987 and used as a paint manufacturing facility. In 1987, the property was sold to Laidlaw Waste Systems, Inc. (Laidlaw) for use as a solid waste transfer station until 1997 when all buildings, aboveground tanks (27 total), underground storage tanks (39 total), and piping were removed from the property and it was paved with asphalt. In 1997, Laidlaw changed their name to Allied Waste Systems, Inc., who was acquired by Republic Services (responsible party) in 2008. The property is currently leased by Burlington Northern Santa Fe Company for intermodal container trailer parking. There are currently 14 on-site and six off-site groundwater monitoring wells associated with this property. Three of the groundwater monitoring wells were installed in a deeper saturated zone where depth to water has been gauged at approximately 130 to 137 feet bgs. Groundwater flow in the deep zone is generally to the south. The deep zone groundwater monitoring wells are sampled annually. The remaining groundwater monitoring wells are screened within the shallow saturated zone where depth to water has been gauged between approximately 60 to 90 feet bgs. Groundwater flow in the shallow zone is generally in two directions; from the south end of the site the flow is north, and from the north end the groundwater flows south. The shallow groundwater monitoring wells are gauged and sampled on a semi-annual basis. The primary contaminants of concern (COCs) in soil and

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		
				shallow groundwater include acetone, benzene, ethylbenzene, isopropyl alcohol, methyl ethyl ketone, toluene, xylenes, and total petroleum hydrocarbons (TPH). In the deep groundwater monitoring wells, COCs include carbon tetrachloride, chloroform, TCE, and TPH. Free product is routinely detected in several of the on-site shallow groundwater monitoring wells and recovered from these wells on a weekly basis. An SVE/biovent system was installed in 1997 and continues to operate. According to the online GeoTracker database, the cleanup status is listed as "Open - Assessment & Interim Remedial Action as of May 1, 2015." Based on the site's active remediation status, this property represents an environmental concern to the proposed ISA Study Area.
Adjacent to the west of the study area, northwest corner of Eastern Ave. and Triggs St.	Parcel No. 19515, 19517, 19519, 19519	Parcel No. 19515, 19517, 19519, 19519	20 I5-SR60	This address was identified as National Lighting Supply (EDR ID No. 161) in the RCRA-SQG, FINDS, and CA ENVIROSTOR databases. According to the ENVIROSTOR database, this property was referred to the DTSC by the County of Los Angeles Fire Department on August 3, 1994. The site is contaminated with PCE (100 ppm), PCBs (range to 1-81 ppm), and petroleum hydrocarbons (6400 ppm). The contaminated area is capped; however, there is a potential for groundwater contamination exists at the site because the depth to groundwater is approximately 70 feet bgs. Due the evidence of contamination at the site, the DTSC recommended a PEA. It is unclear whether a PEA was performed. The ENVIRSTOR database lists the site type as "Historical" and the cleanup status as "Inactive – Needs Evaluation as of June 20, 1995." No additional information was available on the ENVIROSTOR database. Based on the lack of information available in the EDR Report and online, a file review is required to evaluate potential impacts from this property.

Source: *Initial Site Assessment* (February 2017).

Refer to the following page for acronym definitions.

Table 3.12-3: Adjoining Properties of Potential Concern Under Alternatives 5C and 7

Location	Impact		Sub-Area	Description
	Alternative 5C	Alternative 7		

µg/kg = micrograms per kilograms
µg/L = micrograms per liter
amsl = above mean sea level
AOC = Areas of Concern
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, and xylenes
CA BOND EXP PLAN = California Bond Expenditure Plan
CA WDS = California Waste Discharge System Database
Caltrans = California Department of Transportation
CERC-NFRAP = CERCLIS No Further Remedial Action Planned List
CERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System
CHMIRS = California Hazardous Material Incident Reporting System
COCs = contaminants of concern
CORRACTS = RCRA Corrective Action Sites
Cortese = California Environmental Protection Agency Hazardous Waste and Substances Sites (List)
DPE = dual phase extraction
DPR = Department of Parks and Recreation
DTSC = Department of Toxic Substances Control
EDR = Environmental Data Record
EMI = Emission Inventory Data
EPA = Environmental Protection Agency
FINDS = Facility Index Systems
GLAVCD = Greater Los Angeles County Vector Control District
HAZNET = Hazardous Waste Manifests System
HIST-UST = historical underground storage tank
HMS = Health Management Systems
I-710 = Interstate 710
ICIS = Integrated Compliance Information System
Laidlaw = Laidlaw Waste Systems, Inc.
LNAPL = light non-aqueous phase liquids
LUST = leaking underground storage tank
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
MTBE = methyl tertiary-butyl ether
NOV = notices of violations
NPDES = National Pollutant Discharge Elimination System
NPL = National Priorities List
PAH = poly aromatic hydrocarbons
PEA = Preliminary Environmental Assessment
RCRA-SQG = Resource Conservation and Recovery Act Small-Quantity Generator Database
ROD = Record of Decision
RWQCB = Regional Water Quality Control Board
SLIC = SWRCB Spills, Leaks, Investigations, and Cleanups
SPH = separate-phase hydrocarbon
SR-91 = State Route 91
SVE = soil vapor extraction
SWEEPS = Statewide Environmental Evaluation and Planning System
SWF/LF = Solid Waste Facility/Landfill
TPH = total petroleum hydrocarbons
TPHd = total petroleum hydrocarbons diesel
TPHg = total petroleum hydrocarbons gasoline
TRPH = total recoverable petroleum hydrocarbons
TRIS = Toxic Release Inventory System
UP Railroad = Union Pacific Railroad
US ENG CONTROLS = Engineering Controls Sites List
US INST CONTROLS = Institutional Controls Sites List
USPS = U.S. Postal Service
UST = underground storage tank
VOC = volatile organic compounds
WQO = water quality objectives

Table 3.12-4: Solid Waste Disposal Sites of Potential Concern Under Alternatives 5C and 7

Parcel ID No.	APN	Location	Acquisition	Site Listing
N/A	N/A	Between the I-710 and the Los Angeles River between Anaheim St. to the south and Pacific Coast Hwy. to the north	Full (Within Existing right-of-way)	Public Service Transfer Station No. 1 (EDR ID No. 30-3240) is listed in the CA SWF/LF database. This facility is located between the I-710 and the Los Angeles River, north of Anaheim St. and south of Pacific Coast Hwy. The facility is located on City of Long Beach-owned property and is not associated with an APN because it is within the existing right-of-way. Project parcels are located adjacent to the east of this location. Reportedly, the City of Long Beach has an active limited volume transfer operation for green materials at this location. According to the online California Department of Resources Recycling and Recovery (CalRecycle), Solid Waste Information System (SWIS) database (SWIS No. 19-AA-1047), the facility permit was issued in October 2001 and it is permitted to handle 3,000 tons of green waste per year. The facility is inspected quarterly by the County of Los Angeles and the last inspection was performed on January 28, 2016. No violations or areas of concerns were observed at time of inspection. Past inspection records reported that this facility is not open to the public and is reserved for street cleaning operations. No enforcement action records were reported in the SWIS database. Based on the materials processed, frequent inspections and lack of reported violations or listing in other databases indicating a release, this listing is not expected to have created an environmental concern to the ISA Study Area.
40416 40441 50443 50442 40445 80450 50444 40447 40449 50452 04351 50440	7140-014-940 7140-014-939 7140-014-803 7140-014-806 7140-014-942 7140-014-943 7140-014-805 7140-014-910 7140-014-909 7140-014-804 7140-014-028 7140-014-808	Between the I-710 and the Los Angeles River at the end of W. Carson St.	Partial, TCE	According to the online SWIS database, the exact location of Caltrans Long Beach, West Los Angeles River No. 2 (SWIS No. 19-AK-5002) is unknown, but it is located between the I-710 and the Los Angeles River at the end of W. Carson St. This facility was not identified in the EDR Report. This location is a closed solid waste disposal site that was operated by Caltrans and the regulatory status is reported as “unpermitted.” It is inspected annually by the County of Los Angeles and most recent inspection was performed on January 28, 2016. The inspection report notes that the exact location is unknown and no new information has been obtained, but that the general surveyed area appeared to be maintained in satisfactory condition. No violations or areas of concern were noted at the time of the inspection. Based on the former use of this area, there is potential for waste materials to exist which may be encountered during construction and/or excavation activities and therefore, this area is considered to have high risk waste issues.

Table 3.12-4: Solid Waste Disposal Sites of Potential Concern Under Alternatives 5C and 7

Parcel ID No.	APN	Location	Acquisition	Site Listing
12220 12221	7101-013-037 7101-013-041	6300 Alondra Blvd. Paramount, CA	TCE	J. Ruillo (EDR ID No. 20-1748) is listed in the SWF/LF database. According to the online SWIS database, J .Ruillo (SWIS No. 19-AA-5203) consisted of three parcels located east of the I-710 and the Los Angeles River, south of Alondra Blvd. This closed municipal solid waste disposal site ceased operations on July 25, 1969 and the regulatory status is reported as "pre-regulations." This former landfill has been redeveloped with a Home Depot retail store (6400 Alondra Blvd.). It is inspected annually by the County of Los Angeles and most recent inspection report available online was dated April 28, 2015. This report states "Site is currently an operating Home Depot. There are asphalted parking lot areas all around the store with occasional planter strips throughout. No signs of vegetative distress were observed. All parking lot and sidewalk areas were clean and in good repair. No signs of differential settlement were observed. No Solid Waste code violations were observed at the time of inspection." No enforcement action records were reported in the SWIS database. No further information was available in the SWIS database. No project improvements are proposed in this area as it will only be used for a temporary construction easement and therefore this former solid waste disposal site is not expected to have created an environmental concern to the proposed I- 710 Corridor Project.
N/A	N/A	West side of I-710 at the end of San Carlos St.	Adjacent	San Carlos Dump (EDR ID No. 196-10, 13) was identified in the SWF/LF database. According to the online SWIS database, the San Carlos Dump (SWIS No. 19-AA-5340) is located on the west side of I-710 at the end of San Carlos St. The regulatory status of this closed solid waste disposal site is reported as "pre-regulations." It is inspected annually by the County of Los Angeles and the most recent inspection report available online was dated December 14, 2009. The inspection report states "cul-de-sac clean & in good order. No litter, differential settlement, nor distressed vegetation observed on/along freeway on ramp." No solid waste code violations were noted at the time of the inspection. No enforcement action records were reported in the SWIS database. No project improvements are proposed in this area and therefore this former solid waste disposal site is not expected to have created an environmental concern to the proposed I-710 Corridor Project.
N/A	N/A	East end Courtland Ave. at I-710 Lynwood, CA	Within Existing right-of-way	Courtland Ave. Dump (EDR ID No. 16-1274) was identified in the SWF/LF database. This property is located at the end of Courtland Ave, adjacent to the west of I-710. This property is State-owned and it does not appear to be associated with an APN because it is within the existing right-of-way. According to the SWF/LF database, the owner is Caltrans and the operator's status is listed as "closed." This property is a closed solid waste disposal site and the regulatory status is listed as "pre-regulations." According to the online SWIS database, this property (SWIS No. 19-AA-5291) was inspected in 2006-2009. The September 24, 2009 inspection report notes that the property was being used as a

Table 3.12-4: Solid Waste Disposal Sites of Potential Concern Under Alternatives 5C and 7

Parcel ID No.	APN	Location	Acquisition	Site Listing
				construction yard and what appeared to be large piles of asphaltic debris that was being actively ground/crushed were observed on-site. A concern was noted that ground material was drifting against, and in places partially burying, the support pillars for the transition ramps between the southbound I-710 and the westbound I-105. The most recent inspection report available online was dated December 10, 2015 and noted that ..". currently an empty site underneath and adjacent to the southeast quadrant of the interchange between the I-710 and 105 freeways. ... few piles of dirt still left from previous use as a contractor laydown yard." No solid waste code violations were noted at the time of inspection. No project improvements are proposed in this area and therefore this former solid waste disposal site is not expected to have created an environmental concern to the proposed I-710 Corridor Project.
41430 41431 41432 41433 41434 41435 41436 41439 41440 41441	6233-032-902 6233-032-901 6233-032-010 6233-037-901 6233-028-026 6233-028-019 6233-028-005 6233-028-900 6233-037-900 6233-001-011	Long Beach Fwy at Los Angeles River South Gate, CA	Partial, TCE	According to the online SWIS database, Caltrans – South Gate No. 2 (SWIS No. 19-AA-5068) is located north of Imperial Hwy. and east of the north bound I-710 freeway entrance. The area is a vacant lot, undeveloped and fenced off. The Rio Hondo River bike trail is located adjacent to the east. The project parcels in this area include Parcel Nos. 41430 through 41436 and 41439 through 41441. This facility was not identified in the EDR Report. The site was used as a landfill from the 1950s to receive street and highway sweepings, cardboard, wood and paper totaling 31,000 cubic yards of materials. The landfill stopped receiving waste in 1972. The regulatory status of this closed solid waste disposal site is reported as "permitted." It is inspected annually by the County of Los Angeles and the most recent inspection report available online was dated November 10, 2014. The inspection report states "routine inspection for 2014 was conducted. No changes in land use were observed. No significant differential settlement was observed at the time of inspection." No enforcement action records were reported in the SWIS database. Based on the former use of this area, there is potential for waste materials to exist which may be encountered during construction and/or excavation activities and therefore, this area is considered to have high risk waste issues.
15245 15268	6233-002-900 6233-002-901	10200 Miller Way South Gate, CA	Partial, TCE	South Gate Solid Fill (EDR ID No. 16-1032) was identified in the SWF/LF database at 10200 Miller Way. The project parcels in this area include Parcel Nos. 15245 and 15268. South Gate Solid Fill (SWIS No. 19-AA-0042) is a closed solid waste disposal site owned by the City of South Gate. Reportedly, this property was a former inert waste disposal site. Regulatory status of the former disposal facility is reported as "to be determined." The facility is inspected annually by the County of Los Angeles and the most recent inspection report available online was dated March 30, 2015. The following observations were reported "Permission to inspect granted by George Garrido, the owner of GWS Composting (the business operating on top of this closed landfill). No areas of differential

Table 3.12-4: Solid Waste Disposal Sites of Potential Concern Under Alternatives 5C and 7

Parcel ID No.	APN	Location	Acquisition	Site Listing
				settlement were observed. No evidence of vegetative distress seen. Watering protocols for the composting operation were conservative enough not to result in excess water ponding or infiltrating the cap of the landfill. No Solid Waste code violations were observed at the time of inspection." Based on the former use of this area, there is potential for waste materials to exist which may be encountered during construction and/or excavation activities and therefore, this area is considered to have high risk waste issues.
15245 15268	6233-002-900 6233-002-901	10120 Miller Way South Gate, CA	Partial, TCE	GWS, Inc. (EDR ID No. 16-1032) was identified in the SWF/LF database. This address was also identified as Miller Way Solid Landfill (EDR ID No. 16-1032) in the CA WDS database for a general water discharge permit of storm water runoff. The project parcels in this area include Parcel Nos. 15245 and 15268. These parcels are owned by the City of South Gate and leased to GWS, Inc. for use as an active composting operation for green waste. According to the online SWIS database (SWIS No. 19-AA-1064), the facility permit was issued in August 2004 and it is permitted to handle a maximum of 12,500 cubic yards of green waste per year or 200 tons per day. The facility is inspected quarterly by the County of Los Angeles and the last inspection was performed on July 22, 2015. No Solid Waste code violations were observed at the time of inspection. No enforcement action records were reported in the SWIS database. Based on the use of this area, there is potential for waste materials to exist which may be encountered during construction and/or excavation activities and therefore, this area is considered to have high risk waste issues.
71514 15116 15115	6222-001-916 6222-001-020 6222-001-021	5466 Southern Ave. South Gate, CA	Full	Southeastern Disposal and By-Products (EDR ID No. 11-969) was identified at 5466 Southern Ave. in the SWF/LF and WMDUS/SWAT databases. According to the online SWIS database (SWIS No. 19-AA-5545), the former landfill is enclosed by a locked gate and bounded on the east by I-710, on the north and west by utility right-of-ways and the south by a mobile home park. It is also noted that the present use of the former landfill is "partly freeway, partly vacant land", and that it is possibly the location of the former AV Hohn Dump (database states "see A.V. Hohn [AA-19-5103] for which there is no listing). According to the EDR Report, the address was identified as Hohn, A.V. (EDR ID No. 11-969) in the WMDUS/SWAT database. The owner of the property is the City of South Gate and the operator's status is listed as "closed." The regulatory status of this a former solid waste disposal site is reported as "unpermitted" and it reportedly ceased operations in December 1949. Cleanup of the former landfill and contaminated soils was completed in 1984, which effectively mitigated waste constituents, and was approved by the State Department of Health Services. DHS concluded in a February 1986 Preliminary Assessment Summary that this site would remain active in status until a 1990 assessment report of surface and groundwater characteristics was completed. It is unknown if this report was completed (this site is not listed on GeoTracker or ENVIROSTOR). Annual

Table 3.12-4: Solid Waste Disposal Sites of Potential Concern Under Alternatives 5C and 7

Parcel ID No.	APN	Location	Acquisition	Site Listing
				inspections of this parcel are performed by the County of Los Angeles. The most recent inspection report available online was dated December 14, 2015 and no violations or areas of concern were reported. This inspection report states, "ground cover is dirt and native vegetation. There is no activity on the site which could be observed in plain view through the fence." Based on the former landfill use of this property, there is potential for waste materials to exist which may be encountered during construction and/or excavation activities and therefore this parcel is considered to have high risk waste issues.
51518	6222-001-801	Long Beach Fwy and Firestone Blvd. South Gate, CA	TCE	According to the online SWIS database, Caltrans South Gate (SWIS No. 19-AA-5067) is located north of Firestone Blvd. between I-710 and the Los Angeles River. However, the database also states that the parcel number for this facility was confirmed in 2014 to be 6222-001-801 which is located south of Firestone Blvd. This facility was not identified in the EDR Report. The online SWIS database reports that this facility is a closed solid waste disposal site (formerly operated by the State of California) and the regulatory status is listed as "pre-regulations." This land is currently owned by SCE for use as a utility corridor and annual inspections are performed by the County of Los Angeles. The most recent inspection was completed on February 5, 2016 and no violations or area of concern were reported. The inspection report indicates that the site was inaccessible due to perimeter fence and locked gates at the time of the inspection. A 2009 inspection report identifies SWIS No. 19-AA-5067 as "Caltrans, South Gate No. 1" located at 5212 E. Imperial Hwy, southeast of the northbound I-710 off-ramp and north of Imperial Hwy; however, no sites were identified at this location in the mapping feature in the online SWIS database. The 2007 and 2008 inspection reports indicate that Caltrans, South Gate No. 1 was a formerly a landfill for street and highway sweepings that operated from 1955 until 1972 and at the time of the inspections was an unpaved dirt land used as a nursery and composting site. No project improvements are proposed in this area as it will only be used for a temporary construction easement and therefore this former solid waste disposal site is not expected to have created an environmental concern to the proposed I-710 Corridor Project.

Source: *Initial Site Assessment* (February 2017)
Refer to the following page for acronym definitions.

Table 3.12-4: Solid Waste Disposal Sites of Potential Concern Under Alternatives 5C and 7

Parcel ID No.	APN	Location	Acquisition	Site Listing

APN = Assessor's Parcel Number
AST = aboveground storage tank
CA WDS = California Waste Discharge System Database
CalRecycle = California Department of Resources Recycling and Recovery
Caltrans = California Department of Transportation
CCR = California Code of Regulations
DHS = Department of Health Services
DTSC = Department of Toxic Substances Control
EDR = Environmental Data Record
HAZNET = Hazardous Waste Manifests System
HMS = Health Management Systems
I-105 = Interstate 105
I-710 = Interstate 710
ISA = Initial Site Assessment
LUST = leaking underground storage tank
SCE = Southern California Edison
SLIC = SWRCB Spills, Leaks, Investigations, and Cleanups
SWAT = Solid Waste Assessment Test
SWEEPS = Statewide Environmental Evaluation and Planning System
SWF/LF = Solid Waste Facility/Landfill
SWIS = Solid Waste Information System
UST = underground storage tank
WMDUS = State Waste Management Unit Database System

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3.13 AIR QUALITY

The information in this section is based on the following document:

- *Air Quality, Greenhouse Gas, and Health Risk Assessment* (AQ/GHG/HRA) Technical Study (June 2017)

Given the existing air quality/health risk concerns in the Interstate 710 (I-710) Corridor (see discussion of the project need in Chapter 1.0), the Los Angeles County Metropolitan Transportation Authority (Metro), the California Department of Transportation (Caltrans), and the I-710 Funding Partners conducted special analyses beyond the standard Caltrans analyses typically done for roadway/freeway projects (as described in Caltrans' *Standard Environmental Reference* at www.dot.ca.gov/ser/vol1/sec3/physical/ch11air/chap11.htm). These additional special project analyses over and above the standard analyses done for freeway projects were conducted because of the unique goods movement component of the project and the air quality purpose of the project.

The I-710 Corridor Project's effects on air quality were evaluated for three different geographic areas: (1) the South Coast Air Basin (Basin), (2) the I-710 "Area of Interest" (AOI), which is a sub-region of the Basin that includes cities and communities along the I-710 freeway, and (3) the I-710 freeway corridor, which may include a freight corridor and related ramps, depending on the project alternative.

3.13.1 REGULATORY SETTING

The Federal Clean Air Act (FCAA) of 1970 (42 United States Code [USC] 7401 et seq.), as amended, is the primary Federal law that governs air quality while the California Clean Air Act is its companion State law. These laws, and related regulations by the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the Federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and State ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), and sulfur dioxide (SO_2). In addition, national and State standards exist for lead (Pb), and State standards exist for visibility-reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and State standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both State and Federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

3.13.1.1 CONFORMITY

The conformity requirement is based on FCAA Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other Federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to the State Implementation Plan (SIP) for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional—or planning and programming—level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for State standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for CO, NO_2, O_3, particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), SO_2. California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for Pb; however, Pb is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years for the RTP, and 4 years for the FTIP. RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA), make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a "hot-spot" analysis if an area is "nonattainment" or "maintenance" for CO and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is "nonattainment" if

one or more of the monitoring stations in the region measures a violation of the relevant standard and the EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially re-designated to attainment by the EPA, and are then called "maintenance" areas. "Hot-spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot-spot analysis. In general, projects must not cause the "hot-spot"-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

3.13.2 AFFECTED ENVIRONMENT

3.13.2.1 CLIMATIC CONDITIONS

The project site is in Los Angeles County, an area within the South Coast Air Basin (Basin), which includes Orange County and the non-desert parts of Los Angeles, Riverside, and San Bernardino Counties. Air quality regulation in the Basin is administered by the South Coast Air Quality Management District (SCAQMD).

The Basin climate is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern boundary of the Basin, and high mountains surround the rest of the Basin. The region lies in the semi-permanent high-pressure zone of the eastern Pacific Ocean. The resulting climate is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted. However, periods of extremely hot weather, winter storms, and Santa Ana wind conditions do occur in the Basin.

In this area, the period of May through October is warm to hot and dry with average high temperatures of 74–84°F and lows of 58–66°F; however, temperatures frequently exceed 90°F and occasionally reach 100°F in inland areas (away from the moderating effect of the ocean). The period of November through April is mild and somewhat rainy with average high temperatures of 68–73°F and lows of 48–53°F; however, temperatures can occasionally drop to the low 40s or be as high as 80°F for a few days during the winter. The area averages 15 inches of precipitation annually, which mainly occurs during the winter and spring (November through April) with generally light rain showers, but sometimes as heavy rainfall and thunderstorms. The coast gets slightly less rainfall, while the mountains get slightly more.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the

lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed from mid-afternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in the vicinity of the Study Area blow predominantly from the west, south, and southwest, with wind speeds ranging from 0.5 to 8.8 miles per hour (mph). Low average wind speeds together with a persistent temperature inversion limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, northerly or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. Santa Ana conditions tend to last for several days at a time.

Inversion layers have a substantial role in determining O_3 formation. Ozone and its precursors will mix and react to produce higher concentrations under an inversion. The inversion will also simultaneously trap and hold directly emitted pollutants such as CO. PM_{10} is both directly emitted and created indirectly in the atmosphere as a result of chemical reactions. Concentration levels are directly related to inversion layers due to the limitation of mixing space.

Surface or radiation inversions are formed when the ground surface becomes cooler than the air above it during the night. The earth's surface goes through a radiative process on clear nights, when heat energy is transferred from the ground to a cooler night sky. As the earth's surface cools during the evening hours, the air directly above it also cools, while air higher up remains relatively warm. The inversion is destroyed when heat from the sun warms the ground, which in turn heats the lower layers of air; this heating stimulates the ground-level air to float up through the inversion layer.

The combination of stagnant wind conditions and low inversions produces the greatest concentration of pollutants. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are CO and nitrogen oxide (NO_X) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

3.13.2.2 MONITORED AIR QUALITY

The I-710 Corridor Project is in the jurisdiction of the SCAQMD. As shown in Figure 3.13-1, the SCAQMD maintains ambient air quality monitoring stations throughout the Basin. The I-710 Corridor Project Study Area was divided into four representative meteorological zones, each

FIGURE 3.13-1

LEGEND

Ambient Air Quality Monitoring Stations

Freeways of Interest

Area of Interest

N

0 2.5 5

MILES

SOURCE: Ramboll Environ

I-710 Corridor Project RDEIR/SDEIS

Ambient Air Quality Monitoring Stations

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

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Table 3.13-1: NO_2 and CO Background Concentrations Recorded at Ambient Air Quality Monitoring Stations within the Area of Interest

Criteria Air Pollutant	Averaging Period	Meteorological Zone 1 (Coastal) and Zone 2 (Transition)[1] Long Beach Hudson					Meteorological Zone 3 (Inland)[1, 2] Compton					Meteorological Zone 4 (Downtown)[1] Los Angeles Main Street				
		2011	2012	2013	2014	2015	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
NO_2	Maximum 1-hour Concentration ($\mu g/m^3$)	169	*184*	153	**256**	**191**	142	*149*	131	128	138	**206**	*145*	170	154	149
	98^{th} Percentile 1-hour Concentration ($\mu g/m^3$)	139	*146*	134	159	121	123	*119*	116	111	110	126	*130*	118	127	117
	Annual Average Concentration ($\mu g/m^3$)	39.9	*47.6*	40.4	38.9	37.2	35.0	*32.3*	33.1	29.3	31.8	43.0	*47.0*	41.0	42.0	41.7
CO	Maximum 1-hour Concentration ($\mu g/m^3$)	4,236	*4,808*	4,694	4,580	3,778	6,640	5,953	6,640	6,869	5,037	3,206	2,519	2,862	3,435	3,664
	Maximum 8-hour Concentration ($\mu g/m^3$)	3,778	*2,977*	2,977	2,977	2,519	5,381	4,580	4,007	4,351	3,778	2,748	2,175	2,290	2,290	2,061

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).
Note: **Bold text** indicates an exceedance of the Federal standard level (see Table 3.13-3 for full discussion of Federal and State standards).
Note: *Italic text* indicates that data are incomplete due to an insufficient number of days in the data. 90 percent data completeness is required. Invalid data include lost data due to calibrations or other quality assurance procedures. United States Environmental Protection Agency, EPA-454/R-99-005. February 2000. Meteorological Monitoring Guidance for Regulatory Modeling Applications. Website: https://www3.epa.gov/scram001/guidance/met/mmgrma.pdf (accessed March 2016).
[1] Data obtained from SCAQMD Historical Data by Year, Station Nos. 087 (Los Angeles North Main Street), 033 (Long Beach Hudson), and 112 (Compton). Website: http://sfprod.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year (accessed March 2016).
[2] The Lynwood air monitoring station was replaced by the Compton Station in 2009. The Compton Station is used in order to obtain the most recent background data for the Inland meteorological zone.
$\mu g/m^3$ = micrograms per cubic meter
CO = carbon monoxide
NO_2 = nitrogen dioxide
SCAQMD = South Coast Air Quality Management District

Table 3.13-2: O_3, PM_{10}, $PM_{2.5}$, and SO_2 Background Concentrations Recorded at Ambient Air Quality Monitoring Stations within the Area of Interest

Criteria Air Pollutant	Averaging Period	Meteorological Zone 1 (Coastal) and Zone 2 (Transition)[1, 2] South Long Beach/Long Beach Hudson					Meteorological Zone 3 (Inland)[1, 3] Compton					Meteorological Zone 4 (Downtown)[1] Los Angeles Main Street				
		2011	2012	2013	2014	2015	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
O_3	Maximum 1-hour Concentration (ppm)	0.074	*0.080*	**0.090**	0.087	0.087	0.082	0.086	**0.090**	**0.094**	**0.091**	0.087	**0.093**	0.081	**0.113**	**0.104**
	Maximum 8-hour Concentration (ppm)	0.063	*0.066*	0.069	**0.072**	0.066	0.065	**0.070**	**0.080**	**0.081**	**0.072**	0.065	**0.077**	0.069	**0.094**	**0.074**
	Fourth High 8-hour Concentration (ppm)	0.057	*0.054*	0.057	0.061	0.056	0.061	0.064	0.063	**0.073**	0.065	0.060	0.068	0.060	**0.072**	**0.072**
PM_{10}	Maximum 24-hour Concentration ($\mu g/m^3$)	50.0	54.0	54.0	59.0	62.0	--	--	--	--	--	53.0	80.0	57.0	66.0	88.0
	Annual Average Concentration ($\mu g/m^3$)	28.7	25.5	27.3	26.6	26.5	--	--	--	--	--	29.0	30.2	29.5	30.6	33.1
$PM_{2.5}$	Maximum 24-hour Concentration ($\mu g/m^3$)	**42.0**	**46.7**	**42.9**	**52.2**	**48.3**	**35.3**	**51.2**	**52.1**	**35.8**	**41.3**	**49.3**	**58.7**	**43.1**	**59.9**	**56.4**
	98^{th} Percentile 24-hour Concentration ($\mu g/m^3$)	26.6	25.1	24.6	27.2	31.2	31.5	30.3	24.3	30.9	**37.2**	31.5	31.8	29.0	34.5	**38.0**
	Annual Average Concentration ($\mu g/m^3$)	10.7	10.6	11.0	10.7	10.3	**13.0**	11.7	**12.0**	**12.6**	11.8	**13.0**	**12.6**	**12.0**	**12.4**	**12.4**

Table 3.13-2: O_3, PM_{10}, $PM_{2.5}$, and SO_2 Background Concentrations Recorded at Ambient Air Quality Monitoring Stations within the Area of Interest

Criteria Air Pollutant	Averaging Period	Meteorological Zone 1 (Coastal) and Zone 2 (Transition)[1, 2] South Long Beach/Long Beach Hudson					Meteorological Zone 3 (Inland)[1, 3] Compton					Meteorological Zone 4 (Downtown)[1] Los Angeles Main Street				
		2011	2012	2013	2014	2015	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
SO_2 [4]	Maximum 1-hr Concentration (ppm)	0.043	*0.023*	0.015	0.015	*0.038*	--	--	--	--	--	0.020	0.005	0.006	0.005	0.013
	99th Percentile 1-hr Concentration (ppm)	0.025	*0.021*	0.012	0.010	*0.012*	--	--	--	--	--	0.011	0.005	0.005	0.004	0.006

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).
Note: **Bold text** indicates an exceedance of the Federal standard level (see Table 3.13-3 for full discussion of Federal and State standards).
Note: *Italic text* indicates that data are incomplete due to an insufficient number of days in the data. 90 percent data completeness is required. Invalid data include lost data due to calibrations or other quality assurance procedures. United States Environmental Protection Agency, EPA-454/R-99-005. February 2000. Meteorological Monitoring Guidance for Regulatory Modeling Applications. Website: https://www3.epa.gov/scram001/guidance/met/mmgrma.pdf (accessed March 2016)

[1] Data obtained from SCAQMD Historical Data by Year, Station Nos. 087 (Los Angeles North Main Street), 033 (Long Beach Hudson), 077 (South Long Beach), and 112 (Compton). Website: http://sfprod.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year (accessed March 2016).

[2] The Long Beach Hudson air monitoring station did not begin monitoring particulate matter (PM only) until 2015; therefore particulate matter monitoring data were taken from the South Long Beach Station. The maximum 24-hour PM_{10} concentration and average annual PM concentration measured at the Long Beach Hudson Station in 2015 are 80 $\mu g/m^3$ and 31.5 $\mu g/m^3$, respectively.

[3] The Lynwood air monitoring station was replaced by the Compton Station in 2009. The Compton Station is used in order to obtain the most recent background data for the Inland meteorological zone. The Compton Station does not monitor PM_{10}.

[4] SO_2 data for Meteorological Zone 1 and Zone 2 was obtained from the Long Beach Hudson Station. .

$\mu g/m^3$ = micrograms per cubic meter
EPA = United States Environmental Protection Agency
I-710 = Interstate 710
O_3 = ozone
PM = particulate matter
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ppm = parts per million
SCAQMD = South Coast Air Quality Management District
SO_2 = sulfur dioxide

with a representative meteorological station. The closest monitoring stations to the Study Area are the SCAQMD Long Beach North, Long Beach Hudson, Compton, and Los Angeles North Main Street Stations. Tables 3.13-1 and 3.13-2 provide monitoring data from these stations for 2011, 2012, 2013, 2014, and 2015.

From the ambient air quality data provided in Tables 3.13-1 and 3.13-2, it can be seen that CO, annual NO_2, and SO_2 levels are below the relevant State and Federal standards. Values listed in Tables 3.13-1 and 3.13-2 that are equal to or exceed the NAAQS for the various pollutants are highlighted in bold text. One-hour NO_2 levels exceeded the Federal standards at the Long Beach Hudson (2014 and 2015) and Los Angeles Main Street (2011) Stations. One-hour O_3 levels exceeded the State standard at the Compton (2014 and 2015) and Los Angeles North Main Street (2012, 2014, and 2015) Stations. Eight-hour O_3 levels exceeded the State and Federal standards at the Long Beach Hudson (2014), Compton (2013, 2014, and 2015), and Los Angeles North Main Street (2012, 2014, and 2015) Stations. The PM_{10} levels in the project area exceeded the State and Federal standards in each of the past five years at the South Long Beach/Long Beach Hudson and Los Angeles North Main Street Stations. The Federal 24-hour $PM_{2.5}$ standard was exceeded in each of the past five years at the South Long Beach/Long Beach Hudson, Compton, and Los Angeles North Main Street Stations. The State and Federal annual $PM_{2.5}$ standards were also exceeded at the Compton (2011 and 2014) and Los Angeles North Main Street (2011, 2012, 2014, and 2015) Stations. It should be noted that exceedance of a standard is not necessarily a violation, especially for many Federal standards.

3.13.2.3 CRITERIA POLLUTANT ATTAINMENT/NONATTAINMENT STATUS

The national and California ambient air quality standards (AAQS) for the criteria pollutants are summarized in Table 3.13-3.

Air quality monitoring stations are located throughout the nation and maintained by the local air districts and State air quality regulating agencies. Data collected at permanent monitoring stations are used by the EPA to identify regions as “attainment,” “nonattainment,” or “maintenance,” depending on whether the regions meet the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA. In addition, different classifications of nonattainment, such as marginal, moderate, serious, severe, and extreme, are used to classify each air basin in the State on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the NAAQS. Attainment status for each of the criteria pollutants in the Basin is listed in Table 3.13-3.

Table 3.13-3: State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Period	California Standard[1]	Federal Standard[2]	Basin Attainment Status[3]		Principal Health and Atmospheric Effects	Typical Sources
				California Standard	Federal Standard		
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	Revoked	Non-Attainment	---	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from ROG or VOC and NO_X in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Non-Attainment	Designation Pending[4]		
Respirable Particulate Matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3	Non-Attainment	Attainment / Maintenance	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).
	Annual	20 µg/m^3	Revoked	Non-Attainment	---		
Fine Particulate Matter ($PM_{2.5}$)	24-hour	---	35 µg/m^3	---	Non-Attainment (Serious)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO_X, SO_X, ammonia, and ROG.
	Annual	12 µg/m^3	12.0 µg/m^3	Non-Attainment	Non-Attainment (Serious)		
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Attainment	Attainment / Maintenance	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical O_3.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	Attainment	Attainment / Maintenance		

Table 3.13-3: State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Period	California Standard[1]	Federal Standard[2]	Basin Attainment Status[3]		Principal Health and Atmospheric Effects	Typical Sources
				California Standard	Federal Standard		
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	Attainment	Unclassifiable / Attainment	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the "NO_X" group of O_3 precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.
	Annual	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Attainment	Attainment / Maintenance		
Lead (Pb)	30-day average	1.5 µg/m^3	---	Attainment[5]	---	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from gasoline may exist in soils along major roads.
	Rolling 3-month average[6]	---	0.15 µg/m^3	---	Non-Attainment (Partial)[7]		
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	Attainment[5]	Designation Pending[8]	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
	3-hour[9]	---	0.5 ppm (1,300 µg/m^3)	---	Designation Pending[8]		
	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm	Attainment[5]	Undesignated		
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm (42 µg/m^3)	---	Attainment	---	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m^3)	---	Attainment	---	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes

Table 3.13-3: State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Period	California Standard[1]	Federal Standard[2]	Basin Attainment Status[3]		Principal Health and Atmospheric Effects	Typical Sources
				California Standard	Federal Standard		
Sulfates	24-hour	25 µg/m^3	---	Attainment	---	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
Visibility-Reducing Particles	---	Extinction coefficient of 0.23 per kilometer (visibility of ten miles or more due to particles when relative humidity is less than 70%)	---	Unclassified[5]	---	Reduces visibility. Produces haze. Note: not related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas.	See particulate matter above.

Sources: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] California standard levels obtained from ARB CAAQS webpage. Website: http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm (accessed February 2017).

[2] Federal standard levels obtained from the EPA NAAQS Table. Note that some Federal standards include a level (such as the concentrations shown in the Table) and a form (often a statistical form or based on excluding a certain number of exceedances of the standard level over a given number of years). Exceedances of the standard level are not necessarily violations or exceedances of the standard. Website: https://www.epa.gov/criteria-air-pollutants/naaqs- table (accessed February 2017).

[3] Attainment status obtained from SCAQMD NAAQS and CAAQS Attainment Status for the South Coast Air Basin. Website: http://www.aqmd.gov/docs/default- source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2 (accessed February 2017).

[4] Designation is pending; Non-Attainment (Extreme) classification is expected.

[5] Attainment status obtained from ARB Area Designation Maps. Website: http://www.arb.ca.gov/desig/adm/adm.htm (accessed February 2017).

[6] Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[7] According to the ARB website, the Los Angeles County portion of the South Coast Air Basin is designated "Nonattainment" only for near-source monitors. Expect to remain in attainment based on current monitoring data.

[8] Designation is pending; Unclassifiable/Attainment classification is expected.

[9] This is a secondary standard. Not to be exceeded more than once per year.

µg/m3 = micrograms per cubic meter
ARB = California Air Resources Board
Basin = South Coast Air Basin
CAAQS = California Ambient Air Quality Standards
EPA = United States Environmental Protection Agency
mg/m3 = milligrams per cubic meter
NAAQS = National Ambient Air Quality Standards
NO_X = oxides of nitrogen
ppm = parts per million
ROG = reactive organic gases
SCAQMD = South Coast Air Quality Management District
SO_X = oxides of sulfur
VOC = volatile organic compounds

3.13.3 Environmental Consequences

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to air quality are located in Section 3.24.3.13.

3.13.3.1 Regional Air Quality Conformity

A project to reconstruct the I-710 interchanges at Interstate 105 (I-105), State Route 91 (SR-91), Interstate 405 (I-405), and Interstate 5 (I-5) as part of the I-710 Corridor Project is included in the Southern California Association of Governments (SCAG)-adopted 2017 Federal Transportation Improvement Program (FTIP) (Project ID No. LA0B952). The project is also included in the list of financially constrained projects in the SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (Project ID No. 1C0401) and is described as "I-710 South". The project is also included in the Metro Final 2009 Long-Range Transportation Plan (LRTP) as a Funded Freeway Improvement.

Although the full scope of the project is not currently in the FTIP and the Project Description as noted in the RTP/SCS does not match either of the currently proposed build alternatives, both the RTP and the FTIP will be amended to be consistent with the preferred alternative prior to the approval of the Final EIR/EIS. Caltrans and Metro are committed to working with SCAG, an I-710 Corridor Project funding partner, to ensure that the necessary revisions to the project description are included in an amendment to the FTIP and RTP/SCS. Amendments to the FTIP and RTP/SCS are subject to a 30-day public review and comment period prior to approval.

3.13.3.2 Project Level Air Quality Conformity

Because the I-710 Corridor Project is within an attainment/maintenance area for CO and PM_{10}, and a nonattainment area for Federal $PM_{2.5}$ standards, local hot-spot analyses for CO, $PM_{2.5}$, and PM_{10} are required for conformity purposes. The results of the project-level CO analysis and a qualitative PM assessment are presented in Section 3.13.3.3, Permanent Impacts; however, the project-level PM conformity analysis will be conducted once a preferred alternative has been identified following the public review of this RDEIR/SDEIS.

3.13.3.3 Permanent Impacts

Carbon Monoxide (CO). The Caltrans *Transportation Project-Level Carbon Monoxide Protocol* (December 1997) (CO Protocol) was used to assess the project's impact on local CO

concentrations. However, through the interagency consultation process[1], the approach suggested in the CO Protocol was modified slightly to incorporate the use of the EPA-approved mobile source dispersion model, CAL3QHC, to model representative worst-case congested intersections throughout the project's AOI.

The hot spot analysis assessed the potential for localized CO impacts due to the project and whether the project alternatives would either cause violation of the CO ambient air quality standards or exacerbate the air quality conditions to delay the progress of meeting attainment of the standard. The one-hour and eight-hour NAAQS for CO are 35 parts per million (ppm) and nine ppm, respectively. The results of the analysis show that the maximum predicted CO concentrations,[2] representative of worst-case conditions, would be below the corresponding NAAQS for all modeled intersections for the 2012 Baseline and all future alternatives. Hence, project-related CO emissions at local intersections would not cause or contribute to any new violations of the NAAQS. Therefore, pursuant to the Federal transportation conformity rule (CFR Chapter 40 Parts 51 and 93), the proposed project alternatives conform to the SIP for attaining the NAAQS and meets project-level CO conformity requirements.

PARTICULATE MATTER ($PM_{2.5}$ AND PM_{10}).

ANALYSIS METHOD. For the RDEIR/SDEIS, a qualitative analysis for PM_{10} and $PM_{2.5}$ was conducted for the project alternatives, which is not a project-level conformity analysis. This qualitative analysis serves as the PM discussion under NEPA. Project-level conformity will be determined through a quantitative analysis that will be conducted once a preferred alternative has been identified following the public review of this RDEIR/SDEIS. The PM hot-spot analysis protocol is under development, and the interagency consultation process regarding this protocol has been initiated. Interagency consultation has occurred with EPA in its role as a cooperating agency and also with the Transportation Conformity Working Group (TCWG), as the project has been determined to be a Project of Air Quality Concern (POAQC). The TCWG is a forum that supports interagency coordination efforts to maintain transportation conformity, and its membership includes the EPA, the FHWA, the Federal Transit Administration, the ARB, Caltrans, SCAQMD, SCAG, County Transportation Commissions, and other stakeholders.

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[1] The AQ/GHG/HRA protocol, which includes the protocol for CO hotspot analysis, was submitted to the Air Agency Technical Working Group (AATWG), which includes the EPA, on October 12, 2015. Comments were received from the EPA on November 13, 2015.

[2] Equal to the highest-modeled concentration plus background.

For this PM discussion, future localized $PM_{2.5}$ and PM_{10} pollutant emissions were calculated and 2012/2016 Air Quality Management Plan (AQMP) projections are presented. Additionally, the impacts of the project on the regional $PM_{2.5}$ and PM_{10} emissions and incremental $PM_{2.5}$ and PM_{10} levels (compared to the 2012 Baseline and 2035 No-Build Alternative) are discussed in the Additional Analyses section. Impacts were calculated using EMFAC2014, ARB's methodology for entrained road dust, the projected vehicle trip distribution, and/or dispersion modeling.

TYPES OF EMISSIONS CONSIDERED. Some aspects of the NEPA analysis (not for conformity purposes) were performed according to the EPA's guidance for quantitative PM hot-spot analyses. In accordance with 2015 EPA guidance,[3] the analysis includes PM exhaust, tire wear, brake wear, and re-entrained road dust emissions. Exhaust, tire wear, and brake wear emissions from on-road vehicles are always included in a project's $PM_{2.5}$ and PM_{10} analyses. Re-entrained road dust must be included in all PM_{10} hot-spot analyses. For $PM_{2.5}$, re-entrained road dust emissions are included only if EPA or the State agency has made a finding that such emissions are a significant contributor to the $PM_{2.5}$ air quality problem.[4] [5] SCAQMD has identified re-entrained road dust as a significant contributor to the area's $PM_{2.5}$ problem in the Final 2012 AQMP[6] as well as the Final 2016 AQMP;[7] therefore, re-entrained $PM_{2.5}$ was included in this analysis.

Secondary particles formed through $PM_{2.5}$ and PM_{10} precursor emissions from a transportation project take several hours to form in the atmosphere, giving emissions time to disperse beyond the immediate project area of concern for localized analyses. Therefore, $PM_{2.5}$ and PM_{10} precursors are not considered in PM hot-spot analyses.

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[3] United States Environmental Protection Agency (EPA). 2015. Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas (EPA-420-B-15-084). November. Office of Transportation and Air Quality. Website: https://www3.epa.gov/otaq/stateresources/transconf/documents/420b15084.pdf (accessed: August 2016).

[4] Code of Federal Regulation (CFR) Title 40 Chapter I Subchapter C Part 93 Subpart A §93.102(b)(3). Website: http://www.ecfr.gov (accessed August 2016).

[5] CFR Title 40 Chapter I Subchapter C Part 93 Subpart A §93.119(f)(8). Website: http://www.ecfr.gov (accessed August 2016).

[6] South Coast Air Quality Management District (SCAQMD). 2012. Appendix III Air Quality Management Plan - Base and Future Year Emission Inventory. February. Website: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-managementplans/2012-air-quality-management-plan/final-2012-aqmp-(february-2013)/appendix-iii-final-2012.pdf (accessed August 2016).

[7] SCAQMD. 2017. Appendix III Air Quality Management Plan - Base and Future Year Emission Inventory. March. Website: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-iii.pdf?sfvrsn=6 (accessed March 20, 2017).

DATA CONSIDERED. The closest air monitoring stations to the Study Area are the South Long Beach, Long Beach Hudson, Long Beach North, Compton, and Los Angeles North Main Street Stations. These monitoring stations are located in Los Angeles County within the proposed project's Study Area. Therefore, the air quality concentrations monitored at these stations are representative of the conditions within the Study Area. The locations of the air monitoring stations relative to the project area are shown in Figure 3.13-1.

TRENDS IN BASELINE $PM_{2.5}$ CONCENTRATIONS. The monitored $PM_{2.5}$ concentrations at the North Long Beach, Long Beach Pacific Coast Hwy., and Los Angeles Stations are shown in Table 3.13-4. These data show that the Federal 24-hour $PM_{2.5}$ AAQS (35 micrograms per cubic meter [$\mu g/m^3$]) has been exceeded at the Los Angeles North Main Street and Compton Stations once (2015) out of the past six years. In addition, the annual average $PM_{2.5}$ AAQS (12 $\mu g/m^3$) has been exceeded at the Los Angeles North Main Street Station every year in the past six years and four out of the past six years at the Compton Station (2010, 2011, 2013, and 2014).

PROJECTED 24-HOUR CONCENTRATIONS. The monitored $PM_{2.5}$ concentrations at the Los Angeles North Main Street, Compton, South Long Beach, and Long Beach North Stations are shown in Table 3.13-4. These data show that the 24-hour $PM_{2.5}$ NAAQS were not exceeded from 2010 through 2014 at all stations. In the year 2015, only two stations, Los Angeles North Main Street and Compton, show exceedances of the 24-hour $PM_{2.5}$ NAAQS.

Using various methodologies, the 2012 AQMP estimated the 2015 24-hour $PM_{2.5}$ concentrations. Table V-5-23 in the 2012 AQMP estimates that the 24-hour $PM_{2.5}$ concentration in 2030 will be 26.2 $\mu g/m^3$ at South Long Beach, 30.3 $\mu g/m^3$ at Long Beach North, and 31.0 $\mu g/m^3$ at Los Angeles North Main Street. These estimates predict a 1.2 percent increase in 2030 as compared to the 2010–2015 average at South Long Beach, a 5.6 percent increase at Long Beach North, and a 4.8 percent decrease at Los Angeles North Main Street. All 2030 predictions are below the 24-hour $PM_{2.5}$ NAAQS of 35 $\mu g/m^3$. The 2016 Draft AQMP does not have any predictions for future 24-hour $PM_{2.5}$ concentrations beyond 2019 because it is anticipated that the 24-hour $PM_{2.5}$ standard will be met by the 2019 attainment year with no additional reductions needed beyond already adopted measures. As discussed above, this PM analysis is not the required quantitative $PM_{10}/PM_{2.5}$ project-level conformity analysis; that analysis and conformity determination will be conducted for the preferred alternative.

Table 3.13-4: Ambient $PM_{2.5}$ Monitoring Data (µg/m^3)

	2010	2011	2012	2013	2014	2015
Los Angeles North Main Street[1]						
3-year 24-hour average 98th percentile (µg/m^3)	30.40	31.50	32.0	29.0	34.5	38.00
Exceeds Federal 24-hour standard (35 µg/m^3)?	No	No	No	No	No	**Yes**
3-year annual average (µg/m^3)	12.39	12.94	12.53	12.04	12.43	12.49
Exceeds Federal annual average standard (12 µg/m^3)?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Compton[1]						
3-year 24-hour average 98th percentile (µg/m^3)	31.80	31.50	30.30	24.30	30.90	37.20
Exceeds Federal 24-hour standard (35 µg/m^3)?	No	No	No	No	No	**Yes**
3-year annual average (µg/m^3)	12.50	12.91	11.69	12.05	12.59	11.91
Exceeds Federal annual average standard (12 µg/m^3)?	**Yes**	**Yes**	No	**Yes**	**Yes**	No
South Long Beach[1]						
3-year 24-hour average 98th percentile (µg/m^3)	26.50	26.60	25.60	24.60	*20.90*	31.20
Exceeds Federal 24-hour standard (35 µg/m^3)?	No	No	No	No	--	No
3-year annual average (µg/m^3)	10.37	10.79	10.51	11.34	*10.73*	10.16
Exceeds Federal annual average standard (12 µg/m^3)?	No	No	No	No	--	No
Long Beach North[1]						
3-year 24-hour average 98th percentile (µg/m^3)	28.30	27.80	26.50	26.10	31.30	32.10
Exceeds Federal 24-hour standard (35 µg/m^3)?	No	No	No	No	No	No
3-year annual average (µg/m^3)	10.55	10.84	10.39	10.99	11.35	10.89
Exceeds Federal annual average standard (12 µg/m^3)?	No	No	No	No	No	No

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

Note: *Italic text* indicates that the regulatory data completeness criteria for valid summary data were not met for the monitor. Per EPA guidance,[2] a valid data set requires greater than 90 percent data completeness. Invalid data include lost data due to calibrations or other quality assurance procedures.

[1] Data obtained from EPA AirData Annual Summary Data. State Code 6, County Code 37, Monitoring Stations 1103 (Los Angeles North Main Street), 1302 (Compton), 4004 (South Long Beach), and 4002 (Long Beach North). Website: http://aqsdr1.epa.gov/aqsweb/aqstmp/airdata/download_files.html#Annual (accessed August 2016).

[2] EPA. 2000. *Meteorological Monitoring Guidance for Regulatory Modeling Applications*. EPA-454/R-99-005. February. Website: https://www3.epa.gov/scram001/guidance/met/mmgrma.pdf (accessed March 2016).

µg/m^3 = micrograms per cubic meter
EPA = United States Environmental Protection Agency
I-710 = Interstate 710
PM = particulate matter

PROJECTED ANNUAL CONCENTRATIONS. As seen in Table 3.13-4, the annual $PM_{2.5}$ NAAQS of 12 µg/m^3 was not exceeded at the South Long Beach and Long Beach North monitoring stations during 2010 through 2015, but was exceeded in all six years at the Los Angeles North Main Street Station and in four out of the six years at the Compton Station.

Table V-6-7 of the 2012 AQMP estimates that in 2030, the annual $PM_{2.5}$ concentration will be 9.5 µg/m^3 in South Long Beach, 10.2 µg/m^3 in Long Beach North, and 11.4 µg/m^3 in Los Angeles North Main Street. Table 5-5 in the 2016 Draft AQMP predicts that the annual $PM_{2.5}$ concentrations at Los Angeles North Main Street will be between 10.4 and 10.6 µg/m^3 in 2025; this value is lower than the prediction of 11.4 µg/m^3 in the 2012 AQMP for calendar years 2023 and 2030. The photochemical modeling results in the 2012 AQMP indicate an 11 percent decrease in 2030 from the 2010–2015 average at

South Long Beach, a 6 percent decrease at Long Beach North, and a 9 percent decrease at Los Angeles North Main Street. The 2016 Draft AQMP predicts a 16 percent reduction in annual $PM_{2.5}$ concentrations in 2025 as compared to the 2010–2015 average at Los Angeles North Main Street. All future predictions in the 2012 AQMP and the 2016 Draft AQMP are below the NAAQS of 12 $\mu g/m^3$.

TRENDS IN BASELINE PM_{10} CONCENTRATIONS. The PM_{10} concentrations monitored at the South Long Beach, Long Beach North, Long Beach Hudson, and Los Angeles North Main Street Stations are shown in Table 3.13-5. The 24-hour PM_{10} NAAQS were not exceeded between 2010 and 2015 at any of these stations. Averages of the first highest PM_{10} concentration measured at the South Long Beach and the Los Angeles North Main Street Stations across the last six years (2010 to 2015) were 59 $\mu g/m^3$ and 68 $\mu g/m^3$, respectively, which are well below the 24-hour PM_{10} NAAQS of 150 $\mu g/m^3$.

The 2012 AQMP and 2016 Draft AQMP do not predict future concentrations of PM_{10}. However, it is expected that PM_{10} concentrations will continue to decrease as $PM_{2.5}$ emissions are a fraction of PM_{10}.

TRANSPORTATION AND TRAFFIC CONDITIONS. Existing and future (2035) No Build average daily traffic (ADT) volumes and average daily truck volumes for I-710 in the project area are shown in Table 3.13-6. The table indicates that I-710 experiences about 4,000 to 18,000 trucks annual average daily traffic (AADT) in the base year 2012.

TRAFFIC CHANGES DUE TO THE PROPOSED PROJECT. The proposed project is a highway expansion project. Based on the *Freeway Traffic Operations Analysis Report* (March 2017) and the *Intersection Traffic Impact Analysis Report* (March 2017), the proposed project would increase the traffic volumes along I-710. The future traffic volumes along I-710 for each of the build alternatives are shown in Table 3.13-7. As shown, the proposed project would increase the total traffic volume and the number of trucks using I-710.

Table 3.13-8 shows the LOS and delay in the project area for the a.m. and p.m. peak hours at the top ten affected intersections for the 2035 No Build (Alternative 1) and build alternatives (5C and 7). As shown, the I-710 project would improve the LOS and reduce the delay at some intersections in the project area while worsening the LOS and increasing the delay at other intersections within the project area.

Table 3.13-5: Ambient PM_{10} Monitoring Data (µg/m^3)

	2010	2011	2012	2013	2014	2015
Los Angeles Main Street[1]						
First Highest (µg/m^3)	76	53	80	57	66	73
Second Highest (µg/m^3)	71	50	74	46	61	63
Third Highest (µg/m^3)	63	45	64	45	52	44
Fourth Highest (µg/m^3)	57	44	55	40	49	43
Number of days above National 24-hour standard (150 µg/m^3)	0	0	0	0	0	0
South Long Beach[1]						
First Highest (µg/m^3)	76	50	54	54	59	62
Second Highest (µg/m^3)	53	46	39	43	58	51
Third Highest (µg/m^3)	50	45	39	43	43	50
Fourth Highest (µg/m^3)	47	44	38	41	41	44
Number of days above National 24-hour standard (150 µg/m^3)	0	0	0	0	0	0
Long Beach North[1,2]						
First Highest	44	94	74	*67*	N/A	N/A
Second Highest	41	72	70	*64*	N/A	N/A
Third Highest	38	59	65	*56*	N/A	N/A
Fourth Highest	36	58	65	*54*	N/A	N/A
No. of days above National 24-hour standard (150 µg/m^3)	0	0	0	0	N/A	N/A
Long Beach Hudson[1,3]						
First Highest	N/A	N/A	N/A	N/A	84	80
Second Highest	N/A	N/A	N/A	N/A	58	62
Third Highest	N/A	N/A	N/A	N/A	51	60
Fourth Highest	N/A	N/A	N/A	N/A	50	57
No. of days above National 24-hour standard (150 µg/m^3)	N/A	N/A	N/A	N/A	0	0

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

Note: *Italic text* indicates that the regulatory data completeness criteria for valid summary data were not met for the monitor. Per EPA guidance,[4] a valid data set requires greater than 90 percent data completeness. Invalid data include lost data due to calibrations or other quality assurance procedures.

1 Data obtained from EPA AirData Annual Summary Data. State Code 6, County Code 37, Monitoring Stations 1103 (Los Angeles North Main Street), 4004 (South Long Beach), 4002 (Long Beach North), and 4006 (Long Beach Hudson). Website: http://aqsdr1.epa.gov/aqsweb/aqstmp/airdata/download_files.html#Annual (accessed August 2016).

2 The PM_{10} monitor at the Long Beach North monitoring station was decommissioned in September 2013. As a result, data were incomplete in 2013 and not available for 2014 and 2015.

3 The Long Beach Hudson monitoring station began monitoring in 2014. Thus, data for 2010 through 2015 are not available.

4 EPA. 2000. Meteorological Monitoring Guidance for Regulatory Modeling Applications. EPA-454/R-99-005. February. Website: https://www3.epa.gov/scram001/guidance/met/mmgrma.pdf (accessed March 2016).

µg/m^3 = micrograms per cubic meter
EPA = United States Environmental Protection Agency
I-710 = Interstate 710
N/A = not available
PM_{10} = particulate matter less than 10 microns in size

Table 3.13-6: Existing (2012) and No Build (2035) Average Daily Traffic Volumes

I-710 Freeway Segment Description	2012 Baseline AADT Volumes[1]			2035 Alternative 1[2] AADT Volumes[1]		
	Total	Heavy Duty Trucks	% Heavy Duty Trucks in Total	Total	Heavy Duty Trucks	% Heavy Duty Trucks in Total
Northbound						
Ford On to New York Off	62,270	4,331	7%	77,597	7,477	10%
I-5 On to Olympic On	86,351	8,245	10%	101,409	13,070	13%
Washington On to I-5 Off	110,221	11,056	10%	120,532	15,315	13%
Florence On to Atlantic Off	105,477	12,687	12%	112,373	16,848	15%
Firestone On to Florence Off	111,189	12,924	12%	118,247	17,432	15%
Rosecrans On to I-105 On	83,167	11,539	14%	90,120	16,101	18%
Alondra On to Rosecrans Off	124,363	18,206	15%	134,961	26,602	20%
SR-91 On and Alondra Off to Alondra On	113,583	17,747	16%	123,935	25,882	21%
Del Amo On to Long Beach Off	96,313	17,094	18%	107,576	26,084	24%
Willow On to I-405 Off	78,919	15,267	19%	87,289	22,993	26%
Pacific Coast Hwy. On to Willow Off	72,688	15,171	21%	80,895	22,904	28%
Anaheim On to Pacific Coast Hwy. Off	62,912	14,412	23%	72,774	21,738	30%
Ocean Blvd. to Anaheim	24,848	14,108	57%	30,741	20,932	68%
Southbound						
Caesar Chavez On to Third On	63,983	3,879	6%	72,591	8,587	12%
Eastern Off to I-5 Off	98,965	11,005	11%	90,302	15,689	17%
I-5 On and Washington Off to Washington On	100,529	9,097	9%	105,504	14,367	14%
Atlantic On to Florence Off	106,309	12,387	12%	113,630	19,277	17%
Florence On to Firestone Off	112,281	13,042	12%	116,589	20,061	17%
I-105 On to Rosecrans On	117,474	16,804	14%	123,146	26,820	22%
Rosecrans On to Alondra Off	125,833	17,119	14%	132,667	27,250	21%
Alondra On to SR-91 Off	122,178	16,913	14%	128,258	26,982	21%
Long Beach On to Del Amo Off	94,802	18,382	19%	100,643	28,707	29%
I-405 On to Willow Off	82,278	17,947	22%	88,578	28,611	32%
Willow On to Pacific Coast Hwy. Off	75,981	17,902	24%	81,695	28,516	35%
Pacific Coast Hwy. On to Anaheim Off	65,794	16,403	25%	73,281	27,411	37%
Anaheim to Ocean Blvd.	22,139	15,536	70%	28,694	24,627	86%

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] AADT volumes are based on the post-processed traffic data. The post-processed traffic data was developed by adjusting and/or calibrating the I-710 Traffic Model results using actual traffic counts at specific locations on I-710 to provide more accurate traffic volumes.

[2] Alternative 1 is the future No Build Alternative.

AADT = annual average daily traffic
I-5 = Interstate 5
I-105 = Interstate 105
I-710 = Interstate 710
I-405 = Interstate 405
SR-91 = State Route 91

Table 3.13-7: 2035 Project Alternative Average Daily Traffic Volumes

I-710 Freeway Segment Description	2035 Alternative 5C AADT Volumes[2,3]			2035 Alternative 7 AADT Volumes[2,3]		
	Total	Heavy Duty Trucks	% Heavy Duty Trucks in Total	Total	Heavy Duty Trucks	% Heavy Duty Trucks in Total
Northbound						
Ford On to New York Off	83,256	9,354	11%	86,599	11,671	13%
I-5 On to Olympic On	122,078	16,660	14%	128,298	22,971	18%
Florence On to Atlantic and I-5 Off	133,711	20,406	15%	139,182	28,779	21%
Firestone On to Florence Off	135,518	20,579	15%	145,173	32,306	22%
Rosecrans On to I-105 On	100,059	18,681	19%	119,180	30,588	26%
Alondra On to Rosecrans Off	148,147	27,741	19%	165,542	34,289	21%
SR-91 On and Alondra Off to Alondra On	132,296	26,859	20%	148,240	33,253	22%
Del Amo On to Long Beach Off	125,002	29,199	23%	138,918	37,321	27%
Willow On to I-405 Off	111,052	27,332	25%	113,223	29,476	26%
Pacific Coast Hwy. On to Willow Off	100,345	27,177	27%	103,188	29,322	28%
Southbound						
Caesar Chavez On to Third On	76,263	8,683	11%	79,898	10,329	13%
Eastern Off to I-5 Off	107,760	17,942	17%	110,778	22,823	21%
I-5 On and Washington Off to	106,461	14,464	14%	110,088	20,452	19%
Atlantic On to Florence Off	134,251	21,973	16%	134,662	27,046	20%
Florence On to Firestone Off	137,336	22,737	17%	142,582	31,939	22%
I-105 On to Rosecrans On	123,661	27,415	22%	143,253	32,710	23%
Rosecrans On to Alondra Off	137,448	28,045	20%	158,736	33,296	21%
Alondra On to SR-91 Off	121,401	27,152	22%	142,402	32,296	23%
Long Beach On to Del Amo Off	111,696	30,802	28%	125,505	38,515	31%
I-405 On to Willow Off	105,024	31,125	30%	105,040	33,425	32%
Willow On to Pacific Coast Hwy. Off	95,568	31,129	33%	99,066	33,429	34%

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I-710 freeway. Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

[2] AADT volumes are based on the post-processed traffic data. The post-processed traffic data was developed by adjusting and/or calibrating I-710 Traffic Model results using actual traffic counts at specific locations on the I-710 to provide more accurate traffic volumes.

[3] 2035 Alternative 5C AADT volumes include traffic volumes on parallel truck lanes, where applicable.

AADT = annual average daily traffic
I-405 = Interstate-405
I-5 = Interstate-5
I-710 = Interstate-710
PM = particulate matter
SR-91 = State Route-91
ZE/NZE = zero emission/near zero emission

Table 3.13-8: Level-of-Service and Delay Time at Top Ten Affected Intersections

ID #	Main Street	Cross Street	2035 Alternative 1[1]				2035 Alternative 5C[2]				2035 Alternative 7[3]			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
19	Pacific Coast	Santa Fe Ave.	83	F	151.4	F	144.2	F	179.7	F	122.5	F	169.7	F
57	Imperial Hwy.	Paramount Blvd.	44.4	D	95.5	F	45	D	96.3	F	40.2	D	83.8	F
63	Florence Ave.	Alameda St. (West)	61.6	E	198.5	F	57.7	E	185.3	F	64.9	E	187.3	F
83	Indiana St.	Olympic Blvd.	108.9	F	214	F	77.6	E	105.7	F	84.3	F	144.1	F
93	Ford Blvd.	Whittier Blvd.	49.9	D	212.2	F	82.6	F	241.8	F	64.8	E	335.8	F
155	Wilmington Ave.	223rd St.	87.7	F	157.8	F	92.4	F	151.3	F	95.8	F	151.4	F
177	Washington	Soto St.	138.6	F	196.6	F	140.1	F	192.3	F	138.4	F	193.7	F
503	I-405 SB	223rd St. (On/Off)	97.7	F	332.3	F	22.5	C	26.4	C	49	D	29.2	C
523	Long Beach	Victoria St.	41.6	D	135.4	F	48.2	D	231.1	F	62.4	E	207.2	F
1002	Pacific Coast	Harbor Ave.	60.5	E	96.1	F	120.6	F	160.9	F	113.2	F	156.5	F

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Alternative 1 is the future No Build Alternative.

[2] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I-710 freeway. 2035 Alternative 5C includes traffic volumes on truck lanes, where applicable.

[3] Alternative 7 requires all trucks on the freight corridor to be ZE/NZE. 2035 Alternative 7 includes traffic volumes on the freight corridor, where applicable.

I-405 = Interstate 405
LOS = level of service
SB = southbound
Sec = seconds

DAILY VEHICLE EMISSION CHANGES DUE TO THE PROPOSED PROJECT. The $PM_{2.5}$ and PM_{10} emissions for the I-710 are presented in Tables 3.13-9 and 3.13-10, respectively. These emissions were calculated using the I-710 Traffic Model and post-processed traffic data (which incorporates recent traffic count information).

Total PM_{10} and $PM_{2.5}$ emissions consist of vehicle exhaust emissions, tire wear, brake wear, and entrained road dust emissions. The exhaust portion of PM emissions for all 2035 alternatives decrease as compared to the 2012 Baseline. These reductions are primarily driven by cleaner heavy-duty trucks in 2035 as compared to 2012 resulting from the implementation of ARB's Truck and Bus Regulation[8] and the Ports' Clean Trucks Program.[9, 10] Tire wear and brake wear emission estimates are proportional to vehicle miles traveled (VMT); as a result they increase with increased vehicle activity in 2035 as compared to 2012. As described earlier, entrained road dust emissions were calculated using ARB's emission factors (based on EPA's Compilation of Air Pollution Emission Factors [AP-42]) for entrained road dust from paved roads. This methodology assumes that roadways have an infinite silt reservoir and entrained road dust emissions are directly proportional to VMT. As a result, there is a 21 percent to 77 percent increase in entrained road dust emissions for the 2035 alternatives as compared to the 2012 Baseline. The increase in entrained road dust emissions associated with the I-710 freeway for Alternative 7 as compared to the 2012 Baseline is around 1.9 times greater than that for Alternative 5C as compared to the 2012 Baseline because of additional ZE/NZE truck traffic associated with the freight corridor in Alternative 7.

Overall, the decrease in exhaust $PM_{2.5}$ emissions for all 2035 alternatives as compared to the 2012 Baseline is greater than the sum of the increases in tire wear, brake wear, and entrained road dust emissions. As a result, total $PM_{2.5}$ emissions show decreases for the 2035 alternatives when compared to the 2012 Baseline for all I-710 Corridor Project study areas (Table 3.13-9). In the case of PM_{10} emissions, the increases in entrained road dust, tire wear, and brake wear far outweigh the decrease in exhaust PM_{10}. Therefore, total PM_{10} emissions increase for all the 2035 alternatives when compared to the 2012 Baseline (Table 3.13-10).

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[8] California Code of Regulations (CCR). Title 13 Article 4.5 § 2025. Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles. Website: http://www.arb.ca.gov/msprog/onrdiesel/documents/tbfinalreg.pdf (accessed July 2016).

[9] Port of Los Angeles (POLA). Clean Trucks. Website: https://www.portoflosangeles.org/ctp/idx_ctp.asp (accessed July 2016).

[10] Port of Long Beach (POLB). Clean Trucks. Website: http://www.polb.com/environment/cleantrucks/default.asp (accessed July 2016).

Table 3.13-9: I-710 Freeway $PM_{2.5}$ Emissions (lbs/day)

Project Alternative or Baseline	$PM_{2.5}$ Emission Estimates (lbs/day)				Change in Total $PM_{2.5}$ Emission Estimates			
					Compared to 2012 Baseline		Compared to 2035 Alternative 1[2]	
	Exhaust	Tire Wear and Brake Wear	Entrained Road Dust	Total	lbs/day	%	lbs/day	%
South Coast Air Basin[1]								
2012 Baseline	13,978	13,575	10,376	37,929	--	--	--	--
2035 Alternative 1[2]	970	15,731	14,215	30,916	-7,013	-18%	--	--
2035 Alternative 5C[3]	970	15,750	14,230	30,950	-6,979	-18%	34	0.1%
2035 Alternative 7[4]	970	15,754	14,249	30,973	-6,957	-18%	56	0.2%
Area of Interest[1]								
2012 Baseline	3,087	3,238	2,073	8,397	--	--	--	--
2035 Alternative 1[2]	221	3,417	2,500	6,138	-2,259	-27%	--	--
2035 Alternative 5C[3]	221	3,434	2,518	6,173	-2,224	-26%	35	0.6%
2035 Alternative 7[4]	221	3,444	2,543	6,208	-2,189	-26%	70	1.1%
I-710 Freeway (Model)[1]								
2012 Baseline	223	175	168	566	--	--	--	--
2035 Alternative 1[2]	13	186	221	420	-146	-26%	--	--
2035 Alternative 5C[3]	14	204	238	456	-111	-20%	36	8.5%
2035 Alternative 7[4]	17	231	299	546	-20	-3.6%	126	30.1%
I-710 Freeway (Model + Traffic Data)[5]								
2012 Baseline	231	168	168	567	--	--	--	--
2035 Alternative 1[2]	14	185	231	430	-137	-24%	--	--
2035 Alternative 5C[3]	15	204	252	470	-97	-17%	40	9.2%
2035 Alternative 7[4]	18	231	314	563	-4	-1%	133	30.9%

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Emissions based on the I-710 Traffic Model output. The I-710 Traffic Model is a refined version of the SCAG Regional Transportation Plan Travel Demand Model.

[2] Alternative 1 is the future No Build Alternative.

[3] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I- 710 freeway.

[4] Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

[5] Emissions based on the post-processed traffic data. The post-processed traffic data were developed by adjusting and/or calibrating the I-710 Traffic Model results using actual traffic counts at specific locations on the I-710 to provide more accurate traffic volumes.

I-710 = Interstate 710
lbs/day = pounds per day
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SCAG = Southern California Association of Governments
ZE/NZE = zero emission/near zero emission

Table 3.13-10: I-710 Freeway PM_{10} Emissions (lbs/day)

Project Alternative or Baseline	PM_{10} Emission Estimates (lbs/day)				Change in Total PM_{10} Emission Estimates			
					Compared to 2012 Baseline		Compared to 2035 Alternative 1[2]	
	Exhaust	Tire Wear and Brake Wear	Entrained Road Dust	Total	lbs/day	%	lbs/day	%
South Coast Air Basin[1]								
2012 Baseline	14,664	34,279	69,171	118,114	--	--	--	--
2035 Alternative 1[2]	1,041	39,898	94,764	135,703	17,589	15%	--	--
2035 Alternative 5C[3]	1,040	39,946	94,869	135,855	17,741	15%	152	0.1%
2035 Alternative 7[4]	1,040	39,958	94,992	135,990	17,876	15%	286	0.2%
Area of Interest[1]								
2012 Baseline	3,240	8,179	13,818	25,237	--	--	--	--
2035 Alternative 1[2]	237	8,674	16,668	25,580	343	1.4%	--	--
2035 Alternative 5C[3]	237	8,719	16,786	25,742	505	2.0%	162	0.6%
2035 Alternative 7[4]	237	8,743	16,956	25,936	699	2.8%	356	1.4%
I-710 Freeway (Model)[1]								
2012 Baseline	234	446	1,123	1,803	--	--	--	--
2035 Alternative 1[2]	14	479	1,470	1,963	161	9%	--	--
2035 Alternative 5C[3]	15	525	1,584	2,124	322	18%	161	8.2%
2035 Alternative 7[4]	18	597	1,990	2,605	802	45%	642	32.7%
I-710 Freeway (Model + Traffic Data)[5]								
2012 Baseline	242	430	1,122	1,794	--	--	--	--
2035 Alternative 1[2]	15	478	1,540	2,033	239	13%	--	--
2035 Alternative 5C[3]	16	525	1,678	2,220	425	24%	186	9.2%
2035 Alternative 7[4]	19	599	2,094	2,712	918	51%	678	33.%

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Emissions based on the I-710 Traffic Model output. The I-710 Traffic Model is a refined version of the SCAG Regional Transportation Plan Travel Demand Model.

[2] Alternative 1 is the future No Build Alternative.

[3] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I- 710 freeway.

[4] Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

[5] Emissions based on the post-processed traffic data. The post-processed traffic data were developed by adjusting and/or calibrating the I-710 Traffic Model results using actual traffic counts at specific locations on the I-710 to provide more accurate traffic volumes.

I-710 = Interstate 710
lbs/day = pounds per day
PM_{10} = particulate matter less than 10 microns in diameter
SCAG = Southern California Association of Governments
ZE/NZE = zero emission/near zero emission

As seen in Tables 3.13-9 and 3.13-10, the incremental $PM_{2.5}$ and PM_{10} emissions of the 2035 build alternatives compared to the 2035 Alternative 1 (No Build) are essentially zero (approximately 1 percent different or less) in the Basin and AOI study areas. However, the planned increases in the mobility and capacity of the freeway result in increases in PM emissions along the I-710 freeway. Increases in emissions for Alternative 7 are generally greater than for Alternative 5C, primarily due to the greater increase in capacity (and VMT) for Alternative 7 and the linear VMT-dependence of entrained road dust and brake/tire wear emissions.

ZE Design Option. Implementing the ZE design option for Alternative 7 would slightly decrease the I-710 emissions for Alternative 7 (effect of ZE/NZE truck exhaust emissions), but would not appreciably change the 30 percent increase in I-710 PM_{10} and $PM_{2.5}$ emissions for Alterative 7/7ZE compared to the 2035 No Build condition (Alternative 1).

Differences (in lbs/day along the I-710) as compared to Alternative 1	PM_{10}	$PM_{2.5}$	DPM
Alternative 5C	160	36	-1.7
Alternative 7	640	130	-5.2
Alternative 7ZE	630	120	-5.2

DPM = diesel particulate matter
lbs/day = pounds per day
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ZE = zero emission/near zero emission

CONCLUSION. Transportation conformity is required under Section 176(c) of the Clean Air Act (CAA) to ensure that Federally supported highway and transit project activities are consistent with the purpose of the SIP. Conformity for the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant AAQS.

The following paragraphs discuss the results of the qualitative $PM_{2.5}$ and PM_{10} analysis for analysis purposes under NEPA, but do not provide the basis for a project-level Federal air quality conformity determination for the project. Project-level conformity will be determined through a project-level quantitative analysis that will be conducted once a preferred alternative has been identified following the public review of this RDEIR/SDEIS.

- Ambient PM_{10} concentrations in the project vicinity are more than 50 percent below the 24-hour PM_{10} NAAQS.
- Alternative 5C would increase the PM_{10} emissions along the I-710 freeway corridor by up to 18 percent[11] to 24 percent[12] in 2035 when compared to existing conditions. This increase is lower than the percent difference between the current PM_{10} ambient concentrations and the PM_{10} standard.
- Alternative 7 would increase the PM_{10} emissions along the I-710 freeway corridor by up to 45 percent to 51 percent in 2035 when compared to existing conditions. This increase is around the same value as the percent difference between the current PM_{10} ambient concentrations and the PM_{10} standard. Per the 2016 AQMP, the future 24-hour PM_{10} background concentrations are expected to be lower than the current background.
- Based on the local monitoring data and the 2012 AQMP,[13] the 24-hour $PM_{2.5}$ concentrations within the project area would increase by 1.2 percent to 5.6 percent in the southern region of the AOI and decrease by 4.8 percent in the northern region of the AOI in the year 2030 as compared to current background concentrations. Overall, the 2030 background concentrations will be around 4.0 $\mu g/m^3$ to 8.8 $\mu g/m^3$ lower than the 24-hour $PM_{2.5}$ NAAQS of 35 $\mu g/m^3$ and would require a 13 to 34 percent increase to exceed the 24-hour $PM_{2.5}$ NAAQS.
    - Based on the data in Table 3.13-9, $PM_{2.5}$ emissions are expected to increase by 8 percent to 9 percent along the I-710 freeway for Alternative 5C in 2035 when compared to the 2035 No Build Alternative. Since the 2035 No Build Alternative contributes to only a portion of the future $PM_{2.5}$ ambient background concentration and changes in localized ambient $PM_{2.5}$ concentrations are generally a direct function of changes in primary $PM_{2.5}$ emissions, it is reasonable to assume that Alternative 5C would likely not increase the future 24-hour $PM_{2.5}$ ambient background concentration by more than 8 to 9 percent.

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[11] Emissions are based on traffic data from the I-710 Traffic Model combined with emission rate data from EMFAC2014. The I-710 Traffic Model is a modified version of the SCAG Regional Transportation Plan Travel Demand Model.

[12] Emissions are based on post-processed traffic data combined with emission rate data from EMFAC2014. The post-processed traffic data were developed by adjusting and/or calibrating the I-710 Traffic Model results using actual traffic counts at specific locations on the I-710 to provide more accurate traffic volumes.

[13] SCAQMD. 2013. Final 2012 AQMP Appendix V. February. Website: http://www.agmd.gov/docs/defaultsource/clean-air-plans/air-quality-management-plans/2012-air-quality-management-plan/final-2012-aqmp-(february-2013)/appendix-v-final-2012.pdf (accessed August 2016).

  - Based on the data in Table 3.13-9, Alternative 7 is expected to increase the $PM_{2.5}$ emissions from the I-710 freeway by 30 percent to 31 percent in 2035 when compared to the 2035 No Build condition.

- Based on the local monitoring data and modeling in 2012 AQMP, the annual average $PM_{2.5}$ concentrations within the project area would reduce by 6 percent to 11 percent below the current background concentrations in the year 2030. Overall, the 2030 background concentrations will be 0.6 $\mu g/m^3$ to 2.5 $\mu g/m^3$ below the annual $PM_{2.5}$ NAAQS and would require a 5 to 26 percent increase to exceed the annual $PM_{2.5}$ NAAQS. The Final 2016 AQMP[14] predicts an even greater reduction in annual average $PM_{2.5}$ concentration of 16 percent in 2025 as compared to current conditions.
  - As described above, there is projected to be an 8 percent to 9 percent increase in PM2.5 emissions along the I-710 freeway for 2035 Alternative 5C as compared to the 2035 No Build.
  - Based on the data in Table 3.13-9, Alternative 7 is expected to increase the PM2.5 emissions from the I-710 freeway by 30 percent to 31 percent in 2035 when compared to the 2035 No Build condition.
- NOTE: These analyses do not determine project-level conformity. The emissions analysis does show that Alternative 7 incremental near-freeway emissions along the I-710 are at least three times greater than Alternative 5C when compared to the 2035 No Build Alternative.

As previously discussed, a quantitative project-level $PM_{10}/PM_{2.5}$ conformity determination is required for project approval. A protocol is being prepared for the quantitative hot-spot analysis in consultation with the Southern California TCWG. A quantitative project-level "hot-spot" analysis will be performed at selected locations along the I-710 Corridor (per the latest conformity guidance) for the preferred project alternative, which will be recommended after public comments on the RDEIR/SDEIS. The results of the quantitative project-level "hot-spot" analysis will be included in the Final EIR/EIS for the proposed project.

PROJECT-LEVEL MOBILE SOURCE AIR TOXICS (MSAT). In addition to the criteria air pollutants for which there are NAAQS, the EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, other mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

[14] SCAQMD. 2017. Final 2016 AQMP. March. Website: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp (accessed March 20, 2017).

Controlling air toxic emissions became a national priority with the passage of the CAA Amendments of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA assessed this expansive list in its rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Volume 72, No. 37, page 8,430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are part of EPA's Integrated Risk Information System (IRIS).[15] In addition, the EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA).[16] These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (DPM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter (POM). While FHWA considers these the priority MSAT, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOVES2010a model, even if VMT increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSATs is projected for the same time period, as shown in Figure 3.13-2. The projected reduction in MSAT emissions would be slightly different in California due to the use of the EMFAC2014 emission model in place of the MOVES model. Among other things, EMFAC2014 improved estimates of particulate matter emissions from the latest model year diesel trucks, dramatically lowering DPM emissions in 2035. The impact of these new model trucks as the result of the ARB Truck and Bus Rule and the San Pedro Bay Ports Clean Truck Programs, as well as improved emission factors, reduces fleet emissions faster than VMT is expected to increase. In addition, although traffic emissions are generally proportional to vehicle miles traveled, the emission factor is also a function of vehicle distribution, weight, speed, etc., such that improvements in mobility (i.e., less congestion) will also reduce emissions.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

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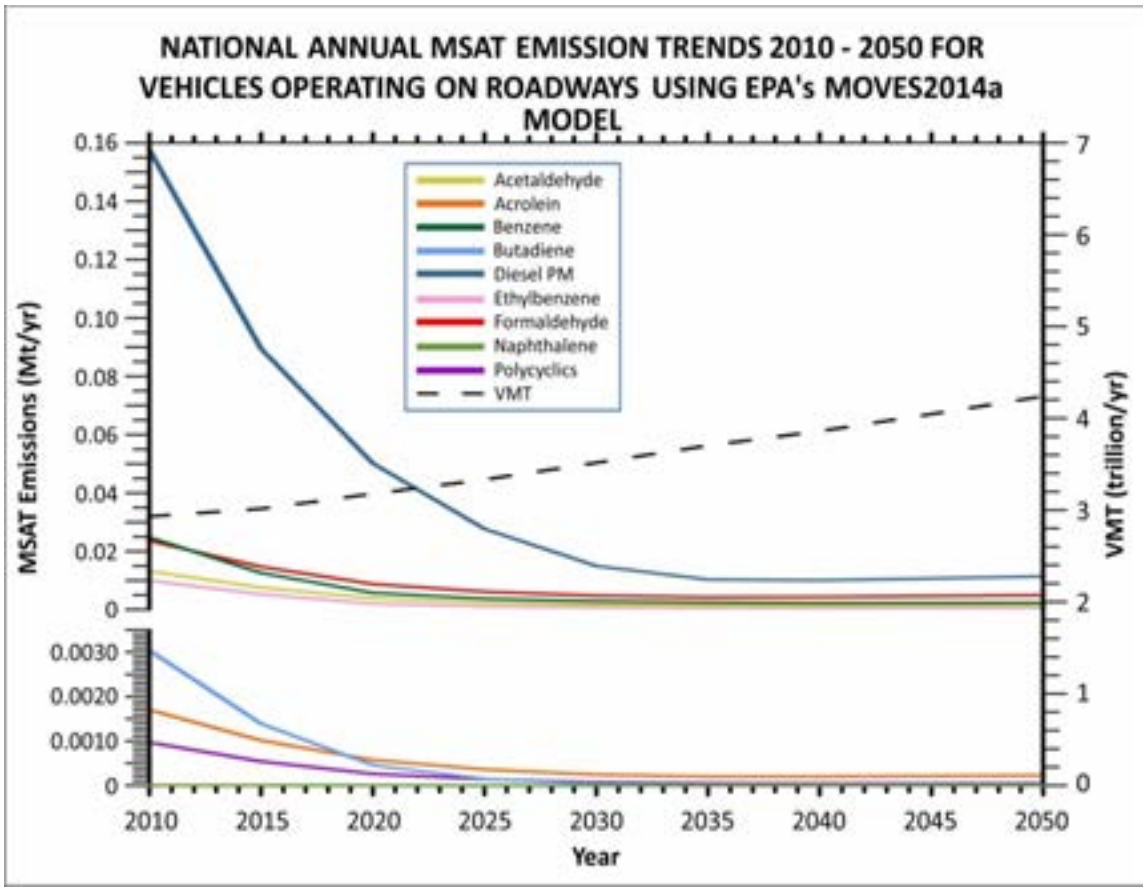
[15] EPA. Website: https://www.epa.gov/iris.

[16] EPA. 2017. 2011 National-Scale Air Toxics Assessment. Website: https://www.epa.gov/national-air-toxics-assessment/2011-national-air-toxics-assessment (accessed February 2017).



Source: Federal Highway Administration. Website: https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/ msat/.

Figure 3.13-2: National MSAT Emission Trends

In October 2016, FHWA issued a memorandum titled *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*[17] to advise FHWA division offices as to when and how to analyze MSATs in the NEPA process for highways. This document is an update to the previous guidance released in December 2012. The guidance is described as interim because MSAT science is still evolving. As the science progresses, FHWA will update the guidance. This analysis follows the FHWA guidance.

MSAT ANALYSIS METHODOLOGY. Depending on the specific project circumstances, FHWA has identified three levels of analysis.

- **Projects with No Meaningful Potential MSAT Effects, or Exempt Projects:** For projects qualifying as categorical exclusions under 23 CFR 771.117 or that are exempt from CAA conformity under 40 CFR 93.126, no analysis or discussion of MSAT is necessary.
- **Projects with Low Potential MSAT Effects:** These projects are those that serve to improve operations of highway, transit, or freight without adding substantial new capacity of without creating a facility that is likely to meaningfully increase MSAT emissions, including minor widening projects, new interchanges, replacement of a signalized intersection on a surface street, and projects where design year traffic is projected to be less than 140,000 to 150,000 per. For these projects, a qualitative assessment of emissions projections should be conducted.
- **Projects with Higher Potential MSAT Effects:** These projects typically are those that create or substantially alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location, involving a substantial number of diesel vehicles for new projects or accommodating with a substantial increase in the number of diesel vehicles for expansion projects, create new capacity or add substantial capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 by the design year, and also be proposed to be located in proximity to populated areas. The approach to assessing impacts for these types of projects would include a quantitative analysis to forecast local-specific emission trends of the priority MSAT for each alternative, as well as addressing the potential for cumulative impacts, where appropriate, based on local conditions.

The proposed project includes the expansion of an existing highway that has average annual daily trips exceeding 140,000 per day and a high percentage of diesel vehicles. Therefore, the project qualifies as having higher potential MSAT effects. This analysis focuses on seven of the nine[18] MSAT pollutants identified by the EPA as being the highest priority MSATs: acrolein, benzene, 1,3-butadiene, DPM, formaldehyde, naphthalene, and polycyclic organic matter (POM). MSAT emission inventories for all project alternatives and baselines were developed for the I-710 Corridor Project study areas using the emission factors of non-criteria air pollutants in

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[17] Federal Highway Administration (FHWA). 2016. Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. October 18. Website: https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/ (accessed July 2017).

[18] This HRA analysis is based on the 2012 FHWA guidance for MSAT analysis that included only seven priority MSAT. After the completion of this analysis, on October 18, 2016, FHWA released an updated guidance that includes two additional MSAT: acetaldehyde and ethylbenzene. As a result these two MSAT are not included in this analysis.

the Basin, I-710 Traffic Model data, and ARB/EPA speciation profiles for reactive organic gases (ROG), total organic gases (TOG), and $PM_{2.5}$. MSAT emission inventories for the I-710 freeway were also developed for the project alternatives and baselines using the emission factors of non-criteria pollutants in Los Angeles County, post-processed traffic data, and ARB/EPA speciation profiles.

MSAT ANALYSIS RESULTS. Table 3.13-11 presents an analysis of MSAT incremental emissions for each of the project alternatives compared with the 2012 existing conditions (baseline) for all study areas. Table 3.13-12 presents a similar comparative analysis of incremental emissions of each of the 2035 build alternatives compared to Alternative 1.

In every instance (all project alternatives, and all study areas [the Basin, the I-710 AOI, and I-710]), decreases in incremental MSAT emissions compared to 2012 were calculated. Reductions in DPM (the main risk driver) were approximately 97 percent (Basin), 97 percent to 98 percent (AOI), and 96 percent to 98 percent along I-710. Compared to 2012, reductions from Alternative 7 were approximately 1 percent greater than reductions with Alternative 5C.

In 2035, compared to Alternative 1, DPM emissions (the main health risk concern) decreased for Alternatives 5C and 7 in all study areas, with the greatest decreases in Alternative 7.

ZE Design Option. Both ZE/NZE trucks for Alternative 7 and ZE trucks only in the ZE Design Option for Alternative 7 are assumed to be non-diesel vehicles based on an analysis of truck technologies that would meet a low-NOx (0.02 g NO_x / bhp-hr) standard or lower. As a result, MSAT emissions estimates of diesel-fueled vehicles for these two project alternatives are identical. Figures F-5 and F-6 in Appendix Q provide a comparison of the spatial distribution of the incremental DPM emissions associated with 2035 Alternative 7 and 2035 Alternative 7ZE as compared to project baselines. These results are identical. Note that MSATs associated with natural gas combustion are included in Alternative 7 NZE/ZE emission estimates.

ADDITIONAL ANALYSES. The I-710 Corridor Project is a cooperative venture of several agencies responsible for both transportation and goods movement in the greater Los Angeles area. Therefore, additional analyses, including multiarea criteria pollutant traffic emissions, criteria pollutant concentration impacts along the I-710, and air toxic health risk impacts (i.e., cancer risk, and acute and chronic hazard indices) were conducted because of the unique goods movement component of the project and the stated purpose of the project to improve air quality.

CRITERIA POLLUTANT TRAFFIC EMISSIONS. Mass emissions of criteria pollutants and/or their precursors (NO_x, volatile organic compounds [VOC], PM_{10}, $PM_{2.5}$, CO, SO_2) from traffic were calculated for the I-710 mainline to determine the impact of the proposed project on the surrounding area. In addition, the Basin mass emissions and mass emissions for the AOI

were also evaluated to determine the impact of the proposed I-710 Corridor Project on a

Table 3.13-11: Comparison of Incremental Air Toxics Emissions for All Project Alternatives Compared to 2012 for all Study Areas

Mobile Source Air Toxic Name	Study Area	Comparison with 2012 Baseline (Diesel-Fueled Vehicles Only)			Comparison with 2012 Baseline (Non-Diesel-Fueled Vehicles)		
		2035 Alternative 1[3] versus 2012 Baseline	2035 Alternative 5C[4] versus 2012 Baseline	2035 Alternative 7[5] versus 2012 Baseline	2035 Alternative 1[3] versus 2012 Baseline	2035 Alternative 5C[4] versus 2012 Baseline	2035 Alternative 7[5] versus 2012 Baseline
		lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Diesel Particulate Matter	Basin	-13,000	-13,000	-13,000	--	--	--
	AOI	-2,800	-2,800	-2,800	--	--	--
	I-710	-210	-210	-220	--	--	--
1,3-butadiene	Basin	-14	-15	-15	-63	-63	-63
	AOI	-3.5	-3.5	-3.7	-16	-16	-16
	I-710	-0.20	-0.22	-0.25	-0.65	-0.63	-0.63
Benzene	Basin	-230	-240	-240	-1,500	-1,500	-1,500
	AOI	-56	-57	-59	-380	-380	-380
	I-710	-3.3	-3.6	-4.0	-15	-15	-15
Formaldehyde	Basin	-3,900	-4,000	-4,000	-560	-506	-560
	AOI	-940	-960	-1,000	-140	-140	-140
	I-710	-55	-61	-68	-5.8	-5.4	-4.7
Acrolein (2-propenal)	Basin	-180	-180	-180	-1.3	-1.3	-1.3
	AOI	-43	-44	-46	-0.32	-0.32	-0.31
	I-710	-2.5	-2.8	-3.1	-0.013	-0.012	-0.0086
Naphthalene	Basin	-300	-300	-300	-95	-95	-95
	AOI	-71	-72	-75	-24	-24	-24
	I-710	-4.1	-4.5	-5.1	-0.98	-0.96	-0.96
Total POM[6]	Basin	-31	-31	-32	-29	-29	-29
	AOI	-7.3	-7.4	-7.6	-7.3	-7.3	-7.3
	I-710	-0.45	-0.49	-0.53	-0.30	-0.29	-0.29

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Emissions based on the I-710 Traffic Model output. The I-710 Traffic Model is a refined version of the SCAG Regional Transportation Plan Travel Demand Model.

[2] Numbers are rounded to two significant digits.

[3] Alternative 1 is the future No Build Alternative.

[4] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I- 710 freeway.

[5] Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

[6] Polycyclic organic matter includes the following fifteen compounds: acenaphthene, acenaphthylene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene.

Table 3.13-12: Comparison of Incremental Air Toxics Emissions for All Project Alternatives Compared to Alternative 1 (No Build) for all Study Areas

Mobile Source Air Toxic Name	Study Area	Comparison with 2035 Alternative 1 (Diesel-Fueled Vehicles Only)		Comparison with 2035 Alternative 1 (Non-Diesel-Fueled Vehicles)	
		2035 Alternative 5C[3] versus 2035 Alternative 1[4]	2035 Alternative 7[5] versus 2035 Alternative 1[4]	2035 Alternative 5C[3] versus 2035 Alternative 1[4]	2035 Alternative 7[5] versus 2035 Alternative 1[4]
		lbs/day	lbs/day	lbs/day	lbs/day
Diesel Particulate Matter	Basin	-6.8	-31	--	--
	AOI	-4.1	-17	--	--
	I-710	-1.7	-5.2	--	--
1,3-butadiene	Basin	-0.081	-0.32	-0.012	-0.030
	AOI	-0.054	-0.19	-0.0035	-0.013
	I-710	-0.021	-0.047	0.012	0.016
Benzene	Basin	-1.3	-5.1	-0.64	-1.0
	AOI	-0.88	-3.1	-0.070	-0.53
	I-710	-0.35	-0.76	0.30	0.30
Formaldehyde	Basin	-22	-87	1.2	5.5
	AOI	-15	-53	0.84	3.2
	I-710	-5.8	-13	0.40	1.0
Acrolein (2-propenal)	Basin	-1.0	-4.0	0.0063	0.027
	AOI	-0.68	-2.4	0.0042	0.0016
	I-710	-0.27	-0.59	0.0016	0.0047
Naphthalene	Basin	-1.6	-6.5	-0.015	-0.033
	AOI	-1.1	-3.9	-0.0035	-0.014
	I-710	-0.44	-0.96	0.019	0.025
Total POM[6]	Basin	-0.14	-0.54	-0.0047	-0.0093
	AOI	-0.091	-0.32	-0.00093	-0.0036
	I-710	-0.036	-0.079	0.0066	0.0092

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Emissions based on the I-710 Traffic Model output. The I-710 Traffic Model is a refined version of the SCAG Regional Transportation Plan Travel Demand Model.

[2] Numbers are rounded to two significant digits.

[3] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I- 710 freeway.

[4] Alternative 1 is the future No Build alternative.

[5] Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

[6] Polycyclic organic matter includes the following fifteen compounds: acenaphthene, acenaphthylene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3- c,d)pyrene, phenanthrene, and pyrene.

AOI - Area of Interest
Basin - South Coast Air Basin
I-710 - Interstate 710
lbs/day = pounds per day
POM - Polycyclic Organic Matter
SCAG = Southern California Association of Governments
ZE/NZE = zero emission/near zero emission

regional scale. The AQ/GHG/HRA Protocol describes the methodology for calculating traffic-related mass emissions. The method for calculating regional emissions impacts from the project alternatives is summarized below.

REGIONAL EMISSION IMPACT METHODOLOGY. The vehicle activity data was obtained from I-710 Traffic Model, which is based on the SCAG regional traffic model. Four different peak time periods were evaluated in the model: AM (6:00 a.m.–9:00 a.m.), Midday (9:00 a.m.–3:00 p.m.), PM (3:00 p.m.–7:00 p.m.) and Nighttime (7:00 p.m.–6:00 a.m.). The I-710 Traffic Model assigns one-directional traffic flows for traffic links (sections of roadways) that represent freeways, ramps, and one-way streets. All other traffic links are assigned bi-directional vehicle flow. The output of the I-710 Traffic Model provides several parameters including a unique identifier for each traffic link in the SCAG network (Link ID), a description of each link (road name, route name, and road type), link lengths, and average vehicle speeds and traffic volumes for each traffic link during four different time periods (AM, mid-day, PM, and night-time).[19] This model output data is hereinafter referred to as "The I-710 Traffic model data."

The I-710 Traffic Model data was then further adjusted and/or calibrated using actual traffic counts at specific locations on I-710 to provide more accurate traffic volumes (referred to as "post-processed traffic data" hereinafter) for the I-710 freeway (includes freight corridor for certain alternatives) and related ramps/freeway-to-freeway connectors.

To maintain consistency with the date of the socioeconomic data used in the SCAG 2012 RTP, 2035 is used as the horizon year for analysis of future conditions. The horizon year of 2035 is consistent with SCAG's 2012 RTP, the base year used for the I-710 Traffic Model.

EMFAC2014 was used to develop emission factors for the various criteria pollutants. The EMFAC model was run for both baseline year 2012 and build-out year 2035. (Details of how EMFAC was used are included in the Air Quality/Greenhouse Gas/ Health Risk Assessment [AQ/GHG/HRA] Protocol and AQ/GHG/HRA Technical Study [June 2017].) EMFAC2014 does not account for rules and regulations enacted by the ARB after 2014.

[19] Note that the I-710 traffic model is based on the 2012 (latest) RTP model, but combines two time periods in the RTP model (evening 7:00 to 9:00 p.m. and night 9:00 p.m. to 6:00 a.m.) and calls it night period (from 7:00 p.m. to 6:00 a.m.).

Both build alternatives include ZE/NZE trucks (4,000 for Alternative 5C and 18,350 for Alternative 7). As a result, ZE/NZE trucks account for approximately 22 percent of the heavy-duty truck VMT along the I-710, and the only trucks traveling along the freight corridor in Alternative 7 are ZE/NZE (approximately 67 percent of heavy-duty truck VMT along the I-710 main line and freight corridor).

SUMMARY OF REGIONAL TRAFFIC EMISSION IMPACTS. The incremental emissions of criteria pollutants for Basin, AOI, and I-710 as compared to 2012 existing conditions and Alternative 1 (2035 No Build) are presented in Tables 3.13-13 and 3.13-14, respectively.

These comparisons are performed for each of the criteria pollutants and for the three project study areas (Basin, I-710 Study AOI, and I-710, which includes the freight corridor under Alternative 7). Each of the alternatives will result in lower NO_x, CO, $PM_{2.5}$ and VOC emissions for all study areas when compared to 2012.

Incremental SO_2 emissions decreased for each of the project alternatives in each study area, compared to 2012, with the exception of Alternative 7 in the I-710 Study Area which increased by one pound per day.

Total traffic-related PM emissions consist of exhaust emissions, direct brake and tire wear, and entrained road dust emissions (particulate matter from roadways lifted into the air by vehicle motion). The entrained road dust emissions were calculated using ARB's emission factors (based on EPA's Compilation of Air Pollution Emission Factors [AP-42][20]) for entrained road dust from paved roads. This methodology conservatively assumes that roadways have an infinite silt reservoir, even for heavily-traveled freeways and major arterials. This methodology increases entrained emissions as a direct function of VMT. Thus, each of the 2035 alternatives shows an increase (approximately 21 to 77 percent) in entrained PM emissions compared to 2012. For $PM_{2.5}$, exhaust emission decreases are great enough that total $PM_{2.5}$ emissions still decrease for all study areas (except for Alternative 7 along I-710). For PM_{10}, calculated increases in entrained and brake/tire wear emissions are much greater than exhaust PM_{10} reductions, resulting in large calculated increases in PM_{10} emissions in all study areas for all 2035 alternatives compared to 2012.

[20] EPA. 2011. AP-42 Compilation of Air Pollutant Emission Factors, Chapter 13.2.1 Miscellaneous Sources - Fugitive Dust Sources - Paved Roads. Website: http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf (accessed May 2015).

Table 3.13-13: Comparison of Incremental Criteria Pollutant Emissions for All Alternatives compared to 2012, for all Study Areas[1,2]

Pollutant	Study Area	Comparison with 2012 Baseline		
		2035 Alternative 1[3] versus 2012 Baseline	2035 Alternative 5C[4] versus 2012 Baseline	2035 Alternative 7[5] versus 2012 Baseline
		lbs/day	lbs/day	lbs/day
NO_X	Basin	-500,000	-500,000	-510,000
	AOI	-120,000	-120,000	-120,000
	I-710	-9,300	-9,700	-10,000
CO	Basin	-1,100,000	-1,100,000	-1,100,000
	AOI	-280,000	-280,000	-280,000
	I-710	-12,000	-12,000	-12,000
PM_{10} (Total)	Basin	18,000	18,000	18,000
	AOI	340	510	700
	I-710	160	320	800
PM_{10} *(Exhaust)*	*Basin*	*-14,000*	*-14,000*	*-14,000*
	AOI	*-3,000*	*-3,000*	*-3,000*
	I-710	*-220*	*-220*	*-220*
PM_{10} *(TWBW)*	*Basin*	*5,600*	*5,700*	*5,700*
	AOI	*500*	*540*	*560*
	I-710	*33*	*79*	*150*
PM_{10} *(Entrained)*	*Basin*	*26,000*	*26,000*	*26,000*
	AOI	*2,900*	*3,000*	*3,100*
	I-710	*350*	*460*	*870*
$PM_{2.5}$ (Total)	Basin	-7,000	-7,000	-7,000
	AOI	-2,300	-2,200	-2,200
	I-710	-150	-110	-20
$PM_{2.5}$ *(Exhaust)*	*Basin*	*-13,000*	*-13,000*	*-13,000*
	AOI	*-2,900*	*-2,900*	*-2,900*
	I-710	*-210*	*-210*	*-210*
$PM_{2.5}$ *(TWBW)*	*Basin*	*2,200*	*2,200*	*2,200*
	AOI	*180*	*200*	*210*
	I-710	*11*	*29*	*56*
$PM_{2.5}$ *(Entrained)*	*Basin*	*3,800*	*3,900*	*3,900*
	AOI	*430*	*450*	*470*
	I-710	*52*	*69*	*130*
VOC	Basin	-90,000	-90,000	-90,000
	AOI	-23,000	-23,000	-23,000
	I-710	-970	-970	-960
SO_2	Basin	-810	-810	-810
	AOI	-240	-240	-230
	I-710	-8	-6	1

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Emissions based on the I-710 Traffic Model output. The I-710 Traffic Model is a refined version of the SCAG Regional Transportation Plan Travel Demand Model.

[2] Numbers are rounded to two significant digits.

[3] Alternative 1 is the future No Build Alternative.

[4] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I- 710 freeway.

[5] Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

AOI = Area of Interest
Basin = South Coast Air Basin
CO = carbon monoxide
I-710 = Interstate 710
lbs/day – pounds per day
NO_X = oxides of nitrogen
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SCAG = Southern California Association of Governments
SO_2 = sulfur dioxide
TWBW = tire wear and brake wear
VOC = volatile organic compound
ZE/NZE = zero emission/near zero emission

Table 3.13-14: Comparison of Incremental Criteria Pollutant Emissions for All Build Alternatives compared to Alternative 1 (No Build), for all Study Areas [1,2]

Pollutant	Study Area	Comparison with 2035 Alternative 1	
		2035 Alternative 5C[3] versus 2035 Alternative 1[4]	2035 Alternative 7[5] versus 2035 Alternative 1[5]
		lbs/day	lbs/day
NO_X	Basin	-1,600	-6,200
	AOI	-1,000	-3,800
	I-710	-330	-730
CO	Basin	-30	-410
	AOI	23	-300
	I-710	190	290
PM_{10} (Total)	Basin	150	290
	AOI	160	360
	I-710	160	640
PM_{10} (Exhaust)	*Basin*	*-0.38*	*-0.92*
	AOI	*0.055*	*-0.041*
	I-710	*0.66*	*3.3*
PM_{10} (TWBW)	*Basin*	*48*	*60*
	AOI	*44*	*69*
	I-710	*46*	*120*
PM_{10} (Entrained)	*Basin*	*100*	*230*
	AOI	*120*	*290*
	I-710	*110*	*520*
$PM_{2.5}$ (Total)	Basin	34	56
	AOI	35	70
	I-710	36	130
$PM_{2.5}$ (Exhaust)	*Basin*	*-0.35*	*-0.85*
	AOI	*0.057*	*-0.024*
	I-710	*0.62*	*3.2*
$PM_{2.5}$ (TWBW)	*Basin*	*19*	*23*
	AOI	*17*	*27*
	I-710	*18*	*45*
$PM_{2.5}$ (Entrained)	*Basin*	*16*	*34*
	AOI	*18*	*43*
	I-710	*17*	*78*
VOC	Basin	-55	-77
	AOI	-17	-59
	I-710	5.8	14
SO_2	Basin	0.93	1.5
	AOI	1.4	3.0
	I-710	2.2	9.5

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

1 Emissions based on the I-710 Traffic Model output. The I-710 Traffic Model is a refined version of the SCAG Regional Transportation Plan Travel Demand Model.

2 Numbers are rounded to two significant digits.

3 Alternative 1 is the future No Build Alternative.

4 Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I- 710 freeway.

5 Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

AOI = Area of Interest
Basin = South Coast Air Basin
CO = carbon monoxide
I-710 = Interstate 710
lbs/day = pounds per day
NO_X = oxides of nitrogen
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
SCAG = Southern California Association of Governments
SO_2 = sulfur dioxide
TWBW = tire wear and brake wear
VOC = volatile organic compound
ZE/NZE = zero emission/near zero emission

Overall the decrease in exhaust $PM_{2.5}$ emissions for all 2035 alternatives as compared to 2012 Baseline is greater than the sum of the increases in tire wear, brake wear, and entrained road dust emissions. As a result, total $PM_{2.5}$ emissions show decreases for the 2035 alternatives when compared to the 2012 Baseline for all I-710 Corridor Project study areas. In the case of PM_{10} emissions, the increases in entrained road dust, tire wear and brake wear far outweigh the decrease in exhaust PM_{10}. Therefore, there are increases in total PM_{10} emissions for all the 2035 alternatives when compared to 2012 Baseline.

It should be noted that after the I-710 Corridor Project emission calculations were completed, ARB revised the silt loading factor for freeways to a lower value (approximately 25 percent lower). Initial analyses indicate that this reduces freeway entrained $PM_{2.5}$ and PM_{10} incremental emissions for all project alternatives as compared to California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) baselines. These reductions are not expected to alter the conclusions of this analysis and the analyses presented can be considered as conservative.

There is no significant change (less than 5 percent) in VMT across the 2035 alternatives for the AOI and the Basin. Emissions associated with on-road vehicles is generally a function of the VMT. Since there is no significant change (less than 5 percent) in VMT across the 2035 alternatives for the AOI and the Basin, emission estimates in Table 3.13-13 for various criteria air pollutants for the 2035 alternatives as compared to the 2012 Baseline are similar. Furthermore, the apparent lack of variation can be partially attributed to the rounding of the emission estimates to two significant digits.

The comparison of the build alternatives to Alternative 1 for 2035 conditions is presented in Table 3.13-14. In this comparison, the impacts of general VMT increases from 2012 are eliminated, although smaller VMT differences among the project alternatives remain.

With the exception of CO emissions under Alternative 5C, each of the alternatives will result in lower NO_x, CO, and VOC emissions for the Basin and AOI study areas when compared to Alternative 1.

Incremental SO_2 emissions, $PM_{2.5}$ exhaust, and PM_{10} exhaust increased for each of the project alternatives in each study area, compared to Alternative 1 (with the exception of $PM_{2.5}$ and PM_{10} at the Basin level, where there are decreases for each alternative).

ZE Design Option. Although NO_x levels are marginally lower for the ZE design option, no substantial change is seen between the incremental impacts of 2035 Alternative 7 and 2035 Alternative 7ZE as compared to the 2012 Baseline for all project study areas, except for SO_2 from the I-710 freeway. Incremental impacts of 2035 Alternative 7 and 2035 Alternative 7ZE in the Basin and the AOI as compared to 2035 Alternative 1 are similar.

CRITERIA POLLUTANT TRAFFIC EMISSION CONCENTRATIONS. Emissions released from traffic are mixed and diluted in ambient air and ultimately transported away from the traffic. The simulation of the release and transport of emissions from traffic in order to estimate the concentrations of the criteria pollutants at specified locations (called receptors) is conducted through air dispersion modeling.

Modeling of the quantities and effects of project traffic-related air pollution was performed using emissions data calculated for the I-710 mainline (and freight corridor for Alternative 7), using post-processed traffic data.[21] The modeling results do not, therefore, reflect changes in emissions on the other nearby freeways, local arterials, and other local roadways. Based on the emissions analysis of the build alternatives, emissions of criteria pollutants generally decrease on these nearby freeways, arterials, and roadways as traffic shifts to the I-710. The detailed modeling methodology and results are presented in the AQ/GHG/HRA (2017). The modeling results presented are conservative in that they account for impacts from increased traffic on the I-710 for the build alternatives but do not account for any decreases in ambient concentrations related to reduced traffic on nearby freeways, arterials, and roadways for the build alternatives as mobility improves on I-710.

For this study, the EPA's AERMOD dispersion model was used to model the criteria pollutant concentrations that would result from traffic-related emissions on I-710. It is important to note that the air dispersion modeling was performed using only the emissions data calculated for the I-710 mainline (and freight corridor for Alternative 7). Freeway traffic emissions were represented in AERMOD as a series of volume sources. The I-710 freeway near-roadway AERMOD modeling uses up to 29,000 adjacent volume sources per model run. In response to comments on the Draft EIR/EIS, grid receptors now "follow" the freeway and begin closer to the freeway (approximately 150 feet away from the edge of the roadway). Air quality and health risk impacts were calculated at over 10,000 model grid

[21] Post-processed traffic data were developed by adjusting and/or calibrating the I-710 Traffic Model results using actual traffic counts at specific locations on I-710 to provide more accurate traffic volumes.

points[22] and 748 "sensitive" receptors (e.g., schools, senior centers, and daycare centers, etc.) were specifically analyzed. Figures 3.3-4 through 3.3-9 in Section 3.3, Community Impacts, which illustrate the change in air pollutant concentrations of both build alternatives as compared to the 2035 No Build Alternative for various pollutants, also show the locations of the sensitive receptors utilized in this analysis.

Hourly-resolution meteorological surface data, such as wind speed and direction, and upper air data must be provided as inputs for air dispersion modeling. A unique aspect of the I-710 Corridor Project is that the freeway is 18 miles in length, and the meteorology over that 18-mile stretch may change along different lengths of the freeway. For purposes of air dispersion modeling, a sphere of influence analysis was performed to identify the most appropriate meteorological stations to use to represent the meteorological conditions encountered along the I-710 freeway. Ultimately, the I-710 Corridor Project Study Area was divided into four representative meteorological zones, each with a representative meteorological station. Meteorological data for a station in each zone was processed using AERMET, the EPA meteorological preprocessor program for AERMOD.

As guidance to lead agencies, the SCAQMD has established CEQA significance criteria for concentration impacts for NO_2 (one-hour and annual average), CO (one-hour and eight-hour), PM_{10} (24-hour and annual average), and $PM_{2.5}$ (24-hour average). Therefore, the concentration impacts for only these criteria pollutants and corresponding averaging periods were calculated and reported. In this section SCAQMD's CEQA significance criteria are presented for information purposes only; the air quality analysis for CEQA is provided in Chapter 4.0, California Environmental Quality Act Evaluation, of this RDEIR/SDEIS.

[22] Fine grid receptors were placed at distances of 50 meters (m), 100 m, 150 m, 200 m, and 250 m from the edge of the Alternative 5C mainline footprint with a spacing of 50 m along the length of the mainline. Coarse grid receptors were placed at distances of 500 m to 3,000 m from the edge of the Alternative 5C mainline footprint with a spacing of 250 m by 250 m, perpendicular to and along the mainline. The Alternative 5C mainline footprint was used as the basis for creating this freeway-following grid because this alternative has the smaller footprint of the two project build alternatives. Only a few receptors on the roadways and related right-of-way were excluded from the criteria pollutant analyses.

The gridded and sensitive receptors were placed as described in the AQ/HRA Protocol. A quantitative $PM_{10}/PM_{2.5}$ project-level conformity analysis will be conducted on the preferred alternative according to EPA guidelines for project-level conformity analyses, with receptors as close as approximately 15 feet from the edge of the roadway.

Tables 3.13-15, 3.13-16 and 3.13-17 provide the calculated maximum incremental concentration impacts for the project alternatives as compared to 2012 for CO, NO_2, PM_{10}, $PM_{2.5}$, and exhaust only emissions of PM_{10} and $PM_{2.5}$ (for analysis of other public health considerations). The annual NO_2 incremental impacts decrease for all project alternatives as compared to 2012.

The 2035 ambient concentration levels calculated by adding the incremental impacts to existing background concentrations of CO and NO_2 were found to be below the California Ambient Air Quality Standards (CAAQS) and the NAAQS for most alternatives. The annual PM_{10} and $PM_{2.5}$ incremental impacts increase for all project alternatives as compared to 2012. The 2035 ambient concentration levels calculated by adding the incremental impacts to existing background concentrations of PM_{10} and $PM_{2.5}$ were found to be above the SCAQMD significance criteria, with the exception of 24-Hour $PM_{2.5}$ under Alternatives 1 and 5C.

Figures 4-2a through 4-2c, from the AQ/GHG/HRA (2017), and provided in Appendix Q of this EIR/EIS, show the change in NO_X emissions for build alternatives as compared to the 2012 Baseline and Alternative 1. These gridded mass emission figures have been plotted by adding the NO_X emissions from links or part of links present in a grid size of 0.25 mile by 0.25 mile. The NO_X emissions for all 2035 alternatives as compared to the 2012 Baseline, decrease on the freeways, arterials, and roadways in the AOI in spite of the increase in the VMT. This occurs due to the improvement in vehicle technology driven by State and local programs/regulations. The only areas where increases occur are in the locations of the Southern California International Gateway (SCIG) Project in in the Port area and the SR-710 North Study (a portion of SR-710 north of Interstate 10 [I-10]). These two proposed projects are included in the 2035 I-710 Traffic Model, as they would be constructed by that time.

Figures 4-1a to 4-1c in Appendix Q of this RDEIR/SDEIS, present gridded mass emission plots for total $PM_{2.5}$ and total PM_{10} (insets) for the 2035 alternatives as compared to the 2012 Baseline (left side of the Figures) and the 2035 build alternatives as compared to the 2035 Alternative 1/No Build (right side of the Figures). These gridded mass emission figures have been plotted by adding the PM emissions from links or part of links present in a grid size of 0.25 mile by 0.25 mile.

Table 3.13-15: Incremental CO and NO_2 Concentration Impacts for Future Project Alternatives as Compared to 2012

Scenario	Pollutant	Averaging Time	Incremental Impact[1]	Maximum Incremental Impact + Background[2] (µg/m^3)	SCAQMD Significance Criteria[3] (µg/m^3)	National Ambient Air Quality Standard[4] (µg/m^3)	Above Significance Criteria or NAAQS?
2035 Alternative 1[5] minus 2012 Baseline	CO	1-hour	0.026	6,869	23,000	40,000	No
		8-hour	0.00042	4,351	10,000	10,000	No
	NO_2	1-hour 1st High	63	319	339	--	No
		1-hour 8th High	46	206	--	188	No[6]
		Annual	-0.35	41	57	100	No
2035 Alternative 5C[7] minus 2012 Baseline	CO	1-hour	21	6,890	23,000	40,000	No
		8-hour	0.47	4,351	10,000	10,000	No
	NO_2	1-hour 1st High	49	304	339	--	No
		1-hour 8th High	39	198	--	188	No[6]
		Annual	-0.36	41	57	100	No
2035 Alternative 7[8] minus 2012 Baseline	CO	1-hour	20	6,890	23,000	40,000	No
		8-hour	3.7	4,354	10,000	10,000	No
	NO_2	1-hour 1st High	54	309	339	--	No
		1-hour 8th High	39	198	--	188	No[6]
		Annual	-0.37	41	57	100	No

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Incremental impacts are based on AERMOD model run outputs.

[2] Background data represents the maximum concentration from the three most recent years (2013, 2014, and 2015) of background data.

[3] SCAQMD Significance Criteria obtained from: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2 (accessed November 2015).

[4] National Ambient Air Quality Standards obtained from Environmental Protection Agency NAAQS Table. Website: https://www.epa.gov/criteria-air-pollutants/naaqs- table (accessed April 2016).

[5] Alternative 1 is the future No Build Alternative.

[6] Factoring in the near-field lower NO-to-NO vehicle emission ratio described in SCAQMD guidance, the one receptor within 20 meters of a modeled roadway with a potential NAAQS exceedance would comply with the NAAQS.

[7] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I-710 freeway.

[8] Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

µg/m^3 = micrograms per cubic meter
AERMOD = AMS/EPA Regulatory Model
CEQA = California Environmental Quality Act
CO = carbon monoxide
I-710 = Interstate-710
NAAQS = National Ambient Air Quality Standard
NO_2 = nitrogen dioxide
SCAQMD = South Coast Air Quality Management District
ZE/NZE = zero emission/near zero emission

Table 3.13-16: Incremental PM_{10} and $PM_{2.5}$ Concentration Impacts for Future Project Alternatives as Compared to 2012

Scenario	Pollutant	Averaging Time	Maximum Incremental Impact[1] (µg/m^3)	SCAQMD Significance Criteria[2] (µg/m^3)	Above Significance Criteria?
2035 Alternative 1[3] minus 2012 Baseline	PM_{10}	24-Hour	7.9	2.5	**Yes**
		Annual	3.9	1.0	**Yes**
	$PM_{2.5}$	24-Hour	0.79	2.5	No
2035 Alternative 5C[4] minus 2012 Baseline	PM_{10}	24-Hour	14	2.5	**Yes**
		Annual	6.5	1.0	**Yes**
	$PM_{2.5}$	24-Hour	1.5	2.5	No
2035 Alternative 7[5] minus 2012 Baseline	PM_{10}	24-Hour	32	2.5	**Yes**
		Annual	13	1.0	**Yes**
	$PM_{2.5}$	24-Hour	5.0	2.5	**Yes**

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Incremental impacts are based on AERMOD model run outputs.

[2] SCAQMD Significance Criteria obtained from: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2 (accessed November 2015).

[3] Alternative 1 is the future No Build Alternative.

[4] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I-710 freeway.

[5] Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

µg/m^3 = micrograms per cubic meter
AERMOD = AMS/EPA Regulatory Model
CEQA = California Environmental Quality Act
I-710 = Interstate-710
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SCAQMD = South Coast Air Quality Management District
ZE/NZE = zero emission/near zero emission

Table 3.13-17: Incremental PM_{10} and $PM_{2.5}$ Exhaust Concentration Impacts for Future Project Alternatives as Compared to 2012

Scenario	Pollutant	Averaging Time	Maximum Incremental Impact[1] ($\mu g/m^3$)
2035 Alternative 1[3] minus 2012 Baseline	PM_{10}	24-Hour	-3.00E-05
		Annual	-1.01E-02
	$PM_{2.5}$	24-Hour	-6.00E-05
2035 Alternative 5C[4] minus 2012 Baseline	PM_{10}	24-Hour	0.00E+00
		Annual	-1.01E-02
	$PM_{2.5}$	24-Hour	0.00E+00
2035 Alternative 7[5] minus 2012 Baseline	PM_{10}	24-Hour	-6.00E-05
		Annual	-9.94E-03
	$PM_{2.5}$	24-Hour	-8.00E-05

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] Incremental impacts are based on AERMOD model run outputs.

[2] SCAQMD Significance Criteria obtained from: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2 (accessed November 2015).

[3] Alternative 1 is the future No Build Alternative.

[4] Alternative 5C includes a funding program for ZE/NZE heavy-heavy duty trucks that meet certain minimum requirements for travel on the I-710 freeway.

[5] Alternative 7 requires all trucks on the freight corridor to be ZE/NZE.

$\mu g/m^3$ = micrograms per cubic meter
AERMOD = AMS/EPA Regulatory Model
CEQA = California Environmental Quality Act
I-710 = Interstate-710
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SCAQMD = South Coast Air Quality Management District
ZE/NZE = zero emission/near zero emission

Total $PM_{2.5}$ emissions, which consist of vehicle exhaust emissions, tire wear, brake wear, and entrained road dust emissions, show mostly decreases on the freeways, arterials, and roadways in the AOI for the 2035 alternatives as compared to the 2012 Baseline (Figures 4-1a to 4-1c, left side). The only increases seen in these charts occur in the Port areas where the proposed SCIG Project would be located in 2035 and a portion of SR-710 north of I-10 where the proposed SR-710 North Study project would be located in 2035.

Total PM_{10} emissions for all 2035 alternatives as compared to the 2012 Baseline (Figures 4-1a to 4-1c, left side insets) increase along the I-710 freeway as well as on portions of I-10, I-5, I-110, and I-405 (and SR-60 for Alternative 7). Increases in total PM_{10} emissions are also observed in the Port areas where the SCIG Project would be located.

There is no change in total $PM_{2.5}$ emissions for 2035 Alternative 5C (Figure 4-1b, right side) compared to 2035 No Build except at a couple of grid cells at the intersection of I-710 and I-405. For 2035 Alternative 7 compared to the 2035 No Build (Figure 4-1c, right side) increases in total $PM_{2.5}$ emissions occur along the I-710 freeway due to the increase in tire wear, brake wear, and entrained road dust associated with the truck traffic on the freight corridor.

Total PM_{10} emissions for the build alternatives compared to the 2035 No Build (Figures 4-1b and 4-1c, right side insets) show an increase in emissions on the I-710 freeway. This is due to the increased mobility and capacity of the freeway, which results in increased entrained road dust emissions. For Alternative 7 (Figure 4-1c, inset), decreases in emissions are observed on sections of nearby freeways (particularly I-605) due to the shifting of truck activity to the I-710 with the introduction of the freight corridor. However, this shift in activity also results in increases in emissions on sections of I-405 and SR-60 as trucks make their way to and from the freight corridor.

Figures 4-3a through 4-3f (Appendix Q) present annual PM isopleths for the 2035 alternatives as compared to the 2012 Baseline (left side of the Figures) and the 2035 build alternatives as compared to the 2035 No Build (right side of the Figures). These isopleths show that total PM_{10} impacts (Figures 4-3a to 4-3c) are generally higher than $PM_{2.5}$ impacts (Figures 4-3d to 4-3f) for all project alternatives. The PM_{10} isopleths that show comparisons of the 2035 alternatives to the 2012 Baseline present the locations of areas along the I-710 freeway where the annual incremental impacts were estimated to be above the SCAQMD significance criteria of 1 microgram per cubic meter ($\mu g/m^3$). These areas are larger for 2035 Alternative 7 as compared to other 2035 alternatives due to the increase in entrained road dust, tire wear, and brake wear associated with the ZE/NZE trucks traveling on the Freight Corridor.

Figures 4-4a through 4-4f (Appendix Q) present 24-hour PM "bubble" plots[23] for the 2035 alternatives as compared to the 2012 Baseline and the 2035 build alternatives as compared to the 2035 Alternative 1 (No Build). The bubble plots present the maximum incremental 24-hour PM concentration at each modeled receptor over the modeling period (modeling period refers to calendar year 2009, as meteorological data for this calendar year was used in the analyses). It's important to note that the maximum incremental 24-hour concentration at one modeled receptor may not occur on the same day as the maximum incremental concentration at another modeled receptor. These figures may include some receptors located within areas restricted from public access such as the Los Angeles River and the right-of-way on arterial and local roadways.

All 2035 alternatives have maximum 24-hour PM_{10} incremental impacts above the SCAQMD significance criteria when compared to the 2012 Baseline (Figures 4-4a to 4-4c, left side), with Alternative 7 showing approximately three times the number of receptors above the significance criteria as Alternative 5C. As discussed previously, these exceedances are primarily driven by the conservative calculations for entrained dust. In regards to $PM_{2.5}$, the 2035 alternatives have far fewer receptors with maximum incremental 24-hour impacts above SCAQMD significance criteria when compared to the 2012 Baseline (Figures 4-4d to 4-4f, left side). Specifically, Alternative 1 (No Build) and Alternative 5C do not have any receptors with maximum incremental 24-hour $PM_{2.5}$ impacts above SCAQMD significance criteria. For Alternative 7 (Figure 4-4f, left side), there are 52 receptors with maximum incremental 24-hour $PM_{2.5}$ impacts above SCAQMD significance criteria. These receptors are located along the freight corridor immediately north of I-405 and at the intersection of I-105 and I-710.

The 2035 build alternatives show increases in near roadway 24-hour PM_{10} impacts for several receptors located within of the I-710 freeway as compared to the 2035 No Build Alternative (Figures 4-4b and 4-4c, right side). The number of impacted receptors is larger in Alternative 7 as compared to Alternative 5C due to increased truck traffic associated with the freight corridor. The 2035 build alternatives show an equivalent amount to a slight decrease in near roadway short-term $PM_{2.5}$ impacts when compared to the 2035 No Build (Figures 4-4e and 4-4f, right side) at all modeled receptors for 2035 Alternative 5C and most modeled receptors for 2035 Alternative 7.

[23] "Bubble" plots are a way of presenting maximum incremental changes in 24-hour PM_{10} and $PM_{2.5}$ concentrations. Each "bubble" in a plot represents a modeled receptor.

ZE Design Option. In general, the air quality impacts are relatively similar for 2035 Alternative 7-ZE as compared to 2035 Alternative 7, with no appreciable changes in maximum incremental impacts observed. Impacts related to PM emissions for both 2035 Alternative 7-ZE and 2035 Alternative 7 are dominated by contributions from entrained road dust emissions (because of the assumption of an infinite silt reservoir on the roadways) and brake/tire wear, which are identical in both project alternative options.

3.13.3.4 PUBLIC HEALTH CONSIDERATIONS

PM MORTALITY AND MORBIDITY. Respirable particulate matter (RPM) is a public health concern as it is known to impact both the respiratory and cardiovascular systems. RPM deposition in the lungs and penetration into the bloodstream (for the smallest particles) triggers a range of inflammation responses and exacerbates health problems such as asthma and chronic bronchitis. Individuals susceptible to higher health risks from exposure to airborne PM include children, the elderly, smokers, and people of all ages with low pulmonary/cardiovascular function. Information about the biological mechanisms by which exposure to ambient particles adversely affects the respiratory and cardiovascular systems may be found in an ARB 2002 review[24] and a 2009 EPA Integrated Science Assessment.[25]

The PM Integrated Science Assessment reviewed numerous epidemiological studies and concluded that the relationship between long-term $PM_{2.5}$ exposures and mortality/morbidity is causal. During its periodic review of the NAAQS, the EPA released the "Quantitative Health Risk Assessment for Particulate Matter," which provided national estimates of premature mortality associated with $PM_{2.5}$ nationwide and in 15 urban areas, including Los Angeles.[26] ARB conducted a thorough review and evaluation of the EPA's analysis along with past EPA health risk assessments and developed an application of these methods for use in California, wherein ARB attempted to quantify the non-toxic health effects (i.e., mortality and morbidity) of PM exposure through concentration-response functions.[27, 28, 29] These models used by the ARB, the

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[24] California Air Resources Board (ARB). 2002b. Air Resources Board Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates. May 3. Website: http://www.arb.ca.gov/carbis/research/aaqs/std-rs/pm-final/exesum.pdf (accessed July 2016).

[25] EPA. 2009. Integrated Science Assessment for Particulate Matter. EPA-600-R-08-139F. December. Website: http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=216546 (accessed February 2016).

[26] EPA. 2010. Quantitative Health Risk Assessment for Particulate Matter. EPA-452-R-10-005. June. Website: http://www3.epa.gov/ttn/naaqs/standards/pm/data/PM_RA_FINAL_June_2010.pdf (accessed February 2016).

[27] That is, concentration-response functions are used to predict the effect of changes in ambient PM concentrations on health effects such as premature deaths, cardiac and respiratory hospitalizations, asthma and other lower respiratory symptoms, lost work/school days, etc.

EPA, and others include formulas showing that the PM-related mortality and morbidity are a function of the annual death rate per person from all causes (typically county-level information for a given age range), a co-efficient from a heath study or studies relating health risk to PM concentrations, the population affected (for the age range of all-causes death), and the change in PM concentration.

Although the ARB model has been used to quantitatively assess project-specific incremental levels of public mortality and morbidity (see for example Chapter 3.2 of the Port of Long Beach (POLB) Middle Harbor Redevelopment Project,[30]) such calculations are subject to significant uncertainty in the input data. Sources of uncertainty include emission estimates, representativeness of the meteorological data, air dispersion modeling algorithms, toxicity factors, population exposure estimates, concentration-response functions,[31] baseline rates of mortality and morbidity (which are typically countywide, not for the specific PM impact area) that are entered into concentration response functions, and occurrence of additional not-quantified adverse health effects. It should be noted that the nature of PM as a complex mixture of various pollutants, as well as the confounding health effects of pollutants such as SO_2, NO_2, CO, and O_3 that tend to co-occur with PM in ambient air, greatly increase the complexity of deriving accurate PM concentration-response functions. Health risk estimates derived in the presence of significant uncertainty tend to rely on very conservative assumptions that may greatly overestimate the potential adverse health effects. According to the Gateway Cities Air Quality Action Plan, uncertainty can be assessed by comparison to other studies.[32] As stated by ARB in a 2006 study of DPM exposure from ports and goods movement in California:[33] "Risk assessment has various uncertainties in the methodology and is therefore deliberately designed so that risks are not under predicted. Risk assessment is thus best understood as a tool for

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[28] ARB. 2009. Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California, Staff Report. December 7. Website: http://www.arb.ca.gov/research/health/pm-mort/pm-mort_final.pdf (accessed May 2015).

[29] ARB. 2010. Estimate of Premature Deaths Associated with Fine Particle Pollution (PM2.5) in California Using a U.S. Environmental Protection Agency Methodology. August 31. Website: http://www.arb.ca.gov/research/health/pm-mort/pm-report_2010.pdf (accessed February 2016).

[30] POLB. 2009. Middle Harbor Redevelopment Project. Final Environmental Impact Statement (FEIS)/Final Environmental Impact Report (FEIR) and Application Summary Report (ASR). April. Website: http://www.polb.com/environment/docs.asp (accessed July 2016).

[31] Concentration-response functions may be location-specific, since the composition of particulate matter varies significantly by region, and not all types of particulate matter are expected to have the same health effects. Therefore, the application of concentration-response functions obtained from epidemiologic studies conducted e.g., outside of California may introduce significant errors in estimating impacts in the South Coast Air Basin.

[32] ICF International. 2013. The Gateway Cities Air Quality Action Plan. June.

[33] ARB. 2006. Diesel Particulate Matter Exposure Assessment Study for the Ports of Los Angeles and Long Beach – Final Report. Website: http://www.arb.ca.gov/ports/marinevess/documents/portstudy0406.pdf (accessed July 2016).

comparing risks from various sources, usually for purposes of prioritizing risk reduction, and not as literal prediction of the community incidence of disease from exposure."[34]

The analysis of PM mortality and morbidity for this project is a qualitative assessment based on comparative analysis of total $PM_{2.5}$ emissions for the various alternatives, given that other components of the model equations should be similar for the different project alternatives and are subject to the uncertainties listed above.

The near-roadway modeling of total $PM_{2.5}$ emissions (sum of running exhaust, tire wear, brake wear, and entrained road dust) indicates that the exposure of people along I-710 to PM-related morbidity and mortality health risks should decrease relative to the 2012 Baseline with the exception of some locations near the roadways (particularly for Alternative 7). To the extent that increases in entrained road dust in the 2035 alternatives may be overestimated, the exposure would be even lower for those very near to the roadways (see discussion of ultrafine particulates below, which uses exhaust $PM_{2.5}$ [rather than total $PM_{2.5}$] as a surrogate).

Total $PM_{2.5}$ emissions can also be used as a potential surrogate for localized primary PM exposure. Calculations show that, in general, total I-710 $PM_{2.5}$ emissions are expected to be lower for each of 2035 Alternatives (1, 5C, and 7) than 2012 Baseline emissions. The same is true for total $PM_{2.5}$ emissions within the Basin and the AOI. Consequently, the public's exposure within the AOI to PM-related morbidity and mortality health risks should decrease relative to the 2012 Baseline, although spatial variations (where there are localized increases in emissions) may occur. These very near-roadway increases are predominantly because of increases in entrained roadway dust (related to the assumption of an infinite silt reservoir on the roadways) from the 2012 Baseline.

ULTRAFINE PARTICULATES – QUALITATIVE ANALYSIS. As scientific studies and environmental regulations are expanding, their focus on the smaller particles in ambient air (total suspended particulate to PM_{10} to $PM_{2.5}$) has grown. An increasing interest in particles of size less than 0.1 microns, referred to as ultrafine particulate matter or ultrafine particulates (UFP or UFPs) is also developing. Although UFPs generally contribute to a small mass fraction of ambient PM, they are orders of magnitude more numerous than PM_{10} and $PM_{2.5}$ particles. Their number concentrations range from 10 to 40×10^3 UFPs/cm^3 in urban air and 40 to 1000×10^3 UFPs/cm^3 near highways. UFPs are not currently regulated in the U.S. However, the SCAQMD recommended in its 2007 AQMP that UFPs be specifically addressed in PM and air toxics control strategies.

[34] Additional discussion and explanation of the sources and level of uncertainty in health risk assessments are provided in Cal/EPA guidance (Cal/EPA 2015).

Fuel combustion in motor vehicles is a major source of UFP, and consequently UFP emissions are concentrated near highways and other roadways. Studies have shown that UFP number concentrations decrease sharply with distance from emission sources as a result of particle growth and accumulation processes; for instance Zhu et al. (Zhu 2002) reported that UFP concentration measurements were equal to background concentrations 300 meters downwind of I-405 near the Los Angeles National Cemetery. Thus, high ambient UFP levels are very localized and exhibit large geographical and temporal variations. Concerns about public exposure to UFPs (especially in areas near freeways) are due to the fact that UFPs and the contaminants they contain are relatively easily transported into the body. This is because (i) smaller particles can be inhaled and deposited deeper into the lungs than larger particles, and (ii) the high surface area/mass ratio of UFPs can facilitate adsorption and result in higher content of trace metals and other toxic organic compounds.

There has been increasing interest among the scientific community in roadway impacts to air quality specific to I-710 (Kozawa et al. 2009, Arhami et al. 2009, Moore et al. 2009). SCAQMD also conducted a series of near roadway ambient air monitoring studies, which examined traffic impacts on concentrations of a host of pollutants, including UFPs.[35][36] In April 2012, SCAQMD reported findings of a study conducted along I-710 in two one-month intensive campaigns (February–March 2009 and July–August 2009). Samples were collected from one background location upwind of the freeway and two locations downwind of the freeway at 15 meters and 80 meters. Air pollutant species measured included UFP count, black carbon, PM_{10}, $PM_{2.5}$, NO_X, CO, tri-sodium phosphate (TSP) lead, and volatile organic compounds (VOCs). Results indicate that ambient air near I-710 (at 15 meters) was enriched in UFP. Similar to the results published by Zhu et al., UFP counts were substantially higher at the monitoring site closest (at 15 meters) to the roadway and dropped off with distance (at 80 meters). Concentrations at both downwind monitoring sites were higher than those at the upwind background measurement site. There was no substantial difference in UFP count during winter versus summer.

Information on UFP is limited at this time and is an area of active research. For example, physical transient behaviors, such as particle growth and accumulation, complicate the task of elucidating UFP concentration-response functions. Also, the existing state of knowledge does not yet support the derivation of reliable UFP emission models that account for the particulate growth and accumulation phases. Dispersion modeling of UFPs would also require additional information on the rate of UFP coagulation and absorption so that concentrations can be

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[35] SCAQMD. Ospital, J, “Health Studies & Near Roadway Issues,” December 2009.

[36] SCAQMD. 2012. Ambient Concentrations of Criteria and Air Toxic Pollutants in Close Proximity to a Freeway with Heavy Duty Diesel Traffic. April. Website: http://www.aqmd.gov/docs/default-source/air-quality/air-quality-monitoring-studies/near-roadway-study.pdf?sfvrsn=2 (accessed June 2015).

calculated. Given the lack of information to quantify emissions, dispersion, exposure, and health response to exposure, UFP emissions could not be quantified from the proposed project. However, a qualitative analysis has been conducted by using $PM_{2.5}$ exhaust emissions, and exposure as a surrogate for UFP exposure[37] to assess the incremental impacts of the project alternatives as compared to the baselines. Calculations show that I-710 $PM_{2.5}$ exhaust emissions are expected to be more than 90 percent lower for each of the 2035 alternatives as compared to the 2012 Baseline emissions. The same is true for exhaust $PM_{2.5}$ emissions in the Basin and AOI. Consequently, the public's exposure to UFP in 2035 would decrease relative to the 2012 Baseline. Near-roadway modeling (Figures 4-8a through 4-9c of Appendix Q) confirms the conclusion of the emissions analyses, which is that the implementation of either of the build alternatives would decrease the public's health risk due to UFP relative to the 2012 Baseline and the 2035 Alternative 1 (No Build), even near the I-710 freeway and freight corridor.

CANCER RISK. The following discussion is included for informational purposes only. For more information on impacts to environmental justice communities as a result of the project, please refer to Section 3.3, Community Impacts. The *Gateway Cities Air Quality Action Plan (AQAP)* (Gateway Cities Council of Governments, 2013) assessed the extent to which air pollution health risk falls disproportionately on disadvantaged populations in the Gateway Cities. The Gateway Cities population was divided into quarters according to risk. Several demographic indicators were utilized to identify potentially disadvantaged populations. The air pollution cancer risk among the Gateway Cities population for the 2009 and projected 2035 scenarios was estimated and distributed among the risk quartiles. Results indicated that within each risk quartile, the proportion of the population in each demographic category was similar, suggesting that there is little evidence of disproportionate cancer risk for disadvantaged populations in either the present (2009) or future (2035) scenario.

3.13.3.5 MOTION 22.1

As described in Chapter 2.0, Section 2.2.2.1 (Community Alternative 7) of this RDEIR/SDEIS, the Metro Board of Directors passed Board Motion 22.1 in October 2015 that directed Metro and Caltrans to study a number of additional items as a part of the I-710 Corridor Project Description. All of these measures are described in Section 2.3.2.1, Common Features of Build Alternatives.

The Motion 22.1 measure applicable to air quality is, under Alternative 7 only, to evaluate the feasibility (should technology be available) to operate only zero emissions trucks along the Freight Corridor as part of the project. A full analysis of the Alternative 7 Zero Emission Design

[37] The rationale for this choice is that both UFP and $PM_{2.5}$ emissions are primarily the result of internal combustion processes.

Option (ZE Design Option) is provided in Appendix F of the AQ/GHG/HRA Technical Report (June 2017). Results of the ZE Design Option analysis have been incorporated into the text and tables above within this section of the RDEIR/SDEIS.

The ZE Design Option has the same design and traffic activity as Alternative 7. The only difference between these two project alternatives is that ZE/NZE trucks in Alternative 7 are replaced with ZE trucks in the ZE Design Option.

No significant changes in incremental mass emissions were seen between the ZE Design Option and Alternative 7 as compared to the project baselines in the South Coast Air Basin and the AOI. On I-710, some decreases in exhaust emission estimates of criteria air pollutants and greenhouse gas (GHG) were observed for the ZE Design Option as compared to Alternative 7. There are, however, no changes in emissions of the main components of particulate matter (PM) (entrained road dust, tire wear, or brake wear emissions). As a result, total PM_{10} and $PM_{2.5}$ emissions for these two project alternatives are similar.

Although there were some decreases seen in exhaust fractions of criteria air pollutants, near-roadway incremental impacts of criteria air pollutants for Alternative 7 and the ZE Design Option were found to be similar.

Differences in Mobile Source Air Toxics (MSAT) emissions between Alternative 7 and the ZE Design Option are minimal, as both the ZE/NZE vehicles in Alternative 7 and ZE vehicles in the ZE Design Option are assumed to be non-diesel. This also translates to similar incremental health risk impacts for the ZE Design Option and 2035 Alternative 7.

3.13.4 Avoidance, Minimization, and/or Mitigation Measures

As discussed above, and as shown in the maps and plots provided in Appendix Q of this RDEIR/SDEIS, the build alternatives will improve air quality and reduce public health risk in the Basin and the I-710 AOI. Along I-710, air quality will be improved and public health risk will be reduced at most locations, but there are some near-roadway locations where there will be an increase in emissions. Alternative 5C has the fewest areas with these near-roadway impacts. The near-roadway impacts are generated by the on-road vehicles, the emissions of which are controlled by ARB and EPA. Programmatic features to fund ZE/NZE trucks and provide a grant program to fund projects that would improve air quality and public health in the corridor are included in both build alternatives. Additionally, proposed measures (AQ-2 and AQ-3) to minimize exposure to air emissions are provided below. These measures are based upon the ARB technical advisory *Strategies to Reduce Air Pollution Exposure Near High Volume Roadways* (California Environmental Protection Agency/Air Resources Board, April 2017).

Caltrans is committed to working with SCAQMD, ARB, and EPA to continue to develop data in the I-710 Corridor that will contribute to improved air quality planning and project design in the

future. As part of that commitment, the I-710 Corridor Project will provide funding for four new air quality monitoring stations within the I-710 Corridor, per Measure AQ-1 below. Although this measure would not serve to reduce either exposure or concentrations, it will serve to provide increased and better air quality data within the I-710 Corridor area so that the effects of projects and resultant mitigation measures can be better quantified. This measure would apply to any of the build alternatives:

AQ-1 Within two years of the approval of a Record of Decision for an Interstate 710 (I-710) Corridor Project build alternative, a funding contribution shall be made to the South Coast Air Quality Management District (SCAQMD) to provide funding for the design and construction of four new air quality monitoring stations within the I-710 Corridor. The new stations will provide for monitoring meteorology (temperature, relative humidity, pressure, wind speed and direction, and rain) and monitoring the following pollutants: ozone (O_3), nitrogen oxide (NO), nitrogen dioxide (NO_2), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), particulate matter less than 10 microns in diameter (PM_{10}), and carbon monoxide (CO).

AQ-2 To further reduce exposure of children and other people to near roadway emissions, air filtration systems shall be provided for any of the following schools within 0.25 mile of I-710 that currently lack adequate air filtration systems. As stated in the California Air Resources Board (ARB) *Technical Advisory* (April 2017), high-efficiency filters in ventilation systems can remove from 50 to 99 percent of the particles in the air. Determination of adequate air filtration systems will be addressed during coordination with the respective school districts or administrations and based on current building codes as well as guidelines set forth by the United States Environmental Protection Agency (EPA) and the SCAQMD.

- Al Hadi Elementary
- Bandini Elementary
- Bell Gardens Elementary
- Bell Gardens Intermediate
- Birney Elementary
- Chavez Elementary
- Children's Collective Inc. - Casa Dominguez
- "Children ""R"" Us" Compton
- "Children ""R"" Us" Rancho Dominguez
- Clinton Elementary
- Dorothy Kirby Camp
- Edison Elementary

- Educational Partnership High
- El Camino College Compton Center
- Ellen Ochoa Learning Center
- Firebaugh High
- Ford Boulevard Elementary
- Garfield Elementary
- Hamilton Middle
- Heliotrope Avenue Elementary
- Heritage Christian School
- Humphrey Avenue Elementary
- Jordan Academy
- Jordan High
- Kelly Elementary
- King Elementary
- Lindsey Academy
- Long Beach School For Adults
- Long Beach Unified Selpa
- Los Cerritos Elementary
- Lugo Elementary
- Maywood Elementary
- Muir Elementary
- Pacific Baptist School
- Park Avenue Elementary
- Powell Academy
- Slawson Southeast Occupational Center
- St. Lucy Elementary
- Vista Continuation High
- Vista High
- Washington Middle
- Whaley Middle School

AQ-3 **Traffic Emission Dispersion Measures.** During final design, two measures will be implemented to increase dispersion of vehicular emissions and particulate matter:

- Provide solid barriers (walls) in areas where soundwalls are not currently proposed. As stated in the ARB *Technical Advisory* (April 2017), studies have found that because of the vertical dispersion provided by such barriers, pollutant concentrations downwind of barriers are reduced by 10 to 50 percent compared to locations without barriers.

- Provide vegetation for pollution dispersion (possibly in combination with solid barriers). As stated in the ARB *Technical Advisory* (April 2017), some studies have shown that densely planted vegetation can reduce pollutant concentrations up to 20 percent on the leeward side of a line of trees.

3.13.5 CLIMATE CHANGE

Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. FHWA emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations and maintenance. Because there have been requirements set forth in California legislation and executive orders on climate change, the issue is addressed in a separate California Environmental Quality Act (CEQA) discussion in Chapter 3. The CEQA analysis may be used to inform the National Environmental Policy Act (NEPA) determination for the project.

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3.14 NOISE

The information in this section is based on the following documents:

- *Traffic Noise Study Report* (May 2016)
- *Noise Abatement Decision Report* (June 2017).

3.14.1 REGULATORY SETTING

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The Noise Control Act of 1972 regulates noise pollution with the intent of protecting human health and minimizing annoyance of noise to the general public. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

3.14.1.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the NEPA 23 Code of Federal Regulations (CFR) 772 noise analysis; see Chapter 4 of this document for further information on noise analysis under CEQA.

3.14.1.2 NATIONAL ENVIRONMENTAL POLICY ACT AND 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA) (and [Caltrans], as assigned) involvement, the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 A-weighted decibels [dBA]) is lower than the NAC for commercial areas (72 dBA). The following Table 3.14-1 lists the NAC for use in the NEPA 23 CFR 772 analysis.

Figure 3.14-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

Table 3.14-1: Noise Abatement Criteria

Activity Category	NAC, Hourly A- Weighted Noise Level, $L_{eq}[h]$[1]	Description of Activities
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67 (Exterior)	Residential
C[2]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in Categories A through D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.

Source: California Department of Transportation. *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects* (May 2011).

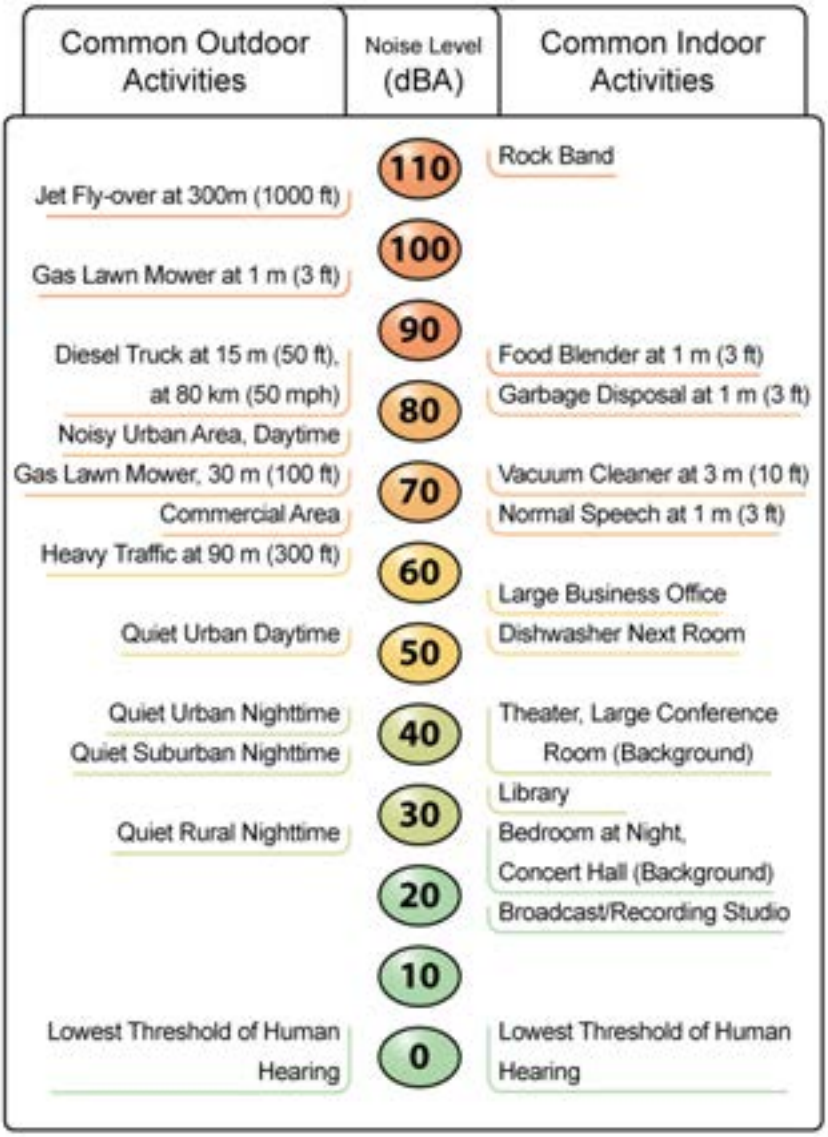
[1] The $L_{eq}(h)$ activity criteria values are for impact determination only and are not design standards for noise abatement measures. All values are A-weighted decibels (dBA).

[2] Includes undeveloped lands permitted for this activity category.

$L_{eq}(h)$ = equivalent continuous sound level per hour

NAC = Noise Abatement Criteria

Figure 3.14-1: Noise Levels of Common Activities



Source: California Department of Transportation. *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects* (May 2011).

In accordance with the California Department of Transportation (Caltrans) *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects* (Traffic Noise Analysis Protocol) (May 2011), a noise impact occurs when the future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within one dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses the noise abatement measures that would likely be incorporated in the project.

The Caltrans Traffic Noise Analysis Protocol (2011) sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum seven-dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include residents' acceptance and the cost per benefited residence.

3.14.2 Affected Environment

3.14.2.1 Surrounding Land Uses and Sensitive Receptors

Land use within the Study Area was determined by a number of field visits and review of aerial maps of the Study Area. Land uses within the Study Area vary and include residential, commercial, industrial, parks, recreation areas, and undeveloped land. Schools and medical facilities are located throughout the Study Area. The Interstate 710 (I-710) freeway mainline is on the west side of the Los Angeles River, from Ocean Blvd. in the City of Long Beach to Imperial Hwy. in the City of South Gate, and on the east side of the Los Angeles River, from Imperial Hwy. in the City of South Gate to State Route 60 (SR-60) in East Los Angeles. A total of 231 noise measurement sites were evaluated within the Study Area. The locations of these sites are shown on Figures 3.14-2 and 3.14-3 for Alternatives 5C and 7, respectively. Figures 3.14-2 and 3.14-3 are provided following the last page of text in this section to minimize disruptions in the text for the reader.

3.14.2.2 Existing Noise Environment

The existing noise environment in the project area was determined by performing both short-term (ten-minute) and long-term (24-hour) noise readings. A few of the short-term noise level measurements were performed for 15 minutes. These short-term noise level measurements were used to calibrate the noise model. A total of 125 short-term monitoring locations were performed using MetroSonics Model dB-3080 Type 2 sound level meters within the Study Area. The results of the short-term noise monitoring are provided in Tables 6-1-1 through 6-1-10 in the *Traffic Noise Study Report* (May 2016) for the proposed project.

Community background noise readings for a duration of ten minutes were taken at 17 locations within the project limits. They ranged between 50 and 61 dBA one-hour A-weighted equivalent continuous sound level (L_{eq}[h]). Background noise is the total of all noise generated within a

community and is measured away from the freeway where freeway traffic noise does not contribute to the total noise level. Background noise levels are typically measured to determine the acoustical feasibility (noise reducibility of five dBA) of noise abatement and to ensure that noise reduction goals can be achieved.

Long-term monitoring was conducted at 24 locations using MetroSonics Model dB-3080 Type 2 sound level meters. The purpose of these measurements was to capture variations in traffic noise levels throughout the day, rather than absolute noise levels at a specific receptor of concern. The long-term sound level data was collected over 144 consecutive ten-minute intervals over a 24-hour period. The long-term 24-hour monitoring locations were used to determine the worst-hour within the project limits and adjust each noise measurement site to the worst-hour. The typical worst-hour noise occurs in the early morning hours just before traffic begins to slow due to congestion, usually around 5:30 a.m.–6:30 a.m. The worst noise hour is affected by many factors, and it varies depending on the day of the week, the type of area (urban vs. rural), and the percentage of heavy trucks, accidents, and other factors. There is no single worst noise hour for the proposed project. The worst noise hours were determined by placing a 24-hour noise meter in the backyards of homes adjacent to the freeway. Then, six consecutive ten-minute noise levels were taken that were the highest levels within the 24-hour noise test. These six noise levels were then averaged logarithmically to come up with a single noise level representing the highest noise level at that location. These noise level measurements were used to calibrate the noise model. The results of the long-term 24-hour noise monitoring were provided in Tables 6-3-1 through 6-3-4 in the *Traffic Noise Study Report* (May 2016) for the proposed project.

In addition to performing noise level measurements, the existing noise levels were determined at 82 modeled locations, which were acoustically representative of the entire Study Area. The existing worst-hour noise levels are shown in Table 3.14-2. All noise monitoring and modeled locations are shown on Figures 3.14-2 and 3.14-3.

3.14.3 Public Health Considerations

There are several types of public health considerations that have been studied over the years related to traffic noise. Although permanent hearing loss is not predicted, since most traffic sound level exposures would remain below 85 decibels (dB) over an eight-hour period, there are potential stress-induced health factors that should be considered:

- **Annoyance:** The expression of negative feelings resulting from interference with an individual's activities including disruption of one's peace of mind.
- **Sleep Disturbance:** Noise exposure lessening of the quality and duration of sleep. Particularly vulnerable groups include night workers, mothers with babies, elderly persons, persons vulnerable to physical and mental disorders, and persons with sleep disorders.

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Table 3.14-2: I-710 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	City	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1[1]	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternative 7	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
All Sites Between Ocean Blvd. and Willow St.																		
NB-A[24]	101 Golden Shore Dr.	Long Beach	P	C (67)	63.0	60.4	2.6	**66.0**	62.0	-4.0	**67.8**	A/E	1.8	5.8	**67.8**	A/E	1.8	5.8
NB-B	Modeled Site	Long Beach	P	C (67)	-	65.0	-	65.0	60.0	-5.0	**67.7**	A/E	2.7	7.7	**67.7**	A/E	2.7	7.7
NB-C	701 W. Ocean Blvd.	Long Beach	H	E (72)	61.6	62.5	-0.9	65.0	68.0	3.0	67.6	N	2.6	-0.4	67.6	N	2.6	-0.4
NB-1	401 Golden Ave.	Long Beach	P	C (67)	59.1	57.8	1.3	63.6	62.3	-1.3	58.0	N	-5.6	-4.3	58.0	N	-5.6	-4.3
NB-1A	730 W. 3rd St. - Interior	Long Beach	S	D (52)	47.0	43.1	3.9	50.7	48.7	-2.0	47.7	N	-3.0	-1.0	47.7	N	-3.0	-1.0
NB-1B	730 W. 3rd St. - Exterior	Long Beach	S	C (67)	63.3	59.4	3.9	**67.0**	65.0	-2.0	64.0	N	-3.0	-1.0	64.0	N	-3.0	-1.0
NB-2	Cesar Chavez Park	Long Beach	P	C (67)	57.7	55.6	2.1	62.2	61.3	-0.9	63.2	N	1.0	1.9	63.2	N	1.0	1.9
NB-3	625 Main St. - Exterior	Long Beach	S	C (67)	62.3	60.9	1.4	**65.8**	**66.5**	0.7	63.3	N	-2.5	-3.2	63.3	N	-2.5	-3.2
NB-3A	625 Main St. - Interior	Long Beach	S	D (52)	41.0	39.6	1.4	44.5	45.2	0.7	42.0	N	-2.5	-3.2	42.0	N	-2.5	-3.2
NB-4[24]	976 Loma Vista Dr.	Long Beach	R	B (67)	54.6	55.4	-0.8	59.5	59.4	-0.1	56.8	N	-2.7	-2.6	56.9	N	-2.6	-2.5
SB-1	1302 Parade St.	Long Beach	R	B (67)	57.2	59.0	-1.8	57.2	58.1	0.9	**65.7**	A/E	8.5	7.6	**68.3**	A/E	11.1	10.2
MSB-1	Modeled Site	Long Beach	R	B (67)	-	62.4	-	62.4	55.7	-6.7	**70.6**	SNI	8.2	14.9	**71.6**	A/E	9.2	15.9
SB-2	1901 Gale Ave.	Long Beach	R	B (67)	62.4	64.0	-1.6	62.4	61.6	-0.8	**74.2**	SNI	11.8	12.6	**72.4**	A/E	10.0	10.8
MS B-2	Modeled Site	Long Beach	R	B (67)	-	59.1	-	59.1	58.5	-0.6	**67.1**	A/E	8.0	8.6	**68.3**	A/E	9.2	9.8
SB-3[24]	1980 Gale Ave.	Long Beach	R	B (67)	**66.6**	**66.8**	-0.2	**66.6**	65.3	-1.3	**81.3**	SNI	14.7	16.0	**77.3**	A/E	10.7	12.0
MSB-3	Modeled Site	Long Beach	R	B (67)	-	62.0	-	62.0	61.1	-0.9	**74.1**	SNI	12.1	13.0	**72.2**	A/E	10.2	11.1
SB-4	2100 Gale Ave.	Long Beach	R	B (67)	61.4	64.3	-2.9	61.4	60.8	-0.6	**75.1**	SNI	13.7	14.3	**74.0**	SNI	12.6	13.2
SB-5	1247 21st St.	Long Beach	R	B (67)	58.5	60.0	-1.5	58.5	59.8	1.3	**70.2**	SNI	11.7	10.4	**70.9**	SNI	12.4	11.1
MSB-5	Modeled Site	Long Beach	R	B (67)	-	62.3	-	62.3	61.5	-0.8	**71.1**	A/E	8.8	9.6	**72.1**	A/E	9.8	10.6
SB-6	1228 23rd St.	Long Beach	R	B (67)	63.5	**65.7**	-2.2	63.7	63.1	-0.6	**79.1**	SNI	15.4	16.0	**78.1**	SNI	14.4	15.0
MSB-6	Modeled Site	Long Beach	R	B (67)	-	63.4	-	63.6	61.3	-2.3	**72.5**	A/E	8.9	11.2	**73.1**	A/E	9.5	11.8
SB-8	1265 W. 25th St.	Long Beach	R	B (67)	59.3	61.1	-1.8	59.5	60.6	1.1	**68.8**	A/E	9.3	8.2	**72.2**	SNI	12.7	11.6
MSB-8	Modeled Site	Long Beach	R	B (67)	-	**66.3**	-	**66.5**	63.5	-3.0	**79.2**	SNI	12.7	15.7	**78.3**	SNI	11.8	14.8
MSB-8A	Modeled Site	Long Beach	R	B (67)	-	62.5	-	62.7	60.6	-2.1	**69.8**	A/E	7.1	9.2	**71.3**	A/E	8.6	10.7
MSB-8B	Modeled Site	Long Beach	R	B (67)	-	65.1	-	65.3	59.7	-5.6	**77.0**	SNI	11.7	17.3	**76.5**	A/E	11.2	16.8
MSB-8C	Modeled Site	Long Beach	R	B (67)	-	63.0	-	63.2	62.4	-0.8	**71.9**	A/E	8.7	9.5	**74.2**	A/E	11.0	11.8
SB-9	2556 Fashion Ave.	Long Beach	R	B (67)	59.1	60.4	-1.3	59.8	62.6	2.8	**66.8**	A/E	7.0	4.2	**70.4**	A/E	10.6	7.8
MSB-9**	Modeled Site	Long Beach	R	B (67)	-	59.3	-	60.0	61.2	1.2	62.3	N	2.3	1.1	**67.7**	A/E	7.7	6.5
NB-5	1871 San Francisco Ave.	Long Beach	R	B (67)	55.8	54.7	1.1	57.3	61.7	4.4	63.8	N	6.5	2.1	63.7	N	6.4	2.0
MNB-5**	Modeled Site	Long Beach	R	B (67)	-	59.3	-	60.8	**65.8**	5.0	**66.8**	A/E	6.0	1.0	**66.5**	A/E	5.7	0.7
MNB-5A**	Modeled Site	Long Beach	R	B (67)	-	62.7	-	64.2	**67.4**	3.2	**69.7**	A/E	5.5	2.3	**68.9**	A/E	4.7	1.5
NB-6	2200 DeForest Ave.	Long Beach	R	B (67)	48.3	50.5	-2.2	49.8	50.8	1.0	52.0	N	2.2	1.2	55.1	N	5.3	4.3
NB-7	2530 DeForest Ave.	Long Beach	R	B (67)	52.2	50.9	1.3	52.9	55.5	2.6	57.5	N	4.6	2.0	61.6	N	8.7	6.1

Table 3.14-2: I-710 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	City	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1[1]	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternative 7	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
MNB-7**	Modeled Site	Long Beach	R	B (67)	-	54.1	-	54.8	59.0	4.2	61.5	N	6.7	2.5	64.3	N	9.5	5.3
MNB-7A**	Modeled Site	Long Beach	R	B (67)	-	52.8	-	53.5	61.4	7.9	63.9	N	10.4	2.5	64.8	N	11.3	3.4
All Sites Between Willow St. and I-405																		
SB-10	2701 Gale Ave.	Long Beach	R	B (67)	60.8	63.5	-2.7	61.7	60.1	-1.6	**70.5**	A/E	8.8	10.4	**72.0**	A/E	10.3	11.9
MSB-10	Modeled Site	Long Beach	R	B (67)	-	59.7	-	60.6	56.7	-3.9	64.3	N	3.7	7.6	**66.4**	A/E	5.8	9.7
MSB-10A	Modeled Site	Long Beach	R	B (67)	-	57.1	-	58.0	55.1	-2.9	62.6	N	4.6	7.5	**66.0**	A/E	8.0	10.9
MSB-10B	Modeled Site	Long Beach	R	B (67)	-	56.8	-	57.7	57.5	-0.2	60.7	N	3.0	3.2	**68.7**	A/E	11.0	11.2
MSB-10C**	Modeled Site	Long Beach	R	B (67)	-	59.8	-	60.7	64.0	3.3	64.6	N	3.9	0.6	**67.8**	A/E	7.1	3.8
SB-11[24]	2820 Gale Ave.	Long Beach	R	B (67)	61.1	64.1	-3.0	62.0	61.1	-0.9	**75.1**	SNI	13.1	14.0	**75.6**	SNI	13.6	14.5
MSB-11	Modeled Site	Long Beach	R	B (67)	-	61.5	-	62.4	59.0	-3.4	**69.2**	A/E	6.8	10.2	**69.7**	A/E	7.3	10.7
SB-12	1222 Spring St.	Long Beach	R	B (67)	65.3	**66.7**	-1.4	**66.2**	63.9	-2.3	**81.4**	SNI	15.2	17.5	**78.9**	SNI	12.7	15.0
SB-13	2990 Gale Ave.	Long Beach	R	B (67)	60.8	63.2	-2.4	61.4	60.0	-1.4	**71.7**	A/E	10.3	11.7	**71.0**	A/E	9.6	11.0
MSB-13	Modeled Site	Long Beach	R	B (67)	-	61.7	-	62.3	58.8	-3.5	**68.8**	A/E	6.5	10.0	**68.6**	A/E	6.3	9.8
MSB-13A	Modeled Site	Long Beach	R	B (67)	-	**66.5**	-	**67.1**	62.2	-4.9	**77.8**	A/E	10.7	15.6	**77.9**	A/E	10.8	15.7
MSB-13B	Modeled Site	Long Beach	R	B (67)	-	62.3	-	62.9	58.6	-4.3	**68.9**	A/E	6.0	10.3	**69.6**	A/E	6.7	11.0
SB-14	1223 33rd St.	Long Beach	R	B (67)	**66.0**	**67.7**	-1.7	**66.6**	61.7	-4.9	**79.2**	SNI	12.6	17.5	**79.7**	SNI	13.1	18.0
MSB-14	Modeled Site	Long Beach	R	B (67)	-	63.9	-	64.5	60.5	-4.0	**71.7**	A/E	7.2	11.2	**73.0**	A/E	8.5	12.5
MSB-14A	Modeled Site	Long Beach	R	B (67)	-	65.0	-	**65.6**	59.6	-6.0	**68.9**	A/E	3.3	9.3	**70.1**	A/E	4.5	10.5
SB-15	3540 Gale Ave.	Long Beach	R	B (67)	**67.2**	**68.9**	-1.7	**68.0**	62.4	-5.6	**81.7**	SNI	13.7	19.3	**80.4**	SNI	12.4	18.0
MSB-15	Modeled Site	Long Beach	R	B (67)	-	**66.1**	-	**66.9**	61.9	-5.0	**72.2**	A/E	5.3	10.3	**73.0**	A/E	6.1	11.1
MSB-15A	Modeled Site	Long Beach	R	B (67)	-	**65.6**	-	**66.4**	61.5	-4.9	**71.9**	A/E	5.5	10.4	**72.8**	A/E	6.4	11.3
MSB-15B	Modeled Site	Long Beach	R	B (67)	-	**66.6**	-	**67.4**	63.5	-3.9	**72.0**	A/E	4.6	8.5	**71.9**	A/E	4.5	8.4
MSB-15C	Modeled Site	Long Beach	R	B (67)	-	63.2	-	64.0	59.3	-4.7	**67.0**	A/E	3.0	7.7	**68.2**	A/E	4.2	8.9
MSB-15D	Modeled Site	Long Beach	R	B (67)	-	58.2	-	59.0	57.5	-1.5	65.1	N	6.1	7.6	64.6	N	5.6	7.1
MSB-15E**	Modeled Site	Long Beach	R	B (67)	-	59.2	-	60.0	60.6	0.6	65.3	N	5.3	4.7	65.3	N	5.3	4.7
MSB-15F**	Modeled Site	Long Beach	R	B (67)	-	57.6	-	58.4	60.9	2.5	**67.3**	A/E	8.9	6.4	**67.3**	A/E	8.9	6.4
MSB-15G**	Modeled Site	Long Beach	R	B (67)	-	55.6	-	56.4	61.1	4.7	**66.9**	A/E	10.5	5.8	**66.9**	A/E	10.5	5.8
SB-16	3618 Gale Ave.	Long Beach	R	B (67)	64.7	64.9	-0.2	64.7	65.4	0.7	Full Right-of-way Acquisition				Full Right-of-way Acquisition			
MSB-16	Modeled Site	Long Beach	R	B (67)	-	64.4	-	64.4	65.2	0.8	**73.6**	A/E	9.2	8.4	**69.8**	A/E	5.4	4.6
MSB-16A**	Modeled Site	Long Beach	R	B (67)	-	61.3	-	61.3	63.7	2.4	**69.0**	A/E	7.7	5.3	**67.6**	A/E	6.3	3.9
MSB-16B**	Modeled Site	Long Beach	R	B (67)	-	58.8	-	58.8	63.1	4.3	**67.4**	A/E	8.6	4.3	**67.4**	A/E	8.6	4.3
MSB-16C**	Modeled Site	Long Beach	R	B (67)	-	57.3	-	57.3	62.3	5.0	**65.8**	A/E	8.5	3.5	**65.8**	A/E	8.5	3.5
SB-17	3635 Gale Ave.	Long Beach	R	B (67)	61.6	64.0	-2.4	61.6	60.8	-0.8	**71.5**	A/E	9.9	10.7	64.4	N	2.8	3.6
MSB-17	Modeled Site	Long Beach	R	B (67)	-	63.7	-	63.7	60.7	-3.0	**69.0**	A/E	5.3	8.3	**67.2**	A/E	3.5	6.5
MSB-17A	Modeled Site	Long Beach	R	B (67)	-	**68.9**	-	**68.9**	59.7	-9.2	**73.9**	A/E	5.0	14.2	**73.2**	A/E	4.3	13.5

Table 3.14-2: I-710 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	City	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1[1]	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternative 7	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
MSB-17B	Modeled Site	Long Beach	R	B (67)	-	64.1	-	64.1	59.7	-4.4	**69.0**	A/E	4.9	9.3	**69.3**	A/E	5.2	9.6
MSB-17D	Modeled Site	Long Beach	R	B (67)	-	65.1	-	65.1	58.6	-6.5	**67.9**	A/E	2.8	9.3	**67.2**	A/E	2.1	8.6
MSB-17F	Modeled Site	Long Beach	R	B (67)	-	65.1	-	65.1	59.5	-5.6	64.7	N	-0.4	5.2	65.0	N	-0.1	5.5
NB-8	2800 DeForest Ave.	Long Beach	R	B (67)	49.0	48.4	0.6	49.3	51.0	1.7	52.8	N	3.5	1.8	61.9	SNI	12.6	10.9
MNB-8**	Modeled Site	Long Beach	R	B (67)	-	53.9	-	54.2	60.0	5.8	61.3	N	7.1	1.3	65.1	N	10.9	5.1
MNB-8A**	Modeled Site	Long Beach	R	B (67)	-	51.9	-	52.3	60.3	8.0	62.7	N	10.4	2.4	65.2	SNI	12.9	4.9
NB-9	3095 San Francisco Ave.	Long Beach	R	B (67)	45.7	48.6	-2.9	46.0	47.5	1.5	49.2	N	3.2	1.7	52.2	N	6.2	4.7
NB-10	3384 DeForest Ave.	Long Beach	R	B (67)	48.7	52.7	-4.0	49.7	50.5	0.8	53.9	N	4.2	3.4	55.5	N	5.8	5.0
MNB-10	Modeled Site	Long Beach	R	B (67)	-	50.7	-	51.7	52.9	1.2	56.6	N	4.9	3.7	57.7	N	6.0	4.8
MNB-10A**	Modeled Site	Long Beach	R	B (67)	-	56.6	-	57.6	58.4	0.8	58.5	N	0.9	0.1	58.5	N	0.9	0.1
All Sites Between I-405 and SR-91																		
NB-13	Virginia Country Club	Long Beach	G	C (67)	55.5	56.4	-0.9	60.5	56.3	-4.2	60.5	N	0.0	4.2	60.5	N	0.0	4.2
MNB-13A	Modeled Site	Long Beach	R	B (67)	-	52.5	-	53.0	54.5	1.5	57.8	N	4.8	3.3	60.0	N	7.0	5.5
MNB-13B	Modeled Site	Long Beach	R	B (67)	-	53.6	-	54.1	54.5	0.4	57.8	N	3.7	3.3	63.1	N	9.0	8.6
NB-14[24]	4921 Holly Ave.	Long Beach	R	B (67)	56.0	56.8	-0.8	61.0	61.0	0.0	61.0	N	0.0	0.0	62.6	N	1.6	1.6
NB-15	5075 Daisy Ave. - Exterior	Long Beach	S	C (67)	57.4	57.0	0.4	58.5	59.8	1.3	61.4	N	2.9	1.6	63.8	N	5.3	4.0
NB-15A	5075 Daisy Ave. - Interior	Long Beach	S	D (52)	42.2	41.8	0.4	43.3	44.6	1.3	46.2	N	2.9	1.6	49.5	N	6.2	4.9
NB-17	156 W. Mountain View	Long Beach	R	B (67)	51.0	54.9	-3.9	54.9	54.3	-0.6	55.6	N	0.7	1.3	60.9	N	6.0	6.6
NB-18[24]	165 Market St.	Long Beach	R	B (67)	55.7	57.7	-2.0	56.8	57.8	1.0	58.6	N	1.8	0.8	61.9	N	5.1	4.1
NB-19	Shady Acres Mobile Park No. 15	Long Beach	R	B (67)	55.8	56.8	-1.0	59.7	58.7	-1.0	59.6	N	-0.1	0.9	63.3	N	3.6	4.6
NB-20	5798 Chestnut Ave.	Long Beach	R	B (67)	55.6	54.4	1.2	57.5	59.2	1.7	60.3	N	2.8	1.1	**65.9**	A/E	8.4	6.7
NB-21	101 E. 60th St.	Long Beach	R	B (67)	58.2	56.2	2.0	60.8	61.7	0.9	62.6	N	1.8	0.9	**66.8**	A/E	6.0	5.1
NB-22	6255 DeForest Ave.	Long Beach	R	B (67)	52.2	54.2	-2.0	54.2	56.2	2.0	56.4	N	2.2	0.2	60.3	N	6.1	4.1
NB-23	937 Paradise Ln.	Long Beach	R	B (67)	52.6	52.0	0.6	54.6	56.0	1.4	56.8	N	2.2	0.8	62.5	N	7.9	6.5
MNB-23	Modeled Site	Long Beach	R	B (67)	-	55.5	-	57.5	57.8	0.3	58.4	N	0.9	0.6	64.4	N	6.9	6.6
SB-19	150 Victoria St. - Exterior	Long Beach	S	C (67)	55.3	56.6	-1.3	64.2	64.2	0.0	64.2	N	0.0	0.0	64.6	N	0.4	0.4
SB-19A	150 Victoria St. - Interior	Long Beach	S	D (52)	41.5	42.8	-1.3	50.4	50.4	0.0	50.4	N	0.0	0.0	50.4	N	0.0	0.0
SB-20	5950 Long Beach Blvd. - Exterior	Long Beach	H	E (72)	61.3	64.2	-2.9	62.8	65.0	2.2	68.3	N	5.5	3.3	**72.0**	A/E	9.2	7.0
SB-20C	261 E. Barclay St.	Long Beach	R	B (67)	61.9	65.1	-3.2	64.5	**65.7**	1.2	**75.0**	A/E	10.5	9.3	**76.0**	SNI	11.5	10.3
SB-21[24]	325 Scott St.	Long Beach	R	B (67)	61.2	**65.6**	-4.4	63.4	63.2	-0.2	**69.5**	A/E	6.1	6.3	**74.0**	A/E	10.6	10.8
SB-23	333 Forhan St.	Long Beach	R	B (67)	59.2	64.2	-5.0	61.1	59.9	-1.2	**66.3**	A/E	5.2	6.4	**69.0**	A/E	7.9	9.1
MSB-23A	Modeled Site	Long Beach	R	B (67)	-	62.9	-	64.8	63.8	-1.0	**66.9**	A/E	2.1	3.1	**72.0**	A/E	7.2	8.2

Table 3.14-2: I-710 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	City	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1[1]	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternative 7	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
MSB-23B	Modeled Site	Long Beach	R	B (67)	-	65.8	-	**67.7**	**66.3**	-1.4	**72.9**	A/E	5.2	6.6	**76.0**	A/E	8.3	9.7
MSB-23C	Modeled Site	Long Beach	R	B (67)	-	-	-	62.7	62.7	0.0	64.7	N	2.0	2.0	**70.0**	A/E	7.3	7.3
All Sites Between SR-91 and I-105																		
SB-25	6910 Coachella Ave.	Long Beach	R	B (67)	63.2	63.3	-0.1	64.5	**66.1**	1.6	**70.8**	A/E	6.3	4.7	**70.7**	A/E	6.2	4.6
SB-26	6911 Coachella Ave.	Long Beach	R	B (67)	55.9	60.7	-4.8	57.2	58.8	1.6	63.4	N	6.2	4.6	65.2	N	8.0	6.4
SB-27[24]	1612 Atlantic Dr.	Compton	R	B (67)	60.6	63.3	-2.7	62.3	63.7	1.4	**74.8**	SNI	12.5	11.1	**74.9**	SNI	12.6	11.2
MSB-27	Modeled Site	Compton	R	B (67)	-	62.9	-2.7	63.1	62.9	-0.2	**69.2**	A/E	6.1	6.3	**70.0**	A/E	6.9	7.1
SB-28	1316 Atlantic Dr.	Compton	R	B (67)	56.3	59.9	-3.6	58.3	60.1	1.8	62.7	N	4.4	2.6	62.8	N	4.5	2.7
SB-29	1311 Atlantic Dr.	Compton	R	B (67)	56.7	59.3	-2.6	58.8	60.3	1.5	60.6	N	1.8	0.3	63.7	N	4.9	3.4
SB-30	16002 S. Atlantic Dr.	Compton	R	B (67)	59.3	61.0	-1.7	61.0	**66.7**	5.7	**66.3**	A/E	5.3	-0.4	Full Right-of-way Acquisition			
MSB-30	Modeled Site	Compton	R	B (67)	-	60.4	-1.7	62.1	**66.1**	4.0	63.4	N	1.3	-2.7	**67.1**	A/E	5.0	1.0
SB-31	15539 S. Gibson Ave.	Compton	R	B (67)	61.4	64.3	-2.9	62.5	**65.6**	3.1	Full Right-of-way Acquisition				Full Right-of-way Acquisition			
SB-32	15519 S. Gibson Ave.	Compton	R	B (67)	60.0	64.2	-4.2	61.1	63.0	1.9	**77.7**	SNI	16.6	14.7	**78.0**	SNI	16.9	15.0
SB-33	4827 Rose St.	Compton	R	B (67)	58.9	62.9	-4.0	60.3	57.4	-2.9	**66.2**	A/E	5.9	8.8	**69.0**	A/E	8.7	11.6
SB-34A[24]	15116 S. Gibson Ave. - Interior	Compton	S	D (52)	40.9	45.8	-4.9	42.0	39.7	-2.3	44.4	N	2.4	4.7	50.2	N	8.2	10.5
SB-34B	15116 S. Gibson Ave. - Exterior	Compton	S	C (67)	61.3	**66.2**	-4.9	62.4	60.1	-2.3	64.8	N	2.4	4.7	**70.6**	A/E	8.2	10.5
SB-35[24]	4930 E. San Marcos	Compton	R	B (67)	61.5	64.2	-2.7	63.1	64.2	1.1	64.2	N	1.1	0.0	**71.0**	A/E	7.9	6.8
SB-36[24]	4947 E. San Vicente St.	Compton	R	B (67)	**65.8**	64.8	1.0	**66.4**	67.1	0.7	**66.4**	A/E	0.0	-0.7	**68.7**	A/E	2.3	1.6
SB-37	4955 E. San Juan St.	Compton	R	B (67)	59.9	64.9	-5.0	60.3	62.2	1.9	61.6	N	1.3	-0.6	63.2	N	2.9	1.0
SB-38	4951 E. San Juan St.	Compton	R	B (67)	59.9	**65.5**	-5.6	60.3	62.1	1.8	61.6	N	1.3	-0.5	65.0	N	4.7	2.9
SB-39	4964 E. San Rafael St.	Compton	R	B (67)	57.0	62.6	-5.6	57.8	58.9	1.1	60.8	N	3.0	1.9	64.4	N	6.6	5.5
SB-40[24]	12310 Edgebrook Ave.	Lynwood	R	B (67)	62.2	63.7	-1.5	**67.8**	**65.6**	-2.2	64.8	N	-3.0	-0.8	**67.8**	A/E	0.0	2.2
SB-41	12830 S. Manette Pl.	East Compton	R	B (67)	51.1	55.4	-4.3	54.1	53.9	-0.2	54.9	N	0.8	1.0	56.5	N	2.4	2.6
SB-42	5450 McMillan St.	Lynwood	R	B (67)	58.6	56.0	2.6	61.6	60.5	-1.1	**65.8**	A/E	4.2	5.3	**65.9**	A/E	4.3	5.4
SB-43	12501 Edgebrook Ave.	Lynwood	R	B (67)	64.1	62.1	2.0	**67.5**	64.7	-2.8	**67.8**	A/E	0.3	3.1	68.3	A/E	0.8	3.6
SB-44	5520 Lavinia Ave.	Lynwood	R	B (67)	56.6	59.1	-2.5	60.0	**66.8**	6.8	63.7	N	3.7	-3.1	61.2	N	1.2	-5.6
SB-45	12323 Edgebrook Ave.	Lynwood	R	B (67)	59.0	57.8	1.2	62.0	63.3	1.3	64.4	N	2.4	1.1	65.0	N	3.0	1.7
SB-46	5542 Pelleur St.	Lynwood	R	B (67)	56.0	58.6	-2.6	59.0	60.1	1.1	61.0	N	2.0	0.9	62.0	N	3.0	1.9
All Sites Between I-105 and SR-90-Imperial Hwy.																		
SB-49*	5246 Martin Luther King Jr. Blvd. - Interior	Lynwood	S	D (52)	43.5	41.7	1.8	44.1	40.1	-4.0	42.1	N	-2.0	2.0	46.7	N	2.6	6.6
SB-50	5246 Martin Luther King Jr. Blvd. - Exterior	Lynwood	S	C (67)	**65.9**	64.1	1.8	**66.5**	62.7	-3.8	64.4	N	-2.1	1.7	**69.1**	A/E	2.6	6.4
SB-51	11323 Wright Rd.	Lynwood	R	B (67)	59.9	61.5	-1.6	62.3	57.3	-5.0	58.8	N	-3.5	1.5	63.2	N	0.9	5.9

Table 3.14-2: I-710 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	City	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1[1]	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternative 7	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
SB-52	11300 Wright Rd. - Interior	Lynwood	S	D (52)	50.1	53.2	-3.1	51.2	40.7	-10.5	44.7	N	-6.5	4.0	45.7	N	-5.5	5.0
SB-53	11300 Wright Rd. - Exterior	Lynwood	S	C (67)	59.6	62.7	-3.1	60.7	60.4	-0.3	65.0	N	4.3	4.6	**66.2**	A/E	5.5	5.8
MSB-53	11638 Louise Ave.	Lynwood	R	B (67)	-	62.3	-3.1	63.3	64.4	1.1	64.7	N	1.4	0.3	65.0	N	1.7	0.6
SB-55	5327 Beechwood Ave.	Lynwood	R	B (67)	56.8	60.0	-3.2	59.0	55.2	-3.8	56.4	N	-2.6	1.2	60.9	N	1.9	5.7
SB-56	11111 Wright Rd.	Lynwood	R	B (67)	60.2	63.4	-3.2	62.6	60.8	-1.8	59.4	N	-3.2	-1.4	63.1	N	0.5	2.3
SB-57[24]	10969 Wright Rd.	Lynwood	R	B (67)	**69.8**	**69.5**	0.3	**72.6**	**70.9**	-1.7	**66.4**	A/E	-6.2	-4.5	**68.9**	A/E	-3.7	-2.0
SB-58	10914 Wright Rd.	Lynwood	R	B (67)	64.8	**67.0**	-2.2	**66.5**	65.4	-1.1	61.1	N	-5.4	-4.3	**66.5**	A/E	0.0	1.1
SB-59	10920 Duncan Ave.	Lynwood	R	B (67)	65.0	65.2	-0.2	**66.7**	65.3	-1.4	62.4	N	-4.3	-2.9	**69.2**	A/E	2.5	3.9
NB-25	6975 Atlantic Ave.	Paramount	R	B (67)	61.6	60.2	1.4	63.0	64.3	1.3	64.1	N	1.1	-0.2	**69.0**	A/E	6.0	4.7
NB-26	6312 Rancho Rio Rd.	Paramount	R	B (67)	56.4	58.4	-2.0	57.8	58.5	0.7	60.3	N	2.5	1.8	**67.7**	A/E	9.9	9.2
NB-27	6400 E. Compton Blvd.	Compton	G	C (67)	53.3	56.1	-2.8	54.3	60.0	5.7	63.4	N	9.1	3.4	**68.6**	SNI	14.3	8.6
NB-27A	6500 E. Compton Blvd. - Interior	Compton	S	D (52)	43.5	42.9	0.6	45.0	45.8	0.8	39.0	N	-6.0	-6.8	45.9	N	0.9	0.1
NB-27C	6500 E. Compton Blvd. - Exterior	Compton	S	C (67)	62.7	62.7	0.0	64.3	55.4	-8.9	58.3	N	-6.0	2.9	65.1	N	0.8	9.7
NB-27B	15301 San Jose - Exterior	Compton	S	C (67)	57.0	56.4	0.6	59.5	54.8	-4.7	58.7	N	-0.8	3.9	**65.5**	A/E	6.0	10.7
NB-27D	15301 San Jose - Interior	Compton	S	D (52)	42.8	42.2	0.6	45.3	40.3	-5.0	45.3	N	0.0	5.0	51.3	N	6.0	11.0
NB-28	6443 San Marcus St.	Paramount	R	B (67)	49.5	54.2	-4.7	50.8	52.7	1.9	54.5	N	3.7	1.8	63.2	SNI	12.4	10.5
NB-29	14703 San Antonio Ave.	Paramount	R	B (67)	51.6	54.7	-3.1	52.9	54.2	1.3	55.6	N	2.7	1.4	65.3	SNI	12.4	11.1
NB-30	6500 San Juan St.	Paramount	P	C (67)	48.0	53.9	-5.9	48.8	51.4	2.6	51.9	N	3.1	0.5	62.7	SNI	13.9	11.3
NB-30A	6556 Rosecrans No. S 35	Paramount	R	B (67)	53.1	52.2	0.9	54.0	54.0	0.0	54.9	N	0.9	0.9	65.2	N	11.2	11.2
NB-31	13425 Rancho Camino	Lynwood	R	B (67)	52.8	56.2	-3.4	55.1	55.1	0.0	54.1	N	-1.0	-1.0	59.0	N	3.9	3.9
MNB-31	7102 Cortland Ave.	Lynwood	R	B (67)	-	61.6	-3.4	61.3	61.3	0.0	56.4	N	-4.9	-4.9	57.2	N	-4.1	-4.1
MNB-32	5511 Century Blvd.	Lynwood	S	C (67)	-	54.0	-3.4	53.2	53.2	0.0	50.5	N	-2.7	-2.7	57.9	N	4.7	4.7
NB-34	11599 Rio Hondo Dr.	Lynwood	P	C (67)	55.4	58.0	-2.6	57.7	57.7	0.0	54.4	N	-3.3	-3.3	64.9	N	7.2	7.2
NB-35	11319 Idaho Ave.	Lynwood	R	B (67)	54.5	57.6	-3.1	56.8	56.0	-0.8	54.1	N	-2.7	-1.9	63.0	N	6.2	7.0
All Sites Between SR-90-Imperial Hwy. and E. 3rd St.																		
NB-36[24]	8201 Specht Ave.	Bell Gardens	R	B (67)	**75.2**	**77.4**	-2.2	**75.2**	63.8	-11.4	**80.0**	A/E	4.8	16.2	**72.6**	A/E	-2.6	8.8
NB-36B	8321 Jaboneria Rd.	Bell Gardens	R	B (67)	-						**78.0**	A/E			**78.0**	A/E		
NB-37	7940 Bell Garden Ave.	Bell Gardens	R	B (67)	**66.4**	**69.1**	-2.7	**68.0**	63.8	-4.2	**75.3**	A/E	7.3	11.5	**76.2**	A/E	8.2	12.4
NB-38	7728 Bell Garden Ave.	Bell Gardens	R	B (67)	63.9	**66.0**	-2.1	65.1	**65.8**	0.7	**74.0**	A/E	8.9	8.2	**75.3**	A/E	10.2	9.5
NB-39	6809 Marlow Ave.	Bell Gardens	R	B (67)	**66.1**	**68.1**	-2.0	**66.5**	**71.8**	5.3	**72.4**	A/E	5.9	0.6	**68.2**	A/E	1.7	-3.6

Table 3.14-2: I-710 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	City	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1[1]	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternative 7	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
NB-40	6516 Selfland Ave.	Bell Gardens	R	B (67)	**67.8**	**67.7**	0.1	**68.2**	**68.9**	0.7	**69.8**	A/E	1.6	0.9	**70.0**	A/E	1.8	1.1
NB-41[24]	5510 Lanto St.	Bell Gardens	R	B (67)	**66.9**	**69.3**	-2.4	**66.9**	**67.0**	0.1	**70.1**	A/E	3.2	3.1	**73.2**	A/E	6.3	6.2
NB-42	5517 Watcher St.	Bell Gardens	R	B (67)	63.4	**65.8**	-2.4	64.3	64.9	0.6	**67.0**	A/E	2.7	2.1	**67.9**	A/E	3.6	3.0
NB-43	4721 Noble St.	Commerce	R	B (67)	**71.9**	**69.3**	2.6	**72.6**	**65.7**	-6.9	**73.8**	A/E	1.2	9.6	**74.5**	A/E	1.9	8.8
NB-44[24]	4701 Leonis St.	Commerce	R	B (67)	64.0	**65.6**	-1.6	64.0	60.5	-3.5	**69.5**	A/E	5.5	8.6	**70.4**	A/E	6.4	9.9
NB-44 M1	4715 Leonis St.	Commerce	R	B (67)	-	**69.2**	-	**69.2**	62.6	-6.6	**70.5**	A/E	1.3	9.1	**71.7**	A/E	2.5	9.1
NB-44 M2	4725 Astor Ave.	Commerce	P	C (67)	-	**70.9**	-	**70.9**	63.2	-7.7	**70.4**	A/E	-0.5	3.2	**71.6**	A/E	0.7	8.4
NB-45	4643 Noakes St.	Commerce	R	B (67)	**69.2**	**70.4**	-1.2	**69.8**	64.4	-5.4	**70.7**	A/E	0.9	0.9	**72.1**	A/E	2.3	7.7
NB-46	1448 Duncan Ave.	East Los Angeles	R	B (67)	61.8	63.4	-1.6	62.2	63.7	1.0	**70.5**	A/E	8.3	0.9	**71.9**	A/E	9.7	8.2
NB-47	1354 Duncan Ave.	East Los Angeles	R	B (67)	62.5	63.2	-0.7	62.8	64.8	2.7	**70.4**	A/E	7.6	0.9	**71.5**	A/E	8.7	6.7
NB-48	1278 Duncan Ave.	East Los Angeles	R	B (67)	65.0	67.2	-2.2	65.2	63.9	-1.3	**68.9**	A/E	3.7	5.0	**68.1**	A/E	2.9	4.2
NB-49	1269 Duncan Ave.	East Los Angeles	R	B (67)	57.0	58.3	-1.3	57.4	56.3	-1.1	**68.9**	SNI	11.5	12.6	**67.4**	A/E	10.0	11.1
NB-50	1118 Burger Ave.	East Los Angeles	R	B (67)	**66.5**	**68.6**	-2.1	**66.9**	62.9	-4.0	**66.8**	A/E	-0.1	6.0	**66.8**	A/E	-0.1	3.9
NB-50 M1	1148 Burger Ave.	East Los Angeles	R	B (67)	-	**70.6**	-	**70.6**	63.7	-6.9	**70.3**	A/E	-0.3	6.0	**70.4**	A/E	-0.2	6.7
NB-51	716 Burger Ave.	East Los Angeles	R	B (67)	63.8	62.1	1.7	63.8	**65.9**	2.1	**75.9**	SNI	12.1	8.4	**76.7**	SNI	12.9	10.8
NB-52	604 Burger Ave.	East Los Angeles	R	B (67)	**67.9**	**68.4**	-0.5	**67.9**	**69.6**	1.7	**72.1**	A/E	4.2	3.0	**73.4**	A/E	5.5	3.8
NB-53	438 Betty Ave.	East Los Angeles	R	B (67)	60.7	64.1	-3.4	61.7	61.9	0.2	**66.7**	A/E	5.0	4.8	64.5	N	2.8	2.6
NB-54	426 Betty Ave.	East Los Angeles	R	B (67)	63.0	64.2	-1.2	64.0	64.2	0.2	62.8	N	-1.2	-1.4	63.1	N	-0.9	-1.1
NB-55	4464 4th St.	East Los Angeles	R	B (67)	60.0	62.5	-2.5	61.0	61.2	0.2	63.2	N	2.2	2.0	63.0	N	2.0	1.8
SB-61	10518 Blumont Rd.	South Gate	R	B (67)	**66.4**	**69.2**	-2.8	**66.5**	**67.9**	1.4	**69.0**	A/E	2.5	1.8	**66.9**	A/E	0.4	5.1
SB-MS1	5230 Pendleton Ave.	South Gate	R	B (67)	-	59.7	-	59.7	61.1	1.4	63.6	N	3.9	2.5	62.0	N	0.0	0.9
SB-62[24]	10442 Blumont Rd.	South Gate	R	B (67)	**68.0**	**71.8**	-3.8	**68.0**	**67.7**	-0.3	**69.7**	A/E	1.7	2.0	**67.3**	A/E	-0.7	-0.4
SB-63	10334 Blumont Rd.	South Gate	R	B (67)	**65.8**	**69.3**	-3.5	**65.8**	**67.2**	1.4	**70.5**	A/E	4.7	3.3	**68.1**	A/E	2.3	0.9
SB-64	No. 20 W. Frontage Rd.	South Gate	R	B (67)	**74.2**	**75.8**	-1.6	**74.3**	64.2	-10.1	**72.0**	A/E	-2.3	7.8	**71.4**	A/E	-2.9	7.2
SB-65	No. 4 Frontage Rd.	South Gate	R	B (67)	**74.7**	**77.0**	-2.3	**74.8**	62.0	-12.8	**77.4**	A/E	2.6	15.4	**76.3**	A/E	1.5	14.3
SB-66	No. 221 W. Frontage Rd.	South Gate	R	B (67)	**78.7**	**80.4**	-1.7	**78.8**	63.6	-15.2	**78.6**	A/E	-0.2	15.0	**77.5**	A/E	-1.3	13.9
SB-67	4644 Leonis St.	Commerce	R	B (67)	**65.8**	**67.5**	-1.7	**66.5**	59.7	-6.8	Full Right-of-way Acquisition				Full Right-of-way Acquisition			
SB-67 M2	4632 Leonis St.	Commerce	R	B (67)	-	**69.8**	-	**69.8**	64.1	-5.7	**70.0**	A/E	0.0	6.0	**70.4**	A/E	0.6	6.3

Table 3.14-2: I-710 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	City	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1[1]	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternative 7	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
SB-67 M3	2308 Connor Ave.	Commerce	R	B (67)	-	**70.4**	-	**70.4**	63.2	-7.2	Full Right-of-way Acquisition				Full Right-of-way Acquisition			
SB-67 M4	2326 Connor Ave.	Commerce	R	B (67)	-	**70.0**	-	**70.0**	62.2	-7.8	Full Right-of-way Acquisition				Full Right-of-way Acquisition			
SB-67 M5	2347 Connor Ave.	Commerce	R	B (67)	-	**67.4**	-	**67.4**	**66.9**	-0.5	**73.1**	A/E	5.7	3.6	**73.6**	A/E	6.2	6.7
SB-68	4627 Leonis St.	Commerce	R	B (67)	60.1	61.2	-1.1	60.8	57.9	-2.9	**67.4**	N	6.6	4.0	**67.9**	A/E	7.1	10.0
SB-69	1501 S. Sydney St.	Commerce	R	B (67)	64.6	64.9	-0.3	65.2	64.0	-1.2	Full Right-of-way Acquisition				Full Right-of-way Acquisition			
SB-69 M1	4543 Dunham St.	East Los Angeles	R	B (67)	-	63.3	-	63.3	64.8	1.5	65.2	N	0.6	2.3	**66.4**	A/E	3.1	1.6
SB-69 M2	4497 Lovett St.	East Los Angeles	R	B (67)	-	63.6	-	63.6	64.9	1.3	**66.2**	A/E	2.6	2.0	**67.5**	A/E	3.9	2.6
SB-69 M3	4476 Triggs St.	East Los Angeles	R	B (67)	-	63.3	-	63.3	64.6	1.3	65.4	N	2.6	1.7	**66.7**	A/E	3.4	2.1
SB-70	1334 Eastern Ave.	East Los Angeles	R	B (67)	64.9	**65.9**	-1.0	64.5	**69.0**	4.5	Full Right-of-way Acquisition				Full Right-of-way Acquisition			
SB-70 M1	1333 S. Eastern Ave.	East Los Angeles	R	B (67)	-	**68.5**	-	**68.5**	**69.6**	1.1	**70.4**	A/E	2.1	1.3	**71.7**	A/E	3.2	2.1
SB-70 M2	4481 Tuttle St.	East Los Angeles	R	B (67)	-	**67.4**	-	**67.4**	**69.0**	1.6	**68.2**	A/E	2.3	1.0	**69.5**	A/E	2.1	0.5
SB-70 M3	1226 Wilkens Ave.	East Los Angeles	R	B (67)	-	62.7	-	62.7	63.2	0.5	**70.2**	A/E	7.5	7.0	**72.3**	A/E	9.6	9.1
SB-70 M4	4480 E. Olympic Blvd.	East Los Angeles	C	C (72)	-	**65.6**	-	**65.6**	**68.5**	2.9	**70.9**	A/E	5.3	2.4	**73.2**	A/E	7.6	4.7
SB-70 M5	4334 Whittier Blvd.	East Los Angeles	K	B (67)	-	**69.0**	-	**69.0**	**66.5**	-2.5	**67.1**	A/E	-1.9	0.6	**70.1**	A/E	1.1	3.6
SB-71[24]	716 Sydney St.	East Los Angeles	R	B (67)	**66.7**	**68.0**	-1.3	**66.7**	65.0	-1.7	61.5	N	-5.2	11.9	64.0	N	-2.7	-1.0
SB-71 M1	930 S. Eastern Ave.	East Los Angeles	R	B (67)	-	63.4	-	63.4	**66.4**	3.0	**68.8**	A/E	5.4	2.4	**72.5**	A/E	9.1	6.1
SB-72	4341 5th St.	East Los Angeles	R	B (67)	64.1	63.3	0.8	63.8	**67.9**	4.1	**68.7**	A/E	4.9	0.8	**71.0**	A/E	7.2	3.1
SB-73[24]	356 S. Humphreys Ave.	East Los Angeles	R	B (67)	62.8	64.8	-2.0	62.8	63.2	0.4	**66.4**	A/E	3.6	3.2	65.3	N	2.5	2.1
All Sites along SR-91 (west and east of I-710)																		
EB-1	205 E. Neece St.	Long Beach	R	B (67)	62.0	63.1	-1.1	63.3	63.3	0.0	63.5	N	0.2	0.2	64.3	N	1.0	1.0
MEB-1	Modeled Site	Long Beach	R	B (67)	-	59.2	-1.1	59.4	59.6	0.2	60.7	N	1.3	1.1	61.5	N	2.1	1.9
MEB-1A	171 W. Bort St.	Long Beach	S	C (67)	-	64.3	-1.1	64.5	64.5	0.0	61.7	N	-2.8	-2.8	64.5	N	0.0	0.0
EB-2[24]	277 E. 65th St.	Long Beach	R	B (67)	61.5	63.4	-1.9	62.8	62.9	0.1	64.8	N	2.0	1.9	65.3	N	2.5	2.4
EB-3[24]	6691 Myrtle Ave.	Long Beach	R	B (67)	61.0	63.2	-2.2	61.0	62.4	1.4	**68.5**	A/E	7.5	6.1	**67.8**	A/E	6.8	5.4
MEB-3	Modeled Site	Long Beach	R	B (67)	-	64.4	-2.2	64.4	63.9	-0.5	**70.1**	A/E	5.7	6.2	64.4	N	0.0	0.5
MEB-3A	Modeled Site	Long Beach	R	B (67)	-	**68.9**	-2.2	**68.9**	**69.8**	0.9	**70.5**	A/E	1.6	0.7	Full Right-of-way Acquisition			

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Receptor No.	Location	City	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1[1]	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternative 7	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
EB-4	1230 E. 67th St.	Long Beach	R	B (67)	63.7	63.4	0.3	63.7	64.9	1.2	**71.3**	A/E	7.6	6.4	**70.3**	A/E	6.6	5.4
EB-5	6679 Gaviota Ave.	Long Beach	R	B (67)	**66.6**	64.3	2.3	**66.6**	**67.8**	1.2	**71.5**	A/E	4.9	3.7	**67.4**	A/E	0.8	-0.4
MEB-6	Modeled Site	Long Beach	R	B (67)	-	-	-	-	-	-	-	-	-	-	65.1	N	-	-
WB-1*	233 Artesia Blvd.	Long Beach	R	B (67)	**68.4**	**68.7**	-0.3	**69.6**	**66.6**	-3.0	65.4	N	-4.2	-1.2	64.7	N	-4.9	-1.9
MWB-1*	6255 DeForest Ave.	Long Beach	P	C (67)	-	64.1	-0.3	65.3	63.3	-2.0	62.4	N	-2.9	-0.9	62.5	N	-2.8	-0.8
MWB-1A	Modeled Site	Compton	R	B (67)	-	-	-	**66.8**	**66.8**	0.0	64.0	N	-2.8	-2.8	65.2	N	-1.6	-1.6
WB-2	250 E. Artesia Blvd.	Long Beach	R	B (67)	64.2	62.1	2.1	64.8	**68.0**	3.2	**70.5**	A/E	5.7	2.5	Full Right-of-way Acquisition			
MWB-2	Modeled Site	Long Beach	R	B (67)	-	-	-	**65.6**	**65.6**	0.0	**66.3**	A/E	0.7	0.7	**71.0**	A/E	5.4	5.4
WB-3	315 Artesia Ln.	Long Beach	R	B (67)	63.8	61.4	2.4	64.1	**71.6**	7.5	**69.4**	A/E	5.3	-2.2	**72.0**	A/E	7.9	0.4
MWB-3	Modeled Site	Long Beach	R	B (67)	-	62.3	2.4	64.2	**67.8**	3.6	**69.4**	A/E	5.2	1.6	**71.0**	A/E	6.8	3.2
WB-5	6757 Lime Ave.	Long Beach	R	B (67)	62.9	62.3	0.6	63.6	64.5	0.9	65.1	N	1.5	0.6	63.6	N	0.0	-0.9
MWB-5	Modeled Site	Long Beach	R	B (67)	-	61.8	0.6	64.8	**66.6**	1.8	65.2	N	0.4	-1.4	64.8	N	0.0	-1.8
WB-6	6755 Lewis Ave.	Long Beach	R	B (67)	**65.9**	63.4	2.5	**65.8**	**67.0**	1.2	**66.8**	A/E	1.0	-0.2	**74.0**	A/E	8.2	7.0
WB-7	1233 E. Eleanor St.	Long Beach	R	B (67)	**67.5**	64.8	2.7	**67.7**	**67.7**	0.0	**67.0**	A/E	-0.7	-0.7	**74.0**	A/E	6.3	6.3
WB-8	6734 Gaviota Ave.	Long Beach	R	B (67)	63.1	63.2	-0.1	63.3	63.6	0.3	64.0	N	0.7	0.4	**67.0**	A/E	3.7	3.4
All Sites along I-405 (west and east of I-710)																		
R1	Long Beach Golf Course	Long Beach	G	C (67)	63.5	**65.7**	2.2	**65.7**	**65.7**	0.0	**65.7**	A/E	0.0	0.0	**65.7**	A/E	0.0	0.0
MR1-A	Modeled Site	Long Beach	R	B (67)	60.5	62.5	-2.0	-	62.9	-	63.1	N	-	0.2	64.9	N	-	2.0
MR1-B	Modeled Site	Long Beach	R	B (67)	58.6	62.5	-3.9	-	57.9	-	61.7	N	-	3.8	62.5	N	-	4.6
MR1-C	Modeled Site	Long Beach	R	B (67)	-	65.2	-3.0	-	63.7	-	65.3	N	-	1.6	**66.0**	A/E	-	2.3
MR1-C1	Modeled Site	Long Beach	R	B (67)	-	64.3	-3.0	-	63.1	-	64.2	N	-	1.1	64.9	N	-	1.8
MR1-C2	Modeled Site	Long Beach	R	B (67)	-	**66.3**	-3.0	-	62.5	-	64.7	N	-	2.2	**65.5**	A/E	-	3.0
MR1-D	Modeled Site	Long Beach	R	B (67)	-	-	-	-	64.5	-	**67.8**	A/E	-	3.3	**69.2**	A/E	-	4.7
MR1-E	Modeled Site	Long Beach	R	B (67)	-	-	-	-	**68.0**	-	**70.8**	A/E	-	2.8	**72.0**	A/E	-	4.0
MR1-F	Modeled Site	Long Beach	R	B (67)	-	-	-	-	**69.4**	-	**72.2**	A/E	-	2.8	**73.5**	A/E	-	4.1
NB-S2	Modeled Site	Long Beach	S	C (67)	58.7	58.8	0.1	59.0	59.0	0.0	62.8	N	3.8	3.8	64.3	N	5.3	5.3
NB-S3	Modeled Site	Long Beach	S	C (67)	60.5	58.7	-1.8	62.0	62.0	0.0	64.7	N	2.7	2.7	**66.4**	A/E	4.4	4.4
NB-S6	Modeled Site	Long Beach	R	B (67)	**74.6**	**74.5**	-0.1	**76.0**	**68.3**	-7.7	**76.0**	A/E	0.0	7.7	**76.8**	A/E	0.8	8.5
NB-S7	Modeled Site	Long Beach	R	B (67)	**66.8**	**69.7**	2.9	**69.0**	64.6	-4.4	**69.0**	A/E	0.0	4.4	**69.4**	A/E	0.4	4.8
R2[24]	3730 Magnolia Ave.	Long Beach	R	B (67)	65.2	65.2	0.0	65.2	**69.9**	4.7	**66.0**	A/E	0.8	-3.9	**67.7**	A/E	2.5	-2.2
MR2	Modeled Site	Long Beach	R	B (67)	-	63.4	-	-	62.6	-	63.0	N	-	0.4	63.7	N	-	1.1
R3	3840 Golden Ave.	Long Beach	R	B (67)	62.4	63.5	1.1	64.0	65.0	1.0	**69.0**	A/E	5.0	4.0	**70.2**	A/E	6.2	5.2
R4	22117 Carlerick Ave.	Long Beach	R	B (67)	61.4	-	-	62.1	**66.0**	3.9	**68.5**	A/E	6.4	2.5	**68.4**	A/E	6.3	2.4
R5	2850 221st Pl.	Long Beach	R	B (67)	62.7	-	-	63.5	**65.9**	2.4	**67.5**	A/E	4.0	1.6	**66.6**	A/E	3.1	0.7
MR5-A	Modeled Site	Long Beach	R	B (67)	-	-	-	63.4	64.0	0.6	**68.0**	A/E	4.6	4.0	**68.1**	A/E	4.7	4.1

Table 3.14-2: I-710 Traffic Noise Level Measurements and Modeling Results (dBA)

Receptor No.	Location	City	Land Use	Noise Abatement Category	Field-Measured Noise Level	Modeled Noise Level	K-Factor	Existing Worst-Hour Noise Level	Future (2035) No Build Noise Level Alternative 1[1]	Noise Increase (No Build vs. Existing)	Future Worst-Hour Noise Level Alternative 5C	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)	Future Worst-Hour Noise Level Alternative 7	Impact Type	Noise Increase (Build vs. Existing)	Noise Increase (Build vs. No Build)
MR5-B	Modeled Site	Long Beach	R	B (67)	-	-	-	65.1	**65.6**	0.5	**72.2**	A/E	7.1	6.6	**72.3**	A/E	7.2	6.7
MR5-C	Modeled Site	Long Beach	R	B (67)	-	-	-	63.7	64.1	0.4	**67.9**	A/E	4.2	3.8	**68.0**	A/E	4.3	3.9
R6[24]	2005 Wardlow Rd.	Long Beach	R	B (67)	64.0	-	-	64.0	64.1	0.1	**67.2**	A/E	3.2	3.1	**66.7**	A/E	2.7	2.6
MR6-A	Modeled Site	Long Beach	R	B (67)	-	-	-	63.2	63.2	0.0	65.1	N	1.9	1.9	65.3	N	2.1	2.1
MR6-B	Modeled Site	Long Beach	R	B (67)	-	-	-	63.8	63.8	0.0	65.0	N	1.2	1.2	65.2	N	1.4	1.4
MR6-C	Modeled Site	Long Beach	R	B (67)	-	-	-	65.0	**65.7**	0.7	**66.7**	A/E	1.7	1.0	**68.0**	A/E	3.0	2.3

Source: California Department of Transportation. *I-710 Corridor Project Traffic Noise Study Report* (May 2016).
[24] 24-hour noise measurement site.
[1] Assumes the construction of Early Action Soundwalls
Notes: All noise levels are in dBA $L_{eq}(h)$.
Land Use: R=Residential; S=School; P=Park & Recreation; G=Golf Course; K=Cemetery; H=Hotel/Motel
Impact Type: N=No Impact; A=Approaches; E=Exceeds; SNI=Substantial Noise Increase
* Predicted noise levels exclude noise contribution from Artesia Blvd.
** Local street traffic is the predominant noise source.
dBA = A-weighted decibels
I-105 = Interstate 105
I-405 = Interstate 405
I-710 = Interstate 710
$L_{eq}(h)$ = one-hour A-weighted equivalent continuous sound level
SR-91 = State Route 91

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- **Immune Effects:** Noise disturbance of sleep stages resulting in immunosuppressive effects.
- **Ergonomics:** Disruption in attention resulting in decreased quality of work.
- **Psychology:** Increased stress resulting in psychic tension.
- **Cardiovascular Disease:** Specifically increased blood pressure and hypertension associated with prolonged noise exposure near roadways above 70 dBA (Bodin et al., 2009).

3.14.4 Environmental Consequences

The project is considered a Type I Project under 23 CFR 772 because one or both alternatives involve the addition of through-traffic lane(s), the addition of auxiliary lanes, and/or the addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange.

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, temporary impacts related to noise are located in Section 3.24.3.14.

3.14.4.1 Permanent Impacts

Groundborne Noise and Vibration Impacts. When on-road vehicles cause effects, such as the rattling of windows, the source can be attributed to airborne noise if the thickness and area of glass is in resonance with a frequency generated by a nearby vehicle. Depending on the qualities of a given window, rattling is caused by both airborne and groundborne noise and vibration. On poor quality windows where rattling is often an issue, the cause can usually be attributed to airborne noise and vibration. Groundborne vibrations are mostly associated with passenger vehicles and trucks traveling on poor roadway conditions such as potholes, bumps, expansion joints, or other discontinuities in the road surface. Smoothing the bump or filling the pothole will usually solve the problem. As the proposed project will use new asphalt pavement followed with proper maintenance, there will be no potholes, bumps, expansion joints, or other discontinuities in the road surface that would generate groundborne vibration or direct or indirect noise impacts from vehicular traffic traveling on I-710.

Traffic Noise Impacts. Future noise levels were predicted using traffic characteristics that would yield the worst hourly traffic noise impact on a regular basis. The design-year (2035) peak-hour traffic volumes, vehicle classification percentages, and traffic speeds were provided by the project engineer and used as the future traffic for areas between Ocean Blvd. and SR-60.

Table 3.14-2 summarizes the traffic noise modeling results for the design-year conditions with and without the project for each alternative. Predicted design-year traffic noise levels with the

project are compared to existing conditions and to design-year no-build conditions. The comparison to existing conditions is included in the analysis to identify traffic noise impacts related to substantial increase under 23 CFR 772. The comparison to the future no build condition indicates the traffic noise increase resulting from the project. Traffic noise impacts are predicted to occur at Activity Category B, C, D, and E land uses within the Study Area, and noise abatement has been considered at all noise receptors where such impacts were predicted.

3.14.5 Noise Abatement Consideration

In accordance with the Noise Control Act of 1972 and 23 CFR 772, noise abatement was considered where noise impacts were predicted in areas of frequent human use that would benefit from a lowered noise level. Potential noise abatement measures identified in the Traffic Noise Analysis Protocol (2011) include the following:

- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project;
- Constructing noise barriers;
- Acquiring property to serve as a buffer zone;
- Using traffic management measures to regulate types of vehicles and speeds; and
- Acoustically insulating public-use or nonprofit institutional structures.

All of these abatement options have been considered. However, because of the configuration and location of the project, abatement in the form of soundwalls, including Early Action Soundwalls, are the only types of abatement that are considered feasible. As part of the Early Action Soundwall Project, the Los Angeles County Metropolitan Transportation Authority (Metro) identified five miles of new soundwalls along I-710, plus an additional seven miles of existing soundwalls that can be aesthetically treated to match the new soundwalls. It is important to note that the No Build scenario for the purpose of this project analysis assumes that the Early Action Soundwall Project will have been completed. Early Action Soundwalls have been identified as those that can be constructed at the ultimate right of way in advance of the I-710 Corridor Project and its associated widening.

The following is a discussion of noise abatement considered for each Activity Category and evaluation area for which traffic noise impacts are predicted. Generally, soundwalls have been identified according to the alternative under which they are proposed; the 500 series naming convention identifies soundwalls analyzed under Alternative 5C and the 700 series naming convention identifies soundwalls analyzed under Alternative 7. Soundwalls analyzed that are not along the I-710 mainline are similar for both alternatives and identified by the freeway on which they are proposed (for example, SW-405A is located along I-405, and SW-91 is located along SR-91).

3.14.5.1 ACTIVITY CATEGORY A

There are no noise-sensitive receptors under this activity category.

3.14.5.2 ACTIVITY CATEGORY B

Most of the noise-sensitive land uses are residences along the I-710 between Ocean Blvd. and SR-60. Traffic noise impacts are considered to occur at receptor locations where predicted design-year noise levels are at least 12 dBA greater than existing noise levels (substantial noise increase), or where predicted design-year noise levels approach (within one dBA) or exceed the 67 dBA L_{eq}(h) NAC. All impacted residential areas within the project limits have been considered for noise abatement, and acoustically feasible soundwalls have been provided in the *Traffic Noise Study Report* for the proposed project. Table 3.14-2 shows all the impacted sites for which noise abatement has been considered. There are impacted residential areas where, due to the presence of an existing noise barrier, raising the height of the barrier did not achieve the minimum required five dBA noise attenuation and at least seven-dBA noise reduction at one or more benefited receptors. Under Alternative 5C, 121 Category B receptors are subject to A/E (Approaches/Exceeds) and/or SNI (Substantial Noise Increase) impacts. Under Alternative 7, 139 Category B receptors are subject to A/E and/or SNI impacts. The noise reduction charts are provided in Appendix B of the *Traffic Noise Study Report*.

3.14.5.3 ACTIVITY CATEGORY C

This activity category includes parks and recreational areas, golf courses, a medical facility, places of worship, schools, and cemeteries.

1. Golden Shore Recreational Vehicle (RV) Park (represented by noise barrier Site Nos. NB-A and NB.-B) is located south of Shoreline Dr. and east of the Los Angeles River. Noise measurements were conducted at a swimming pool and modeled at a nearby RV in order to determine noise impacts. Noise impacts are predicted to occur at the RV Park for both Alternatives 5C and 7, and noise abatement in the form of soundwalls has been considered.
2. Cesar E Chavez Park is located on the southeast corner of Shoreline Dr. and 6th St. east of the Los Angeles River in the City of Long Beach and is represented by Site Nos. NB-1 and NB-2. No noise impacts were identified at the park for both Alternatives 5C and 7, and no noise abatement has been considered.
3. Virginia Country Club is located between Interstate 405 (I-405) and Del Amo Blvd. along northbound I-710 in the City of Long Beach. Site No. NB-13 represents an outdoor golf course area. No impacts were identified at the golf course for either build alternative, and no noise abatement has been considered.

4. The City of Compton Golf Course is located between Alondra Blvd. and Compton/ Somerset Blvds. along northbound I-710 in the City of Compton. This golf course is represented by Site No. NB-27. Based on the noise analysis, noise impacts have been predicted to occur at this golf course for Alternative 7. Therefore, noise abatement in the form of a sound barrier was considered.
5. Ralph C. Dills Park is located between Somerset Blvd. and Rosecrans Ave. along northbound I-710 in the City of Paramount and is represented by Site No. NB-30. No noise impacts have been identified for this park under Alternative 5C. However, noise impacts were identified at this park because a substantial noise increase of 12 dB or more is predicted under Alternative 7. Noise abatement has been considered in the form of a soundwall along the proposed freight corridor.
6. Hollydale Park is located between Century Blvd. and Gardendale St. along northbound I-710 east of the Los Angeles River in the City of South Gate. This park is represented by Site No. NB-34. No noise impacts were identified at this park under both Alternatives 5C and 7, and no noise abatement was considered.
7. Julia Russ Asmus Park (represented by modeled Site No. NB-36B) is located at 8321 Jaboneria Rd. in the City of Bell Gardens. Traffic noise impacts have been predicted to occur at this park under both Alternatives 5C and 7. Noise abatement in the form of a soundwall was considered.
8. Bandini Park (Site No. NB-44M2) is located between Washington Blvd. and the rail yard to the north in the City of Commerce. Freeway traffic noise impacts have been predicted to occur under both Alternatives 5C and 7 at this park. Noise abatement in the form of a soundwall was considered for this area.
9. The Kingdom Hall (place of worship) is located along the I-710 southbound off-ramp at Willow St. in the City of Long Beach; however, there is no exterior area of frequent human use that would benefit from a lowered noise level. Iglesia Bautista (a place of worship) is located on the southwest corner of I-710 and Interstate 5 (I-5) and has no exterior area of frequent human use that would benefit from a lowered noise level.
10. Cesar E Chavez Elementary School is located between Broadway and 3rd St. along northbound I-710 in the City of Long Beach. This school is represented by Site Nos. NB-1A (inside classroom) and NB-1B (outside area of frequent human use). Based on the noise analysis, no traffic noise impacts were predicted to occur at this school for either of the build alternatives, and no noise abatement was considered.
11. Edison Elementary School is located between 6th St. and 7th St. along the northbound side of I-710 in the City of Long Beach. This school is represented by Site No. NB-3 (exterior). Based on the noise analysis, no noise impacts were predicted to occur at this school for either of the build alternatives, and no noise abatement was considered.

12. Perry Lindsey Academy is located at the northwestern corner of Del Amo Blvd. and Long Beach Blvd. along northbound I-710 in the City of Long Beach. This school is represented by Site No. NB-15 (exterior). No noise impacts were predicted to occur at this school for either build alternative, and no noise abatement was considered.
13. Colin Powell Academy is located between Long Beach Blvd. and Artesia Blvd./State Route 91 (SR-91) along southbound I-710 in the City of Long Beach. This school is represented by Site No. SB-19 (exterior). Based on the noise analysis, no noise impacts are predicted to occur at this school under either of the build alternatives, and no noise abatement was considered.
14. The Girls and Boys Town of Compton is located between Alondra Blvd. and Compton Blvd. along southbound I-710 in an unincorporated area of Los Angeles County, Rancho Dominguez. Site No. SB-34B (exterior) acoustically represents this residential, educational, and assessment center. The exterior noise levels at this facility exceeded the NAC under Alternative 7. Noise abatement in the form of a soundwall was considered.
15. Marco Antonio Firebaugh High School is located between I-105 and Martin Luther King Jr. Blvd. along southbound I-710 in the City of Lynwood. This school is represented by Site No. SB-50 (exterior). Site No. SB-50 has been used to calibrate the noise model even though there are no frequent human use areas that would benefit from a lowered noise level. Other locations on the playground were modeled, but no noise impacts were identified.
16. Vista High School is located between Martin Luther King Jr. Blvd. and Imperial Hwy. along southbound I-710 in the City of Lynwood. Site No. SB-53 was used to calibrate this site although there is no exterior area of frequent human use identified at this school. Based on the noise analysis, no noise impacts are predicted to occur at this school under either of the build alternatives, and no noise abatement was considered.
17. William Jefferson Clinton Elementary School is located between Alondra Blvd. and Somerset Blvd. along northbound I-710 to the east of the Los Angeles River in the City of Compton. This school is represented by Site No. NB-27C (exterior). The noise analysis indicates that there would be no freeway traffic noise impacts under either build alternative for this school. Therefore, no noise abatement has been considered.
18. Dominguez High School is also located between Alondra Blvd. and Somerset Blvd. along northbound I-710 to the east of the Los Angeles River in the City of Compton. This school is represented by Site No. NB-27B (exterior). Based on the analysis, traffic noise impacts have been predicted to occur at this school for exterior areas under Alternative 7 only. However, based on Traffic Noise Model (TNM) modeling, noise barriers on the mainline I-710, as well as on the truck lanes, would not provide the minimum required five-dBA noise level. Therefore, no barriers have been proposed for this school.

19. Hollydale School is located between Century Blvd. and McKinley Ave. along northbound I-710 in the City of South Gate. The school is represented by Site No. MNB-32 (exterior). Based on the noise analysis, no traffic noise impacts were predicted to occur at this school under either alternative, and no noise abatement was considered.
20. Bell Gardens Elementary School is located at 5620 Quinn St. in the City of Bell Gardens. The measured and predicted noise levels at Site Nos. NB-36 and NB-37 represent the exterior noise levels for this school. The playing field near the freeway is generally not considered an area of frequent human use that would benefit from a lowered noise level. However, since noise levels have been predicted to occur at representative sites for this school, sound barriers have been considered under both Alternatives 5C and 7.
21. Humphreys Ave. Elementary School is located at 500 South Humphreys Ave. in the City of Los Angeles. There are existing 12-foot-high soundwalls along the northbound I-710 that provide noise reduction to this school. The measured and predicted noise levels at Site No. NB-53 (a nearby residential site) are representative of the school area. Noise abatement has been considered since freeway traffic noise impacts have been predicted for this area. However, based on the noise analysis, increasing the height of the existing 12-foot-high soundwall to 16 feet would only provide a noise level reduction of one to two dB. Therefore, a higher soundwall would not provide the minimum required noise reduction of five dB for acoustical feasibility and seven dB noise reduction to at least one receptor for reasonableness.
22. The Los Angeles County Fire Station (which may contain housing for firefighters) is located near the southwest corner of I-710 and Whittier Blvd. This fire station is represented by Site No. SB-71M1. Because noise impacts have been identified under both Alternatives 5C and 7, noise abatement was considered in the form of a soundwall.
23. There are four cemeteries located within the project limits and all of them are situated west of I-710 and north of I-5. They include Mt. Zion Cemetery, Beth Israel Cemetery, Home of Peace Memorial Park, and Calvary Cemetery. While cemeteries are considered noise-sensitive land uses according to the Protocol, they must contain an area or facility for formalized memorial gathering. Individual grave sites, access ways, and informal activity areas are not considered individually sensitive receptors. None of these cemeteries has a formalized gathering area facing the freeway, and, therefore, no noise impacts have been identified.

3.14.5.4 ACTIVITY CATEGORY D

While there are several schools where interior noise measurements were conducted, none of the school interior classroom noise levels approached or exceeded the NAC of 52 dBA-L_{eq}(h). Also, there are two places of worship (discussed in Section 3.14.5.3 – Item Nos. 9 and 10) adjacent to the I-710, where the predicted worst-hour interior noise level would not approach or exceed the NAC of 52 dBA-L_{eq}(h).

3.14.5.5 ACTIVITY CATEGORY E

Noise-sensitive land uses under this activity category include a hotel, a motel, and a restaurant. The NAC under this category is 72 dBA-L_{eq}(h).

1. The Hilton Hotel, Long Beach (Site No. NB-C), is located on the northeast corner of Ocean Blvd. and Golden Ave., east of the Los Angeles River in the City of Long Beach. The swimming pool is located approximately 25 to 30 feet above ground in elevation. No traffic noise impacts are predicted to occur at the swimming pool area under either build alternative.
2. The Luxury Inn Motel is located just north of Long Beach Blvd. along southbound I-710. The outdoor frequent human use area (spa) associated with the motel is represented by Site No. SB-20. Noise impacts have been predicted to occur at this location under Alternative 7.
3. A McDonald's Restaurant is located at the southwest corner of Olympic Blvd. and Eastern Ave. in the City of Los Angeles. The outdoor seating area associated with the fast-food restaurant is represented by Site No. SB-70M4. Noise impacts have been predicted to occur at this restaurant for both Alternatives 5C and 7. Noise abatement in the form of a soundwall was considered.

3.14.5.6 ACTIVITY CATEGORY F

There are many industrial buildings, maintenance facilities, manufacturing, retail facilities, and warehousing units located within the project limits. Additionally, there is a logging facility, a bus yard, and several rail yards identified along the I-710 within project limits. However, since no areas of frequent human use were identified in this category, noise abatement was not necessary to consider.

3.14.5.7 FEASIBILITY

Caltrans' *Traffic Noise Analysis Protocol* (Noise Protocol) sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum five-dBA (for projects using the 2011 Noise Protocol) in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. Each soundwall was evaluated for feasibility based on achievable noise reduction. For each sound barrier found to be acoustically feasible, the reasonable cost allowances were calculated. The following is a description of the acoustic feasibility of sound barriers for the build alternatives. The locations of acoustically feasible soundwalls for the build alternatives are shown on Figures 3.14-2 and 3.14-3 (these figures are located at the end of this section in order to not break up the text for the reader). Soundwalls that may not be considered feasible in this analysis but are identified to be constructed as part of the Early Action Soundwall Program will be funded with local funds and not subject to federal reimbursement.

ALTERNATIVE 5C

- Soundwall SW-500 would benefit the Golden Shore RV Park located on the southwest corner of Shoreline Dr. and Golden Shore Dr. in the City of Long Beach. SW-500 (a range of eight to 16 feet) would provide noise reduction in the range of seven-to-11-dBA to the park residents. SW-500 has been recommended for construction at a height of ten feet as part of the Early Action Soundwall Project. The location of this soundwall is shown on Figure 3.14-2 (sheet 2).
- Soundwalls SW-501A+B+C would benefit the residential area consisting of single-family homes located between Pacific Coast Hwy. and Willow St. along southbound I-710 in the City of Long Beach. SW-501 would replace the entire existing ten-to-12-foot-high soundwall in this area to accommodate the widening along I-710. SW-501A+B+C would provide a five-to-15-dBA noise reduction to up to 185 receptors. As part of the Early Action Soundwall Project, SW-501 (Segments 1 through 7) has been recommended for construction at a height of 16 feet from Pacific Coast Hwy. to W. 25th St. and a height of 12 feet from W. 25th St. to Willow St. The location of this soundwall is shown on Figure 3.14-2 (sheets 4 and 5).
- Soundwall SW-501D would be proposed for construction along Pacific Coast Hwy. in the City of Long Beach to benefit the residential area consisting of mostly single-family homes located immediately east of the Los Angeles River. SW-501D would benefit (five-to-eight dBA) approximately ten homes in this area with acoustically feasible wall heights of ten-to-16 feet. The location of this soundwall is shown on Figure 3.14-2 (sheet 4).
- Soundwall SW-502 would benefit the residential area consisting of mainly single-family homes located between Willow St. and Wardlow Rd. along southbound I-710 in the City of Long Beach. SW-502 would completely remove and replace the existing ten-foot-high soundwall in this area to accommodate widening along I-710. The current loop off-ramp at Wardlow Rd. on southbound I-710 would be closed. SW-502 is predicted to provide a ten-to-15-dBA noise reduction to about 78 to 218 residences in this area. As part of the Early Action Soundwall Project, SW-502 (Segments 1 through 4) has been recommended for construction at a height of 12 feet from Willow St. to W. 27th St. and a height of 16 feet from W. 27th St. to Wardlow Rd. The location of this soundwall is shown on Figure 3.14-2 (sheets 5 and 6).
- Soundwall SW-502A would benefit the residential area located north of Wardlow Rd. to Baker St. along southbound I-710 in the City of Long Beach. SW-502A would remove and replace the existing ten -foot-high soundwall and would be constructed on the edge of shoulder of the truck bypass lanes. SW-502A would provide a six-to-nine-dBA noise reduction to about three to eight homes in this area just south of the I-710/I-405 interchange. The location of this soundwall is shown on Figure 3.14-2 (sheet 6).

- Soundwall SW-502B would benefit the residential area consisting of mostly single-family homes located between Baker St. and I-405 along the southbound I-405 to the southbound I-710 connector in the City of Long Beach. SW-502B would provide acoustic benefit in the range of seven-to-11-dBA to four to 18 homes in this area. As part of the Early Action Soundwall Project, SW-502B (labeled as SW-502—Segments 6 and 7) has been recommended for construction at a height of 16 feet along the State right-of-way line. The location of this soundwall is shown on Figure 3.14-2 (sheets 6 and 9).
- Soundwall SW-502C would benefit the impacted residential area along eastbound Wardlow Rd. just west of the I-710 in the City of Long Beach. SW-502C would benefit about seven homes along Wardlow Rd. that do not have property walls in their backyards. For the homes that do have the five-foot-high property walls, a noise barrier is not able to achieve the minimum required five-dBA noise reduction. It is important to note that this sound barrier has been proposed outside of the Caltrans' right of way and onto the City of Long Beach right of way. Therefore, before finalizing the design of this barrier, input from all affected homeowners and the City of Long Beach must be considered. The location of this soundwall is shown on Figure 3.14-2 (sheets 6 and 8).

  Since noise impacts were identified on westbound Wardlow Rd. (represented by Sites #MSB16A-C), just west of the I-710, noise abatement was considered. However, the sound barrier provided only a two-to-three-dBA noise reduction, and therefore, did not meet the acoustical feasibility requirement.
- Soundwall SW-405A1 would be proposed for construction on the edge of shoulder along northbound I-405 between Salmon Ave. and Santa Fe Ave., west of the I-710 in the City of Long Beach. SW-405A1 would remove and replace the existing sound barrier and would provide a five-to-eight-dBA noise reduction for about eight to 37 homes along 221st Place. The location of this soundwall is shown on Figure 3.14-2 (sheets 7 and 8).
- Soundwall SW-405A2 would be proposed for construction on the edge of shoulder along southbound I-405 between S. McHelen Ave. and Santa Fe Ave. west of the I-710 in the City of Long Beach. SW-405A2 is a new wall that would connect the existing sound barrier immediately to the west. This barrier is predicted to provide a five-to-six-dBA noise reduction to one to three homes located south of Wardlow Rd. The location of this soundwall is shown on Figure 3.14-2 (sheets 7 and 8).
- Soundwall SW-405B would be proposed for construction on the edge of shoulder along the northbound I-710 to the southbound I-405 connector and then transition onto the southbound I-405 mainline in the City of Long Beach. This soundwall would remove and replace the existing soundwalls, close the barrier gap over Pacific Pl./Metro Blue Line Bridge, and connect to the existing sound barrier at Cedar Ave. in Long Beach. SW-405B at a height of 16 feet is predicted to provide a five-dBA noise reduction to about nine homes in this area. The location of this soundwall is shown on Figure 3.14-2 (sheet 10).

- Soundwall SW-405C1 has been recommended (as part of the Early Action Soundwall Project – SW-405C Segment 1) for construction at a height of 16 feet (1,239 feet long) and would be located on the City of Long Beach right of way along Del Mar Ave. near the Metro Blue Line tracks. There are no freeway noise impacts identified in this area as part of the proposed project in order to improve the I-710. Also, this barrier is considered acoustically not feasible as it does not provide the minimum required noise level of five dBA. The location of this soundwall is shown on Figure 3.14-2 (sheet 10).
- Soundwall SW-405C2 also has been recommended (as part of the Early Action Soundwall Project – SW-405C Segment 2) for construction at a height of 16 feet (1,007 feet long) and located on the edge of shoulder along the northbound I-405 to northbound I-710 connector in the City of Long Beach. This residential area would likewise not be impacted by the freeway traffic noise from the proposed project. Similarly, this barrier would also be considered not acoustically feasible as it would provide only a three-dBA noise reduction. The location of this soundwall is shown on Figure 3.14-2 (sheet 10).
- Soundwall SW-405C3 too has been recommended (under the Early Action Soundwall Project – SW-405C Segments 4 through 6) for construction at a height of 16 feet and 740 feet in length. It would be located on the State right of way along the northbound I-405 off-ramp at Long Beach Blvd in the City of Long Beach. This residential area, although outside the limits for the I-710 Corridor Project, has been identified for noise impacts based on predicted noise levels. This 16-foot-high wall is also considered acoustically feasible, providing an eight-dBA noise reduction to four receivers. The location of this soundwall is shown on Figure 3.14-2 (sheet 11).
- Soundwall SW-503A+B would benefit the residential area consisting of mostly single-family homes located between Long Beach Blvd. and Artesia Blvd. along southbound I-710 in the City of Long Beach. Both soundwalls would completely remove and replace the existing eight-foot-high soundwalls to accommodate widening. These walls combined provide a seven-to-12-dBA noise reduction to approximately 39 to 49 receptors in this area. SW-503A has been recommended for construction at a height of 16 feet as part of the Early Action Soundwall Project (labeled as SW-503A – Segment 1 and SW-503B – Segment 1). SW-503B has been recommended for construction at a height of 16 feet as part of the Early Action Soundwall Project (labeled as SW-503B – Segments 2, 3, and 4). The location of this soundwall is shown on Figure 3.14-2 (sheets 14 and 17).
- Soundwall SW-91A would be proposed for construction on the edge of shoulder along the southbound SR-91 off-ramp at Long Beach Blvd in the City of Long Beach. SW-91A would remove and replace the existing ten-foot-high sound barrier to accommodate the widening of this realigned off-ramp. This wall provides only a one-dBA noise reduction at the maximum height of 16 feet due to the new retaining wall providing additional shielding to this area.

- Soundwall SW-91B+C would combine to provide a six-to-nine-dBA noise reduction to about 55 to 64 residences along E. 67th St. on the eastbound SR-91 in the City of Long Beach. SW-91B would be proposed for construction on the edge of shoulder along the northbound I-710 to the eastbound SR-91 connector transitioning onto the mainline eastbound SR-91 and up to Lime Ave. SW-91C would be constructed on the edge of shoulder along eastbound SR-91 from Atlantic Ave. to Cherry Ave. in Long Beach. It must be noted that both of these walls must be constructed because of the widening of SR-91 that would remove the existing ten-to-12-foot-high soundwall in this area. The location of this soundwall is shown on Figure 3.14-2 (sheets 17, 18, and 19).
- Soundwall SW-504 would be proposed for construction on the edge of shoulder along the southbound I-710 from Greenleaf Blvd. to Alondra Blvd. in the City of Compton. This soundwall would remove and replace the existing eight-to-12-foot-high soundwall to accommodate widening of the I-710. It would join the existing eight-foot-high sound barrier near the power lines at Greenleaf Blvd. SW-504 is predicted to provide an eight-to-12-dBA noise reduction to approximately 30 to 60 homes in this area. The location of this soundwall is shown on Figure 3.14-2 (sheet 20).
- Soundwall SW-505 would be proposed for construction on the edge of shoulder along the southbound I-710 off-ramp at Alondra Blvd. in the City of Compton. This soundwall would remove and replace the existing 12-foot-high soundwall along State right of way protecting the residential area along Gibson Ave. and a newly constructed developer's sound barrier (eight-feet high) that is providing noise attenuation for Seasons (a senior apartment complex) to accommodate widening of the I-710. SW-505 would provide a six-to-eight-dBA noise reduction to approximately six to 17 homes in this area, including a small park, for the aforementioned apartment complex. Also, this barrier would join SW-506. The location of this soundwall is shown on Figure 3.14-2 (sheet 20).
- Soundwall SW-506 would be proposed for construction on the State right of way (and would also join SW-505) along the southbound I-710 between Myrrh St. and Compton Blvd. in the City of Compton. It would provide a five-to-eight-dBA noise reduction to 15 to 25 receptors to this residential area. It would also remove and replace a 12-foot-high soundwall for the Girls and Boys Town facility located at the southwest corner of the I-710 and Compton Blvd. SW-506 has been recommended for construction at a height of 16 feet as part of the Early Action Soundwall Project (labeled as SW-507 – Segment 2). The location of this soundwall is shown on Figure 3.14-2 (sheets 20 and 21).
- Soundwall SW-507 would be proposed for construction on top of a retaining wall along the southbound I-710 off-ramp at Rosecrans Ave. in the City of Lynwood. Although this area is considered barely impacted by the proposed project, the noise abatement is not acoustically feasible as it provides only a four-dBA noise reduction. However, SW-507 has been recommended for construction at a height of 14 feet as part of the Early Action

Soundwall Project (labeled as SW-614 – Segments 1 and 2). The location of this soundwall is shown on Figure 3.14-2 (sheets 21 and 22).

- Soundwall SW-508 would be proposed for construction on the edge of shoulder along eastbound Imperial Hwy. (SR-90) transitioning onto the southbound I-710 on-ramp in the City of Lynwood. SW-508 is predicted to provide a five-dBA noise reduction to about seven homes in this area. The location of this soundwall is shown on Figure 3.14-2 (sheets 23 and 24).
- Soundwall SW-509 would be proposed for construction on the edge of shoulder along the southbound I-710 off-ramp at Imperial Hwy. (SR-90) in the City of South Gate. This barrier would need to be extended over the Los Angeles River Bridge in order to provide the required noise reduction to the impacted homes along Blumont Rd. SW-509 is predicted to provide a six-to-eight-dBA noise reduction to 27 to 30 homes in this area. The location of this soundwall is shown on Figure 3.14-2 (sheet 24).
- Soundwalls SW-510A+B+C would be proposed for construction to provide noise reduction to the Thunderbird Villa Mobile Home Park located along southbound I-710 between Miller Way and Southern Ave. SW-510A and SW-510B would be located along the frontage road on the City of South Gate right of way. SW-510C would be located along the freeway edge of shoulder within the State right of way. SW-510A+B+C have been recommended as part of the Early Action Soundwall Project (marked as SW-509—Segments 1 through 4) at a height of 16 feet and totaling 1,948 feet in length. These barriers would provide up to a ten-dBA noise reduction for up to 65 mobile homes at Thunderbird Villa. The location of this soundwall is shown on Figure 3.14-2 (sheets 24 and 25).
- Soundwalls SW-511A+B would be proposed for construction on the right of way between Shull St. and Cecilia St. along northbound I-710 in the Cities of Cudahy and Bell Gardens. These walls are separated by a channel that connects to the Los Angeles River to the west. It must be noted that SW-511A+B have been recommended as part of the Early Action Soundwall Project (marked as SW-510 – Segments 1 and 2) at a height of 16 feet and totaling 1,333 feet in length. These barriers would provide an eight-to-12-dBA noise reduction to about 20 homes in this area as well as to Julia Russ Asmus Park. The location of this soundwall is shown on Figure 3.14-2 (sheet 26).
- Soundwall SW-511C would be proposed for construction on the edge of shoulder along the northbound I-710 from Cecilia St. (joining SW-511B) to Clara St. in the Cities of Cudahy and Bell Gardens. This sound barrier would completely remove and replace the existing ten-to-12-foot-high soundwall to accommodate widening of the I-710. SW-511C is predicted to provide a five-to-11-dBA noise reduction to approximately ten to 27 homes in this area including the Bell Gardens Elementary School. The location of this soundwall is shown on Figure 3.14-2 (sheet 26).

- Soundwalls SW-512A+B have been predicted to provide a five-to-six-dBA noise reduction to the residential area and Bandini Park located along northbound I-710 at the Washington Blvd. on-ramp in the City of Commerce. SW-512A would be located on the on-ramp while SW-512B would be located on the proposed connector from northbound I-710 to northbound I-5. SW-512A would completely remove and replace an existing 15-foot-high soundwall to accommodate the new on-ramp configuration. Both SW-512A and SW-512B (parallel to each other) have been predicted to benefit 12 to 25 receptors in this area. The location of this soundwall is shown on Figure 3.14-2 (sheets 30 and 31).
- Soundwalls SW-513A+B have been predicted to provide a five-to-nine-dBA noise reduction to the residential area located along southbound I-710 at the Washington Blvd. off-ramp in the City of Commerce. SW-513A would be located on the off-ramp while SW-513B would be located on the mainline southbound I-710. SW-513A would completely remove and replace an existing 15-foot-high sound barrier to allow for new off-ramp configuration. Both SW-513A and SW-513B (parallel to each other) have been predicted to benefit four to 16 receptors in this area. The location of this soundwall is shown on Figure 3.14-2 (sheets 30 and 31).
- Soundwalls SW-514A+B have been predicted to provide a six-to-nine-dBA noise reduction to the residential area located along northbound I-710 between Noakes St. and Olympic Blvd. in the City of Commerce and the community of East Los Angeles. SW-514A would be located on the mainline northbound I-710 while SW-514B would be located on the newly proposed connector from northbound I-710 to northbound I-5. SW-514A would completely remove and replace an existing 12-foot-high sound barrier that is located on the northbound I-710 mainline and would continue over the I-5 interchange to the Olympic Blvd. off-ramp. Both SW-514A and SW-514B (parallel to each other) have been predicted to benefit 21 to 53 receptors in this area. The location of this soundwall is shown on Figure 3.14-2 (sheets 30, 31, 32, and 33).
- Soundwall SW-515 would be proposed for construction on the edge of shoulder along southbound I-5 to the southbound I-710 connector in the City of Commerce and the community of East Los Angeles, removing and replacing the existing 12-foot-high sound barrier to allow for shifting of the mainline and ramps in this interchange area. Based on TNM modeling, although SW-515 does not provide the minimum required noise reduction to this residential area, it must be constructed in order to replace the existing sound barrier. The location of this soundwall is shown on Figure 3.14-2 (sheets 30, 31, 32 and 33).
- Soundwalls SW-516+SW-517 have been predicted to provide a five-to-ten-dBA noise reduction to about 14 to 62 single and multifamily residential units between Olympic Blvd. and Humphreys Ave. in the community of East Los Angeles. SW-516 would be proposed for construction on the edge of shoulder along the mainline northbound I-710 over the Olympic Blvd. Bridge. SW-517 would begin on the on-ramp from Olympic Blvd.

onto the mainline northbound I-710 and overlap with an existing 12-foot-high barrier near Humphreys Ave. Both of these barriers would remove and replace the existing 12-foot-high barriers within the limits. The location of this soundwall is shown on Figure 3.14-2 (sheets 32, 33, 34, and 35).

- Soundwall SW-518 would be proposed for construction on the edge of shoulder along southbound I-710 over the Olympic Blvd. Bridge in the community of East Los Angeles. SW-518 has been predicted to provide a five-to six- dBA noise reduction to one residence (immediately south of the cemetery) along Eastern Ave. and an outside frequent human use area at McDonald's. If this wall were to be constructed, it would obstruct the view of many commercial properties to/from the freeway. Before finalizing the design/construction of this wall, a concurrence from all affected property owners is necessary to obtain their input. Home of the Peace Park, a cemetery in this area, does not have a formalized gathering area that would benefit from a lowered noise level, and therefore, was not analyzed for noise impacts. The location of this soundwall is shown on Figure 3.14-2 (sheets 32 and 33).

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- Soundwall SW-700 would benefit the Golden Shore RV Park located on the southwest corner of Shoreline Dr. and Golden Shore Dr. in the City of Long Beach. SW-700 (a range of eight to 16 feet) and would provide noise reduction in the range of seven-to-11-dBA to the park residents. SW-700 has been recommended for construction at a height of ten feet as part of the Early Action Soundwall Project as SW-500. The location of this soundwall is shown on Figure 3.14-3 (sheet 2).
- Soundwalls SW-701A+B+C would benefit the residential area consisting of single-family homes located between Pacific Coast Hwy. and Willow St. along southbound I-710 in the City of Long Beach. SW-501 would replace the entire existing ten-to-12-foot-high soundwall in this area to accommodate the widening along I-710. SW-701A+B+C would provide a five-to- 14-dBA noise reduction to about 21 to 77 receptors. In addition, a sound barrier (SW-701TL) has been analyzed along the edge of shoulder of the elevated truck lanes from south of Pacific Coast Hwy. to just north of Willow St. However, SW-701TL in combination with SW-701A+B+C provides noise reduction to eight additional residences. This sound barrier (SW-701A+B+C) has been recommended for construction under the Early Action Soundwall Project as SW-501 (Segments 1 through 7) at a height of 16 feet from Pacific Coast Hwy. to W. 25th St. and a height of 12 feet from W. 25th St. to Willow St. The location of this soundwall is shown on Figure 3.14-3 (sheets 4 and 5).
- Soundwall SW-701D would be proposed for construction along the Pacific Coast Hwy. to benefit the residential area consisting of mostly single-family homes located immediately east of the Los Angeles River in the City of Long Beach. SW-701D would benefit (five-to-

eight-dBA) approximately ten homes in this area with acoustically feasible wall heights of ten-to-16 feet. The location of this soundwall is shown on Figure 3.14-3 (sheet 4).

- Soundwall SW-702 would benefit the residential area consisting of mainly single-family homes located between Willow St. and Wardlow Rd. along southbound I-710 in the City of Long Beach. SW-702 would completely remove and replace the existing ten-foot-high soundwall in this area to accommodate widening along I-710. The current loop off-ramp at Wardlow Rd. on southbound I-710 would be closed. SW-702 is predicted to provide ten-to-15-dBA noise reduction to about 76 to 185 residences in this area. This soundwall (SW-702) under the Early Action Soundwall Project, has been recommended for construction as SW-502 (Segments 1–4) at a height of 12 feet from Willow St. to W. 27th St. and a height of 16 feet from W. 27th St. to Wardlow Rd. The location of this soundwall is shown on Figure 3.14-3 (sheets 5 and 6).
- Soundwall SW-702A would remove and replace the existing ten-foot-high soundwall and would be proposed for construction on the edge of shoulder of the northbound I-405 to southbound I-710 connector in the City of Long Beach. Although SW-702A would not provide the minimum required noise abatement to the residential area located north of Wardlow Rd. to Baker St. along southbound I-710, it must be constructed to replace the existing sound barrier that would be removed to accommodate widening. The location of this soundwall is shown on Figure 3.14-3 (sheet 6).
- Soundwall SW-702B would benefit the residential area consisting of mostly single-family homes located between Baker St. and I-405 along the southbound I-405 to southbound I-710 connector in the City of Long Beach. SW-702B would provide acoustic benefit in the range of seven-to-11-dBA to four to 12 homes in this area. As part of the Early Action Soundwall Project, this sound barrier, SW-702B (labeled as SW-502 – Segments 6 and 7) has been recommended for construction at a height of 16 feet along the State right-of-way line. The location of this soundwall is shown on Figure 3.14-3 (sheets 6 and 9).
- Soundwall SW-702C would benefit the impacted residential area along eastbound Wardlow Rd. just west of the I-710 in the City of Long Beach. SW-702C would benefit about seven homes along Wardlow Rd. that do not have property walls in their backyards. For the homes that do have the five-foot-high property walls, a noise barrier is not able to achieve the minimum required five-dBA noise reduction. This sound barrier has been proposed outside of the Caltrans' right of way and onto the City of Long Beach right of way. Therefore, before finalizing the design of this barrier, input from all affected homeowners and the City of Long Beach must be considered. Since noise impacts were identified on westbound Wardlow Rd. (represented by Site Nos. MSB16A-C), just west of the I-710, noise abatement was considered. However, the sound barrier provided only a two-to-three-dBA noise reduction, and therefore, did not meet the acoustical feasibility requirement. The location of this soundwall is shown on Figure 3.14-3 (sheets 6 and 8).

- Soundwall SW-405A1 would be proposed for construction on the edge of shoulder along northbound I-405 between Salmon Ave. and Santa Fe Ave. west of the I-710 in the City of Long Beach. SW-405A1 would remove and replace the existing sound barrier and would provide a five-to-eight-dBA noise reduction for about eight to 37 homes along 221st Place. The location of this soundwall is shown on Figure 3.14-3 (sheets 7 and 8).
- Soundwall SW-405A2 would be proposed for construction on the edge of shoulder along southbound I-405 between S. McHelen Ave. and Santa Fe Ave., west of the I-710 in the City of Long Beach. SW-405A2 is a new wall that would connect the existing sound barrier immediately to the west. This barrier is predicted to provide a five-to-six-dBA noise reduction to one to three homes located south of Wardlow Rd. The location of this soundwall is shown on Figure 3.14-3 (sheets 7 and 8).
- Soundwall SW-405B would be proposed for construction on the edge of shoulder along the northbound I-710 to the southbound I-405 connector and then transition onto the southbound I-405 mainline in the City of Long Beach. This soundwall would remove and replace the existing soundwalls, close the barrier gap over Pacific Pl./Metro Blue Line Bridge, and connect to the existing sound barrier at Cedar Ave. in Long Beach. SW-405B at a height of 16 feet is predicted to provide a five-dBA noise reduction to about nine homes in this area. The location of this soundwall is shown on Figure 3.14-3 (sheet 10).
- Soundwall SW-405C1 has been recommended (as part of the Early Action Soundwall Project – SW-405C Segment 1) for construction at a height of 16 feet (1,239 feet long) and would be located on the City of Long Beach right of way along Del Mar Ave. near the Metro Blue Line tracks. It must be noted that there are no freeway noise impacts identified in this area as part of the proposed project to improve the I-710. Also, this barrier is considered acoustically not feasible as it does not provide the minimum required noise level of five dBA. The location of this soundwall is shown on Figure 3.14-3 (sheet 10).
- Soundwall SW-405C2 also has been recommended (as part of the Early Action Soundwall Project – SW-405C Segment 2) for construction at a height of 16 feet (1,007 feet long) and located on the edge of shoulder along the northbound I-405 to northbound I-710 connector in the City of Long Beach. This residential area is likewise not impacted by the freeway traffic noise by the proposed project. Similarly, this barrier is also not acoustically feasible as it provides only a three-dBA noise reduction. The location of this soundwall is shown on Figure 3.14-3 (sheet 10).
- Soundwall SW-405C3 too has been recommended (under the Early Action Soundwall Project – SW-405C Segments 4 through 6) for construction at a height of 16 feet and 740 feet in length. It would be located on the State right of way along the northbound I-405 off-ramp at Long Beach Blvd. in the City of Long Beach. This residential area, although outside the limits for the I-710 Corridor Project, has been identified for noise

impacts based on predicted noise levels. This 16-foot-high wall is also considered acoustically feasible, providing an eight-dBA noise reduction to four receivers. The location of this soundwall is shown on Figure 3.14-3 (sheet 11).

- Soundwalls SW-703A+B would benefit the residential area consisting of mostly single-family homes located between Long Beach Blvd. and Artesia Blvd. along southbound I-710 in the City of Long Beach. Both soundwalls would completely remove and replace the existing eight-foot-high soundwalls to accommodate widening. Because of the freight corridor, these walls would provide only a five-dBA noise reduction to approximately ten receptors in this area. Therefore, SW-703TL has also been analyzed along the truck lanes from Long Beach Blvd. to Artesia Blvd. The combination of these walls would provide about a seven-to-nine-dBA noise reduction to approximately 12 to 23 homes. SW-703A has been recommended for construction at a height of 16 feet. as part of the Early Action Soundwall Project (labeled as SW-503A – Segment 1 and SW-503B – Segment 1). SW-703B has been recommended for construction at a height of 16 feet as part of the Early Action Soundwall Project (labeled as SW-503B – Segments 2, 3, and 4). The location of this soundwall is shown on Figure 3.14-3 (sheets 14 and 17).
- Soundwalls SW-91A+B would combine to provide five-to seven-dBA noise reduction to about 14 to 26 residences along E. 67th St. on eastbound SR-91 in the City of Long Beach. SW-91A would be proposed for construction on the edge of shoulder along the northbound I-710 to eastbound SR-91 connector up to Lewis Ave. SW-91B would be constructed on the edge of shoulder along the mainline eastbound SR-91 from Lewis Ave. to Cherry Ave. (transitioning onto the off-ramp at Cherry Ave.) in Long Beach. Both of these walls must be constructed because of the widening of the SR-91 that would remove the existing ten to 12-foot-high soundwall in this area. The location of this soundwall is shown on Figure 3.14-3 (sheets 18 and 19).
- Soundwalls SW-91C+D would combine to provide a six-to-nine-dBA noise reduction to about 21 to 32 residences along E. Eleanor St. and E. Penfold St. (between Atlantic Ave. and Cherry Ave.) on the westbound SR-91 in the City of Long Beach. SW-91C would be proposed for construction on the edge of shoulder along the westbound SR-91 mainline from Cherry Ave. and Lewis Ave. SW-91D would be constructed on the edge of shoulder along the mainline westbound SR-91 from Lewis Ave. to Atlantic Ave. (transitioning onto the off-ramp at Atlantic Ave.) in Long Beach. It must be noted that both of these walls must be constructed because of the widening of SR-91 that would remove the existing ten-to-12-foot-high soundwall in this area. The location of this soundwall is shown on Figure 3.14-3 (sheets 18 and 19).
- Soundwalls SW-91E+F would remove and replace a good portion of the existing eight-to-12-foot-high soundwall along the edge of shoulder of the southbound I-710 to westbound SR-91 connector in the City of Long Beach. Although these walls would not provide the minimum required noise abatement to the adjacent residential area, they

must be constructed to replace the existing sound barriers that would be removed to accommodate widening. The location of this soundwall is shown on Figure 3.14-3 (sheets 16 and 17).

- Soundwall SW-704 would be proposed for construction on the edge of shoulder along the southbound I-710 from Greenleaf Blvd. to Alondra Blvd. in the City of Compton. This soundwall would remove and replace the existing eight-to-12-foot-high soundwall to accommodate widening of the I-710. It would join the existing eight-foot-high sound barrier near the power lines at Greenleaf Blvd. SW-704 is predicted to provide an eight-to-11-dBA noise reduction to approximately 30 to 45 homes in this area. The location of this soundwall is shown on Figure 3.14-3 (sheet 20).
- Soundwall SW-705 would be proposed for construction on the edge of shoulder along the southbound I-710 off-ramp at Alondra Blvd. in the City of Compton. This soundwall would remove and replace the existing 12-foot-high soundwall along State right of way protecting the residential area along Gibson Ave. and a newly constructed developer's sound barrier (eight-foot-high) that is providing noise attenuation for Seasons (a senior apartment complex) to accommodate widening of the I-710. SW-705 would provide a five-dBA noise reduction to three receptors in this area including a small park for the aforementioned apartment complex. Also, this barrier would join SW-706. Another barrier, SW-705TL, was analyzed on top of the freight corridor (southbound). Both of these walls combined would provide up to a seven-dBA noise reduction to the same number of receptors (three). The location of this soundwall is shown on Figure 3.14-3 (sheets 20 and 21).
- Soundwall SW-706 would be proposed for construction on the State right of way (would also join SW-705) along the southbound I-710 between Myrrh St. and Compton Blvd. in the City of Compton. Based on the analysis, due to the noise contribution from the freight corridor, SW-706 would not provide the minimum required noise reduction (five dBA) to this residential area. Additional analysis revealed that even by placing a barrier on top of the truck lanes, substantial noise reduction is not achieved. SW-706 would also remove and replace a 12-foot-high soundwall for the Girls and Boys Town facility located at the southwest corner of the I-710 and Compton Blvd. SW-706 has been recommended for construction at a height of 16 feet as part of the Early Action Soundwall Project (labeled as SW-507 – Segment 2). The location of this soundwall is shown on Figure 3.14-3 (sheets 20 and 21).
- Soundwall SW-706A would be proposed for construction on the State right of way along the southbound I-710 between Compton Blvd. and Rosecrans Ave. in the City of Compton. There is an existing 12-foot-high soundwall here whose height would need to be raised to 16 feet. This vertical extension of this existing barrier provides five-to-six-dBA noise reduction to about 50 residences in this area. And additionally, a sound barrier (SW-705TL) analyzed along the elevated truck lanes would provide a seven-dBA

noise reduction to about 70 residences. The location of this soundwall is shown on Figure 3.14-3 (sheet 21).

- Soundwall SW-707 would be proposed for construction on top of a retaining wall along the southbound I-710 off-ramp at Rosecrans Ave. in the City of Lynwood. SW-507 constructed at a height of 16 feet would provide a five-dBA noise reduction to this area. Also, SW-707 has been recommended for construction at a height of 14 feet as part of the Early Action Soundwall Project (labeled as SW-614 – Segments 1 and 2). The location of this soundwall is shown on Figure 3.14-3 (sheets 21 and 22).
- Soundwall SW-708 would be proposed for construction on the edge of shoulder along eastbound Imperial Hwy. (SR-90) transitioning onto the southbound I-710 on-ramp in the City of Lynwood. SW-708 (only at a height of 14 to 16 feet) is predicted to provide a five-dBA noise reduction to about seven homes in this area. Additional barrier SW-708TL along the freight corridor in the City of South Gate would not provide further acoustic benefit to any more residences in this area. The location of this soundwall is shown on Figure 3.14-3 (sheets 23 and 24).
- Soundwall SW-709 would be proposed for construction on the edge of shoulder along the southbound I-710 off-ramp at Imperial Hwy. (SR-90) in the City of South Gate. This barrier would need to be extended over the Los Angeles River Bridge in order to provide the required noise reduction to the impacted homes along Blumont Rd. SW-709 is predicted to provide a five-to-six-dBA noise reduction to ten to 30 homes in this area. Additional barrier SW-708TL along the freight corridor would not provide any more acoustic benefit to any more residences in this area. The location of this soundwall is shown on Figure 3.14-3 (sheet 24).
- Soundwalls SW-710A+B+C would be proposed for construction to provide noise reduction to the Thunderbird Villa Mobile Home Park located along southbound I-710 between Miller Way and Southern Ave. in the City of South Gate. SW-710A and SW-710B would be located along the frontage road on the City of South Gate right of way. SW-710C would be located along the freeway edge of shoulder within the State right of way. Based on the analysis, however, due to the addition of the freight corridor, none of these walls would provide the minimum required noise reduction to the Thunderbird Villa homes. Therefore, SW-710TL on top of the freight corridor has been analyzed, and based on the analysis, this wall (combined with SW-710A+B+C) would provide 11-to-14-dBA noise reduction to about 47 mobile homes. SW-710A+B+C have been recommended as part of the Early Action Soundwall Project (marked as SW-509 – Segments 1 through 4) at a height of 16 feet and totaling 1,948 feet in length. The location of this soundwall is shown on Figure 3.14-3 (sheets 24 and 25).
- Soundwalls SW-711A+B would be proposed for construction on the right of way between Shull St. and Cecilia St. along northbound I-710 in the Cities of Cudahy and Bell Gardens. These walls are separated by a channel that connects to the Los Angeles

River to the west. SW-711A+B have been analyzed to provide about five-to-seven-dBA noise reduction to about nine to ten homes in this area. Additionally, since the freight corridor runs right on top of the mainline I-710 in this area, SW-711TL has also been analyzed on top of the truck lanes. Combination of all these walls would provide a five-to-11-dBA noise reduction to about nine to 21 homes. It must be noted that SW-711A+B have been recommended as part of the Early Action Soundwall Project (marked as SW-510 – Segments 1 and 2) at a height of 16 feet and totaling 1,333 feet in length. The location of this soundwall is shown on Figure 3.14-3 (sheet 26).

- Soundwall SW-711C would be proposed for construction on the edge of shoulder along the northbound I-710 from Cecilia St. (joining SW-711B) to Clara St. in the Cities of Cudahy and Bell Gardens. This sound barrier would completely remove and replace the existing ten-to-12-foot-high soundwall to accommodate widening of the I-710. SW-711C is predicted to provide a five-dBA noise reduction to approximately 12 homes in this area including the Bell Gardens Elementary School. Additionally, a barrier (SW-711TL) has been analyzed that would provide greater acoustic benefit to this impacted area. SW-711C in combination with SW-711TL would provide about a nine-to-11-dBA noise reduction to up to 27 homes. The location of this soundwall is shown on Figure 3.14-3 (sheet 26).
- Soundwall SW-711D is a short (240 feet in length) sound barrier that would remove and replace the existing 12-foot-high sound barrier. This portion would be proposed for construction just south of the Gage Ave. Bridge along northbound I-710 in the Cities of Bell and Bell Gardens. Another sound barrier on top of the freight corridor (SW-712TL) has been analyzed in combination with SW-711D. Both of these walls combine to provide a five-dBA noise reduction to six receptors in this area. The location of this soundwall is shown on Figure 3.14-3 (sheet 27).
- Soundwall SW-711E would be proposed for construction on the newly proposed retaining wall between Gage Ave. and the UP Railroad Bridge in the Cities of Bell and Bell Gardens. SW-711E would remove and replace the existing eight-to-ten-foot-high sound barrier to accommodate widening. This barrier would provide a six-to-ten-dBA noise reduction to approximately seven to 14 residences in this area. Another barrier, SW-712TL has also been analyzed on top of the freight corridor. Both SW-711E and SW-712TL would combine to provide ten-dBA noise reduction to 20 homes at a height of 16 feet. SW-712TL does not provide any more noise reduction than SW-711E. SW-712TL, however, does provide benefit to additional receptors. The location of this soundwall is shown on Figure 3.14-3 (sheets 27 and 28).
- Soundwalls SW-712A+B have been predicted to provide a five-to-six-dBA noise reduction to the residential area and Bandini Park, located along northbound I-710 at the Washington Blvd. on-ramp in the City of Commerce. SW-712A would be located on the on-ramp while SW-712B would be located on the proposed connector from northbound

I-710 to northbound I-5. SW-712A would completely remove and replace an existing 15-foot-high soundwall to accommodate the new on-ramp configuration. Both SW-712A and SW-712B (parallel to each other) have been predicted to benefit 12 to 25 receptors in this area. The location of this soundwall is shown on Figure 3.14-3 (sheets 30 and 31).

- Soundwalls SW-713A+B have been predicted to provide a six-to-eight-dBA noise reduction to the residential area located along southbound I-710 at the Washington Blvd. off-ramp in the City of Commerce. SW-713A would be located on the off-ramp while SW-713B would be located on the mainline southbound I-710. SW-713A would completely remove and replace an existing 15-foot-high sound barrier to allow for new off-ramp configuration. Both SW-713A and SW-713B (parallel to each other) have been predicted to benefit six to 16 receptors in this area. The location of this soundwall is shown on Figure 3.14-3 (sheets 30 and 31).
- Soundwalls SW-714A+B have been predicted to provide six-to-nine-dBA noise reduction to the residential area located along northbound I-710 between Noakes St. and Olympic Blvd. in the City of Commerce and the community of East Los Angeles. SW-714A would be located on the mainline northbound I-710 while SW-714B would be located on the proposed connector from northbound I-710 to northbound I-5. SW-714A would completely remove and replace an existing 12-foot-high sound barrier that is located on the northbound I-710 mainline and would continue over the I-5 interchange to the Olympic Blvd. off-ramp. Both SW-714A and SW-714B (parallel to each other) have been predicted to benefit 21 to 53 receptors in this area. It is important to note that if this wall were to be constructed, it would obstruct the view of some commercial properties (near the off-ramp at Olympic Blvd.) to/from the freeway. Before finalizing a decision to design/construct this wall, a concurrence from all affected property owners is necessary to obtain their input. The location of this soundwall is shown on Figure 3.14-3 (sheets 30, 31 and 32).
- Soundwall SW-715 would be proposed for construction on the edge of shoulder along southbound I-5 to the southbound I-710 connector in the City of Commerce and the community of East Los Angeles, removing and replacing the existing 12-foot-high sound barrier to allow for shifting of the mainline and ramps/connectors in this interchange area. Based on TNM modeling, although SW-715 does not provide the minimum required noise reduction to this residential area, it must be constructed in order to replace the existing sound barrier. The location of this soundwall is shown on Figure 3.14-3 (sheets 30, 31 and 32).
- Soundwalls SW-716+SW-717 have been predicted to provide five-to-nine-dBA noise reduction to about 14 to 64 single and multifamily residential units between Olympic Blvd. and Humphreys Ave. in the community of East Los Angeles. SW-716 would be constructed on the edge of shoulder along the mainline northbound I-710 over the Olympic Blvd. Bridge. SW-717 would begin on the on-ramp from Olympic Blvd. onto the

mainline northbound I-710 and overlap with an existing 12-foot-high barrier near Humphreys Ave. Both of these barriers would remove and replace the existing 12-foot-high barriers within the limits. The location of this soundwall is shown on Figure 3.14-3 (sheets 32 and 33).

- Soundwall SW-718 would be proposed for construction on the edge of shoulder along southbound I-710 over the Olympic Blvd. Bridge in the community of East Los Angeles. SW-718 has been predicted to provide a six-dBA- noise reduction to one residence (immediately south of the cemetery) along Eastern Ave. and an outside frequent human use area at McDonald's. If this wall were to be constructed, it would obstruct the view of many commercial properties to/from the freeway. Before finalizing the design/ construction of this wall, a concurrence from all affected property owners is necessary to obtain their input. Home of the Peace Park, a cemetery in this area, does not have a formalized gathering area that would benefit from a lowered noise level, and therefore, is not analyzed for noise impacts. The location of this soundwall is shown on Figure 3.14-3 (sheet 32).
- Soundwall SW-719 would be proposed for construction on the edge of shoulder along the southbound I-710 off-ramp at Eastern Ave. in the community of East Los Angeles, joining the existing 12-foot-high sound barrier. This short barrier has been analyzed to provide a five-dBA noise reduction to the Los Angeles County Fire Department's building where sleeping quarters for the firefighters may be impacted. The location of this soundwall is shown on Figure 3.14-3 (sheet 32).

3.14.5.8 REASONABLENESS

The reasonableness of a soundwall is determined by comparing the estimated cost of the soundwall construction against the total reasonable allowance. The total reasonable allowance is determined based on the number of benefited residences multiplied by the reasonable allowance per residence. Additionally, in accordance with the Caltrans Traffic Noise Analysis Protocol (2011), each sound barrier must provide at least seven dBA of noise reduction at one or more benefited receiver(s) to be considered reasonable. Therefore, if the estimated sound barrier construction cost exceeds the total reasonable allowance or was not predicted to provide at least seven dBA of noise reduction at one or more benefited receiver, the sound barrier is determined to be not reasonable. However, if the estimated sound barrier construction cost is within the total reasonable allowance and is predicted to provide at least seven dBA of noise reduction at one or more benefited receiver, the sound barrier is determined to be reasonable.

The estimated construction cost was prepared based on escalated Caltrans 2015 Contract Cost Data. The unit costs for material used in the estimate are based on masonry construction, with a variety of foundation types applicable to site conditions. Some sections of soundwalls will be built on top of retaining walls and bridge structures. The cost of constructing the retaining walls or bridge structures was not included in the estimate for the soundwalls because the retaining

walls and bridge structures are to be built regardless of the placement of the soundwalls. Therefore, the cost to construct retaining walls or bridge structures is included as part of the overall project, not noise abatement. The viewpoints of benefited receptors (including those of property owners and residents of the benefited receptors) will also be taken into account prior to making a final decision on noise abatement.

Table 3.14-3 lists the acoustically feasible soundwalls for Alternatives 5C and 7 along with the design-year (2035) noise levels, the height, approximate length, the noise attenuation, number of benefited receptors, the reasonable allowance per benefited residence, the total reasonable allowances per barrier, the estimated soundwall construction cost, and whether the soundwall is reasonable.

3.14.5.9 Non-Acoustical Factors Relating to Feasibility

Factors not relating to acoustics that must be considered for sound barriers include: geometric standards, safety, maintenance, security, and utility relocations, geotechnical considerations, and visual impacts. Additional factors to consider include opinions of affected residents and input from the public and public agencies. Social, economic, legal, and technological factors also must be taken into consideration.

Non-acoustic feasibility issues associated with the proposed walls are not anticipated based on the current level of project design. Non-standard features (sight distance, etc.) for both alternatives have been identified. There are non-standard locations with sight obstructions (barrier and/or soundwall).

3.14.5.10 Preliminary Decision on Soundwalls

Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of barriers shown in Table 3.14-3, depending on the selected alternative. The following presents the preliminary noise abatement decision pertaining to each of the evaluated soundwalls under Alternatives 5C and 7. Some of these barriers are required because they would replace existing soundwalls that would be removed by the proposed project. The final decision on noise abatement will be made following the completion of public review of the Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) and the public involvement processes.

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C	SW-500[4]	Long Beach	8	626	7	Yes	16	Yes	$80,000	$1,280,000	$305,958	Yes
			10		9	Yes	24	Yes	$80,000	$1,920,000	$323.955	Yes
			12		10	Yes	24	Yes	$80,000	$1,920,000	$341,953	Yes
			14		10	Yes	24	Yes	$80,000	$1,920,000	$359,950	Yes
			16		11	Yes	25	Yes	$80,000	$2,000,000	$377,948	Yes
	SW-501A+B+C[4]	Long Beach	8	589 + 2,117 + 2,806	10	Yes	45	Yes	$80,000	$3,600,000	$2,693,990	Yes
			10		12	Yes	87	Yes	$80,000	$6,960,000	$2,852,460	Yes
			12		13	Yes	107	Yes	$80,000	$8,560,000	$3,010,930	Yes
			14		14	Yes	158	Yes	$80,000	$12,640,000	$3,169,400	Yes
			16		15	Yes	178	Yes	$80,000	$14,240,000	$3,327,870	Yes
	SW-501D	Long Beach	8	565	5	Yes	4	No	$80,000	$320,000	$276,144	Yes
			10		6	Yes	8	No	$80,000	$640,000	$292,388	Yes
			12		7	Yes	8	Yes	$80,000	$640,000	$308,631	Yes
			14		7	Yes	8	Yes	$80,000	$640,000	$324,875	Yes
			16		8	Yes	8	Yes	$80,000	$640,000	$341,119	Yes
	SW-502[4]	Long Beach	8	6,005	10	Yes	78	Yes	$80,000	$6,240,000	$2,934,944	Yes
			10		12	Yes	122	Yes	$80,000	$9,760,000	$3,107,588	Yes
			12		13	Yes	203	Yes	$80,000	$16,240,000	$3,280,231	Yes
			14		14	Yes	218	Yes	$80,000	$17,440,000	$3,452,875	Yes
			16		15	Yes	218	Yes	$80,000	$17,440,000	$3,625,519	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C	SW-502A[1]	Long Beach	8	509	6	Yes	3	No	$80,000	$240,000[2]	$133,147	Yes
			10		6	Yes	8	No	$80,000	$640,000[2]	$144,618	Yes
			12		7	Yes	8	Yes	$80,000	$640,000	$156,090	Yes
			14		8	Yes	8	Yes	$80,000	$640,000	$167,561	Yes
			16		9	Yes	8	Yes	$80,000	$640,000	$179,032	Yes
	SW-502B[4]	Long Beach	8	1,272	7	Yes	4	Yes	$80,000	$320,000	$621,690	No
			10		8	Yes	7	Yes	$80,000	$560,000	$658,260	No
			12		9	Yes	15	Yes	$80,000	$1,200,000	$694,830	Yes
			14		10	Yes	18	Yes	$80,000	$1,440,000	$731,400	Yes
			16		11	Yes	18	Yes	$80,000	$1,440,000	$767,970	Yes
	SW-502C	Long Beach	8	700	4	No	0	No	$80,000	$0	$237,475	N/A
			10		5	Yes	10	No	$80,000	$800,000	$257,600	Yes
			12		6	Yes	10	No	$80,000	$800,000	$277,725	Yes
			14		6	Yes	10	No	$80,000	$800,000	$297,850	Yes
			16		6	Yes	10	Yes	$80,000	$800,000	$317,975	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C	SW-405A1[1]	Long Beach	8	2,401	5	Yes	8	No	$80,000	$640,000	$542,237	Yes
			10		6	Yes	10	No	$80,000	$800,000	$587,587	Yes
			12		7	Yes	10	Yes	$80,000	$800,000	$632,937	Yes
			14		7	Yes	17	Yes	$80,000	$1,360,000	$678,287	Yes
			16		8	Yes	37	Yes	$80,000	$2,960,000	$723,638	Yes
	SW-405A2	Long Beach	8	1,218	4	No	0	No	$80,000	$0	$333,592	N/A
			10		5	Yes	1	No	$80,000	$80,000	$361,687	No
			12		5	Yes	2	No	$80,000	$160,000	$389,781	No
			14		6	Yes	3	No	$80,000	$240,000	$417,876	No
			16		6	Yes	3	No	$80,000	$240,000	$445,970	No
	SW-405B[1]	Long Beach	8	1,752	3	No	0	No	$80,000	$0	$489,227	N/A
			10		3	No	0	No	$80,000	$0	$530,455	N/A
			12		4	No	0	No	$80,000	$0	$571,682	N/A
			14		4	No	0	No	$80,000	$0	$612,910	N/A
			16		5	Yes	9	No	$80,000	$720,000[2]	$654,137	Yes
	SW-405C1[4]	Long Beach	8	1,239	2	No	0	No	$80,000	$0	$420,331	N/A
			10		3	No	0	No	$80,000	$0	$445,952	N/A
			12		4	No	0	No	$80,000	$0	$491,573	N/A
			14		4	No	0	No	$80,000	$0	$527,195	N/A
			16		4	No	0	No	$80,000	$0	$562,816	N/A

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C	SW-405C2[4]	Long Beach	8	1,007	0	No	0	No	$80,000	$0	$341,625	N/A
			10		1	No	0	No	$80,000	$0	$370,576	N/A
			12		1	No	0	No	$80,000	$0	$399,527	N/A
			14		2	No	0	No	$80,000	$0	$428,479	N/A
			16		3	No	0	No	$80,000	$0	$457,430	N/A
	SW-405C3[4]	Long Beach	8	742	1	No	0	No	$80,000	$0	$251,045	N/A
			10		2	No	0	No	$80,000	$0	$272,320	N/A
			12		5	Yes	4	No	$80,000	$320,000	$293,595	Yes
			14		7	Yes	4	Yes	$80,000	$320,000	$314,870	Yes
			16		8	Yes	4	Yes	$80,000	$320,000	$336,145	No
	SW-503A+B[4]	Long Beach	8	2,166 + 1,926	7	Yes	39	Yes	$80,000	$3,120,000	$1,830,283	Yes
			10		9	Yes	39	Yes	$80,000	$3,120,000	$1,947,928	Yes
			12		10	Yes	47	Yes	$80,000	$3,760,000	$2,065,573	Yes
			14		11	Yes	49	Yes	$80,000	$3,920,000	$2,183,218	Yes
			16		12	Yes	49	Yes	$80,000	$3,920,000	$2,300,863	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C	SW-91A[1]	Long Beach	8	813	1	No	0	No	$80,000	$0	$233,835	N/A
			10		1	No	0	No	$80,000	$0	$253,851	N/A
			12		1	No	0	No	$80,000	$0	$273,867	N/A
			14		1	No	0	No	$80,000	$0	$293,883	N/A
			16		1	No	0	No	$80,000	$0	$313,898	N/A
	SW-91B[1]+91C[1]	Long Beach	8	1,351 + 5,069	6	Yes	55	No	$80,000	$4,400,000[2]	$1,351,423	Yes
			10		7	Yes	59	Yes	$80,000	$4,720,000	$1,464,123	Yes
			12		8	Yes	63	Yes	$80,000	$5,040,000	$1,576,823	Yes
			14		9	Yes	63	Yes	$80,000	$5,040,000	$1,689,523	Yes
			16		9	Yes	64	Yes	$80,000	$5,120,000	$1,802,223	Yes
	SW-504[1]	Compton	8	2,405	8	Yes	30	Yes	$80,000	$2,400,000	$528,782	Yes
			10		10	Yes	45	Yes	$80,000	$3,600,000	$572,959	Yes
			12		11	Yes	45	Yes	$80,000	$3,600,000	$617,136	Yes
			14		11	Yes	60	Yes	$80,000	$4,800,000	$661,313	Yes
			16		12	Yes	60	Yes	$80,000	$4,800,000	$705,491	Yes
	SW-505[1]	Compton	8	557	3	No	0	No	$80,000	$0	$576,236	N/A
			10		4	No	0	No	$80,000	$0	$610,133	N/A
			12		6	Yes	6	No	$80,000	$480,000	$644,029	No
			14		7	Yes	17	Yes	$80,000	$1,360,000	$677,925	Yes
			16		8	Yes	17	Yes	$80,000	$1,360,000	$711,821	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C	SW-506[4]	Compton	8	1,446	4	No	0	No	$80,000	$0	$706,733	N/A
			10		5	Yes	15	No	$80,000	$1,200,000	$748,305	Yes
			12		6	Yes	18	No	$80,000	$1,440,000	$789,878	Yes
			14		6	Yes	22	No	$80,000	$1,760,000	$831,450	Yes
			16		7	Yes	25	Yes	$80,000	$2,000,000	$873,023	Yes
	SW-507[4]	Lynwood	8	1,083	1	No	0	No	$80,000	$0	$367,408	N/A
			10		3	No	0	No	$80,000	$0	$398,544	N/A
			12		4	No	0	No	$80,000	$0	$429,680	N/A
			14		4	No	0	No	$80,000	$0	$460,817	N/A
			16		4	No	0	No	$80,000	$0	$491,953	N/A
	SW-508	Lynwood	8	1,343	2	No	0	No	$80,000	$0	$402,425	N/A
			10		3	No	0	No	$80,000	$0	$436,782	N/A
			12		4	No	0	No	$80,000	$0	$471,138	N/A
			14		4	No	0	No	$80,000	$0	$505,494	N/A
			16		5	Yes	7	No	$80,000	$560,000	$539,850	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C	SW-509	South Gate	8	2,320	4	No	0	No	$80,000	$0	$783,489	N/A
			10		6	Yes	27	No	$80,000	$2,160,000	$841,806	Yes
			12		7	Yes	27	Yes	$80,000	$2,160,000	$900,122	Yes
			14		7	Yes	28	Yes	$80,000	$2,240,000	$958,439	Yes
			16		8	Yes	30	Yes	$80,000	$2,400,000	$1,016,755	Yes
	SW-510A+B+C[4]	South Gate	8	84 + 997 + 867	5	Yes	23	No	$80,000	$1,840,000	$790,476	Yes
			10		7	Yes	46	Yes	$80,000	$3,680,000	$846,481	Yes
			12		9	Yes	65	Yes	$80,000	$5,200,000	$902,486	Yes
			14		9	Yes	65	Yes	$80,000	$5,200,000	$958,491	Yes
			16		10	Yes	65	Yes	$80,000	$5,200,000	$1,014,496	Yes
	SW-511A+B[4]	Cudahy / Bell Gardens	8	691 + 642	8	Yes	10	Yes	$80,000	$800,000	$651,504	Yes
			10		9	Yes	10	Yes	$80,000	$800,000	$689,828	Yes
			12		10	Yes	10	Yes	$80,000	$800,000	$728,151	Yes
			14		11	Yes	10	Yes	$80,000	$800,000	$766,475	Yes
			16		12	Yes	10	Yes	$80,000	$800,000	$804,799	No
	SW-511C[1]	Cudahy / Bell Gardens	8	2,013	5	Yes	10	No	$80,000	$800,000	$983,854	No
			10		5	Yes	12	No	$80,000	$960,000	$1,041,728	No
			12		9	Yes	20	Yes	$80,000	$1,600,000	$1,099,601	Yes
			14		10	Yes	25	Yes	$80,000	$2,000,000	$1,157,475	Yes
			16		11	Yes	27	Yes	$80,000	$2,160,000	$1,215,349	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C	SW-512A[1]+B	Commerce	8	1,548 + 1,772	3	No	0	No	$80,000	$0	$921,587	N/A
			10		3	No	0	No	$80,000	$0	$999,235	N/A
			12		5	Yes	12	No	$80,000	$960,000	$1,076,883	No
			14		5	Yes	22	No	$80,000	$1,760,000	$1,154,531	Yes
			16		6	Yes	25	No	$80,000	$2,000,000	$1,232,179	Yes
	SW-513A[1]+B	Commerce	8	1,272 + 843	5	Yes	4	No	$80,000	$320,000	$568,865	No
			10		6	Yes	8	No	$80,000	$640,000	$616,745	Yes
			12		7	Yes	10	Yes	$80,000	$800,000	$664,625	Yes
			14		8	Yes	12	Yes	$80,000	$960,000	$712,506	Yes
			16		9	Yes	16	Yes	$80,000	$1,280,000	$760,386	Yes
	SW-514A[1]+B	Commerce / East Los Angeles	8	2,585 + 1,765	6	Yes	21	No	$80,000	$1,680,000	$1,022,649	Yes
			10		7	Yes	24	Yes	$80,000	$1,920,000	$1,108,313	Yes
			12		7	Yes	27	Yes	$80,000	$2,160,000	$1,193,976	Yes
			14		8	Yes	47	Yes	$80,000	$3,760,000	$1,279,640	Yes
			16		9	Yes	53	Yes	$80,000	$4,240,000	$1,365,303	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C	SW-515[1]	Commerce / East Los Angeles	8	1,813	1	No	0	No	$80,000	$0	$375,291	N/A
			10		1	No	0	No	$80,000	$0	$406,565	N/A
			12		3	No	0	No	$80,000	$0	$437,840	N/A
			14		3	No	0	No	$80,000	$0	$469,114	N/A
			16		3	No	0	No	$80,000	$0	$500,388	N/A
	SW-516[1]+517[1]	East Los Angeles	8	1,305 + 2,587	5	Yes	14	No	$80,000	$1,120,000	$805,644	Yes
			10		7	Yes	14	Yes	$80,000	$1,120,000	$872,781	Yes
			12		8	Yes	30	Yes	$80,000	$2,400,000	$939,918	Yes
			14		9	Yes	42	Yes	$80,000	$3,360,000	$1,007,055	Yes
			16		10	Yes	62	Yes	$80,000	$4,960,000	$1,074,192	Yes
	SW-518	East Los Angeles	8	1,206	4	No	0	No	$80,000	$0	$249,642	N/A
			10		5	Yes	1	No	$80,000	$80,000	$270,446	No
			12		6	Yes	1	No	$80,000	$80,000	$291,249	No
			14		6	Yes	1	No	$80,000	$80,000	$312,053	No
			16		6	Yes	2	No	$80,000	$160,000	$332,856	No

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C (Design Option 3A)	SW-514A[1]+B	Commerce / East Los Angeles	8	2,426 + 1,765	6	Yes	21	No	$80,000	$1,680,000	$1,022,649	Yes
			10		7	Yes	24	Yes	$80,000	$1,920,000	$1,108,313	Yes
			12		7	Yes	27	Yes	$80,000	$2,160,000	$1,193,976	Yes
			14		8	Yes	47	Yes	$80,000	$3,760,000	$1,279,640	Yes
			16		9	Yes	53	Yes	$80,000	$4,240,000	$1,365,303	Yes
	SW-515[1]	Commerce / East Los Angeles	8	1,813	1	No	0	No	$80,000	$0	$375,291	N/A
			10		1	No	0	No	$80,000	$0	$406,565	N/A
			12		3	No	0	No	$80,000	$0	$437,840	N/A
			14		3	No	0	No	$80,000	$0	$469,114	N/A
			16		3	No	0	No	$80,000	$0	$500,388	N/A
	SW-516+A[1]+B[1]+517[1]	East Los Angeles	8	1,731+ 1,044+ 1,434+ 3,026	5	Yes	15	No	$80,000	$1,200,000	$1,825,154	No
			10		6	Yes	87	No	$80,000	$6,960,000	$1,978,437	Yes
			12		7	Yes	128	Yes	$80,000	$10,240,000	$2,131,721	Yes
			14		9	Yes	142	Yes	$80,000	$11,360,000	$2,285,004	Yes
			16		10	Yes	151	Yes	$80,000	$12,080,000	$2,438,288	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
5C (Design Option 3A)	SW-518	East Los Angeles	8	1,302	2	No	0	No	$80,000	$0	$269,514	N/A
			10		3	No	0	No	$80,000	$0	$291,974	N/A
			12		3	No	0	No	$80,000	$0	$314,433	N/A
			14		4	No	0	No	$80,000	$0	$336,893	N/A
			16		5	Yes	13	No	$80,000	$1,040,000	$359,352	Yes
	SW-519[1]+520[1]	East Los Angeles	8	1,512 + 1,445	4	No	0	No	$80,000	$0	$768,200	N/A
			10		5	Yes	14	No	$80,000	$1,120,000	$826,568	Yes
			12		7	Yes	25	Yes	$80,000	$2,000,000	$884,937	Yes
			14		8	Yes	27	Yes	$80,000	$2,160,000	$941,442	Yes
			16		8	Yes	27	Yes	$80,000	$2,160,000	$1,001,673	Yes
7	SW-700[4]	Long Beach	8	626	7	Yes	16	Yes	$80,000	$1,280,000	$305,958	Yes
			10		9	Yes	24	Yes	$80,000	$1,920,000	$323,955	Yes
			12		10	Yes	24	Yes	$80,000	$1,920,000	$341,953	Yes
			14		10	Yes	24	Yes	$80,000	$1,920,000	$359,950	Yes
			16		11	Yes	25	Yes	$80,000	$2,000,000	$377,948	Yes
	SW-701A+B+C[4]	Long Beach	8	589 + 2,117 + 2,806	9	Yes	21	Yes	$80,000	$1,680,000	$2,693,990	No
			10		11	Yes	47	Yes	$80,000	$3,760,000	$2,852,460	Yes
			12		12	Yes	55	Yes	$80,000	$4,400,000	$3,010,930	Yes
			14		13	Yes	77	Yes	$80,000	$6,160,000	$3,169,400	Yes
			16		14	Yes	77	Yes	$80,000	$6,160,000	$3,327,870	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-701A+B+C+ 701TL	Long Beach	16+8	5,512 + 7,231	15	Yes	85	Yes	$80,000	$6,800,000	$4,741,531	Yes
			16+10		15	Yes	85	Yes	$80,000	$6,800,000	$4,866,265	Yes
			16+16		15	Yes	85	Yes	$80,000	$6,800,000	$5,240,470	Yes
	SW-701D	Long Beach	8	565	5	Yes	4	No	$80,000	$320,000	$276,144	Yes
			10		6	Yes	8	No	$80,000	$640,000	$292,388	Yes
			12		7	Yes	8	Yes	$80,000	$640,000	$308,631	Yes
			14		7	Yes	8	Yes	$80,000	$640,000	$324,875	Yes
			16		8	Yes	8	Yes	$80,000	$640,000	$341,119	Yes
	SW-702[4]	Long Beach	8	6,005	11	Yes	76	Yes	$80,000	$6,080,000	$2,934,944	Yes
			10		12	Yes	109	Yes	$80,000	$8,720,000	$3,107,588	Yes
			12		13	Yes	175	Yes	$80,000	$14,000,000	$3,280,231	Yes
			14		14	Yes	185	Yes	$80,000	$14,800,000	$3,452,875	Yes
			16		15	Yes	185	Yes	$80,000	$14,800,000	$3,625,519	Yes
	SW-702A[1]	Long Beach	8	509	2	No	0	No	$80,000	$0	$99,510	N/A
			10		3	No	0	No	$80,000	$0	$108,290	N/A
			12		3	No	0	No	$80,000	$0	$117,070	N/A
			14		4	No	0	No	$80,000	$0	$125,850	N/A
			16		4	No	0	No	$80,000	$0	$134,631	N/A

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-702B[4]	Long Beach	8	1,272	7	Yes	4	Yes	$80,000	$320,000	$621,690	No
			10		8	Yes	7	Yes	$80,000	$560,000	$658,260	No
			12		9	Yes	7	Yes	$80,000	$560,000	$694,830	No
			14		10	Yes	12	Yes	$80,000	$960,000	$731,400	Yes
			16		11	Yes	12	Yes	$80,000	$960,000	$767,970	Yes
	SW-702C	Long Beach	8	700	4	No	0	No	$80,000	$0	$237,475	N/A
			10		5	Yes	7	No	$80,000	$560,000	$257,600	Yes
			12		6	Yes	7	No	$80,000	$560,000	$277,725	Yes
			14		6	Yes	7	No	$80,000	$560,000	$297,850	Yes
			16		7	Yes	7	Yes	$80,000	$560,000	$317,975	Yes
	SW-405A1[1]	Long Beach	8	2,401	6	Yes	8	No	$80,000	$640,000	$542,237	Yes
			10		6	Yes	10	No	$80,000	$800,000	$587,587	Yes
			12		7	Yes	10	Yes	$80,000	$800,000	$632,937	Yes
			14		8	Yes	17	Yes	$80,000	$1,360,000	$678,287	Yes
			16		8	Yes	37	Yes	$80,000	$2,960,000	$723,638	Yes
	SW-405A2	Long Beach	8	1,218	4	No	0	No	$80,000	$0	$333,592	N/A
			10		5	Yes	1	No	$80,000	$80,000	$361,687	No
			12		5	Yes	2	No	$80,000	$160,000	$389,781	No
			14		6	Yes	3	No	$80,000	$240,000	$417,876	No
			16		6	Yes	3	No	$80,000	$240,000	$445,970	No

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-405B[1]	Long Beach	8	1,752	3	No	0	No	$80,000	$0	$487,393	N/A
			10		3	No	0	No	$80,000	$0	$528,460	N/A
			12		4	No	0	No	$80,000	$0	$569,526	N/A
			14		4	No	0	No	$80,000	$0	$610,593	N/A
			16		5	Yes	9	No	$80,000	$720,000	$651,659	Yes
	SW-405C1[4]	Long Beach	8	1,239	2	No	0	No	$80,000	$0	$420,331	N/A
			10		3	No	0	No	$80,000	$0	$455,952	N/A
			12		4	No	0	No	$80,000	$0	$491,573	N/A
			14		4	No	0	No	$80,000	$0	$527,195	N/A
			16		4	No	0	No	$80,000	$0	$562,816	N/A
	SW-405C2[4]	Long Beach	8	1,007	0	No	0	No	$80,000	$0	$341,625	N/A
			10		1	No	0	No	$80,000	$0	$370,576	N/A
			12		1	No	0	No	$80,000	$0	$399,527	N/A
			14		2	No	0	No	$80,000	$0	$428,479	N/A
			16		3	No	0	No	$80,000	$0	$457,430	N/A

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-405C3[4]	Long Beach	8	742	1	No	0	No	$80,000	$0	$251,045	N/A
			10		2	No	0	No	$80,000	$0	$272,320	N/A
			12		5	Yes	4	No	$80,000	$320,000	$293,595	Yes
			14		7	Yes	4	Yes	$80,000	$320,000	$314,870	Yes
			16		8	Yes	4	Yes	$80,000	$320,000	$336,145	No
	SW-703A+B[4]	Long Beach	8	2,166 + 1,926	1	No	0	No	$80,000	$0	$1,789,469	N/A
			10		1	No	0	No	$80,000	$0	$1,907,114	N/A
			12		2	No	0	No	$80,000	$0	$2,024,759	N/A
			14		3	No	0	No	$80,000	$0	$2,142,404	N/A
			16		5	Yes	10	No	$80,000	$800,000	$2,260,049	No
	SW-703A+B+TL	Long Beach	16+8	4,092 + 4,198	7	Yes	12	Yes	$80,000	$960,000	$3,080,758	No
			16+10		8	Yes	21	Yes	$80,000	$1,680,000	$3,153,174	No
			16+16		9	Yes	23	Yes	$80,000	$1,840,000	$3,370,420	No
	SW-91A[1]+B[1]	Long Beach	8	2,396 + 3,241	5	Yes	14	No	$80,000	$1,120,000	$1,289,058	No
			10		5	Yes	18	No	$80,000	$1,440,000	$1,396,922	Yes
			12		6	Yes	21	No	$80,000	$1,680,000	$1,504,787	Yes
			14		6	Yes	21	No	$80,000	$1,680,000	$1,612,651	Yes
			16		7	Yes	26	Yes	$80,000	$2,080,000	$1,720,515	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-91C[1]+D[1]	Long Beach	8	3,362 + 1,665	6	Yes	21	No	$80,000	$1,680,000	$1,279,427	Yes
			10		7	Yes	26	Yes	$80,000	$2,080,000	$1,384,025	Yes
			12		8	Yes	30	Yes	$80,000	$2,400,000	$1,488,623	Yes
			14		8	Yes	30	Yes	$80,000	$2,400,000	$1,593,222	Yes
			16		9	Yes	32	Yes	$80,000	$2,560,000	$1,697,820	Yes
	SW-91E[1]+F[1]	Long Beach	8	2,350 + 476	3	No	0	No	$80,000	$0	$615,003	N/A
			10		3	No	0	No	$80,000	$0	$666,362	N/A
			12		4	No	0	No	$80,000	$0	$717,721	N/A
			14		4	No	0	No	$80,000	$0	$769,080	N/A
			16		4	No	0	No	$80,000	$0	$820,439	N/A
	SW-704[1]	Compton	8	2,405	8	Yes	30	Yes	$80,000	$2,400,000	$497,835	Yes
			10		9	Yes	45	Yes	$80,000	$3,600,000	$539,321	Yes
			12		10	Yes	45	Yes	$80,000	$3,600,000	$580,808	Yes
			14		11	Yes	45	Yes	$80,000	$3,600,000	$622,294	Yes
			16		11	Yes	45	Yes	$80,000	$3,600,000	$663,780	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-705[1]	Compton	8	557	1	No	0	No	$80,000	$0	$230,495	N/A
			10		2	No	0	No	$80,000	$0	$264,391	N/A
			12		3	No	0	No	$80,000	$0	$284,729	N/A
			14		4	No	0	No	$80,000	$0	$305,066	N/A
			16		5	Yes	3	No	$80,000	$240,000	$325,404	No
	SW-705+TL	Compton	16+8	557 + 4,391	7	Yes	3	Yes	$80,000	$240,000	$1,152,990	No
			16+10		7	Yes	3	Yes	$80,000	$240,000	$1,249,073	No
			16+16		7	Yes	3	Yes	$80,000	$240,000	$1,537,320	No
	SW-706[4]	Compton	8	1,446	1	No	0	No	$80,000	$0	$706,733	N/A
			10		1	No	0	No	$80,000	$0	$748,305	N/A
			12		1	No	0	No	$80,000	$0	$789,878	N/A
			14		1	No	0	No	$80,000	$0	$831,450	N/A
			16		1	No	0	No	$80,000	$0	$873,023	N/A
	SW-706+705TL	Compton	16+8	1,446 + 4,391	3	No	0	No	$80,000	$0	$1,731,463	N/A
			16+10		3	No	0	No	$80,000	$0	$1,807,208	N/A
			16+16		4	No	0	No	$80,000	$0	$2,034,442	N/A
	SW-706A	Compton	14	2,221	5	Yes	50	No	$80,000	$4,000,000	$1,277,075	Yes
			16		6	Yes	50	No	$80,000	$4,000,000	$1,340,929	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-706A+705TL	Compton	16+8	2,221 + 4,391	7	Yes	70	Yes	$80,000	$5,600,000	$2,199,369	Yes
			16+10		7	Yes	70	Yes	$80,000	$5,600,000	$2,275,114	Yes
			16+16		7	Yes	70	Yes	$80,000	$5,600,000	$2,502,348	Yes
	SW-707[4]	Lynwood	8	1,083	2	No	0	No	$80,000	$0	$367,408	N/A
			10		3	No	0	No	$80,000	$0	$398,544	N/A
			12		4	No	0	No	$80,000	$0	$429,680	N/A
			14		4	No	0	No	$80,000	$0	$448,362	N/A
			16		5	Yes	10	No	$80,000	$800,000	$491,953	Yes
	SW-708	Lynwood	8	1,343	3	No	0	No	$80,000	$0	$358,007	N/A
			10		4	No	0	No	$80,000	$0	$388,809	N/A
			12		4	No	0	No	$80,000	$0	$419,612	N/A
			14		5	Yes	7	No	$80,000	$560,000	$450,415	Yes
			16		5	Yes	7	No	$80,000	$560,000	$481,218	Yes
	SW-708+708TL	Lynwood / South Gate	16+8	1,343 + 4,031	5	Yes	7	No	$80,000	$560,000	$1,276,592	No
			16+10		5	Yes	7	No	$80,000	$560,000	$1,357,840	No
			16+16		5	Yes	7	No	$80,000	$560,000	$1,601,582	No

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-709	South Gate	8	2,320	3	No	0	No	$80,000	$0	$623,070	N/A
			10		4	No	0	No	$80,000	$0	$675,510	N/A
			12		5	Yes	10	No	$80,000	$800,000	$727,950	Yes
			14		5	Yes	19	No	$80,000	$1,520,000	$780,390	Yes
			16		6	Yes	30	No	$80,000	$2,400,000	$832,830	Yes
	SW-709+708TL	South Gate	16+8	2,320 + 4,031	6	Yes	30	No	$80,000	$2,400,000	$1,581,687	Yes
			16+14		6	Yes	30	No	$80,000	$2,400,000	$1,854,461	Yes
			16+16		6	Yes	30	No	$80,000	$2,400,000	$1,945,386	Yes
	SW-710A+B+C[4]	South Gate	8	84 + 997 + 867	1	No	0	No	$80,000	$0	$1,081,115	N/A
			10		2	No	0	No	$80,000	$0	$1,144,710	N/A
			12		3	No	0	No	$80,000	$0	$1,208,305	N/A
			14		3	No	0	No	$80,000	$0	$1,271,900	N/A
			16		3	No	0	No	$80,000	$0	$1,335,495	N/A
	SW-710A+B+C+710TL	South Gate	16+8	1,948 + 3,137	11	Yes	47	Yes	$80,000	$3,760,000	$1,948,779	Yes
			16+14		14	Yes	47	Yes	$80,000	$3,760,000	$2,111,118	Yes
			16+16		14	Yes	47	Yes	$80,000	$3,760,000	$2,165,232	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-711A+B[4]	Cudahy / Bell Gardens	8	691 + 642	3	No	0	No	$80,000	$0	$651,054	N/A
			10		4	No	0	No	$80,000	$0	$689,828	N/A
			12		4	No	0	No	$80,000	$0	$728,151	N/A
			14		5	Yes	9	No	$80,000	$720,000	$766,475	No
			16		7	Yes	10	Yes	$80,000	$800,000	$804,799	No
	SW-711A+B+TL	Cudahy / Bell Gardens	16+8	1,333 + 4,217	10	Yes	16	Yes	$80,000	$1,280,000	$1,629,222	No
			16+12		11	Yes	21	Yes	$80,000	$1,680,000	$1,774,709	No
			16+16		11	Yes	21	Yes	$80,000	$1,680,000	$1,920,195	No
	SW-711C[1]	Cudahy / Bell Gardens	8	2,013	4	No	0	No	$80,000	$0	$983,854	N/A
			10		4	No	0	No	$80,000	$0	$1,041,728	N/A
			12		5	Yes	10	No	$80,000	$800,000	$1,099,601	No
			14		5	Yes	10	No	$80,000	$800,000	$1,157,475	No
			16		5	Yes	12	No	$80,000	$960,000	$1,215,349	No
	SW-711C+711TL	Cudahy / Bell Gardens	16+8	2,013 + 4,217	9	Yes	25	Yes	$80,000	$2,000,000	$2,039,772	No
			16+12		10	Yes	27	Yes	$80,000	$2,160,000	$2,185,259	No
			16+16		11	Yes	27	Yes	$80,000	$2,160,000	$2,330,745	No

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-711D[1]	Bell / Bell Gardens	8	240	0	No	0	No	$80,000	$0	$46,920	N/A
			10		2	No	0	No	$80,000	$0	$51,060	N/A
			12		3	No	0	No	$80,000	$0	$55,200	N/A
			14		4	No	0	No	$80,000	$0	$59,340	N/A
			16		5	Yes	4	No	$80,000	$320,000	$63,480	Yes
	SW-711D+712TL	Bell / Bell Gardens	16+8	240 + 4,020	5	Yes	6	No	$80,000	$480,000	$849,390	No
			16+12		5	Yes	6	No	$80,000	$480,000	$988,080	No
			16+16		5	Yes	6	No	$80,000	$480,000	$1,126,770	No
	SW-711E[1]	Bell / Bell Gardens	8	1,235	6	Yes	7	No	$80,000	$560,000	$241,443	Yes
			10		7	Yes	7	Yes	$80,000	$560,000	$262,746	Yes
			12		8	Yes	7	Yes	$80,000	$560,000	$284,050	Yes
			14		9	Yes	10	Yes	$80,000	$800,000	$305,354	Yes
			16		10	Yes	14	Yes	$80,000	$1,120,000	$326,658	Yes
	SW-711E+712TL	Bell / Bell Gardens	16+8	1,235 + 4,020	10	Yes	20	Yes	$80,000	$1,600,000	$1,112,568	Yes
			16+12		10	Yes	20	Yes	$80,000	$1,600,000	$1,251,258	Yes
			16+16		10	Yes	20	Yes	$80,000	$1,600,000	$1,389,948	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-712A[1]+B	Commerce	8	1,548 + 1,772	4	No	0	No	$80,000	$0	$687,240	N/A
			10		4	No	0	No	$80,000	$0	$744,510	N/A
			12		5	Yes	12	No	$80,000	$960,000	$801,780	Yes
			14		5	Yes	22	No	$80,000	$1,760,000	$859,050	Yes
			16		6	Yes	25	No	$80,000	$2,000,000	$916,320	Yes
	SW-713A[1]+B	Commerce	8	1,272 + 843	0	No	0	No	$80,000	$0	$569,923	N/A
			10		6	Yes	6	No	$80,000	$480,000	$617,895	No
			12		7	Yes	10	Yes	$80,000	$800,000	$665,867	Yes
			14		8	Yes	12	Yes	$80,000	$960,000	$713,840	Yes
			16		8	Yes	16	Yes	$80,000	$1,280,000	$761,812	Yes
	SW-714A[1]+B	Commerce / East Los Angeles	8	2,585 + 1,765	6	Yes	21	No	$80,000	$1,680,000	$1,022,517	Yes
			10		7	Yes	24	Yes	$80,000	$1,920,000	$1,108,169	Yes
			12		7	Yes	27	Yes	$80,000	$2,160,000	$1,193,821	Yes
			14		9	Yes	47	Yes	$80,000	$3,760,000	$1,279,473	Yes
			16		9	Yes	53	Yes	$80,000	$4,240,000	$1,365,125	Yes

Table 3.14-3: Summary of Feasibility and Reasonableness Data for Soundwalls

Alternative	Sound Wall No.	City	Height (feet)	Approximate Length (feet)	Noise Attenuation (dBA)	Acoustically Feasible?	Number of Benefited Receptors	Acoustical Design Goal (7 dBA to one receptor) met?	Reasonable Allowance per Benefited Receptor	Total Reasonable Allowance per Barrier	Estimated Soundwall Construction Cost	Cost Less Than Allowance?
7	SW-715[1]	Commerce / East Los Angeles	8	1,813	1	No	0	No	$80,000	$0	$375,291	N/A
			10		2	No	0	No	$80,000	$0	$406,565	N/A
			12		3	No	0	No	$80,000	$0	$437,840	N/A
			14		3	No	0	No	$80,000	$0	$469,114	N/A
			16		3	No	0	No	$80,000	$0	$500,388	N/A
	SW-716[1]+717[1]	East Los Angeles	8	1,305 + 2,587	5	Yes	14	No	$80,000	$1,120,000	$805,644	Yes
			10		5	Yes	14	No	$80,000	$1,120,000	$872,781	Yes
			12		8	Yes	30	Yes	$80,000	$2,400,000	$939,918	Yes
			14		9	Yes	42	Yes	$80,000	$3,360,000	$1,007,055	Yes
			16		9	Yes	64	Yes	$80,000	$5,120,000	$1,074,192	Yes
	SW-718	East Los Angeles	8	1,206	4	No	0	No	$80,000	$0	$249,462	N/A
			10		4	No	0	No	$80,000	$0	$270,446	N/A
			12		6	Yes	1	No	$80,000	$80,000	$291,249	No
			14		6	Yes	1	No	$80,000	$80,000	$312,053	No
			16		6	Yes	2	No	$80,000	$160,000	$332,856	No
	SW-719	East Los Angeles	8	562	2	No	0	No	$80,000	$0	$116,334	N/A
			10		2	No	0	No	$80,000	$0	$126,029	N/A
			12		5	Yes	1	No	$80,000	$80,000	$135,723	No
			14		5	Yes	1	No	$80,000	$80,000	$145,418	No
			16		5	Yes	1	No	$80,000	$80,000	$155,112	No

Sources: California Department of Transportation. *I-710 Corridor Project Traffic Noise Study Report* (May 2016); *Noise Abatement Decision Report* (NADR) (June 2017).
[1] This soundwall must be constructed as a replacement of the existing soundwall to accommodate the proposed project widening.
[2] Although not reasonable, this soundwall must be provided as a replacement of the existing soundwall impacted by the proposed project.
[3] Although not feasible or reasonable, the final decision to construct this soundwall will be made prior to public review of the RDEIR/SDEIS.
[4] Sound barrier that is to be constructed as part of the Early Action Soundwall Project (EA-298000)
dBA = A=weighted decibels
I-710 = Interstate 710
$L_{eq}(h)$ = one-hour A-weighted equivalent continuous sound level
RDEIR/SDEIS = Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement

ALTERNATIVE 5C

- Soundwall SW-500 would benefit the Golden Shore RV Park located on the southwest corner of Shoreline Dr. and Golden Shore St. SW-500 would provide up to an 11-dBA noise reduction to 25 receptors at the Golden Shore RV Park. However, please note that SW-500 has been rejected by the City of Long Beach and as such, has not been recommended for construction as part of the Early Action Soundwall Project or the I-710 Corridor Project.
- Soundwalls SW-501A+B+C would benefit the residential area consisting of single-family homes located between Pacific Coast Hwy. and Willow St. along southbound I-710. SW-501 would replace the entire existing ten-to-12-foot-high soundwall in this area to accommodate the widening along I-710. SW-501A+B+C have been recommended at 16 feet in height, which would provide up to a 15-dBA noise reduction to 178 residences. Please note that as part of the Early Action Soundwall Project, SW-501 (Segments 1 through 7) has been recommended for construction at a 16-foot height from Pacific Coast Hwy. to W. 25th St. and at 12 feet in height from W. 25th St. to Willow St. SW-501A+B+C covers all segments (Segments 1 through 7) of the Early Action Soundwall Project.
- Soundwall SW-501D would be constructed along Pacific Coast Hwy. to benefit the residential area consisting of mostly single-family homes located immediately east of the Los Angeles River. SW-501D has been recommended for construction at 12 feet in height providing up to a seven-dBA noise reduction to eight receptors.
- Soundwall SW-502 would benefit the residential area consisting of mainly single-family homes located between Willow St. and Wardlow Rd. along southbound I-710. SW-502 would completely remove and replace the existing ten-foot-high soundwall in this area to accommodate widening along I-710. The current loop off-ramp at Wardlow Rd. on southbound I-710 would be closed. SW-502 is recommended for construction at 16 feet in height and it would provide up to a 15-dBA noise reduction to 218 residences in this area. Please note that as part of the Early Action Soundwall Project, SW-502 (Segments 1 through 4) has been recommended for construction at a 12-foot height from Willow St. to W. 27th St. and at 16 feet in height from W. 27th St. to Wardlow Rd.
- Soundwall SW-502A would benefit the residential area located north of Wardlow Rd. to Baker St. along southbound I-710. SW-502A would remove and replace the existing ten-foot-high soundwall and would be constructed on the edge of shoulder of the truck bypass lanes. SW-502A has been recommended at 16 feet in height and would provide up to a nine-dBA noise reduction to eight homes in this area just south of the I-710/I-405 interchange. SW-502A is identified as SW-502 (Segment 5) that could not be constructed because of the required widening.

- Soundwall SW-502B would benefit the residential area consisting of mostly single-family homes located between Baker St. and I-405 along the southbound I-405 to the southbound I-710 connector. SW-502B has been recommended at 16 feet in height and would provide acoustic benefit of up to an 11-dBA noise reduction to 18 homes in this area. Please note that as part of the Early Action Soundwall Project, SW-502B (labeled as SW-502 – Segments 6 and 7) has been recommended for construction at a 16 feet height along the State right of way line.
- Soundwall SW-502C would benefit the impacted residential area along eastbound Wardlow Rd. just west of the I-710 in Long Beach. SW-502C, recommended at 16 feet in height, would benefit seven homes along Wardlow Rd. that do not have property walls in their backyards. For the homes that do have the five-foot-high property walls, a noise barrier is not able to achieve the minimum required five-dBA noise reduction. It is important to note that this sound barrier has been proposed outside of the Caltrans' right of way and onto the City of Long Beach right of way. Therefore, before finalizing the design of this barrier, input from all affected homeowners and the City of Long Beach must be considered.
- Soundwall SW-405A1 would be constructed on the edge of shoulder along northbound I-405 between Salmon Ave. and Santa Fe Ave. west of the I-710 in the City of Long Beach. SW-405A1 would remove and replace the existing sound barrier and would be constructed at 16 feet in height to provide up to an eight-dBA noise reduction for 37 homes along 221st Place.
- Soundwall SW-405A2 was analyzed on the edge of shoulder along southbound I-405 between S. McHelen Ave. and Santa Fe Ave. west of the I-710 in Long Beach. SW-405A2 is a new wall that would connect the existing sound barrier immediately to the west. This barrier is predicted to provide a five-to-six-dBA noise reduction for only one-to-three homes located south of Wardlow Rd. Because the construction cost of this barrier exceeds the reasonable allowance by two times, it has not been recommended for construction.
- Soundwall SW-405B would be constructed on the edge of shoulder along the northbound I-710 to southbound I-405 connector and then transition onto the southbound I-405 mainline. This soundwall would remove and replace the existing soundwalls, close the barrier gap over the Pacific Place/Metro Blue Line Bridge, and connect to the existing sound barrier at Cedar Ave. in the City of Long Beach. SW-405B at 16 feet height is predicted to provide a five-dBA noise reduction to nine homes in this area. Although this barrier does not meet the seven-dBA noise reduction goal to be determined reasonable, it must be constructed in order to replace an existing soundwall that would be removed to accommodate freeway widening. If the wall were to not be constructed, the community would be exposed to a noise level of 69 dBA, a five-dBA increase over existing noise levels.

- Soundwall SW-405C1, located in the City of Long Beach right of way along Del Mar Ave. near the Metro Blue Line tracks, has not been recommended as there are no freeway noise impacts identified in this area as part of the proposed project and the barrier is considered acoustically not feasible as it does not provide the minimum required noise reduction of five dBA.
- Soundwall SW-405C2 located on the edge of shoulder along the northbound I-405 to the northbound I-710 connector in the City of Long Beach is likewise not recommended for construction as this residential area is also not impacted by the freeway traffic noise by the proposed project. Similarly, this barrier is also not acoustically feasible as it provides only a three-dBA noise reduction.
- Soundwall SW-405C3 would be located on the State right of way along the northbound I-405 off-ramp at Long Beach Blvd. This residential area, although outside the limits for the I-710 Corridor Project, has been identified for noise impacts based on predicted noise levels. SW-405C3 has been recommended at 16 feet in height as it would provide up to an eight-dBA noise reduction to four receivers. Also, SW-405C3 has been recommended (under the Early Action Soundwall Project – SW-405C [Segments 4 through 6]) for construction at 16 feet in height and 740 feet in length.
- Soundwall SW-503A+B would benefit the residential area consisting of mostly single-family homes located between Long Beach Blvd. and Artesia Blvd. along southbound I-710. Both soundwalls would completely remove and replace the existing eight-foot-high soundwalls to accommodate widening. SW-503A and SW-503B have been recommended at 16 feet in height, benefiting 49 homes with up to a 12-dBA noise reduction. Please note that SW-503A has been recommended for construction at a 16-foot height as part of the Early Action Soundwall Project (labeled as SW-503A–Segment 1 and SW-503B–Segment 1). In addition, SW-503B has been recommended for construction at 16 feet in height as part of the Early Action Soundwall Project (labeled as SW-503B–Segments 2, 3, and 4).
- Soundwall SW-91A would be constructed on the edge of shoulder along southbound SR-91 off-ramp at Long Beach Blvd. SW-91A would remove and replace the existing ten-foot-high sound barrier to accommodate the widening of this realigned off-ramp. Although SW-91A provides only a one-dBA noise reduction (due to the new retaining wall providing additional shielding to this area), it is still being recommended at ten feet to replace the existing sound barrier that would be removed to accommodate freeway widening, although it is not considered feasible or reasonable.
- Soundwall SW-91B+C have been recommended for construction at 14 feet in height. These walls would combine to provide up to a nine-dBA noise reduction to 63 residences along E. 67th St. on the eastbound SR-91 in the City of Long Beach. SW-91B would be constructed on the edge of shoulder along the northbound I-710 to eastbound SR-91 connector transitioning onto the mainline eastbound SR-91 and up to Lime Ave.

SW-91C would be constructed on the edge of shoulder along eastbound SR-91 from Atlantic Ave. to Cherry Ave. in Long Beach. It must be noted that both of these walls must be constructed because of the widening of the SR-91 that would remove the existing ten-to-12-foot-high soundwalls in this area.

- Soundwall SW-504 has been recommended for construction at 14 feet in height and would be constructed on the edge of shoulder along the southbound I-710 from Greenleaf Blvd. to Alondra Blvd. This soundwall would remove and replace the existing eight-to-12-foot-high soundwall to accommodate widening of the I-710. It would join the existing eight-foot-high sound barrier near the power lines at Greenleaf Blvd. SW-504 is predicted to provide up to an 11-dBA noise reduction to 60 homes in this area.
- Soundwall SW-505 would be constructed on the edge of shoulder along the southbound I-710 off-ramp at Alondra Blvd. This soundwall would remove and replace the existing 12-foot-high soundwall along the State right of way protecting the residential area along Gibson Ave. and a newly constructed developer's sound barrier (eight feet high) that protects Seasons (a senior apartment complex) to accommodate widening of the I-710. SW-505 has been recommended for construction at 16 feet in height and would provide up to an eight-dBA noise reduction to 17 homes in this area including a small park for the aforementioned apartment complex. Also, this barrier would join SW-506.
- Soundwall SW-506 would be constructed on the State right of way (would also join SW-505) along the southbound I-710 between Myrrh St. and Compton Blvd. SW-506 has been recommended at 16 feet in height. It would provide up to a seven-dBA noise reduction to 25 receptors to this residential area. It would also remove and replace a 12-foot-high soundwall for the Girls and Boys Town facility located at the southwest corner of the I-710 and Compton Blvd. Please note that SW-506 has been recommended for construction at 16 feet in height as part of the Early Action Soundwall Project (labeled as SW-507–Segment 2).
- Soundwall SW-507/614 has not been recommended for construction along the southbound I-710 off-ramp at Rosecrans Ave. Although this area is considered barely impacted by the proposed project, the noise abatement is not acoustically feasible as it provides only a four-dBA noise reduction.
- Soundwall SW-508 has not been recommended for construction as the new retaining walls that would be constructed from the eastbound Imperial Hwy. (SR-90) transitioning onto the southbound I-710 on-ramp would block much of the noise to the adjacent residential area. This retaining wall is actually predicted to provide a noise reduction of up to seven dBA from future worst-hour noise levels. Also, based on its location, constructing SW-508 would have serious safety sight-distance issues.
- Soundwall SW-509 has been recommended for construction at 14 feet in height. It would be constructed on the edge of shoulder along the southbound I-710 off-ramp at Imperial

Hwy. (SR-90). This barrier would need to be extended over the Los Angeles River Bridge in order to provide the required noise reduction to the impacted homes along Blumont Rd. SW-509 is predicted to provide up to a seven-dBA noise reduction to 28 homes in this area.

- Soundwall SW-510A+B+C have been recommended for construction at 16 feet in height. Combined, these barriers would provide up to a ten-dBA noise reduction to 65 residences of the Thunderbird Villa Mobile Home Park located along southbound I-710 between Miller Way and Southern Ave. SW-510A and SW-510B would be located along the frontage road on the City of South Gate right of way. Since these two walls are outside of the State right of way, an agreement with the residents and the City of South Gate would need to be made to the construction and maintenance of both barriers SW-510A and SW-510B. SW-510C would be located along the freeway edge of shoulder within the State right of way. Please note that SW-510A+B+C have been recommended as part of the Early Action Soundwall Project (marked as SW-509 – Segments 1 through 4) at 16 feet in height and totaling 1,948 feet in length. These barriers would provide up to a ten-dBA noise reduction for 65 mobile homes of the Thunderbird Villa Mobile Home Park.
- Soundwall SW-511A+B have been recommended for construction at 16 feet in height. They would be constructed on the right of way between Shull St. and Cecilia St. along northbound I-710. These walls are separated by a channel that connects to the Los Angeles River to the west. Both SW-511A and SW-511B combine to provide up to 12 dBA noise reduction to ten homes in this area. It must be noted that SW-511A+B have been recommended as part of the Early Action Soundwall Project (marked as SW-510 – Segments 1 and 2) at 16 feet in height and totaling 1,333 feet in length. These barriers would provide an eight-to-12-dBA noise reduction to ten residences in this area.
- Soundwall SW-511C would be constructed on the edge of shoulder along the northbound I-710 from Cecilia St. (joining SW-511B) to Clara St. This sound barrier would completely remove and replace the existing ten-to-12-foot-high soundwall to accommodate widening of the I-710. SW-511C has been recommended at 16 feet in height and is predicted to provide up to an 11-dBA noise reduction to 27 homes in this area including the Bell Gardens Elementary School.
- Soundwall SW-512A+B have been predicted to provide up to a six-dBA noise reduction to the residential area and Bandini Park located along northbound I-710 at the Washington Blvd. on-ramp. SW-512A would be located on the on-ramp while SW-512B would be located on the newly proposed connector from northbound I-710 to northbound I-5. SW-512A would completely remove and replace an existing 15-foot-high soundwall to accommodate the new on-ramp configuration. SW-512A has been recommended for construction at 16 feet in height with SW-512B at 14 feet in height. Both walls combined would provide acoustic benefit to 25 residences and the park in this area. Although

these barriers do not meet the seven-dBA noise reduction goal to be considered reasonable, they must be constructed to replace the existing soundwall that would be removed to accommodate freeway widening. If the replacement walls were to not be constructed, the community in this area would be exposed to a noise level of 74 dBA, a six-dBA increase over existing noise levels.

- Soundwall SW-513A+B have been predicted to provide up to a nine-dBA noise reduction to the residential area located along southbound I-710 at the Washington Blvd. off-ramp. SW-513A would be located on the off-ramp while SW-513B would be located on the mainline southbound I-710. SW-513A would completely remove and replace an existing 15-foot-high sound barrier to allow for the new off-ramp configuration. SW-513A has been recommended for construction at 16 feet in height with SW-513B at 14 feet in height. Both SW-513A and SW-513B have been predicted to benefit 16 homes in this area.
- Soundwall SW-514A+B have been predicted to provide up to a nine-dBA noise reduction to 47 homes located along northbound I-710 between Noakes St. and Olympic Blvd. SW-514A has been recommended for construction at 14 feet and would be located on the mainline northbound I-710 while SW-514B has also been recommended at 14 feet in height and would be located on the newly proposed connector from northbound I-710 to northbound I-5. SW-514A would completely remove and replace an existing 12-foot-high sound barrier that is located on the northbound I-710 mainline and would continue over the I-5 interchange to the Olympic Blvd. off-ramp. Both SW-514A and SW-514B have been predicted to benefit 47 residences in this area.
- Soundwall SW-515 would be constructed on the edge of shoulder along new realigned southbound I-5 to the southbound I-710 connector, removing and replacing the existing 12-foot-high sound barrier to allow for shifting of the mainline and ramps in this interchange area. Based on TNM modeling, although SW-515 does not provide the minimum required noise reduction to this residential area, it must be constructed in order to replace the existing sound barrier. SW-515 has been recommended for construction at 14 feet in height. Although this barrier is not considered acoustically feasible or reasonable, it must be constructed to replace the existing barrier that would be removed to accommodate freeway widening. If the replacement wall was not constructed, the community in the area would be exposed to a noise level of 70 dBA, a three-dBA increase over existing levels.
- Soundwall SW-516+SW-517 have been recommended for construction at 16 feet in height. Both of these walls would provide up to a ten-dBA noise reduction to 62 single and multifamily residential units between Olympic Blvd. and Humphreys Ave. SW-516 would be constructed on the edge of shoulder along the mainline northbound I-710 over the Olympic Blvd. Bridge. SW-517 would begin on the on-ramp from Olympic Blvd. onto the mainline northbound I-710 and overlap with an existing 12-foot-high barrier near

Humphreys Ave. Both of these barriers would remove and replace the existing 12-foot-high barriers in this area.

- Soundwall SW-518 has not been recommended for construction as the construction cost is double the reasonable allowance for this barrier. SW-518 would provide up to a six-dBA noise reduction to only one residence (immediately south of the cemetery) along Eastern Ave. and an outside frequent human use area at McDonald's. The construction cost of $332,856 exceeds the reasonable allowance of $160,000, and therefore, is considered to be not reasonable from a cost perspective.

DESIGN OPTION 3A

- Soundwall SW-514A+B have been predicted to provide up to a nine-dBA noise reduction to 47 homes located along northbound I-710 between Noakes St. and Olympic Blvd. SW-514A has been recommended for construction at 14 feet and would be located on the mainline northbound I-710 while SW-514B has also been recommended at 14 feet in height and would be located on the newly proposed connector from northbound I-701 to northbound I-5. SW-514A would completely remove and replace an existing 12-foot-high sound barrier that is located on the northbound I-710 mainline and would continue over the I-5 interchange to the Olympic Blvd. off-ramp. Both SW-514A and SW-514B have been predicted to benefit 47 homes in this area.
- Soundwall SW-515 would be constructed on the edge of shoulder along new realigned southbound I-5 to the southbound I-710 connector, removing and replacing the existing 12-foot-high sound barrier to allow for shifting of the mainline and ramps in this interchange area. Based on TNM modeling, although SW-515 does not provide the minimum required noise reduction to this residential area, it must be constructed in order to replace the existing sound barrier. SW-515 has been recommended for construction at 14 feet in height. Although not acoustically feasible or reasonable, this barrier must be constructed to replace the existing barrier that would be removed to accommodate freeway widening. If the replacement wall were not constructed, the community in this area would be exposed to a 70 dBA noise level, a three-dBA increase over existing levels.
- Soundwalls SW-516+SW-516A+SW-516B+SW-517 have all been recommended for construction at 14 feet in height. All of these walls together would provide up to a nine-dBA noise reduction to 142 single and multifamily residential units between Olympic Blvd. and Humphreys Ave. along the northbound I-710. SW-516 (from south of Olympic Blvd. to Verona St.) would be constructed along the edge of shoulder of the newly proposed direct connector from Slauson Ave. to SR-60. SW-516A would be constructed on the edge of shoulder along the mainline northbound I-710 over the Olympic Blvd. Bridge. SW-516B would be constructed on the mainline I-710 (northbound) from Whittier Blvd. to Humphrey Ave. SW-517 would begin on the on-

ramp from Olympic Blvd. onto the newly proposed direct connector to SR-60 until Humphrey Ave. All of these barriers would remove and replace the existing 12-foot-high barriers in this area.

- Soundwall SW-518 has been recommended for construction at 16 feet in height along the on-ramp at Olympic Blvd. and then onto the southbound I-710 mainline. SW-518 would provide a five-dBA noise reduction to 12 residences (immediately south of the cemetery) along Eastern Ave. and an outside frequent human use area at McDonald's. It should be noted that since this barrier does not meet the acoustical design goal of a seven-dBA reduction to one benefited receptor, it is not eligible for Federal funding.
- Soundwalls SW-519 and SW-520 have been recommended for construction at 14 feet in height along the southbound I-710 at Whittier Blvd. and would replace the existing 12-foot high walls, as well as partially remove and replace an existing ten-foot sound barrier located on the State right of way between Humphrey Ave. and the Whittier Blvd. off-ramp. An eight-dBA noise reduction would be provided to 27 homes in this area.

ALTERNATIVE 7

- Soundwall SW-700 would benefit the Golden Shore RV Park located on the southwest corner of Shoreline Dr. and Golden Shore St. SW-700 would provide up to an 11-dBA noise reduction to 25 receptors at the Golden Shore RV Park. However, please note that SW-700 has been rejected by the City of Long Beach and as such, has not been recommended for construction under the Early Action Soundwall Project or the I-710 Corridor Project.
- Soundwalls SW-701A+B+C + SW-701TL would benefit the residential area consisting of single-family homes located between Pacific Coast Hwy. and Willow St. along southbound I-710. SW-701 would replace the entire existing ten-to-12-foot-high soundwall in this area to accommodate the widening along I-710. SW-701A+B+C have been recommended at 16 feet in height along the State right of way. In addition, a sound barrier (SW-701TL) has also been recommended at eight feet in height along the edge of shoulder of the elevated truck lanes from south of the Pacific Coast Hwy. to just north of Willow St. All of these sound barriers combined would provide up to 15 dBA noise reduction to 85 homes. Please note that sound barriers SW-701A+B+C have been recommended for construction under the Early Action Soundwall Project as SW-501 (Segments 1 through 7) at 16 feet in height from Pacific Coast Hwy. to W. 25th St. and at 12 feet in height from W. 25th St. to Willow St.
- Soundwall SW-701D would be constructed along the Pacific Coast Hwy. to benefit the residential area consisting of mostly single-family homes located immediately east of the

Los Angeles River. SW-701D has been recommended for construction at 12 feet in height and would benefit (up to a seven-dBA noise reduction) eight homes in this area.

- Soundwall SW-702 would benefit the residential area consisting of mainly single-family homes located between Willow St. and Wardlow Rd. along southbound I-710. SW-702 would completely remove and replace the existing ten-foot-high soundwall in this area to accommodate widening along I-710. The current loop off-ramp at Wardlow Rd. on southbound I-710 would be closed. SW-702 is recommended for construction at 16 feet in height and is predicted to provide up to a 15-dBA noise reduction to 185 residences in this area. Please note that this soundwall (SW-702) has been recommended for construction under the Early Action Soundwall Project as SW-502 (Segments 1 through 4) at 12 feet in height from Willow St. to W. 27th St. and at 16 feet in height from W. 27th St. to Wardlow Rd.
- Soundwall SW-702A would remove and replace the existing ten-foot-high soundwall and would be constructed on the edge of shoulder of the northbound I-405 to southbound I-710 connector. Although SW-702A would not provide the minimum required noise abatement to the residential area located north of Wardlow Rd. to Baker St. along southbound I-710, it must be constructed to replace the existing sound barrier that would be removed to accommodate widening. SW-702A has been recommended for construction at 16 feet in height. Although not acoustically feasible or reasonable, this barrier must be constructed to replace the existing soundwall that would be removed to accommodate freeway widening. If the wall was not constructed, the community in this area would be exposed to a 70 dBA noise level, a six-dBA increase over existing levels.
- Soundwall SW-702B would benefit the residential area consisting of mostly single-family homes located between Baker St. and I-405 along the southbound I-405 to southbound I-710 connector. SW-702B has been recommended for construction at 16 feet in height and would provide acoustic benefit of up to 11 dBA to 12 homes in this area. Please note that as part of the Early Action Soundwall Project, this sound barrier, SW-702B (labeled as SW-502–Segments 6 and 7) has been recommended for construction at 16 feet in height along the State right of way line.
- Soundwall SW-702C would benefit the impacted residential area along eastbound Wardlow Rd. just west of the I-710 in the City of Long Beach. SW-702C, recommended at 16 feet in height, would benefit seven homes along Wardlow Rd. that do not have property walls in their backyards. For the homes that do have the five-foot-high property walls, a noise barrier is not able to achieve the minimum required five-dBA noise reduction. It is important to note that this sound barrier has been proposed outside of the Caltrans' right of way and onto the City of Long Beach right of way. Therefore, before finalizing the design of this barrier, input from all affected homeowners and the City of Long Beach must be considered.

- Soundwall SW-405A1 has been recommended to be constructed at 16 feet in height on the edge of shoulder along northbound I-405 between Salmon Ave. and Santa Fe Ave. west of the I-710 in the City of Long Beach. SW-405A1 would remove and replace the existing sound barrier and would provide up to an eight-dBA noise reduction for 37 homes along 221st Place.
- Soundwall SW-405A2 was analyzed on the edge of shoulder along southbound I-405 between S. McHelen Ave. and Santa Fe Ave. west of the I-710 in the City of Long Beach. SW-405A2 is a new wall that would connect the existing sound barrier immediately to the west. This barrier is predicted to provide five-to-six-dBA noise reduction to only one to three homes located south of Wardlow Rd. Because the construction cost of this barrier exceeded the reasonable allowance by two times, it has not been recommended for construction.
- Soundwall SW-405B would be constructed on the edge of shoulder along the northbound I-710 to the southbound I-405 connector and then transition onto the southbound I-405 mainline. This soundwall would remove and replace the existing soundwalls, close the barrier gap over the Pacific Place/Metro Blue Line Bridge, and connect to the existing sound barrier at Cedar Ave. in the City of Long Beach. SW-405B, at 16 feet in height, is predicted to provide a five-dBA noise reduction at up to nine homes in this area. Although this barrier does not meet the seven-dBA noise reduction goal to be considered reasonable, it must be constructed to replace the existing wall that would be removed to accommodate freeway widening. If the wall was not constructed, the community in the area would be exposed to a noise level of 70 dBA, a six-dBA increase over existing levels.
- Soundwall SW-405C1 located on the City of Long Beach right of way along Del Mar Ave. near the Metro Blue Line tracks in Long Beach has not been recommended as there are no freeway noise impacts identified in this area as part of the proposed project, and the barrier is considered acoustically not feasible as it does not provide the minimum required noise reduction of five dBA.
- Soundwall SW-405C2 located on the edge of shoulder along the northbound I-405 to the northbound I-710 connector in Long Beach is likewise not recommended for construction as this residential area is also not impacted by the freeway traffic noise by the proposed project. Similarly, this barrier is also not acoustically feasible as it provides only a three-dBA noise reduction.
- Soundwall SW-405C3 would be located on the State right of way along the northbound I-405 off-ramp at Long Beach Blvd. This residential area, although outside the limits for the I-710 Corridor Project, has been identified for noise impacts based on predicted noise levels. SW-405C3 has been recommended at 16 feet in height as it would provide up to an eight-dBA noise reduction to four receivers. Also, SW-405C3 has been

recommended (under the Early Action Soundwall Project – SW-405C [Segments 4 through 6]) for construction at 16 feet in height and 740 feet in length.

- Soundwall SW-703A+B + SW-703TL would benefit the residential area consisting of mostly single-family homes located between Long Beach Blvd. and Artesia Blvd. along southbound I-710. Both soundwalls would completely remove and replace the existing eight-foot-high soundwalls to accommodate widening. Because of the freight corridor, these walls would provide only a five-dBA noise reduction to ten receptors in this area. Therefore, SW-703TL has also been analyzed along the truck lanes from Long Beach Blvd. to Artesia Blvd. SW-703TL has been recommended at 10 feet in height along the truck lane structure as it provides (in association with SW-703A+B) an eight-dBA reduction to 21 receptors in the area. It should be noted that while SW-703TL is acoustically feasible and meets the seven-dBA acoustical design goal, it is not considered cost-reasonable, and it is not eligible for Federal funding. SW-703A and SW-703B have been recommended at 16 feet in height. Please note that SW-703A has been recommended for construction at 16 feet in height as part of the Early Action Soundwall Project (labeled as SW-503A–Segment 1 and SW-503B–Segment 1). And SW-703B has been recommended for construction at 16 feet in height as part of the Early Action Soundwall Project (labeled as SW-503B–Segments 2, 3, and 4).
- Soundwall SW-91A+B have been recommended for construction at 16 feet in height, and they would combine to provide up to a seven-dBA noise reduction to 26 residences along E. 67th St. on the eastbound SR-91 in the City of Long Beach. SW-91A would be constructed on the edge of shoulder along the northbound I-710 to eastbound SR-91 connector up to Lewis Ave. SW-91B would be constructed on the edge of shoulder along the mainline eastbound SR-91 from Lewis Ave. to Cherry Ave. (transitioning onto the off-ramp at Cherry Ave.) in the City of Long Beach. It must be noted that both of these walls must be constructed because of the widening of the SR-91 that would remove the existing ten-to-12-foot-high soundwall in this area.
- Soundwall SW-91C+D have been recommended for construction at 14 feet in height and they would combine to provide up to an eight-dBA noise reduction to 30 residences along E. Eleanor St. and E. Penfold St. (between Atlantic Ave. and Cherry Ave.) on the westbound SR-91 in the City of Long Beach. SW-91C would be constructed on the edge of shoulder along the westbound SR-91 mainline from Cherry Ave. and Lewis Ave. SW-91D would be constructed on the edge of shoulder along the mainline westbound SR-91 from Lewis Ave. to Atlantic Ave. (transitioning onto the off-ramp at Atlantic Ave.) in the City of Long Beach. It must be noted that both of these walls must be constructed because of the widening of the SR-91 that would remove the existing ten-to-12-foot high soundwall in this area.
- Soundwall SW-91E+F would remove and replace a good portion of the existing eight–to-12-foot-high soundwall along the edge of shoulder of the southbound I-710 to the

westbound SR-91 connector. Although these walls would not provide the minimum required noise abatement to the adjacent residential area, they must be constructed to replace the existing sound barriers that would be removed to accommodate widening. Both SW-91E and SW-91F have been recommended for construction at 14 feet in height. Although these barriers are not considered acoustically feasible or cost-reasonable, they must be constructed to replace the existing soundwall that would be removed in order to accommodate freeway widening. If the walls were not constructed, the community in this area would be exposed to a noise level of 72 dBA, an eight-dBA increase over existing noise levels.

- Soundwall SW-704 would be constructed on the edge of shoulder along the southbound I-710 from Greenleaf Blvd. to Alondra Blvd. This soundwall would remove and replace the existing eight-to-12-foot-high soundwall to accommodate widening of the I-710. It would join the existing eight-foot-high sound barrier near the power lines at Greenleaf Blvd. SW-704 is recommended for construction at 14 feet in height and would provide up to an 11-dBA noise reduction to 45 homes in this area.
- Soundwall SW-705 + SW-705TL: SW-705 has been recommended at 16 feet in height and would be constructed on the edge of shoulder along the southbound I-710 off-ramp at Alondra Blvd. This soundwall would remove and replace the existing 12-foot-high soundwall along the State right of way protecting the residential area along Gibson Ave. and a newly constructed developer's sound barrier (eight-foot-high) that protects Seasons (a senior apartment complex) to accommodate widening of the I-710. SW-705 would provide a five-dBA noise reduction to only three receptors in this area, including a small park for the aforementioned apartment complex. Also, this barrier would join SW-706. Another barrier, SW-705TL, was analyzed on top of the freight corridor (southbound). SW-705TL has been recommended for construction at eight feet in height. Both of these walls combined would provide up to a seven-dBA noise reduction to the same number of receptors (three) in this area. While a combination of these recommended barriers is acoustically feasible but not cost effective, SW-705TL combines with other walls (see below) to provide acoustic benefit to 70 receptors in this community and is cost-reasonable and is, therefore, recommended for construction.
- Soundwall SW-706 + SW-705TL: SW-706 would be constructed at 16 feet in height on the State right of way (and would also join SW-705) along southbound I-710 between Myrrh St. and Compton Blvd. Based on the analysis, due to the noise contribution from the freight corridor, SW-706 would not provide the minimum required noise reduction (five dBA) to this residential area. SW-705TL has been recommended for construction at eight feet in height. Both walls together would provide a three-dBA noise reduction. SW-706 would also remove and replace a 12-foot-high soundwall for the Girls and Boys Town facility located at the southwest corner of the I-710 and Compton Blvd. Please

note that SW-706 has been recommended for construction at 16 feet in height as part of the Early Action Soundwall Project (labeled as SW-507–Segment 2).

- Soundwall SW-706A + SW-705TL: SW-706A has been recommended to be constructed at 16 feet in height on the State right of way along southbound I-710 between Compton Blvd. and Rosecrans Ave. There is an existing 12-foot-high soundwall here whose height would need to be raised to 16 feet. The vertical extension of this existing barrier provides up to a six-dBA noise reduction to 50 residences in this area. And additionally, a sound barrier (SW-705TL) analyzed along the elevated truck lanes would provide up to a seven-dBA noise reduction to 70 residences. SW-705TL has been recommended for construction at eight feet in height.
- Soundwall SW-707/614 has not been recommended for construction along the southbound I-710 off-ramp at Rosecrans Ave. Although this area is considered barely impacted by the proposed project, the noise abatement is not acoustically feasible as it provides only a four-dBA noise reduction. This barrier is not proposed for construction as it does not provide the minimum required noise reduction.
- Soundwall SW-708 has not been recommended for construction on the edge of shoulder along eastbound Imperial Hwy. (SR-90) transitioning onto the southbound I-710 on-ramp. As proposed, SW-708 would not achieve a seven-dBA reduction to at least one impacted receptor, and would be located along a tight curve causing sight distance issues. Additional barrier SW-708TL along the freight corridor would not provide any more acoustic benefit to any more residences in this area, and therefore, has also not been recommended.
- Soundwall SW-709 has been recommended for construction at 16 feet in height and would be constructed on the edge of shoulder along the southbound I-710 off-ramp at Imperial Hwy. (SR-90). This barrier would need to be extended over the Los Angeles River Bridge in order to provide the required noise reduction to the impacted homes along Blumont Rd. SW-709 is predicted to provide a six-dBA noise reduction to 30 homes in this area. Additional barrier SW-708TL along the freight corridor would not provide any more acoustic benefit to any more residences in this area, and therefore, has not been recommended. It should be noted that since SW-709 does not meet the acoustical design goal of a seven-dBA reduction to one impacted receptor, it is not eligible for Federal funding.
- Soundwall SW-710A+B+C + SW-710TL: SW-710A+B+C have been recommended to be constructed at 16 feet in height to provide noise reduction to the Thunderbird Villa Mobile Home Park located along southbound I-710 between Miller Way and Southern Ave. SW-710A and SW-710B would be located along the frontage road on the City of South Gate right of way. SW-710C would be located along the freeway edge of shoulder within the State right of way. Based on the analysis, however, due to the addition of the freight corridor, none of these walls would provide the minimum required noise reduction to the

Thunderbird Villa Mobile homes. Therefore, SW-710TL on top of the freight corridor has been recommended for construction at eight feet in height. The combination of SW-710A+B+C and SW-710TL would provide up to an 11-dBA noise reduction to 47 mobile homes. Please note that SW-710A+B+C have been recommended as part of the Early Action Soundwall Project (marked as SW-509–Segments 1 through 4) at 16 feet in height and totaling 1,948 feet in length.

- Soundwall SW-711A+B + SW-711TL: SW-711A+B have been recommended for construction at 16 feet in height on the right of way between Shull St. and Cecilia St. along northbound I-710. These walls are separated by a channel that connects to the Los Angeles River to the west. Additionally, since the freight corridor runs directly on top of the mainline I-710 in this area, SW-711TL, at eight feet in height, has also been recommended for construction on top of the truck lanes. The combination of all these walls would provide up to a ten-dBA noise reduction to about 16 homes. It must be noted that SW-711A+B have been recommended as part of the Early Action Soundwall Project (marked as SW-510–Segments 1 and 2) at 16 feet in height and totaling 1,333 feet in length.
- Soundwall SW-711C + SW-711TL: SW-711C has been recommended for construction at 16 feet height on the State right of way along the northbound I-710 from Cecilia St. (joining SW-711B) to Clara St. This sound barrier would completely remove and replace the existing ten-to-12-foot-high soundwall to accommodate widening of the I-710. Additionally, a barrier (SW-711TL) on top of the truck lanes has been recommended at eight feet in height that would provide greater acoustic benefit to this impacted area. SW-711C in combination with SW-711TL would provide up to a nine-dBA noise reduction to 25 homes and the Bell Gardens Elementary School. Although these barriers are not considered reasonable, they must be constructed to replace the existing soundwall that would be removed to accommodate freeway widening. If the walls were not constructed, the community and school in this area would be exposed to a 78 dBA noise level, a ten-dBA increase over existing levels.
- Soundwall SW-711D + SW-712TL: SW-711D is a short (240-foot in length) sound barrier that has been recommended for construction at 16 feet in height. This barrier would replace the existing 12-foot-high sound barrier to accommodate widening of the I-710 mainline. This portion of the wall would be constructed on a retaining wall just south of the Gage Ave. Bridge along northbound I-710. Another sound barrier on top of the freight corridor (SW-712TL) has also been recommended at eight feet in height. Both SW-711D and SW-712TL would combine to provide a five-dBA noise reduction to six receptors in this area. Although SW-711D does not meet the acoustical design goal of a seven-dBA reduction to one impacted receptor to be considered reasonable, it must be constructed to replace the existing wall that would be removed to accommodate freeway

widening. If this wall was not constructed, the community in this area would be exposed to a 70 dBA noise level, two dBA over existing levels.

- Soundwall SW-711E + SW-712TL: SW-711E has been recommended for construction at 16 feet in height on the newly proposed retaining wall between Gage Ave. and the Union Pacific Railroad Bridge. SW-711E would remove and replace the existing eight–to-ten-foot sound barrier to accommodate widening. Another barrier, SW-712TL has also been recommended at an eight-foot height on top of the freight corridor. Both SW-711E and SW-712TL would combine to provide a ten-dBA noise reduction to 20 homes in this area.
- Soundwall SW-712A+B have been recommended at heights of 16 feet and 14 feet, respectively. They have been predicted to provide up to a six-dBA noise reduction to the residential area and Bandini Park located along northbound I-710 at the Washington Blvd. on-ramp. SW-712A would be located on the on-ramp while SW-712B would be located on the newly proposed connector from northbound I-710 to northbound I-5. SW-712A would completely remove and replace an existing 15-foot-high soundwall to accommodate the new on-ramp configuration. Both SW-712A and SW-712B (parallel to each other) have been predicted to benefit 25 residences in this area. Although these barriers are not considered reasonable as they do not meet the acoustical design goal of a seven-dBA reduction to one impacted receptor, they must be constructed to replace the existing wall that would be removed to accommodate freeway widening. If the walls were not constructed, the community in the area would be exposed to a 75 dBA noise level, a seven-dBA increase over existing levels.
- Soundwall SW-713A+B have been recommended at heights of 16 feet and 14 feet, respectively. They would provide up to an eight-dBA noise reduction to the residential area located along southbound I-710 at the Washington Blvd. off-ramp. SW-713A would be located on the off-ramp while SW-713B would be located on the mainline southbound I-710. SW-713A would completely remove and replace an existing 15–foot-high sound barrier to allow for the new off-ramp configuration. Both SW-713A and SW-713B (parallel to each other) have been predicted to benefit 16 homes in this area.
- Soundwall SW-714A+B have been recommended at heights of 14 feet. They have been predicted to provide up to a nine-dBA noise reduction to the residential area located along northbound I-710 between Noakes St. and Olympic Blvd. SW-714A would be located on the mainline northbound I-710 while SW-714B would be located on the newly proposed connector from northbound I-710 to northbound I-5. SW-714A would completely remove and replace an existing 12-foot-high sound barrier that is located on the northbound I-710 mainline and would continue over the I-5 interchange to the Olympic Blvd. off-ramp. Both SW-714A and SW-714B (parallel to each other) have been predicted to benefit 47 homes in this area. It is important to note that if SW-714A were to be constructed, it would obstruct the view of some commercial properties (near the off-

ramp at Olympic Blvd.) to/from the freeway. Before finalizing a decision to design/construct this wall, a concurrence from all affected property owners is necessary to obtain their input.

- Soundwall SW-715 has been recommended for construction at 14 feet in height on the edge of shoulder along southbound I-5 to the southbound I-710 connector, removing and replacing the existing 12-foot-high sound barrier to allow for shifting of the mainline and ramps/connectors in this interchange area. Based on TNM modeling, although SW-715 does not provide the minimum required noise reduction to this residential area and is not considered acoustically feasible or reasonable, it must be constructed in order to replace the existing sound barrier that would be removed to accommodate freeway widening. If the wall was not constructed, the community in the area would be exposed to a 72 dBA noise level, a five-dBA increase over existing levels.
- Soundwall SW-716+SW-717 have been recommended for construction at 16 feet in height. They are predicted to provide up to a nine-dBA noise reduction to 64 single- and multifamily residential units between Olympic Blvd. and Humphreys Ave. SW-716 would be constructed on the edge of shoulder along the mainline northbound I-710 over the Olympic Blvd. Bridge. SW-717 would begin on the on-ramp from Olympic Blvd. onto the mainline northbound I-710 and overlap with an existing 12-foot-high barrier near Humphreys Ave. The new barriers would replace the existing 12-foot-high barriers within the limits. It is important to note that if SW-716 were to be constructed, it would obstruct the view of some commercial properties (near the on/off-ramp at Olympic Blvd.) to/from the freeway. Before finalizing a decision to design/construct this wall, a concurrence from all affected property owners is necessary to obtain their input.
- Soundwall SW-718 has not been recommended for construction on the edge of shoulder along southbound I-710 over the Olympic Blvd. Bridge. Although SW-718 has been predicted to provide a six-dBA noise reduction to only one residence (immediately south of the cemetery) along Eastern Ave. and an outside frequent human use area at McDonald's, the construction cost estimate of this barrier is two times the reasonable allowance. Also, if this wall were to be constructed, it would obstruct the view of many commercial properties to/from the freeway.
- Soundwall SW-719 analyzed on the edge of shoulder along the southbound I-710 off-ramp at Eastern Ave., joining the existing 12-foot-high sound barrier, has not been recommended. This short barrier had been analyzed to determine acoustical feasibility to the Los Angeles County Fire Department's building in which sleeping quarters for the firefighters may be impacted. Although SW-719 provides a five-dBA noise reduction, it is considered not cost-effective as the construction cost would be two times the reasonable allowance for this barrier.

3.14.6 Avoidance, Minimization, and/or Abatement Measures

The following measures are required to provide abatement for traffic noise impacts in accordance with 23 CFR 772:

N-1 Based on the studies completed to date, the California Department of Transportation (Caltrans) intends to incorporate noise abatement in the form of soundwalls listed as reasonable in Table 3.14-3, depending on the selected alternative. During final design, Caltrans will make the final decision on noise abatement to be included in the selected build alternative, based on the final design of the proposed project and the public involvement process. If during final design, conditions have substantially changed, noise abatement at some of the locations noted above may not be necessary. Caltrans will incorporate the final noise abatement in the final project design and specifications.

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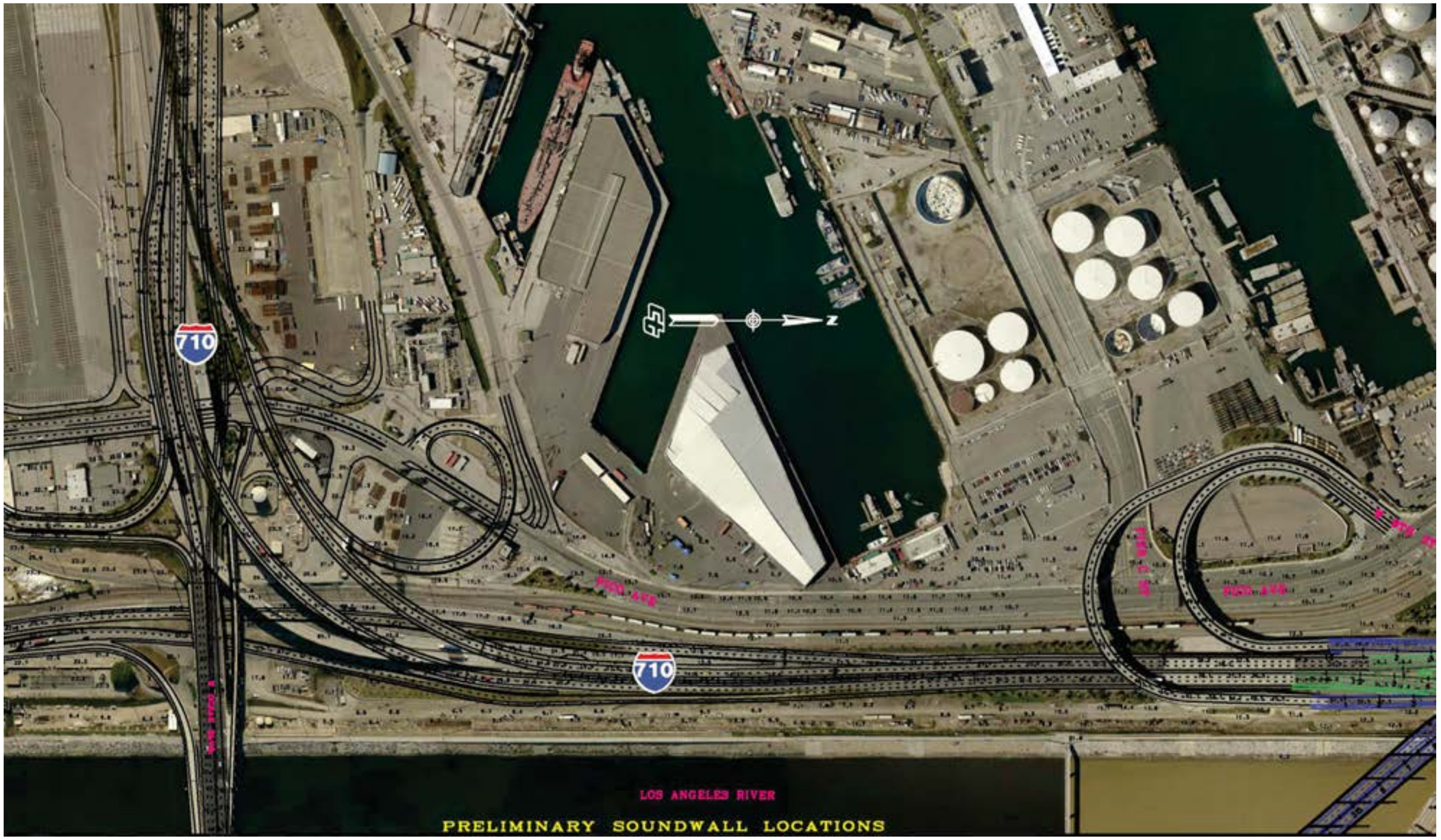

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 1 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 2 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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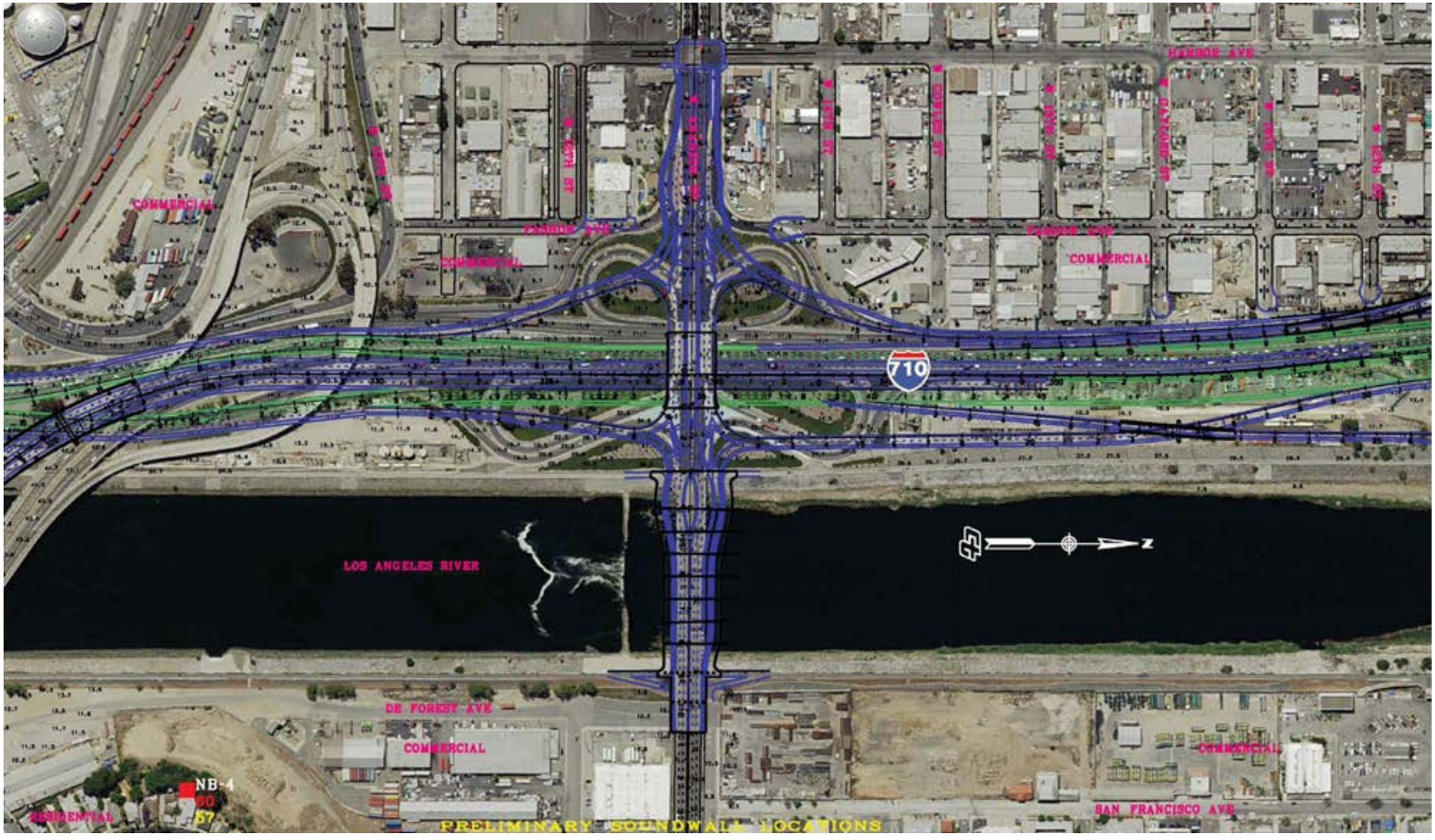

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- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 3 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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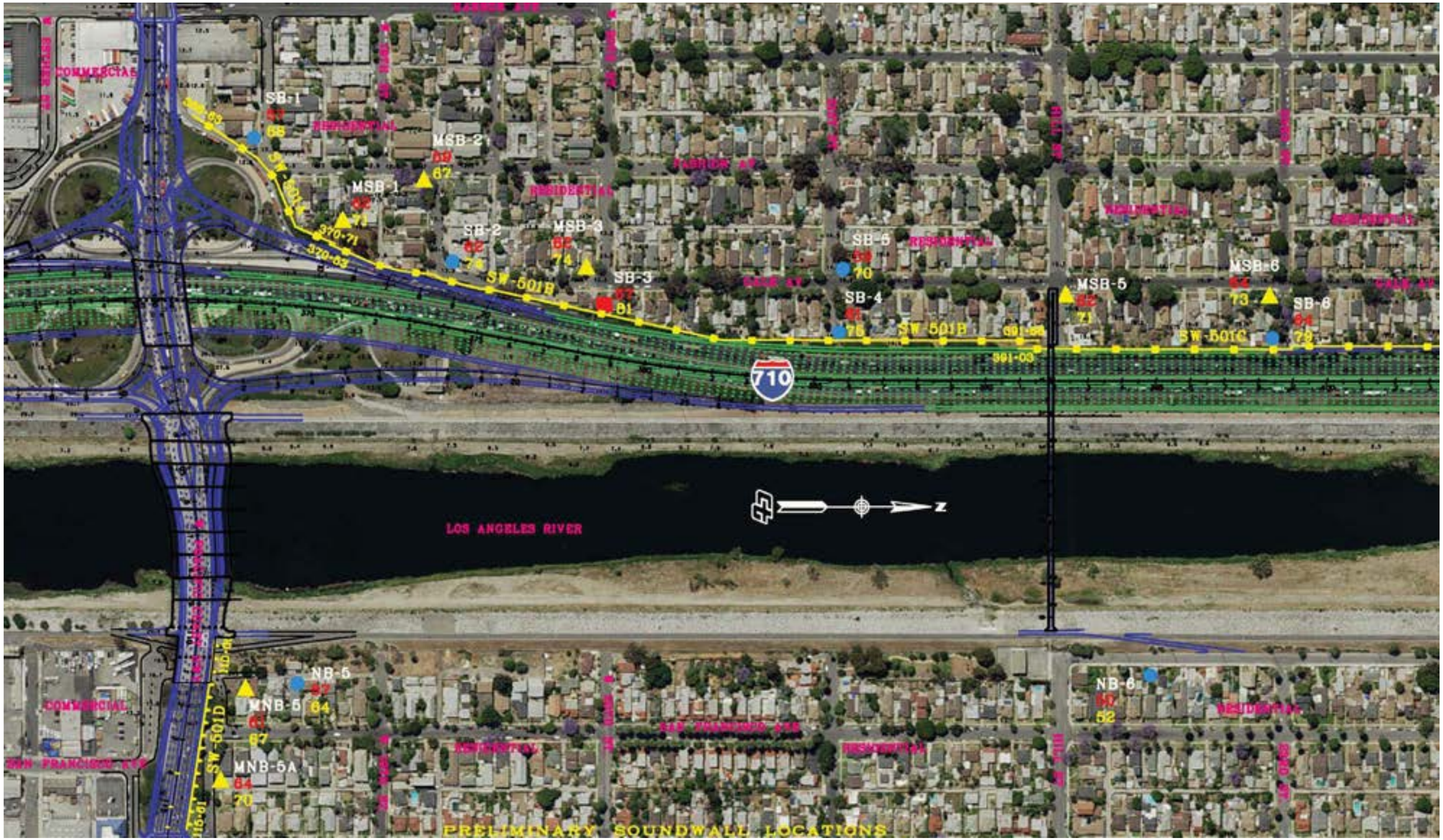

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- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 4 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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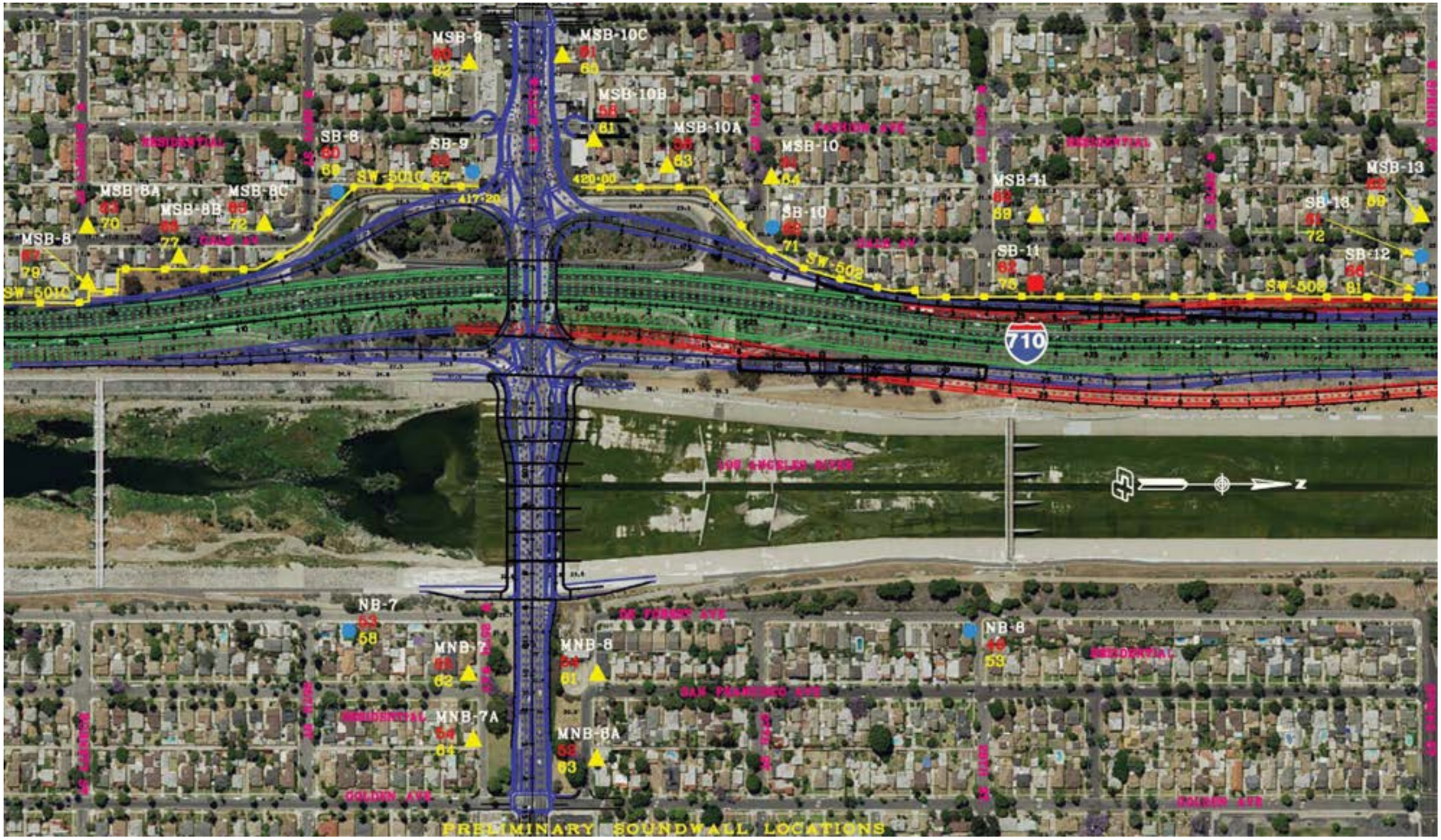

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- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 5 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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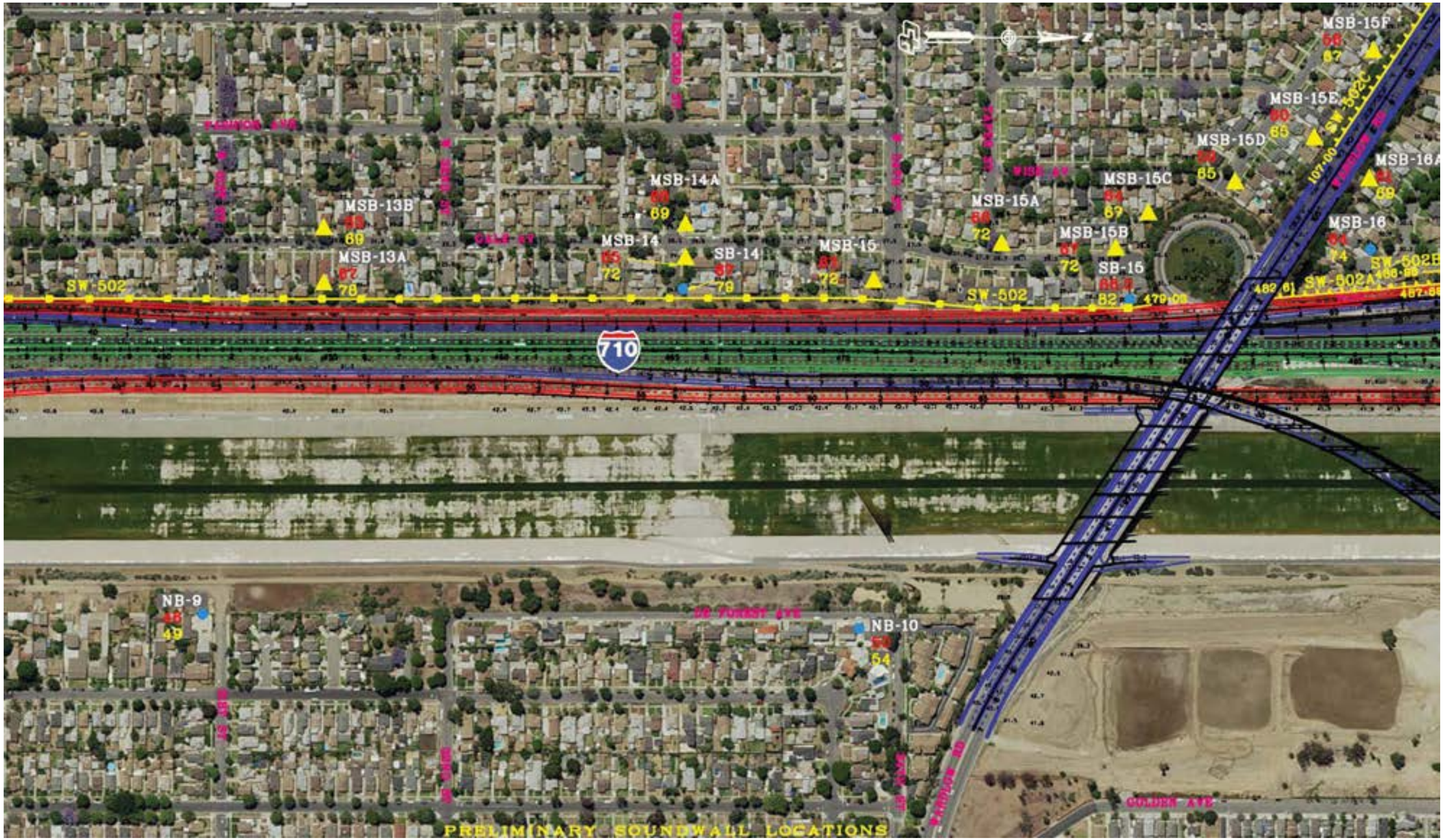

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FIGURE 3.14-2
Sheet 6 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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FIGURE 3.14-2
Sheet 7 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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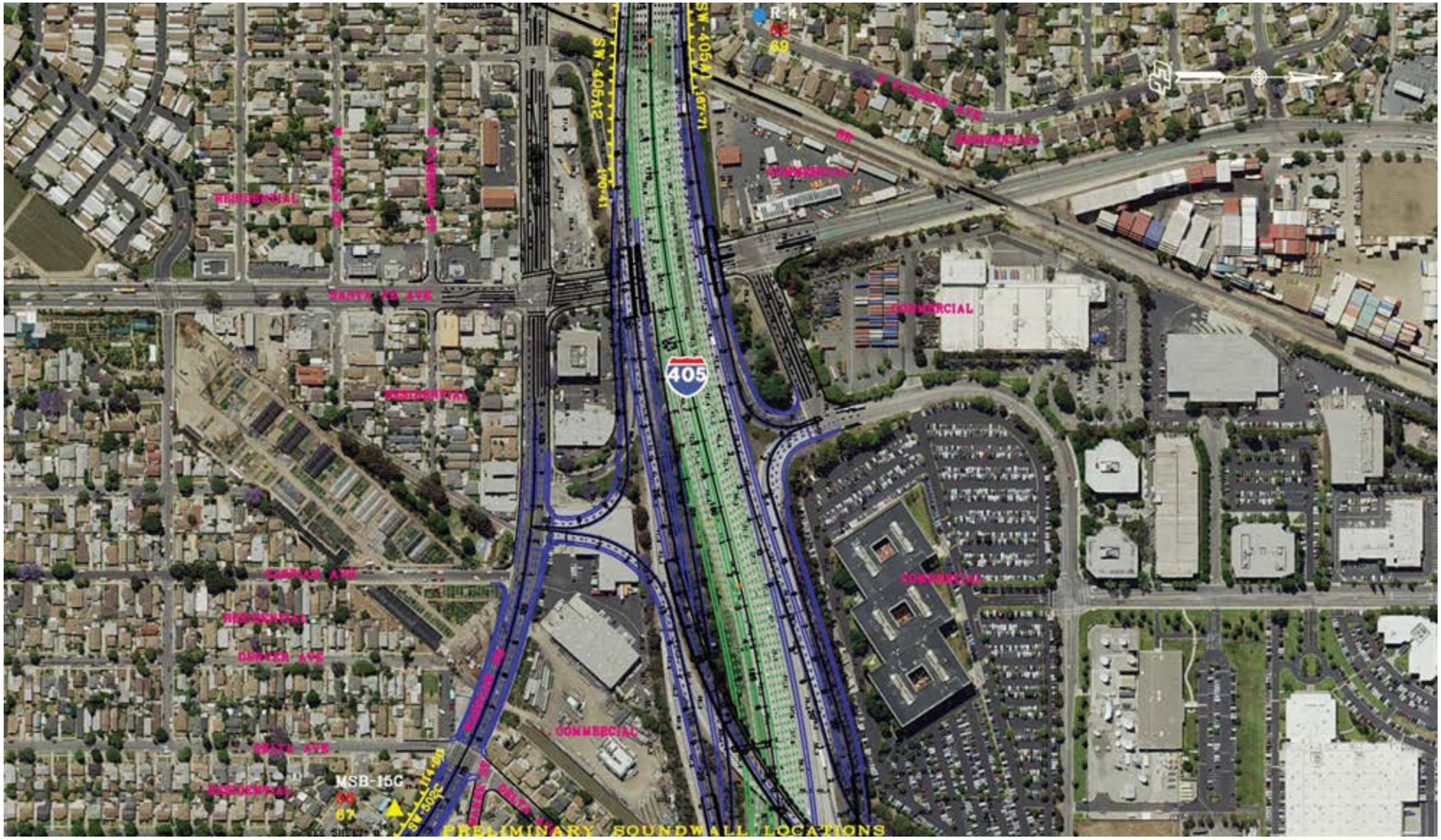

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FIGURE 3.14-2
Sheet 8 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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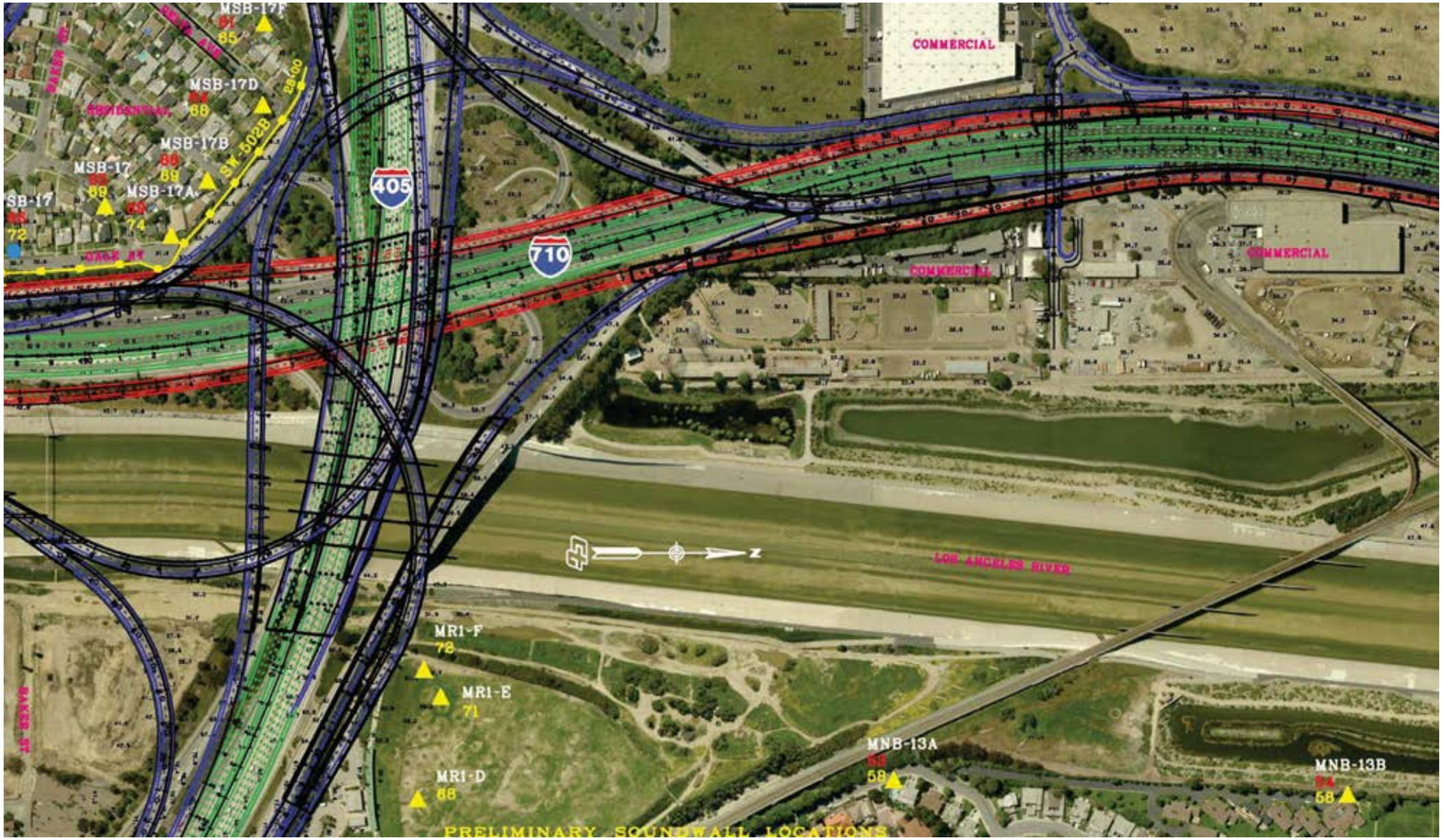

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FIGURE 3.14-2
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I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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FIGURE 3.14-2
Sheet 10 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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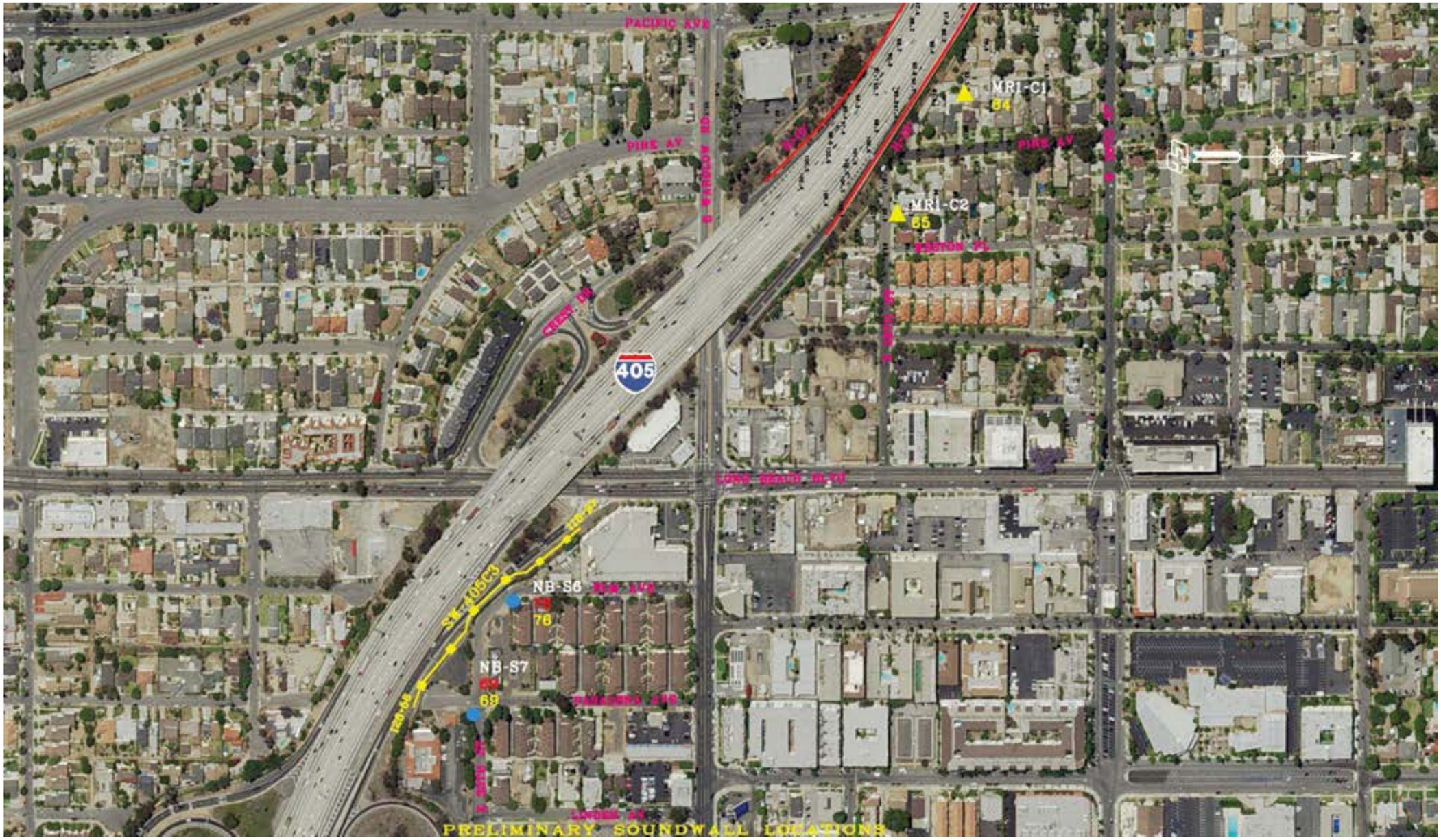

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FIGURE 3.14-2
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I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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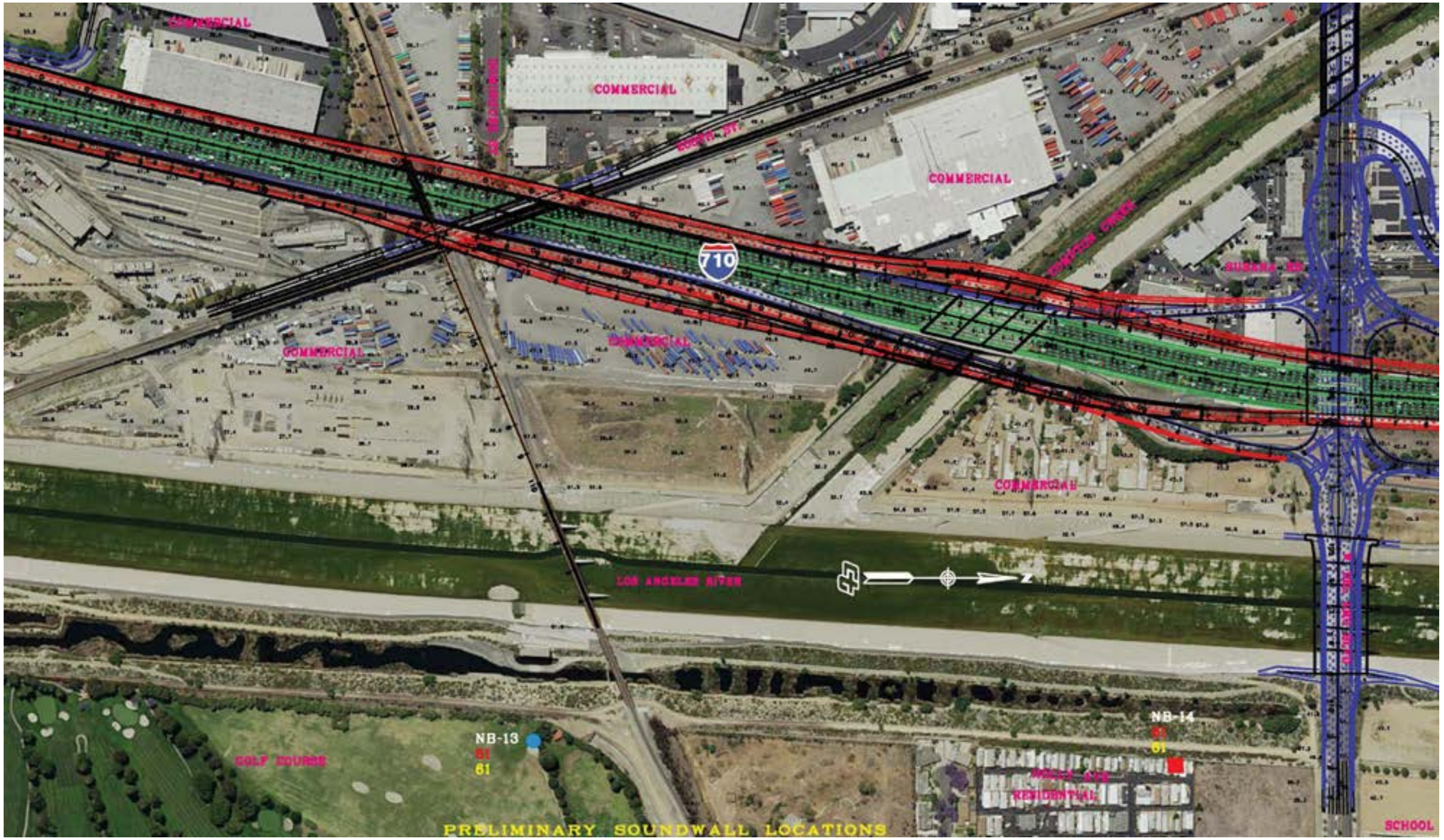

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FIGURE 3.14-2
Sheet 12 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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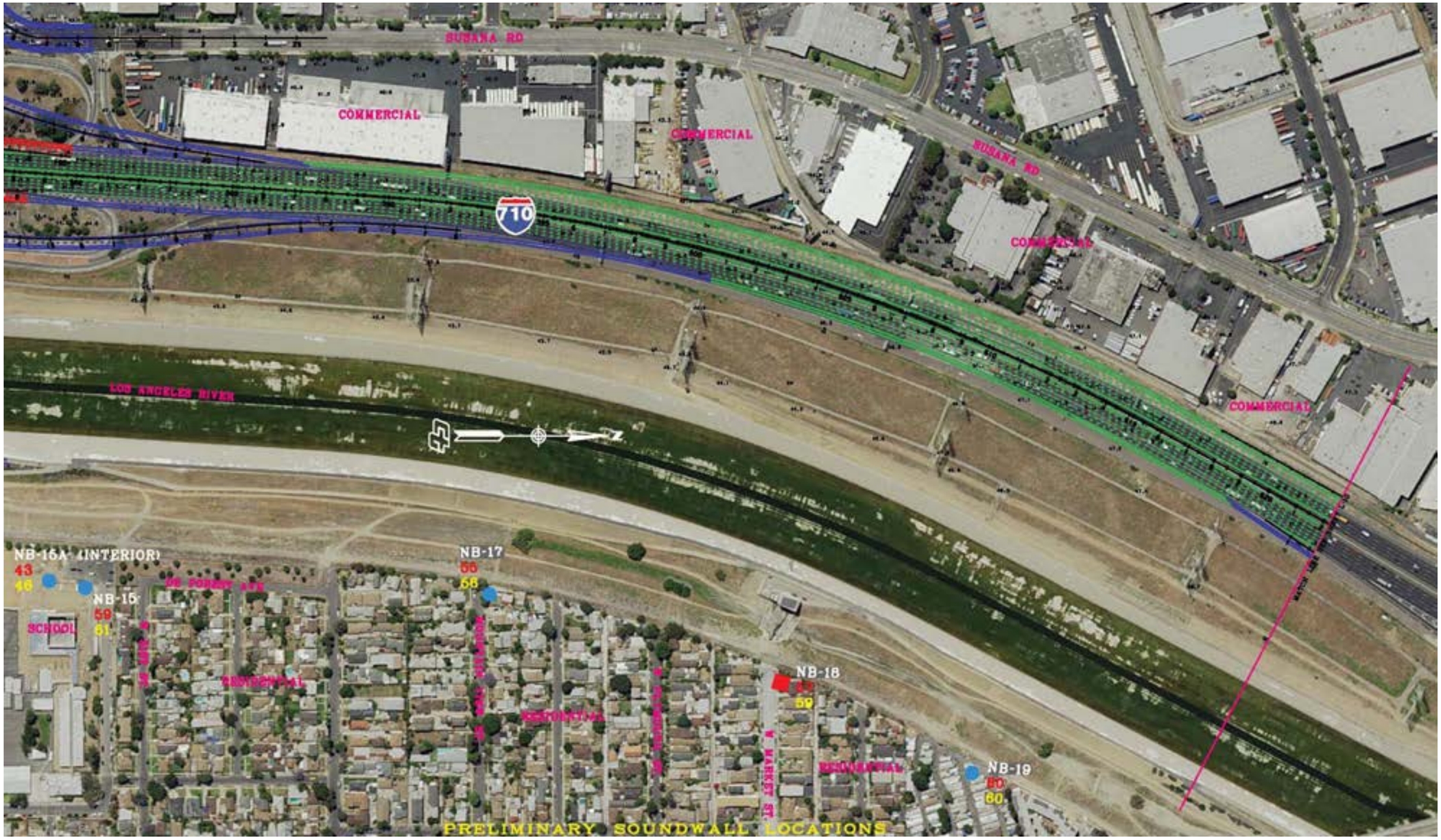

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FIGURE 3.14-2
Sheet 13 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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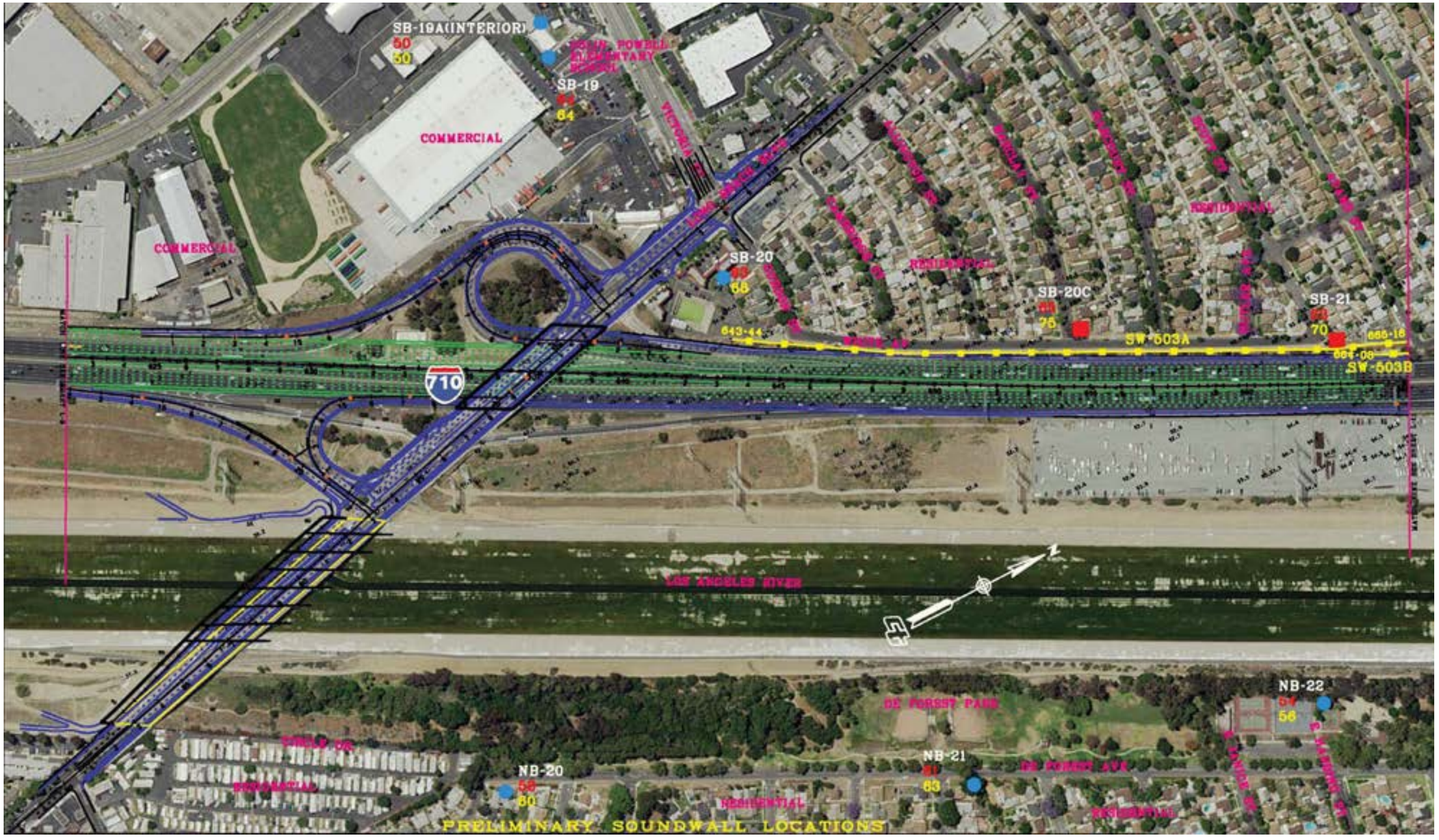

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FIGURE 3.14-2
Sheet 14 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

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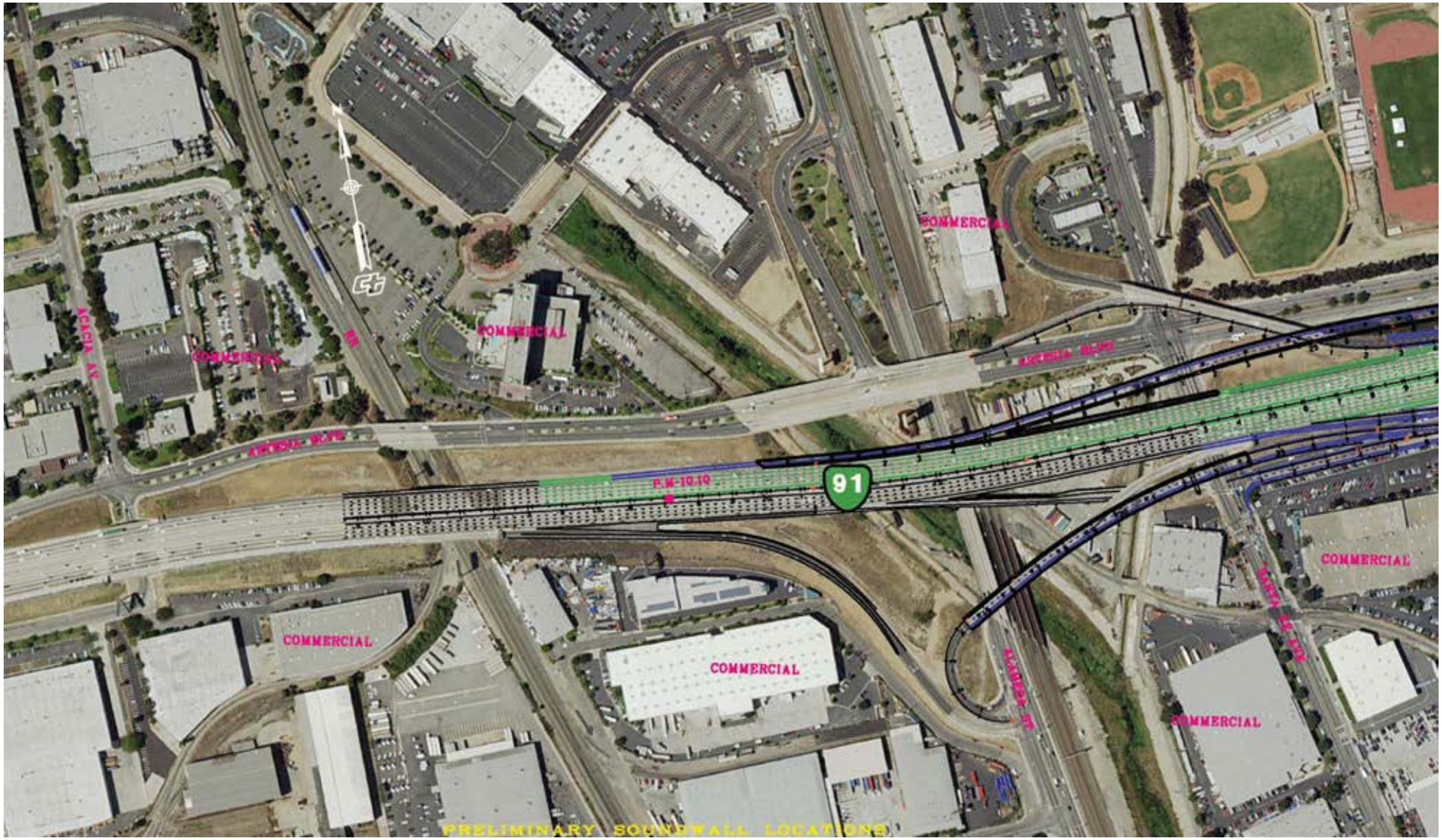

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FIGURE 3.14-2
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I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 16 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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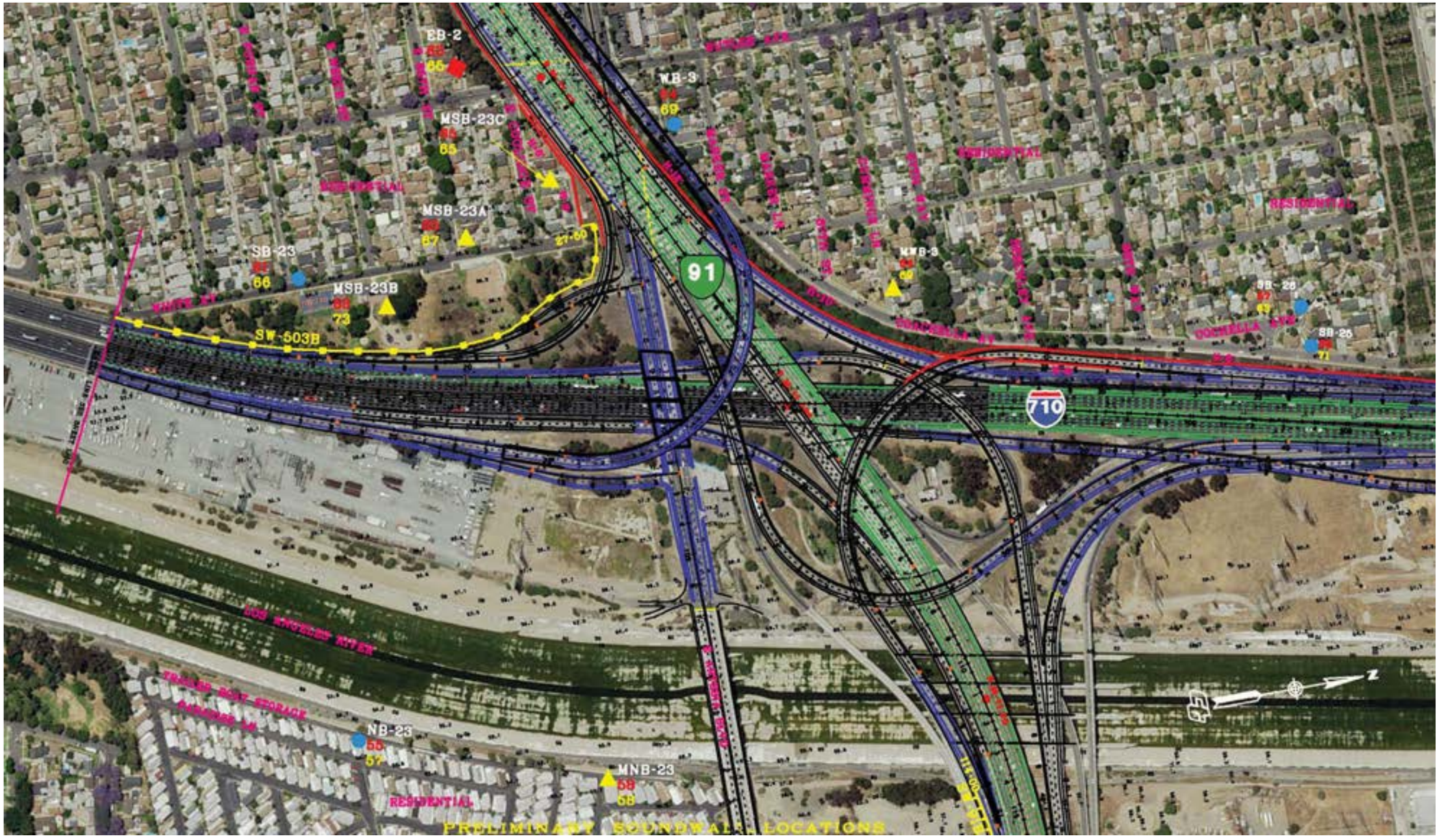

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FIGURE 3.14-2
Sheet 17 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
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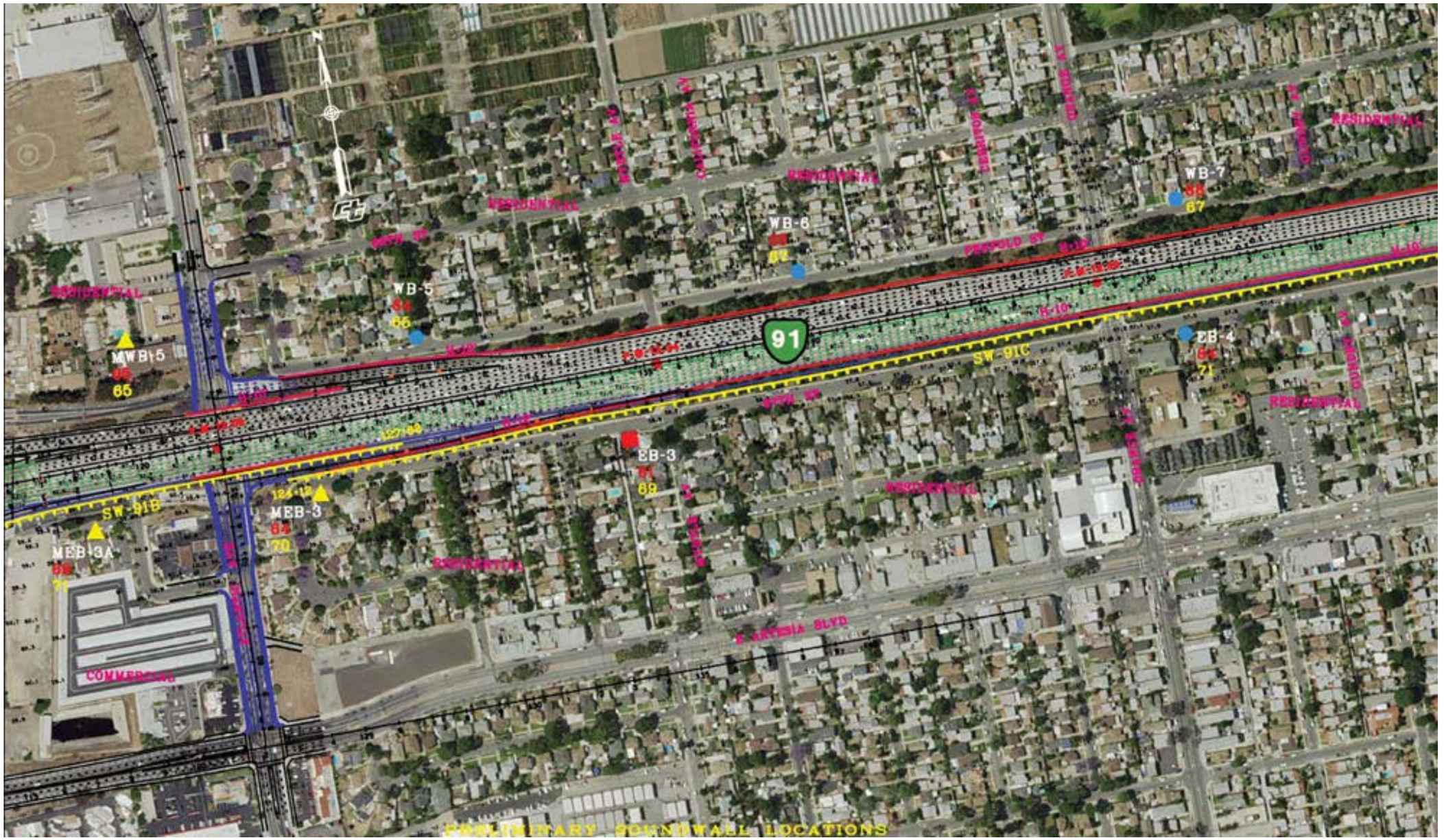

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FIGURE 3.14-2
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I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
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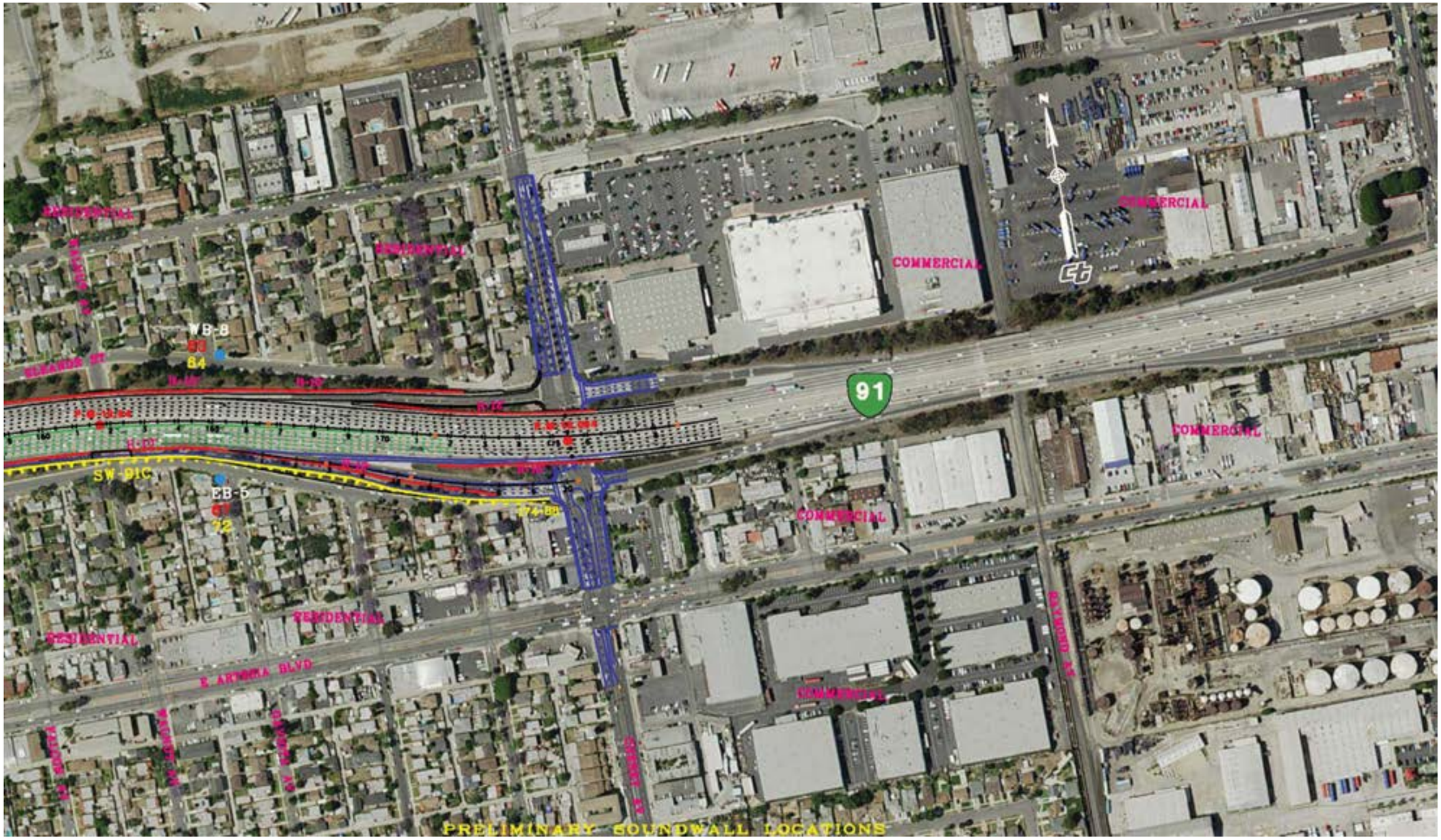

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FIGURE 3.14-2
Sheet 19 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

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FIGURE 3.14-2
Sheet 20 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
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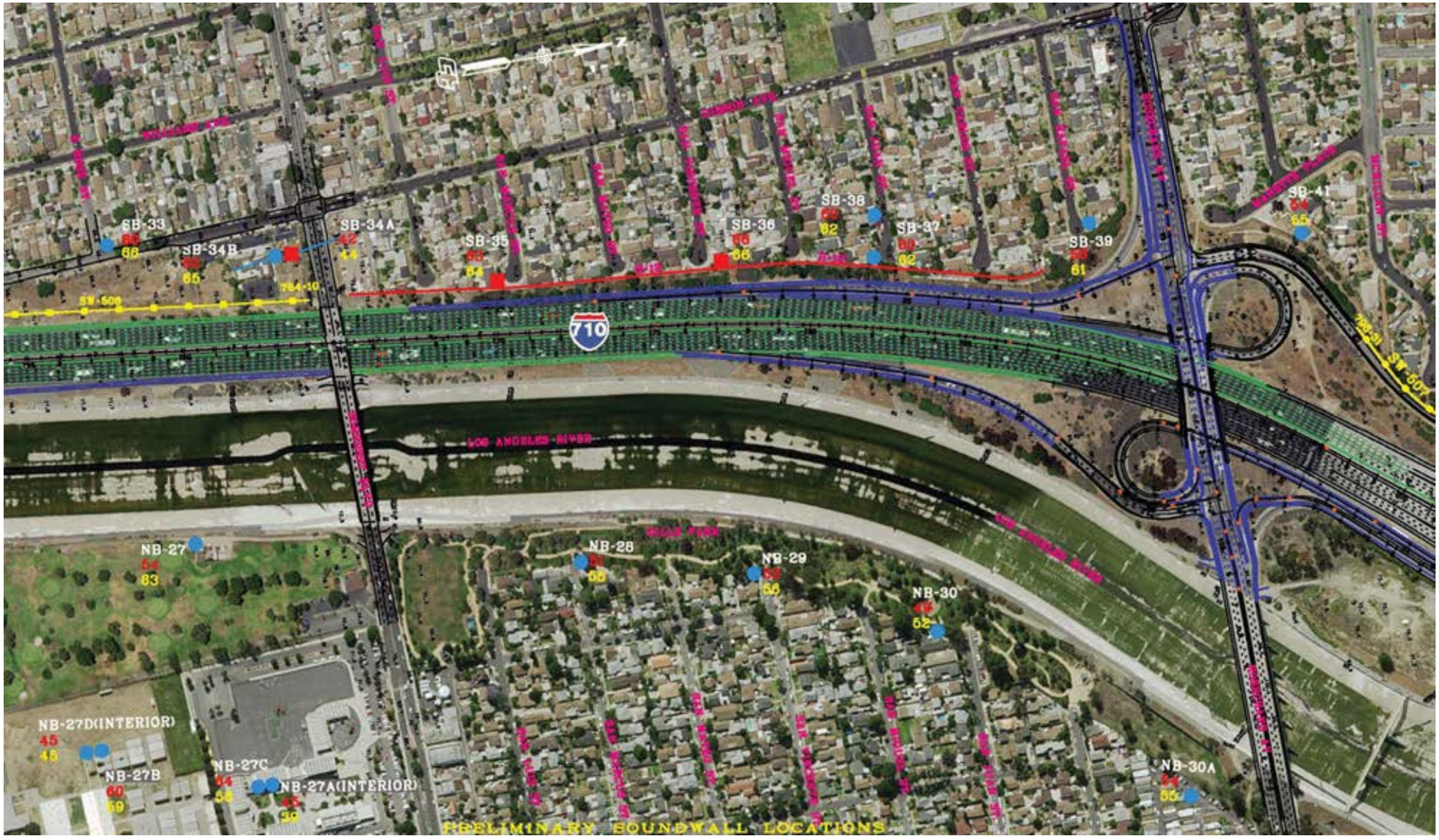

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FIGURE 3.14-2
Sheet 21 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

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- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 22 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 23 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 24 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA
- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

SOURCE: Caltrans

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FIGURE 3.14-2
Sheet 25 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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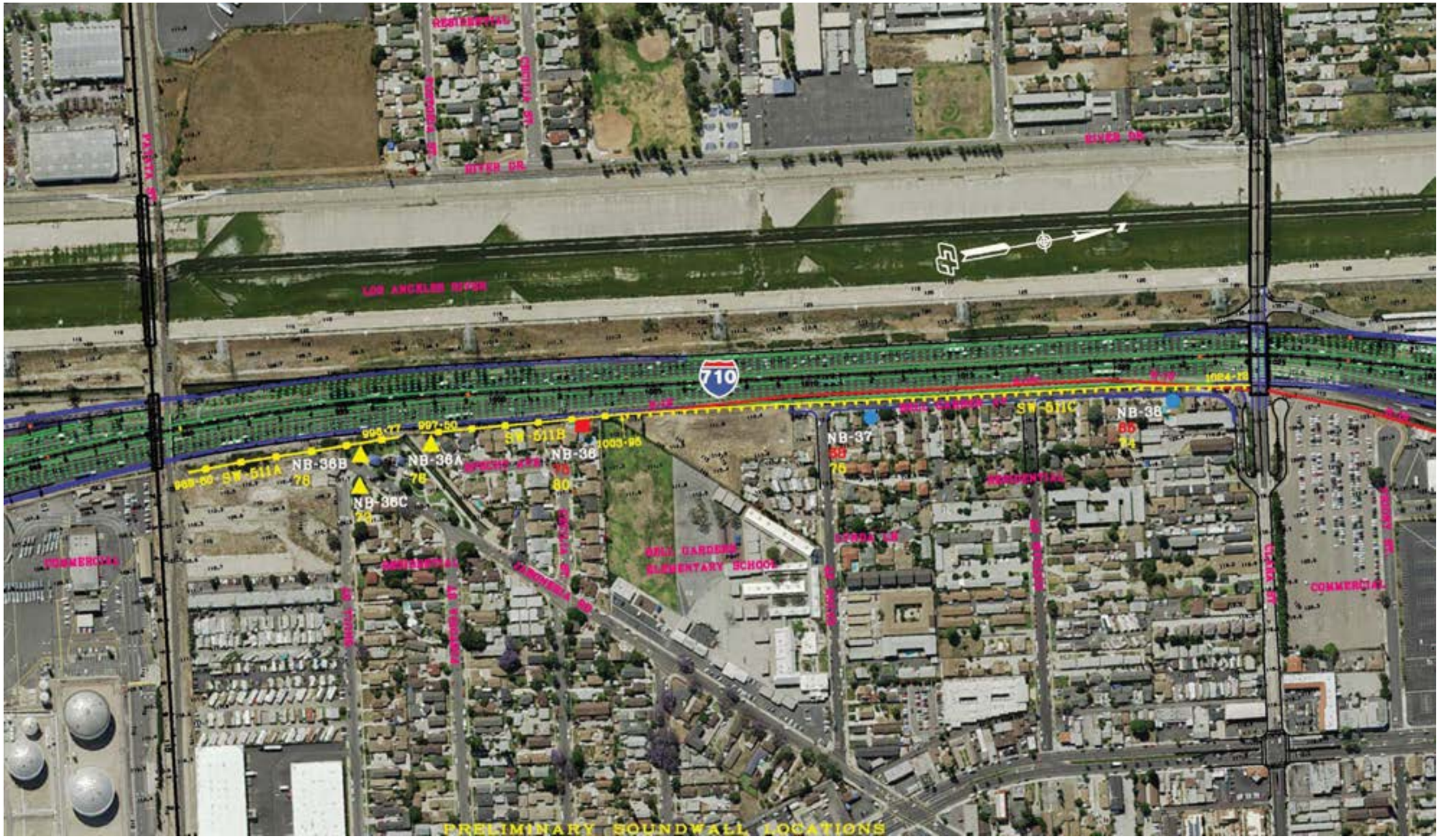

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 26 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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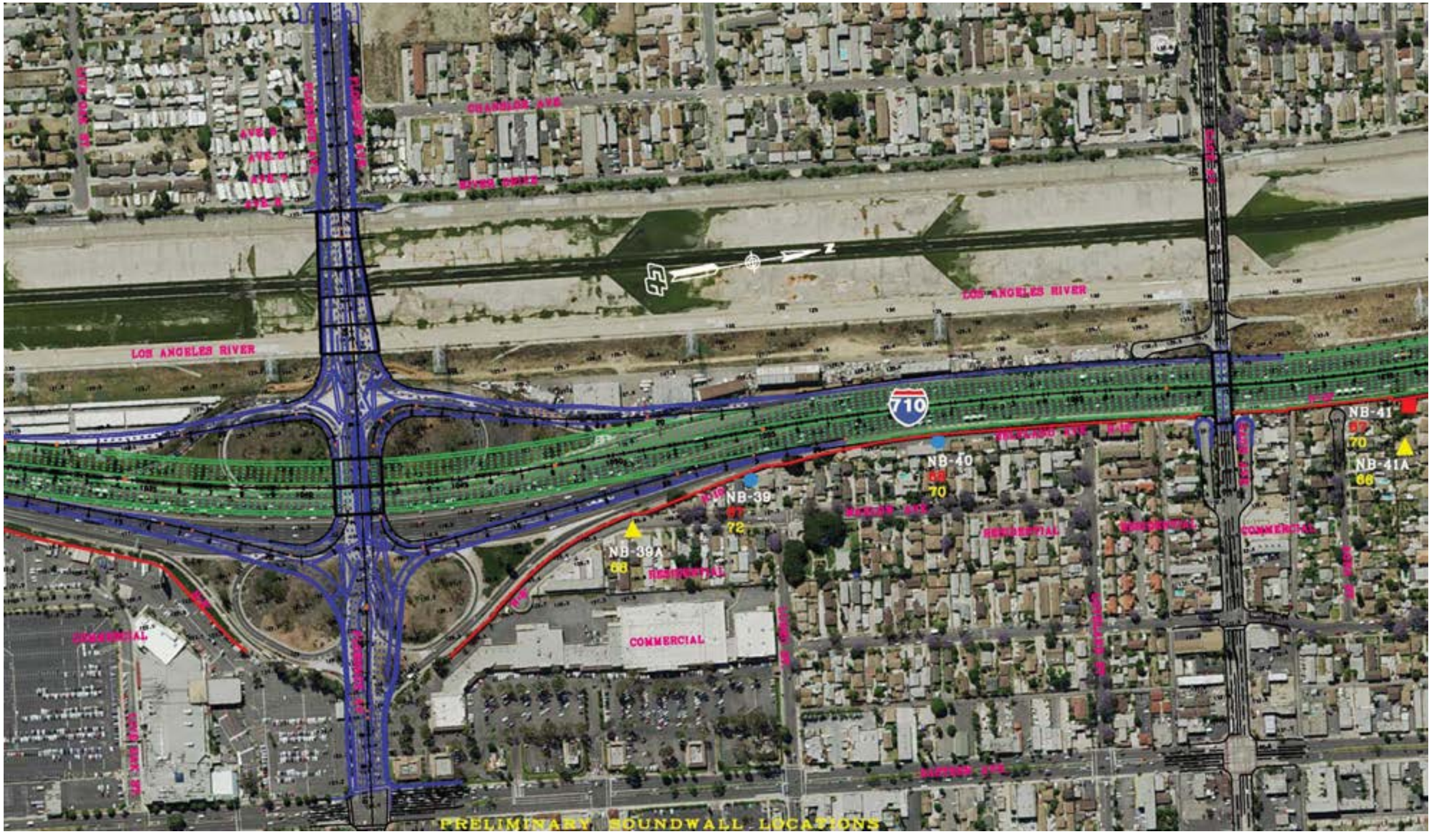

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 27 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
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- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

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- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
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SOURCE: Caltrans

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FIGURE 3.14-2
Sheet 28 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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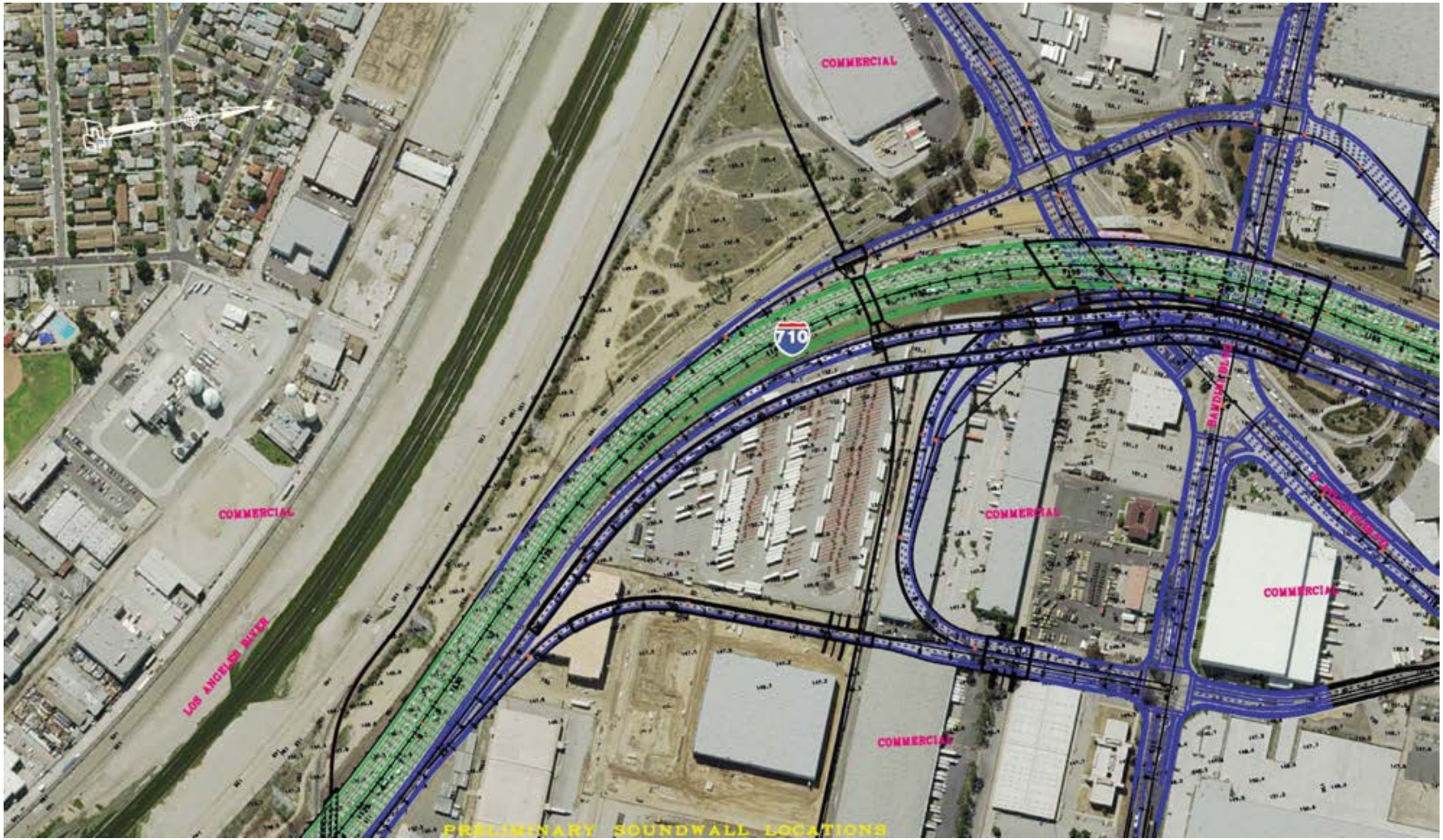

LEGEND

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- MODELED SITE
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FIGURE 3.14-2
Sheet 29 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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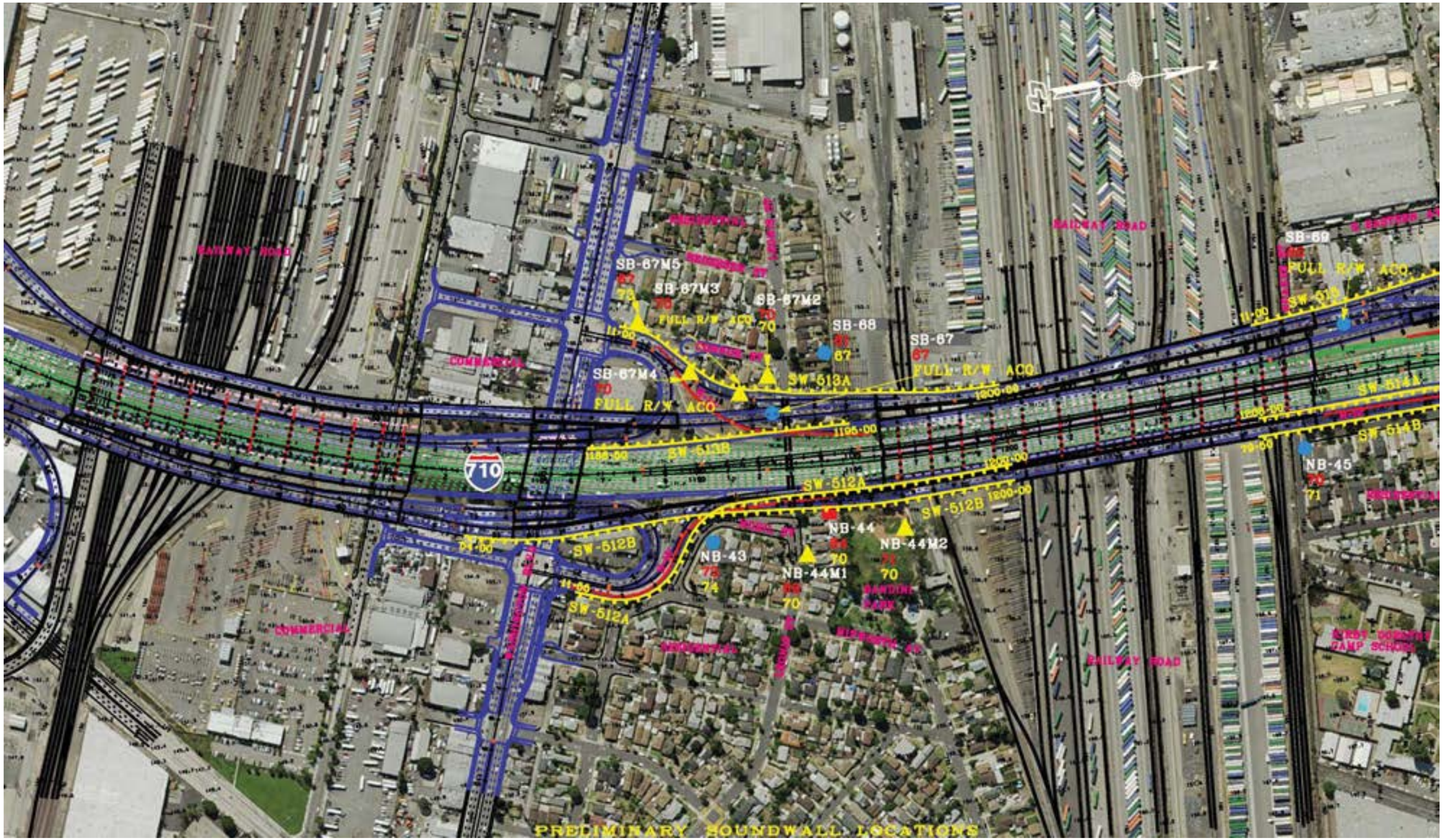

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- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 30 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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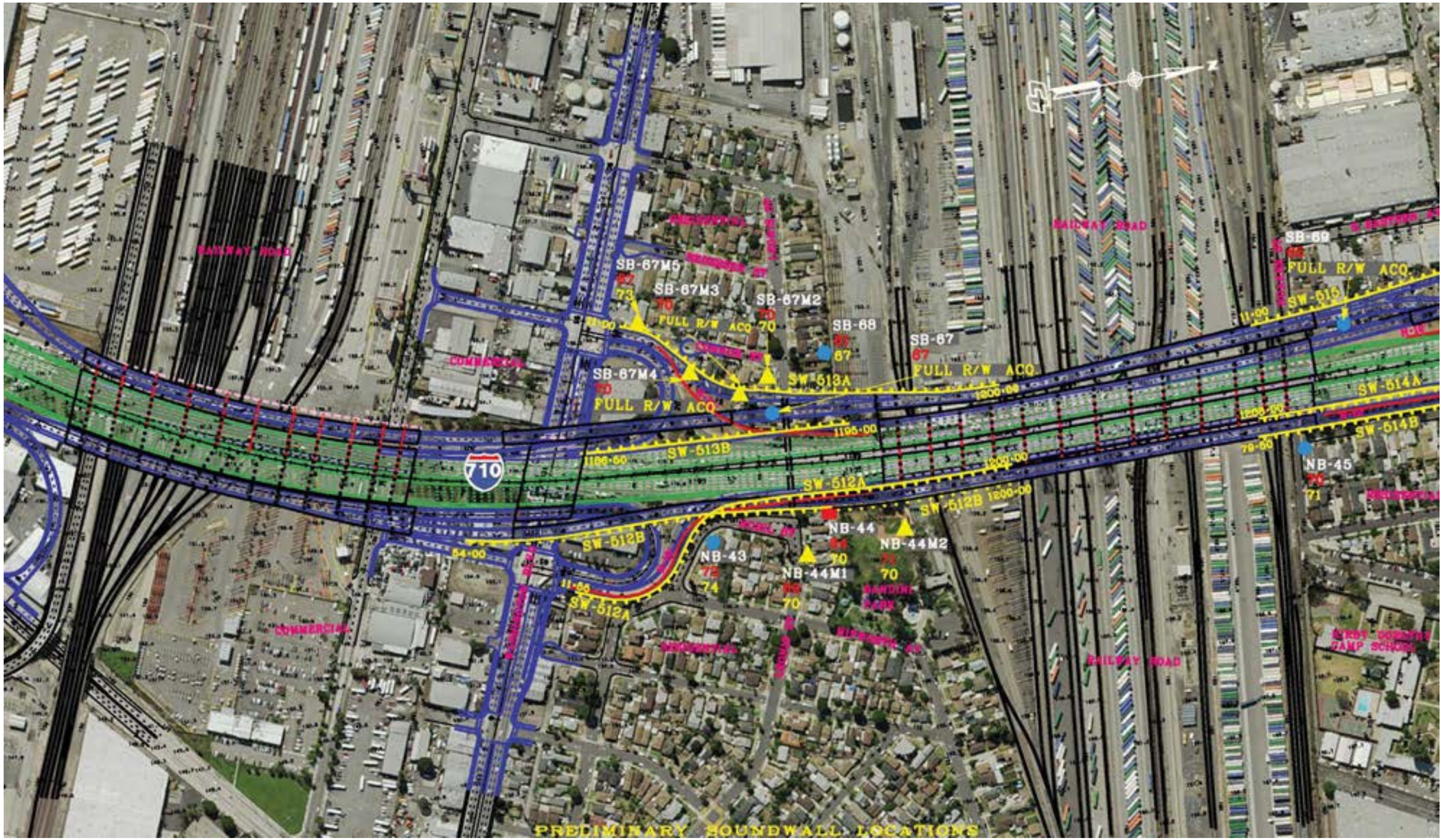

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
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- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

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FIGURE 3.14-2
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I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls (Option 1A)

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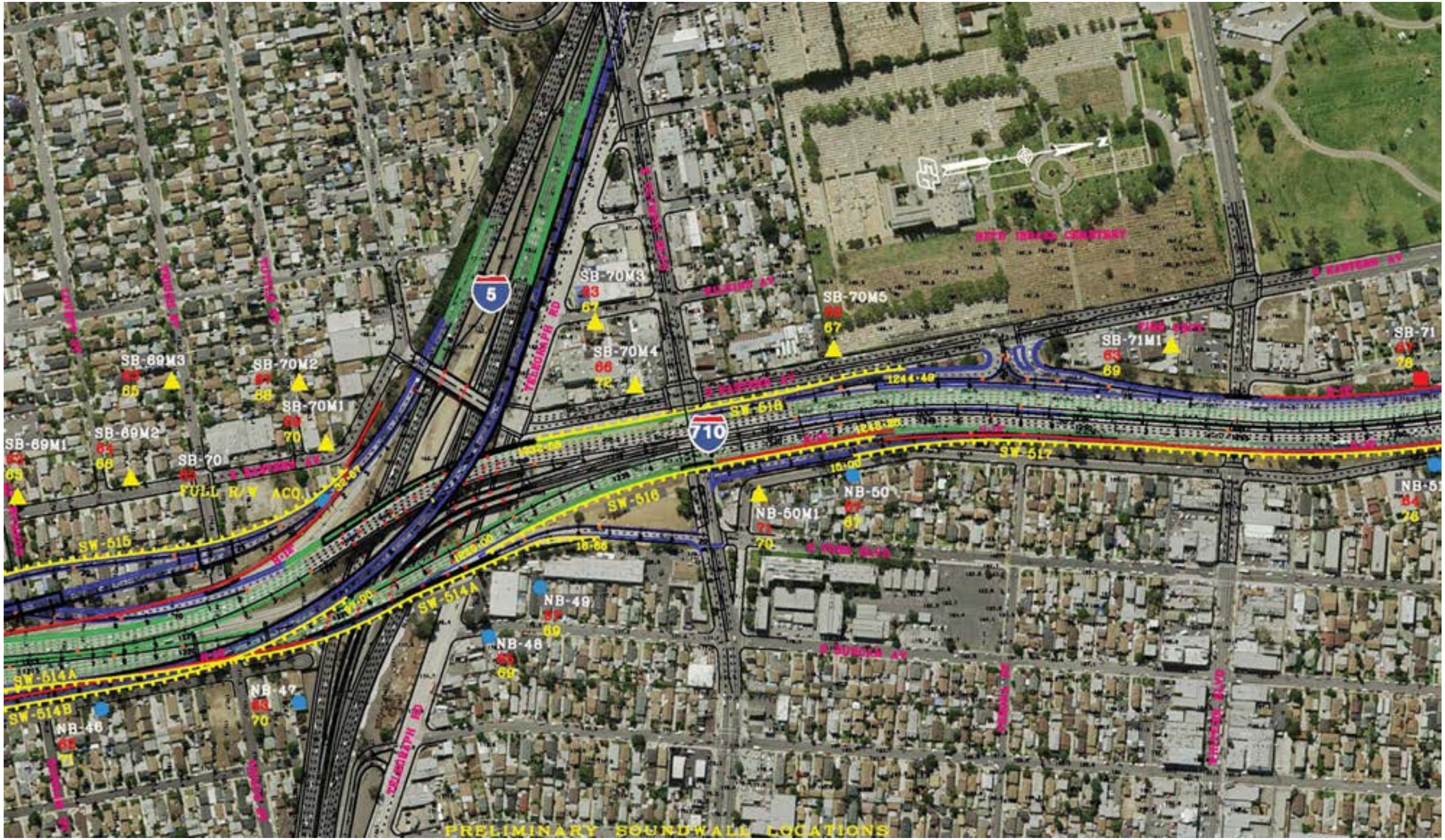

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA
- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 32 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA
- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 33 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls (East LA Option)

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA
- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 34 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-5C

FIGURE 3.14-2
Sheet 35 of 35

I-710 Corridor Project RDEIR/SDEIS

Alternative 5C – Noise Monitoring and Modeled Sites, and Soundwalls (East LA Option)

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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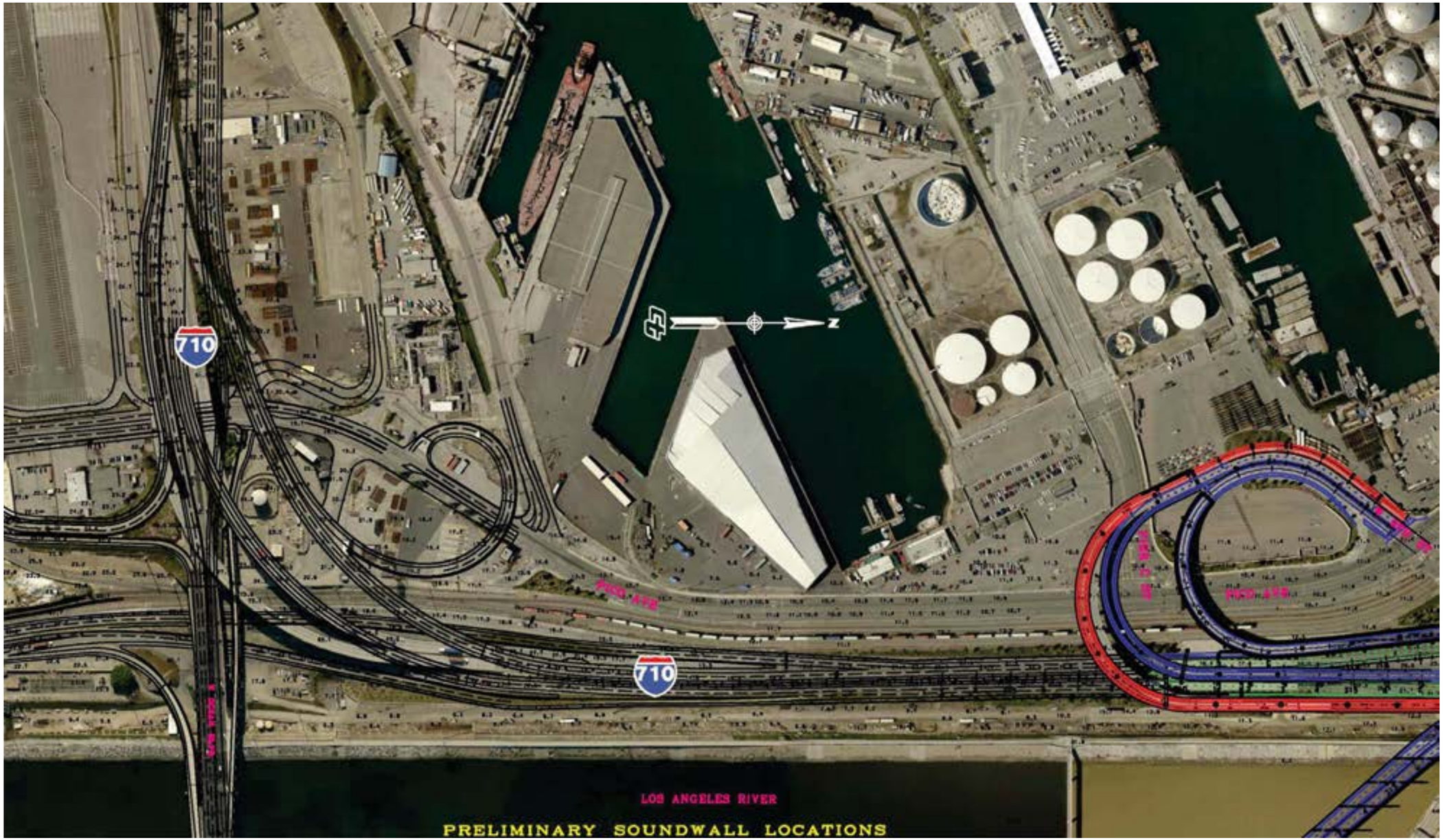

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

SOURCE: Caltrans

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FIGURE 3.14-3
Sheet 1 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 2 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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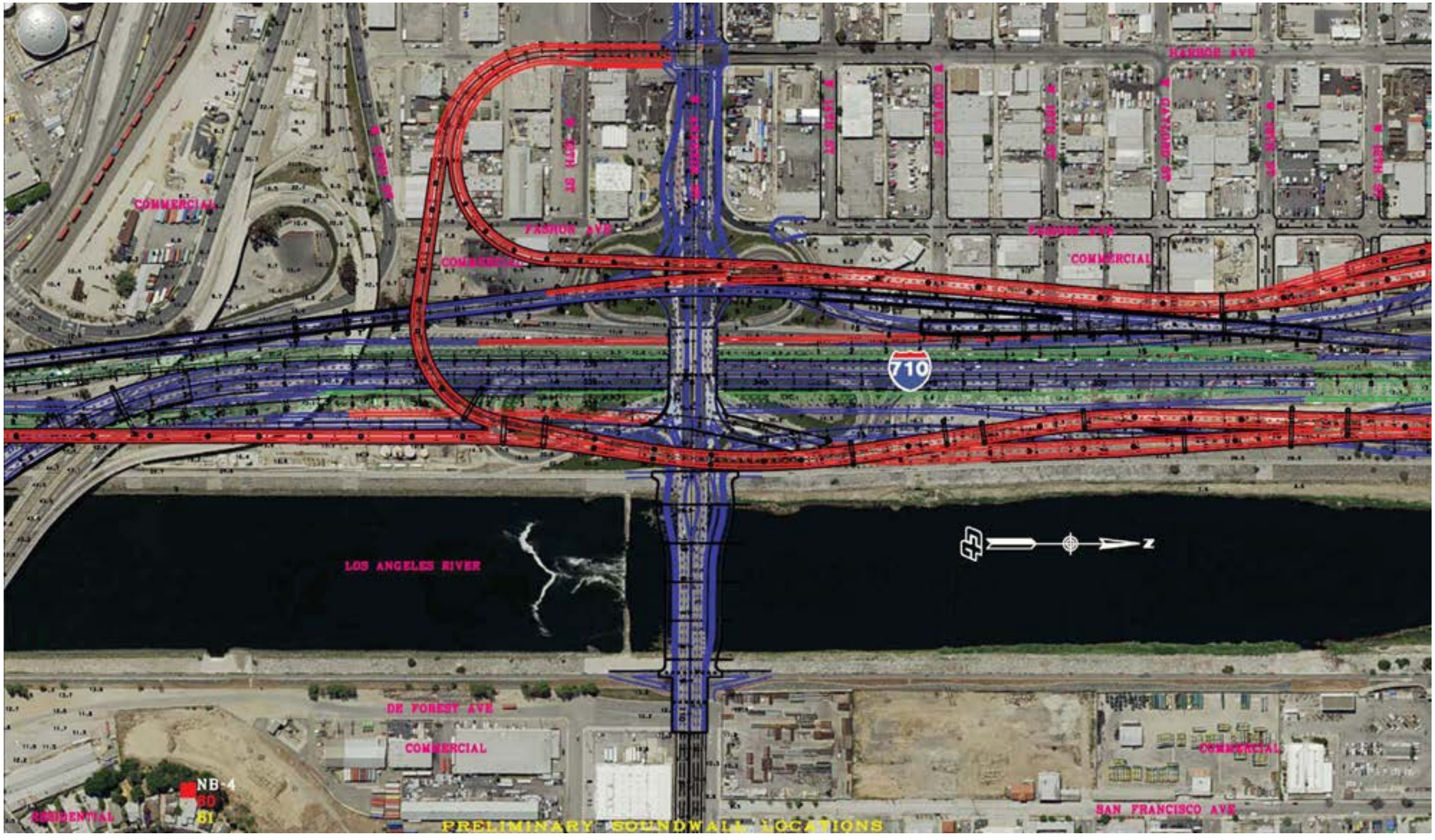

LEGEND

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- MODELED SITE
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- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
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- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 3 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

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- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 4 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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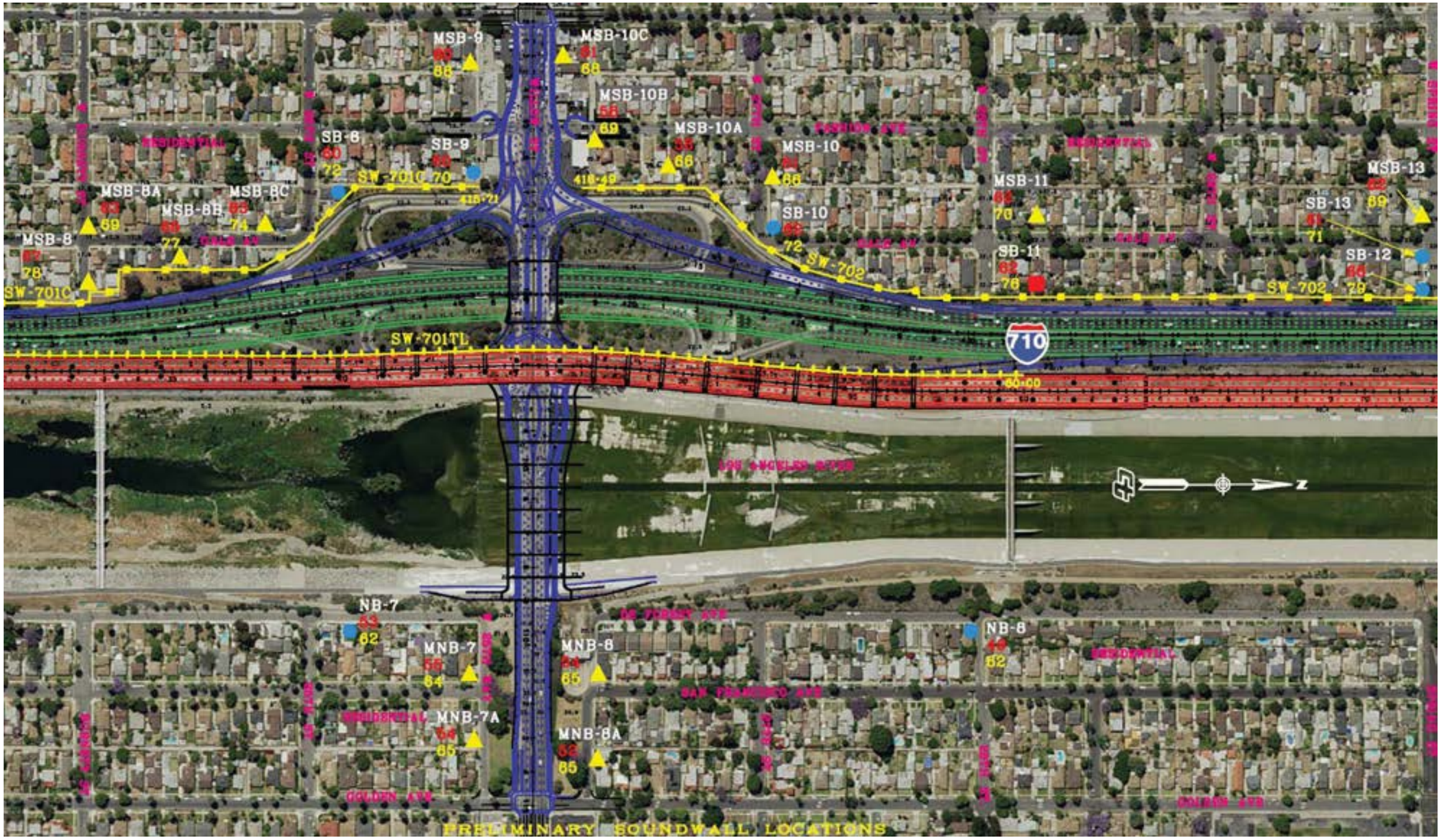

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
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- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

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FIGURE 3.14-3
Sheet 5 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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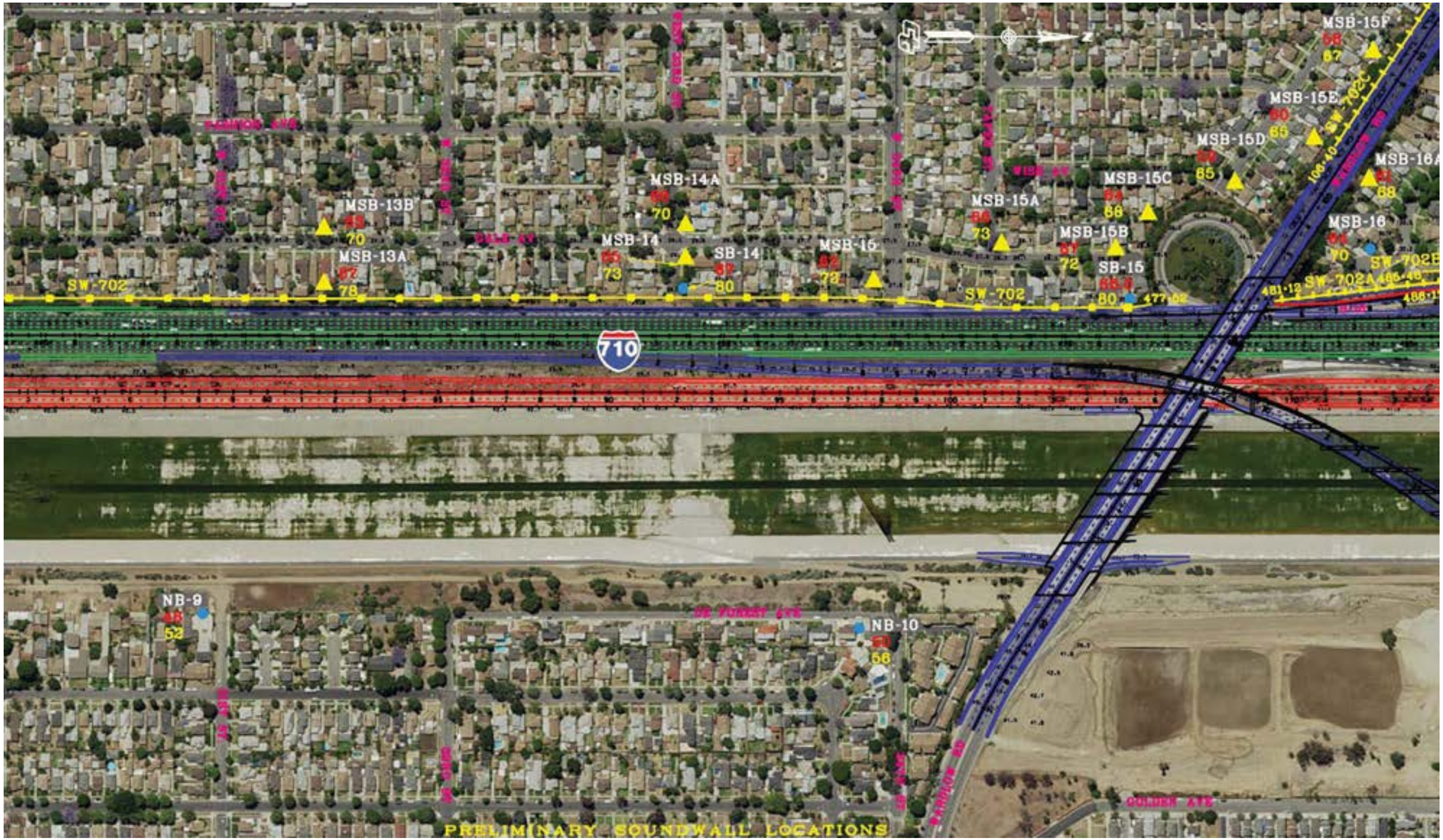

LEGEND

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- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 6 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 7 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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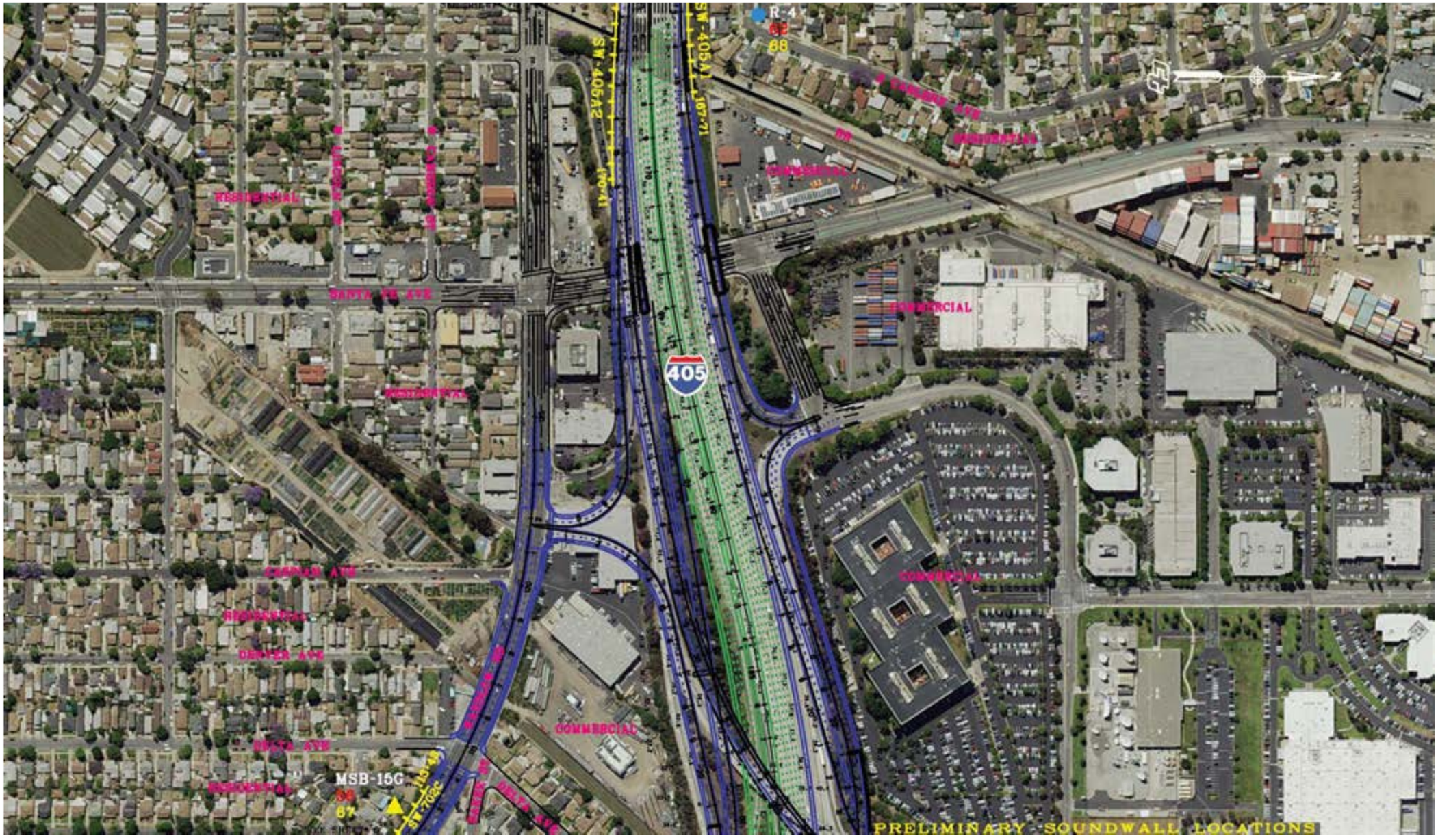

LEGEND

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- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

SOURCE: Caltrans

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FIGURE 3.14-3
Sheet 8 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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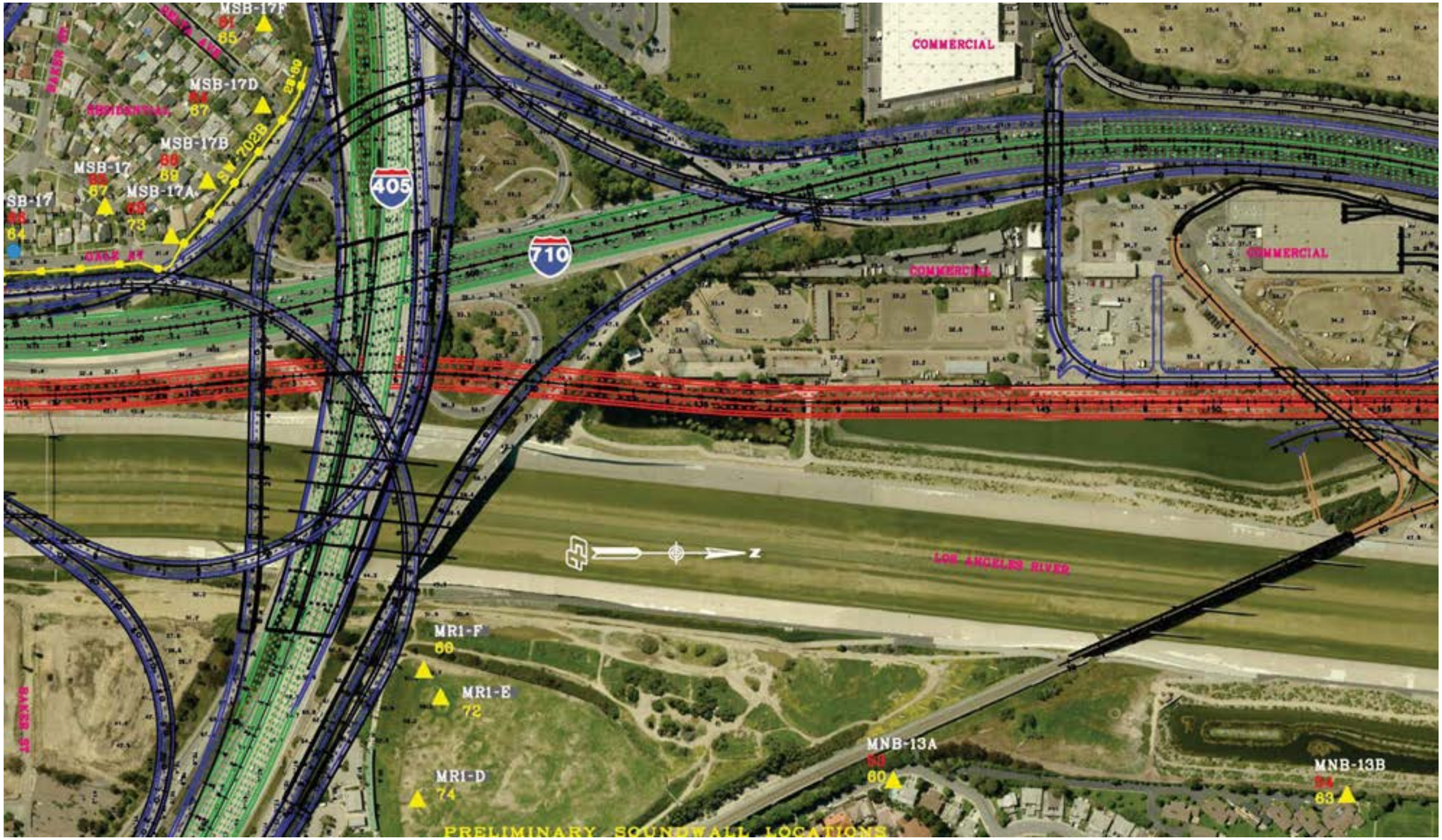

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- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

SOURCE: Caltrans

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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 10 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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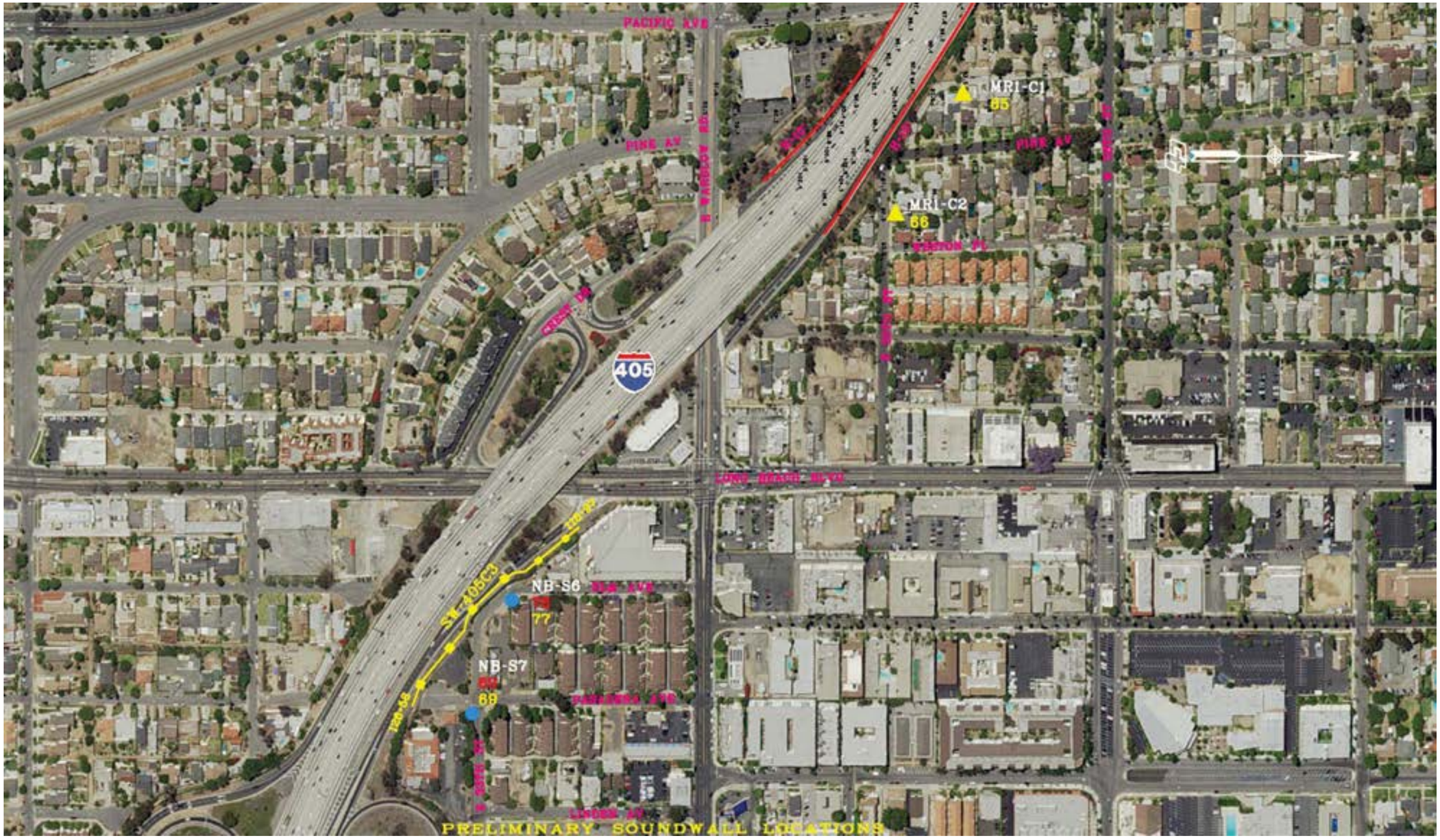

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

SOURCE: Caltrans

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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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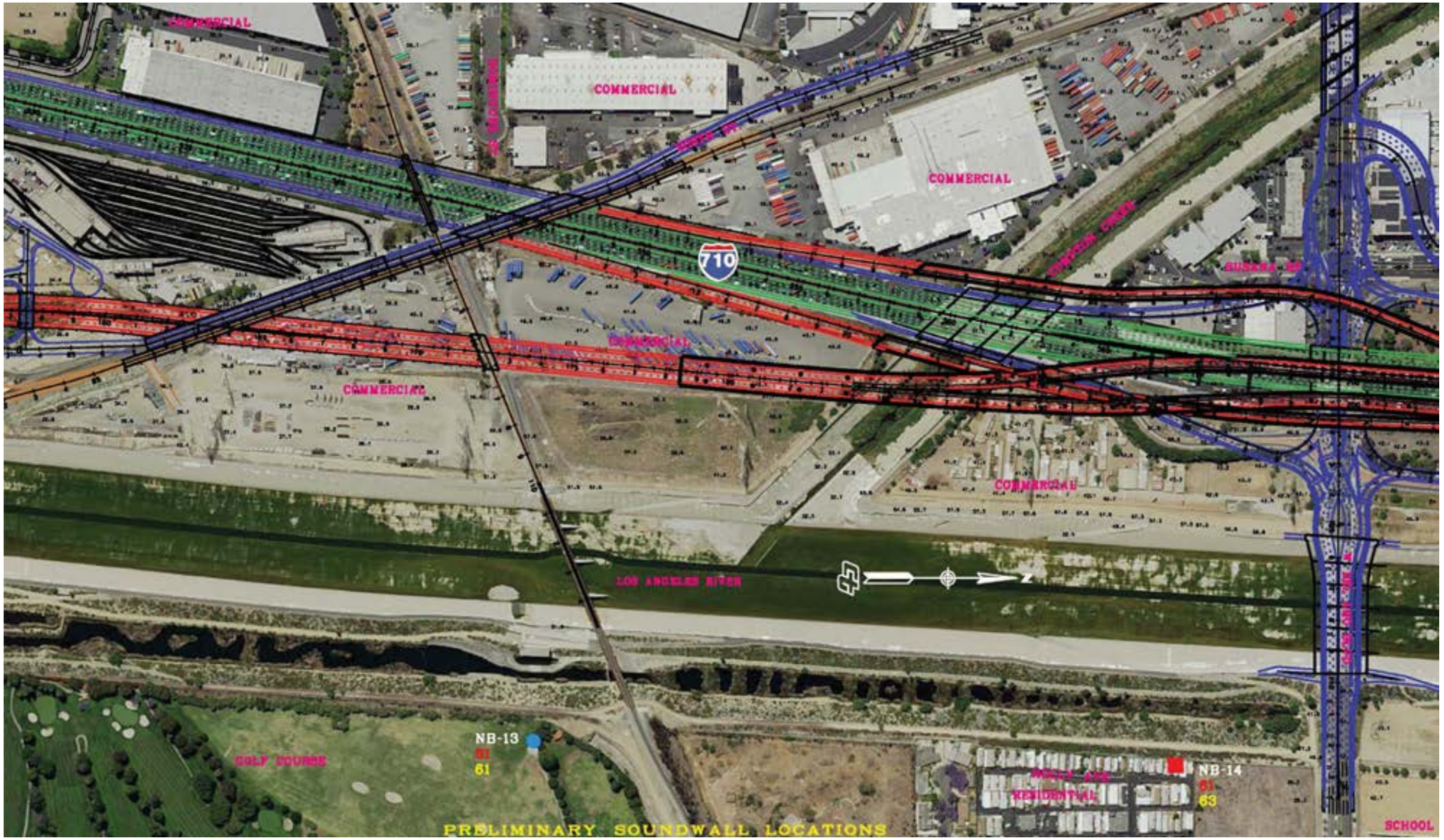

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
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- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
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- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 12 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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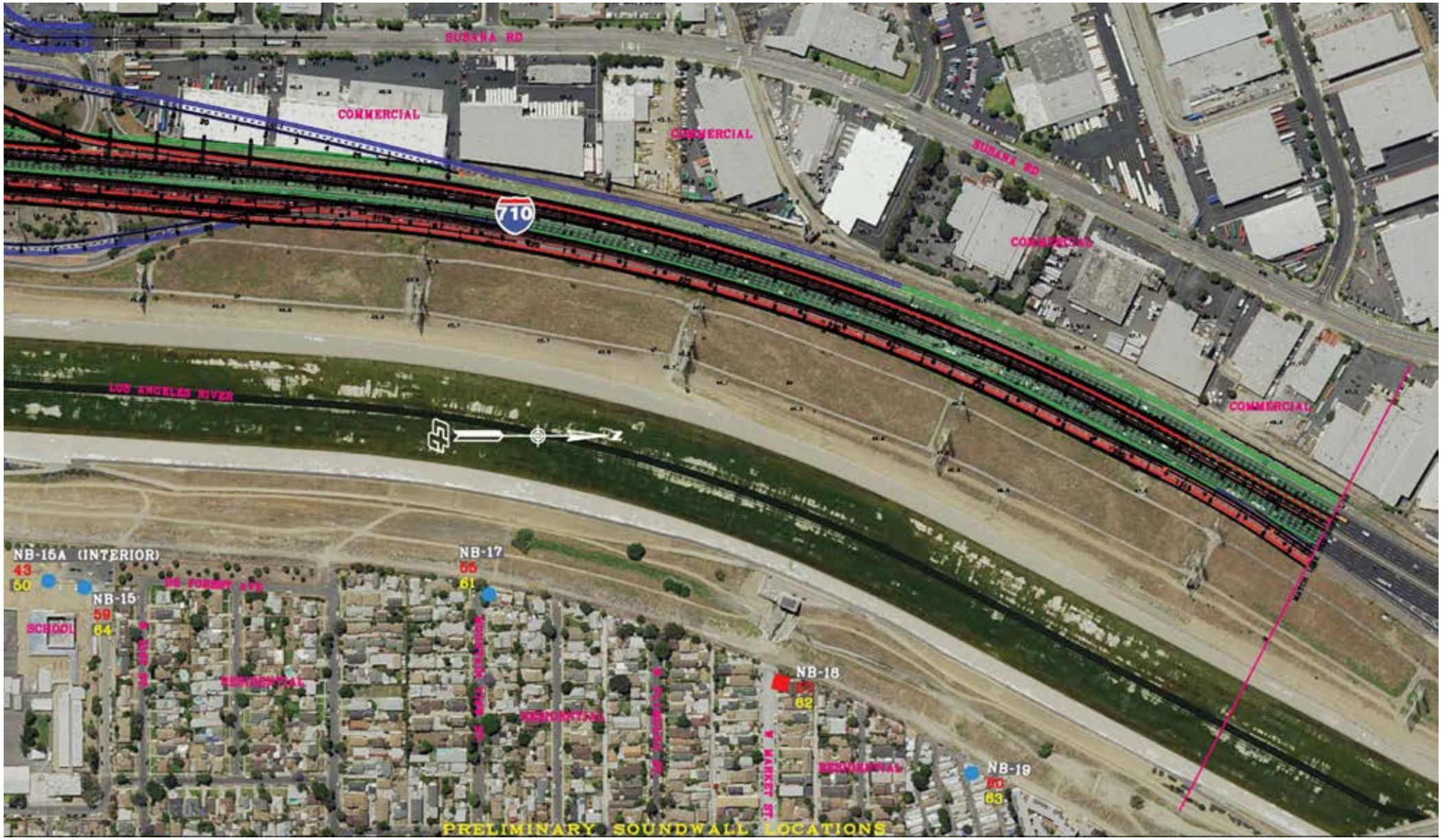

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
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- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

SOURCE: Caltrans

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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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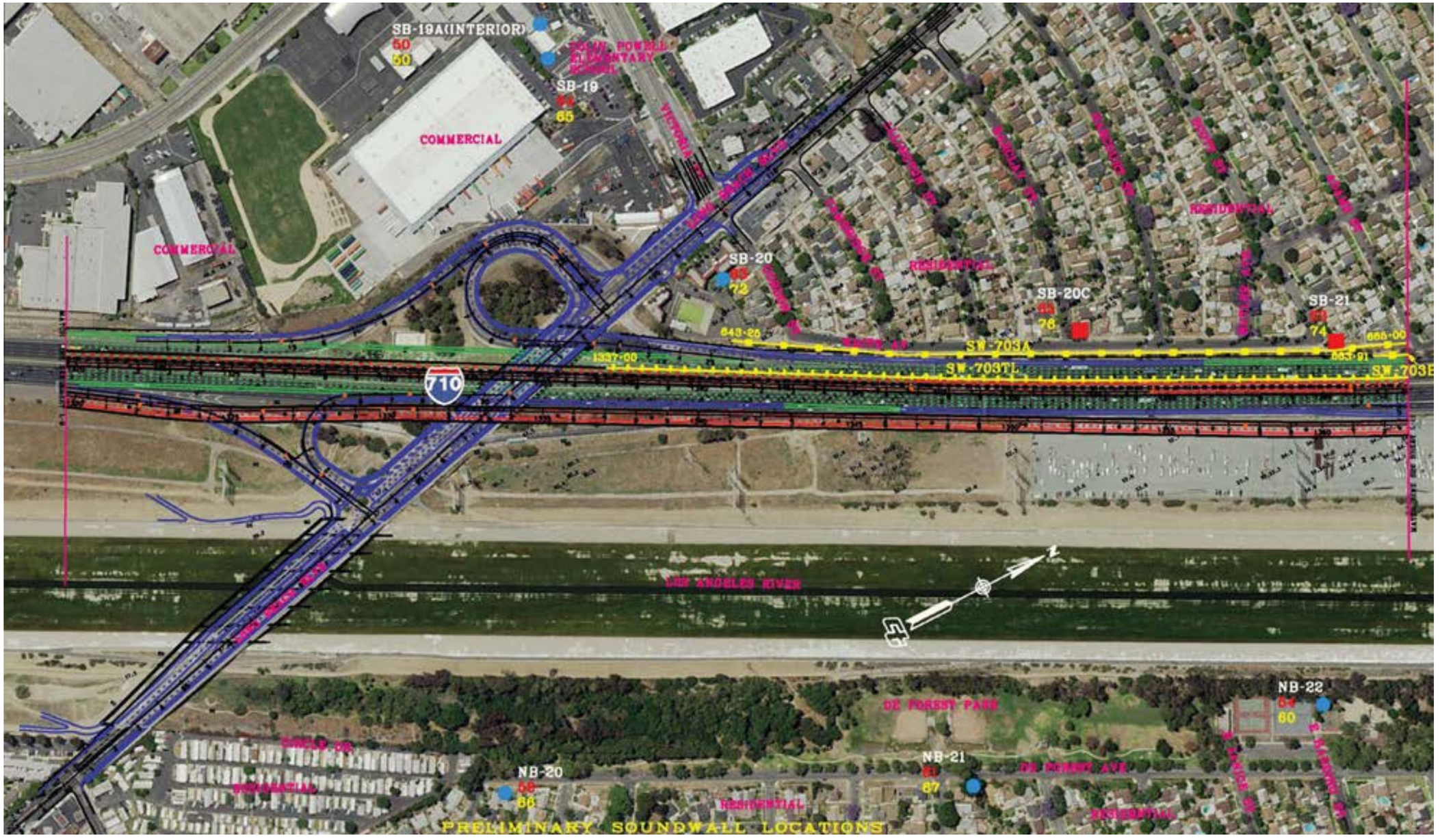

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
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- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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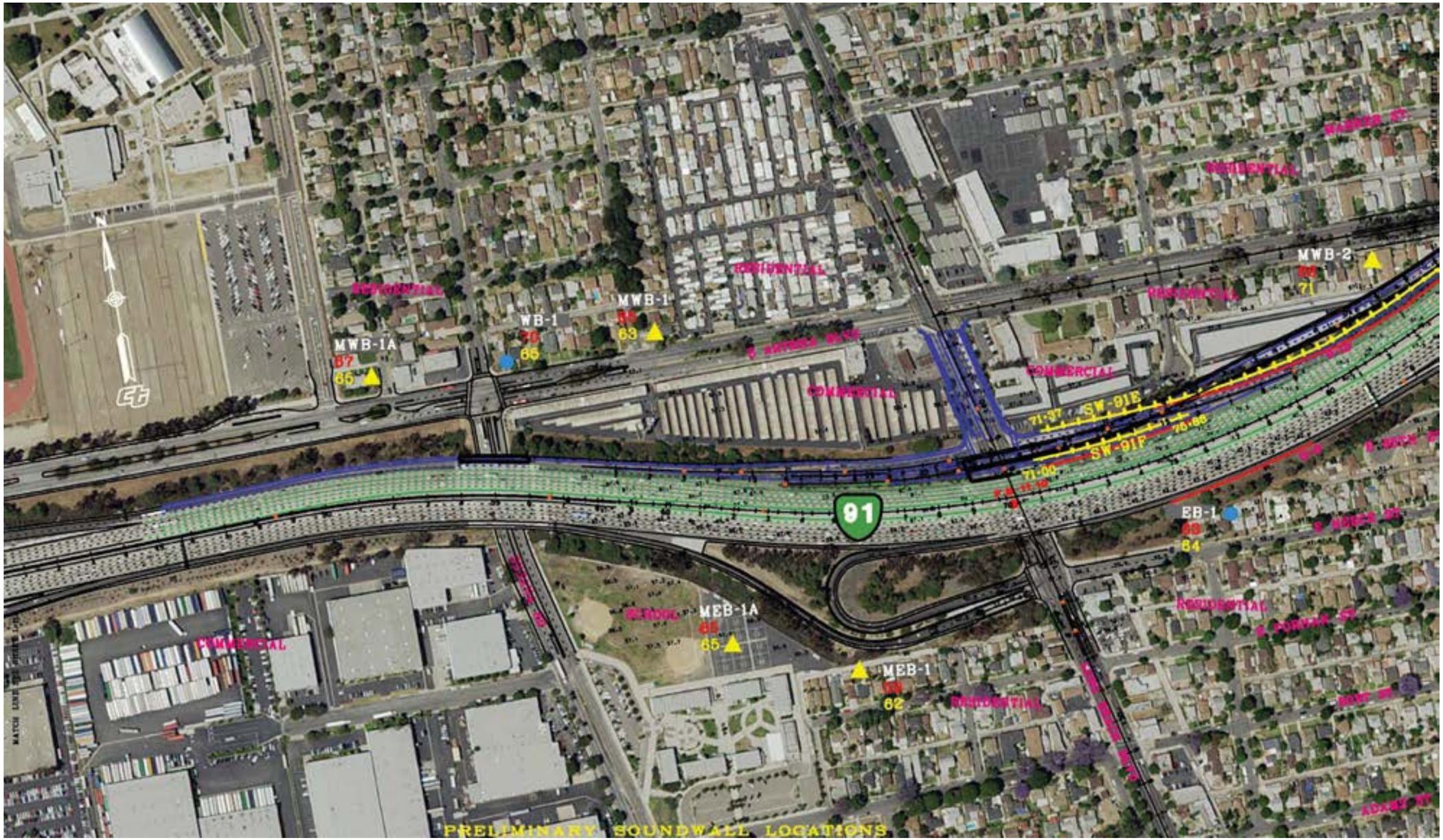

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
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- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
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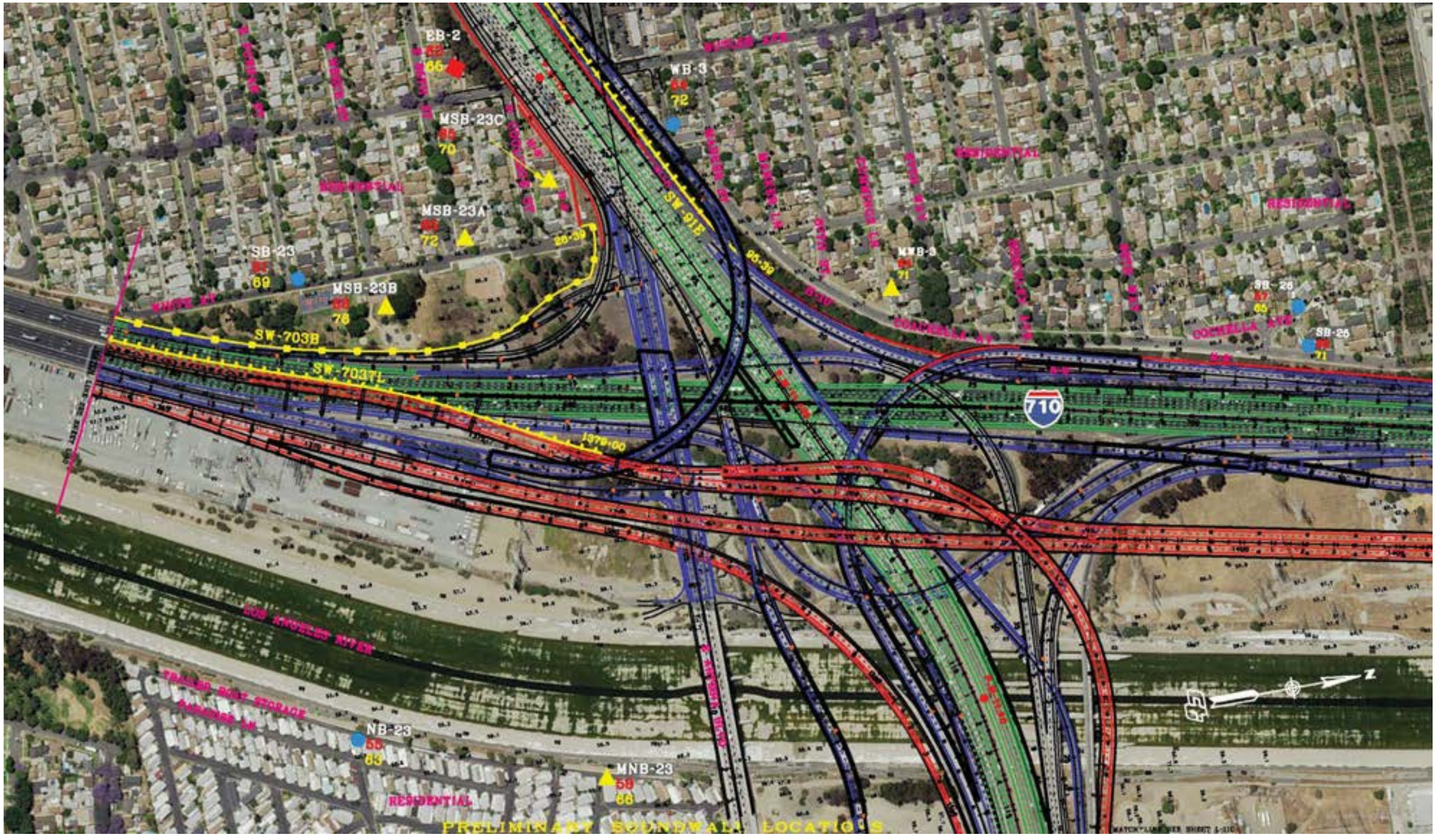

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

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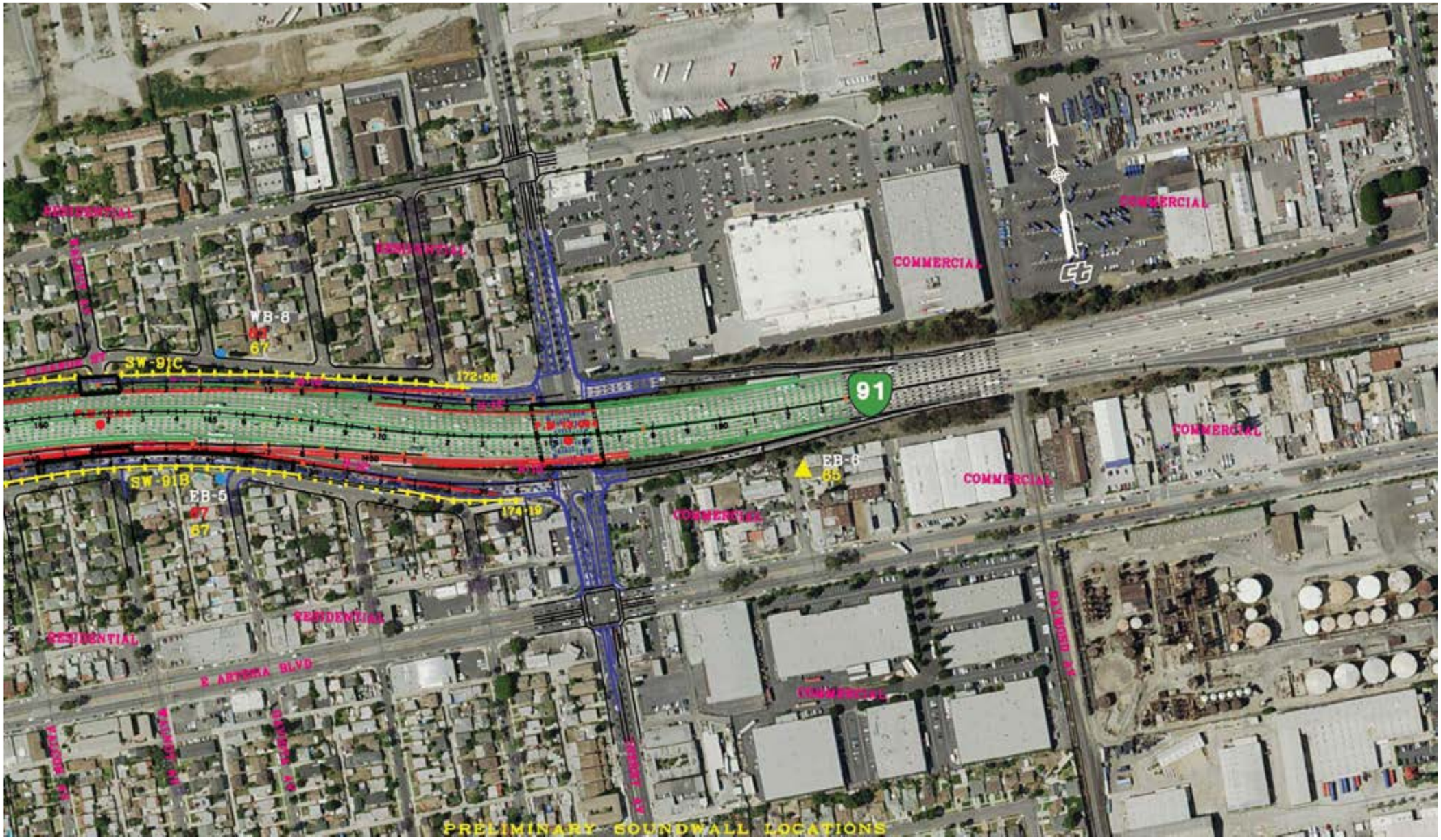

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

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- MODELED SITE
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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5

EA 249900; EFIS 0700000443

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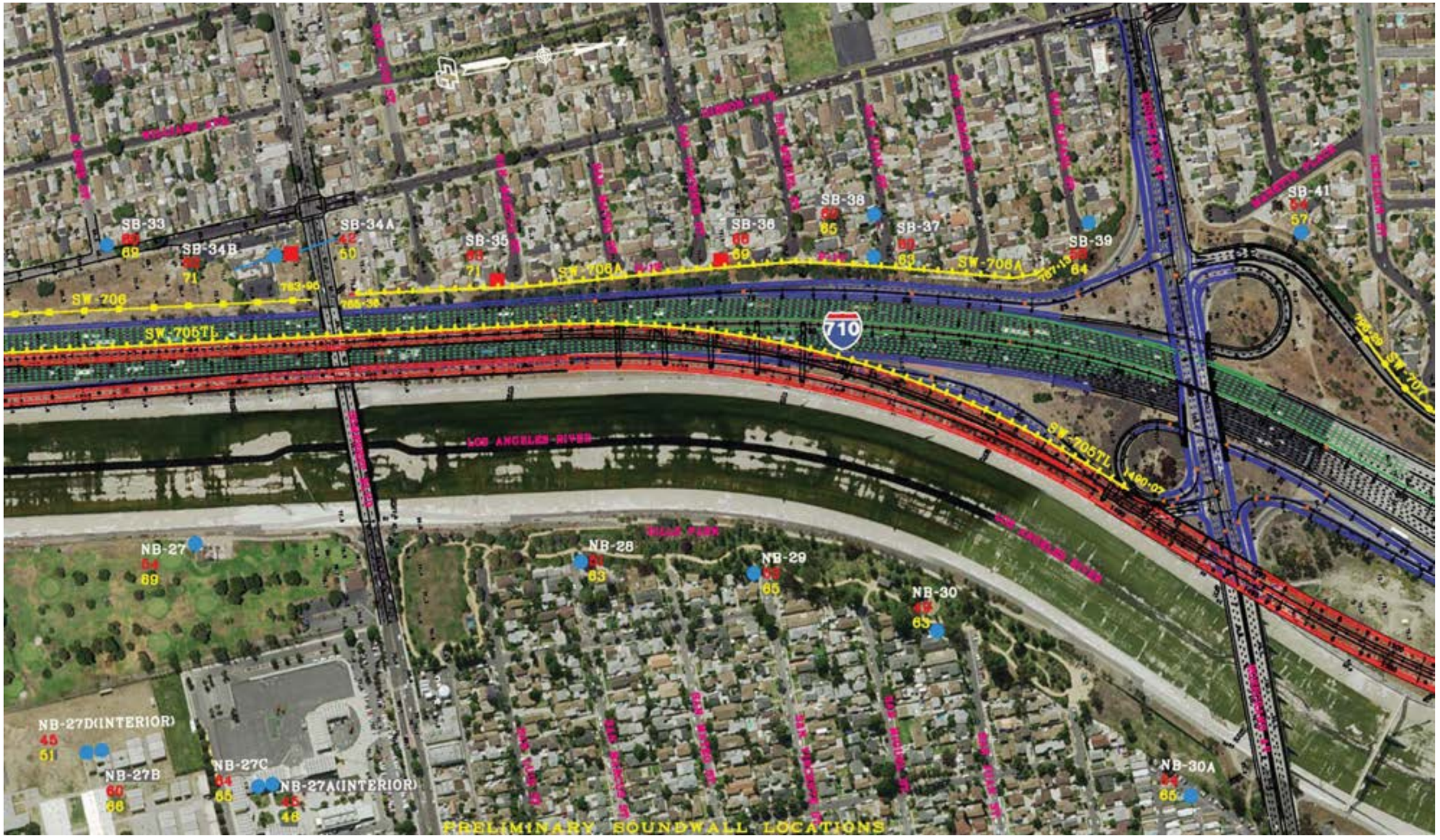

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
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- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
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LEGEND

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- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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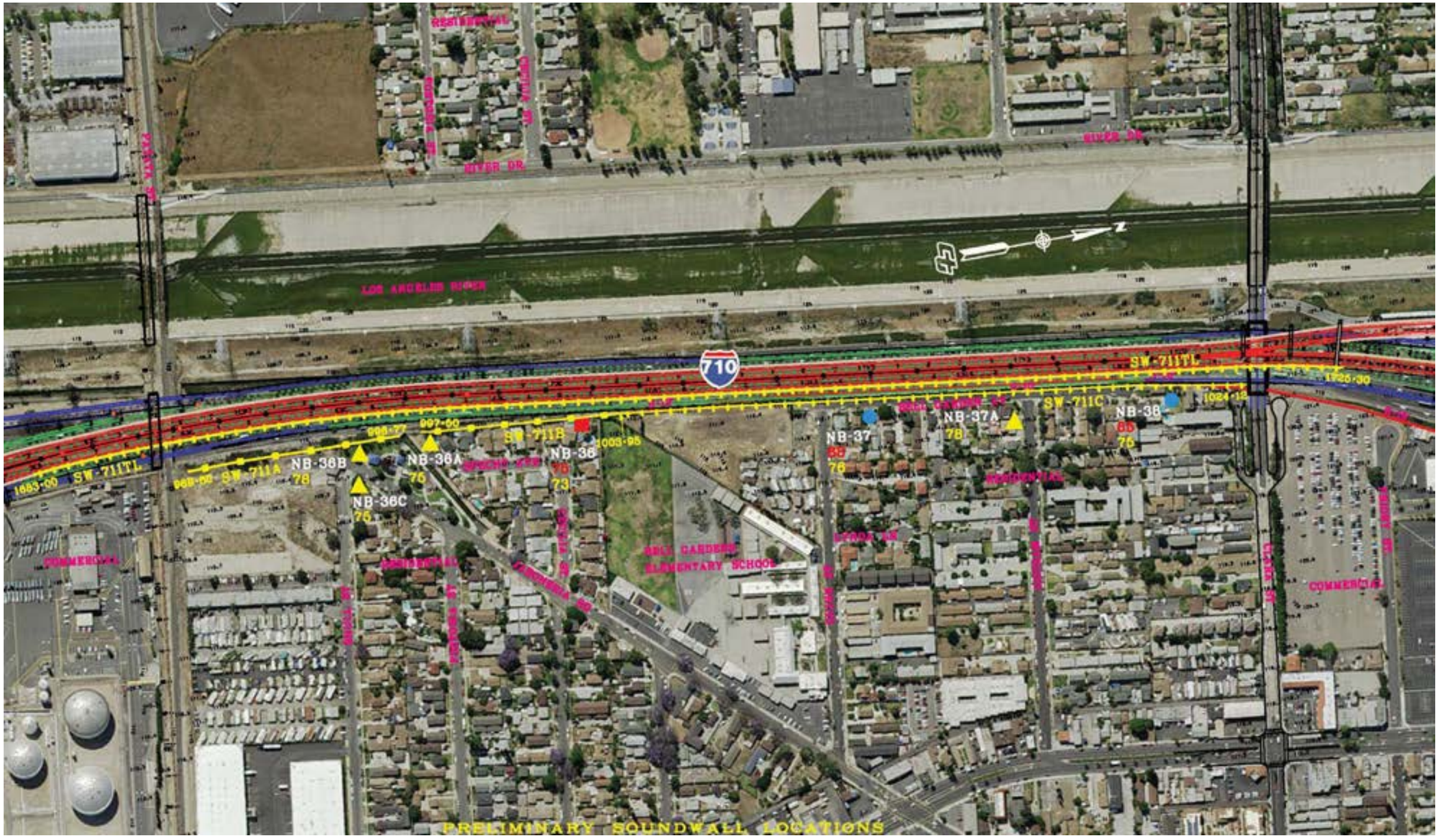

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
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- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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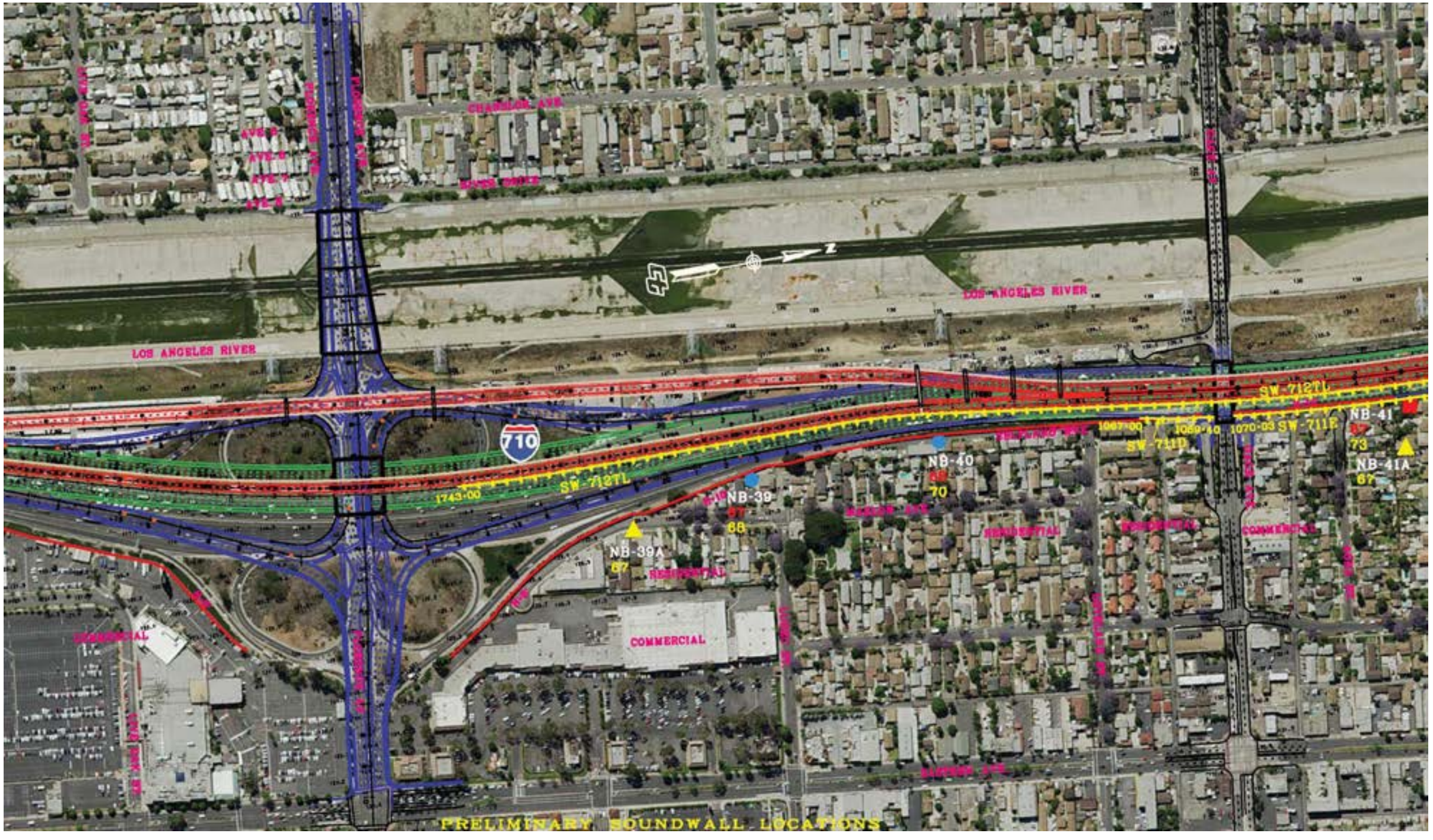

LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
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- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 27 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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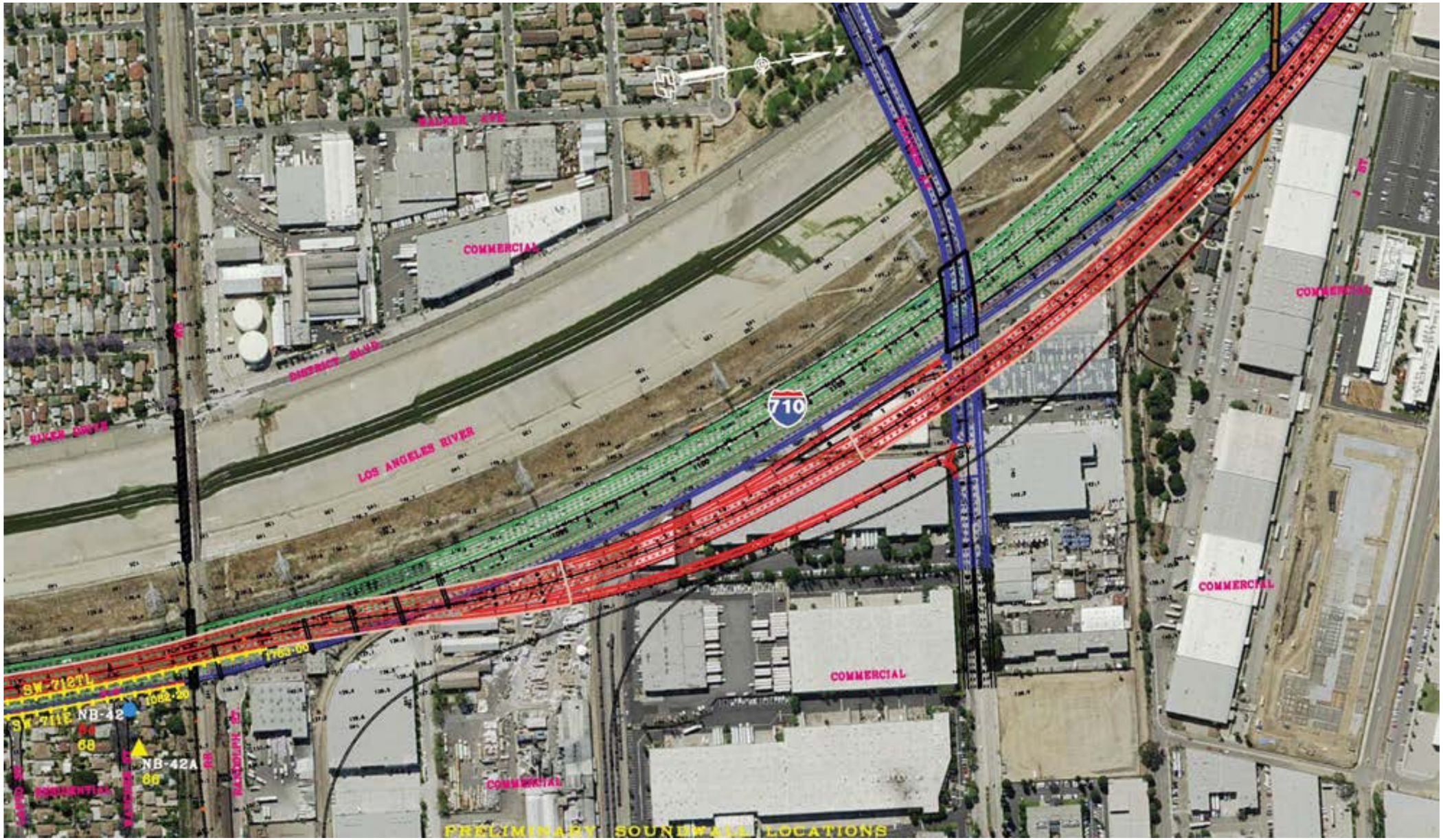

LEGEND

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- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
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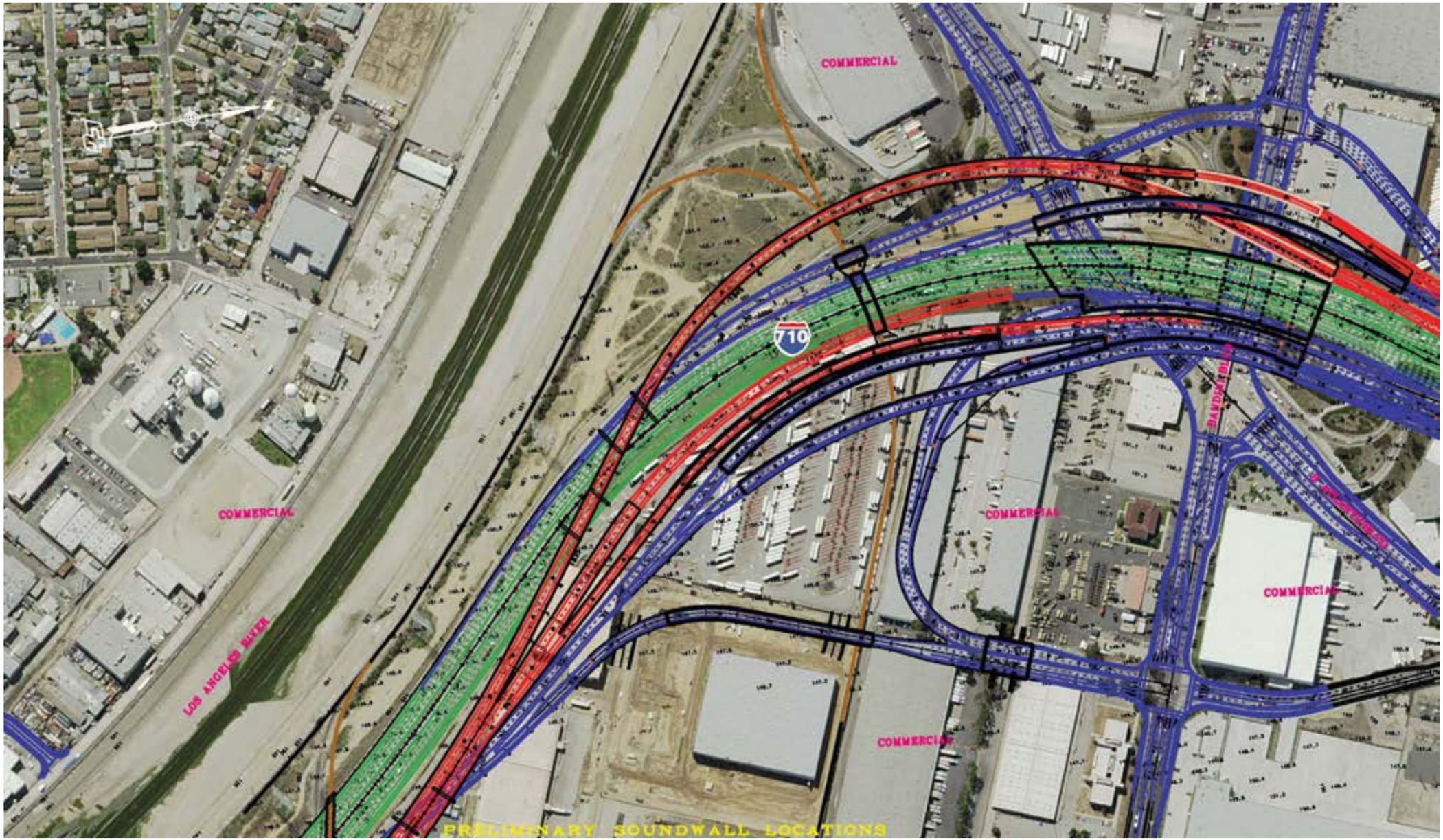

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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
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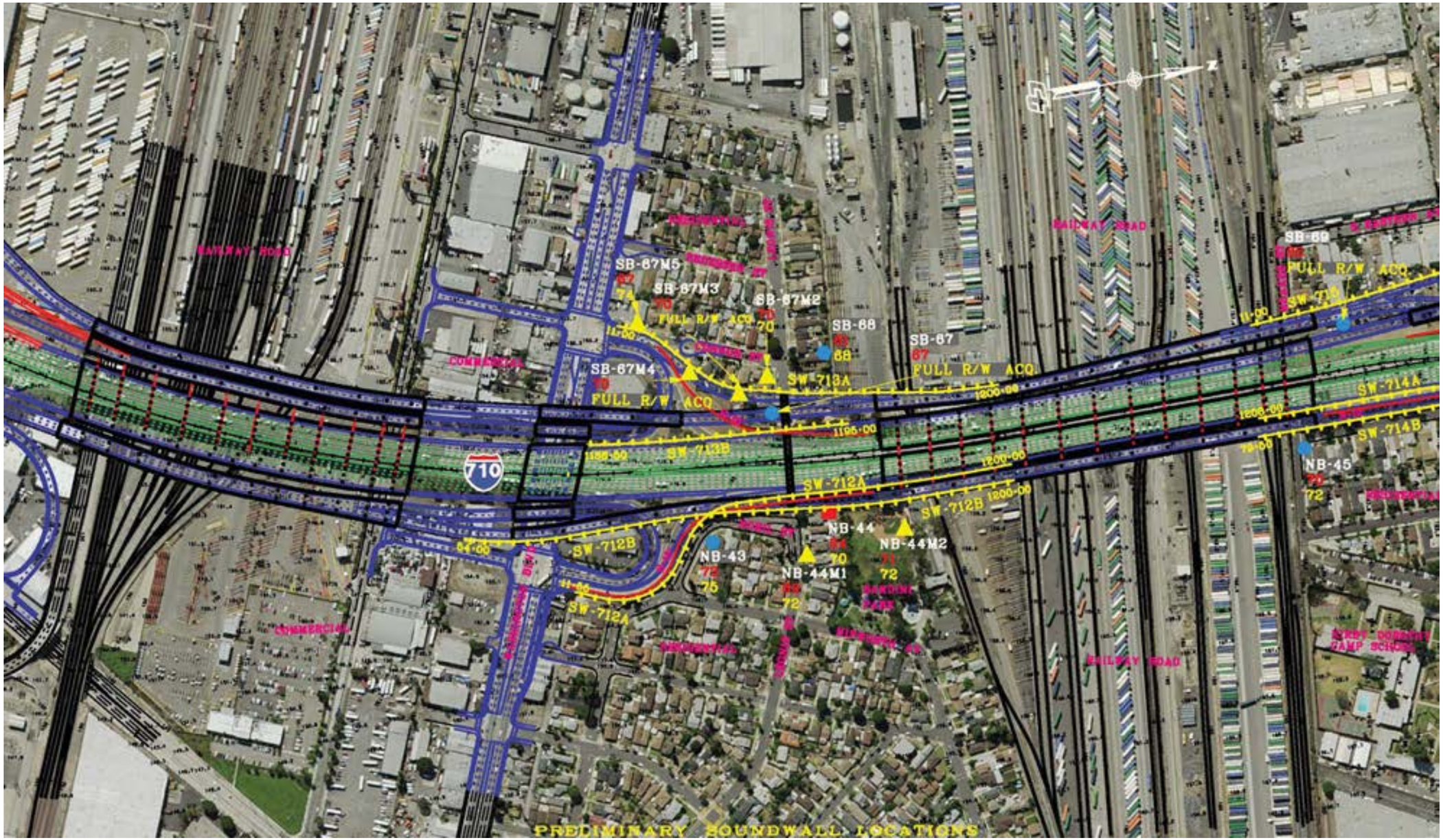

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FIGURE 3.14-3
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I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

SOURCE: Caltrans

I:\URS0801\G\EIR-EIS\2nd Admin Draft\RDEIR-SDEIS\Noise\Alt 7-Noise Monitoring&Modeled Sites&Soundwalls.cdr (12/13/2016)

FIGURE 3.14-3
Sheet 31 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls (Option 1B)

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA
- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 32 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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LEGEND

- 10-MINUTE NOISE MEASUREMENT SITE
- MODELED SITE
- 24-HOUR NOISE MEASUREMENT SITE
- XX EXISTING WORST-HOUR NOISE LEVEL, dBA
- XX FUTURE UNABATED WORST-HOUR NOISE LEVEL, dBA

- EXISTING SOUND WALL
- PROPOSED SOUND WALL UNDER EARLY ACTION SW PROJECT (EA 0713000243)
- ACOUSTICALLY FEASIBLE SW UNDER ALTERNATIVE-7

FIGURE 3.14-3
Sheet 33 of 33

I-710 Corridor Project RDEIR/SDEIS

Alternative 7 – Noise Monitoring and Modeled Sites, and Soundwalls

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Caltrans

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3.15 ENERGY

The information in this section is based on the following document:

- *Interstate 710* (I-710) *Corridor Project Energy Technical Report* (June 2017)

3.15.1 REGULATORY SETTING

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

The California Environmental Quality Act (CEQA) Guidelines, Appendix F, Energy Conservation, state that Environmental Impact Reports (EIRs) are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

3.15.2 AFFECTED ENVIRONMENT

Energy is currently consumed within the Study Area for the construction of public and private projects; operation of automobiles, trucks, and marine vessels; and operation of existing land uses. Automobile and truck fueling stations are located throughout the Study Area.

California is rich in conventional and renewable energy resources. It has large crude oil and substantial natural gas deposits in six geological basins, located in the Central Valley and along the Pacific coast. Most of those reserves are concentrated in the southern San Joaquin Basin. More than a dozen of the nation's 100 largest oil fields are located in California, including the Belridge South oil field, the second-largest oil field in the contiguous United States. In addition, Federal assessments indicate that large undiscovered deposits of recoverable oil and gas lie offshore in the Federally administered Outer Continental Shelf; although, Federal law currently prohibits oil and gas leasing in that area. California's renewable energy potential is extensive. The State's hydroelectric power potential ranks second in the nation (behind Washington State), and substantial geothermal and wind power resources are found along the coastal mountain ranges and the eastern border with Nevada. High solar energy potential is found in southeastern California's sunny deserts.

California is the most populous state in the nation, and its total energy demand is second only to Texas. Although California is a leader in the energy-intensive chemical, forest products, glass, and petroleum industries, the State has one of the lowest per capita energy consumption rates in the country. The California government's energy-efficiency programs have contributed to low per capita energy consumption. Driven by high demand from California's many motorists, major airports, and military bases, the transportation sector is the State's largest energy consumer.

More motor vehicles are registered in California than any other state, and worker commute times are among the longest in the country.

PETROLEUM. California is one of the top producers of crude oil in the nation, with output accounting for more than one-tenth of total U.S. production. Drilling operations are concentrated primarily in Kern County and Los Angeles County, although substantial production also takes place offshore in both State and Federal waters. Concerns regarding the cumulative impacts of offshore oil and gas development, combined with a number of major marine oil spills throughout the world in recent years, have led to a permanent moratorium on offshore oil and gas leasing in California waters and a deferral of leasing in Federal waters. However, development on existing State and Federal leases is unaffected and may still occur within offshore areas leased prior to the effective date of the moratorium.

A network of crude oil pipelines connects production areas to refining centers in the Los Angeles area, the San Francisco Bay area, and the Central Valley. California refiners also process large volumes of Alaskan and foreign crude oil received at ports in Los Angeles, Long Beach, and the Bay Area. Crude oil production in California and Alaska is in decline, and California refineries have become increasingly dependent on foreign imports. Led by Saudi Arabia and Ecuador, foreign suppliers now provide more than two-fifths of the crude oil refined in California; however, California's dependence on foreign oil remains less than the national average.

California ranks third in the United States in petroleum refining capacity and accounts for more than one-tenth of total U.S. capacity. California's largest refineries are highly sophisticated; they are capable of processing a wide variety of crude oil types and are designed to yield a high percentage of light products like motor gasoline. To meet strict Federal and State environmental regulations, California refineries are configured to produce cleaner fuels, including reformulated motor gasoline and low-sulfur diesel.

Most California motorists are required to use a special motor gasoline blend called California Clean Burning Gasoline (CA CBG). In the ozone non-attainment areas of Imperial County and the Los Angeles metropolitan area, motorists are required to use California Oxygenated Clean Burning Gasoline, and the Los Angeles area is also required to use oxygenated motor gasoline during the winter months. By 2004, California completed a transition from methyl tertiary butylether (MTBE) to ethanol as a gasoline oxygenate additive, making California the largest ethanol fuel market in the United States. Four ethanol production plants are located in central and southern California, but most of California's ethanol supply is transported by rail from corn-based producers in the Midwest. Some supply is also imported from abroad.

NATURAL GAS. California natural gas production typically accounts for less than 2 percent of total annual U.S. production and satisfies less than one-fifth of State demand. Production takes place in basins located in northern and southern California, as well as offshore in the Pacific Ocean. California receives most of its natural gas by pipeline from production regions in the Rocky Mountains, the Southwest, and western Canada. As with crude oil production, California natural gas production is in decline. However, State supply has remained relatively stable due to increasing amounts of natural gas shipped from the Rocky Mountains. California markets are served by two key natural gas trading centers—the Golden Gate Center in northern California and the California Energy Hub in southern California, and the State has nearly a dozen natural gas storage facilities that help stabilize supply. In part to help meet California's demand for natural gas, several companies have proposed building liquefied natural gas (LNG) import terminals in southern California.

COAL, ELECTRICITY, AND RENEWABLES. Natural gas-fired power plants typically account for more than one-half of State electricity generation. California is one of the largest hydroelectric power producers in the United States, and with adequate rainfall, hydroelectric power typically accounts for close to one-fifth of State electricity generation. California's two nuclear power plants account for almost one-fifth of total generation. Due to strict emission laws, only a few small coal-fired power plants operate in California.

California leads the nation in electricity generation from nonhydroelectric renewable energy sources. California generates electricity using wind, geothermal, solar, fuel wood, and municipal solid waste/landfill gas resources. A facility known as "The Geysers," located in the Mayacamas Mountains north of San Francisco, is the largest complex of geothermal power plants in the world, with more than 750 megawatts of installed capacity. California has numerous wind farms in five major wind resource areas, and several new projects are currently under construction. The world's largest solar power facility operates in California's Mojave Desert. Two southern California utilities are planning to build new solar farms, a 500-megawatt facility in the Mojave Desert and a 300-megawatt plant in the Imperial Valley. These proposed plants would dwarf existing United States solar generation capacity. To further boost renewable energy use, California's Energy Action Plan includes incentives that encourage Californians to install solar power systems on their rooftops.

Due to high electricity demand, California imports more electricity than any other State in the country. States in the Pacific Northwest deliver power to California markets primarily from hydroelectric sources, while states in the Desert Southwest deliver power primarily from coal- and natural gas-fired sources. Hydroelectric power comes to California primarily through the Western USA interconnection, which runs from northern Oregon to southern California. The system, also known as the Pacific Intertie, is the largest single electricity transmission program in the United States. Although the Pacific Intertie was originally designed to transmit electricity south during California's peak summer demand season, flow is sometimes reversed overnight

and has occasionally been reversed during periods of reduced hydroelectric generation in the Northwest. California restricts the use of coal-fired generation within its boundaries; however, the Los Angeles Department of Water and Power (LADWP) operates the coal-fired Intermountain power plant in Utah, which delivers three-fourths of its output to LADWP and other California municipal utilities. A recent California law forbids utilities from entering into long-term contracts with conventional coal-fired power producers. Intermountain's existing contracts with southern California cities are set to expire in 2027.

In 2000 and 2001, California suffered an energy crisis characterized by electricity price instability and four major blackouts that were caused by a supply and demand imbalance. Multiple factors contributed to this imbalance, including a heavy dependence on out-of-state electricity providers, drought conditions in the northwest that reduced hydroelectric power generation, a rupture on a major natural gas pipeline supplying California power plants, strong economic growth leading to increased electricity demand in western states, an increase in unplanned power plant outages, and unusually high temperatures that increased electricity demand for air-conditioning and other cooling uses. Following the energy crisis, the California State government created an Energy Action Plan designed to eliminate outages and excessive price spikes. To achieve these goals, the Plan calls for optimizing energy conservation, building sufficient new generation facilities, upgrading and expanding the electricity transmission and distribution infrastructure, and ensuring that generation facilities can quickly come online when needed.

3.15.2.1 ENERGY CONSUMPTION IN CALIFORNIA/LOS ANGELES COUNTY

The following statistics have been provided by the California Energy Commission (CEC) and are current through 2014.

ELECTRICITY. Fueled by population growth, the demand for electricity in California is increasing. At the same time, the mandate to decrease greenhouse gas emissions will only increase in the future. California's electricity mix is generated by natural gas (44.5 percent); coal (6.4 percent); large hydroelectric (5.5 percent); nuclear (8.5 percent); and renewable (20.1 percent) sources.

In 2014, California produced 67 percent of the electricity it used; the rest was imported from the Pacific Northwest (13 percent) and the United States Desert Southwest (20 percent). Natural gas is the main source for electricity, contributing 44.5 percent of the total system power. According to the United States Department of Energy (DOE), Energy Information Administration (EIA) *Annual Electric Power Industry Report*, Californians spent almost $40 billion for their electricity in 2014. Table 3.15-1 shows the total electricity consumed in Los Angeles County for 2014.

Table 3.15-1: Annual Electric Consumption in Los Angeles County (2014)

Type of Consumer	Millions of Kilowatt-Hours[1]
Residential	20,758
Non-Residential	49,240
Total	**69,998**

Source: California Energy Commission. Energy Consumption Data Management System (2016).
[1] A kilowatt-hour is a unit of power equal to 1,000 watts of electricity consumed in one hour.

NATURAL GAS. Electricity generation is the largest user of natural gas, using approximately half of all natural gas in the State. The residential sector uses 38 percent of the available natural gas. Of that amount, 88 percent is used for space and water heating. Table 3.15-2 shows the total natural gas consumption in Los Angeles County for 2009.

Table 3.15-2: Natural Gas Consumption in Los Angeles County (2014) in Millions of Therms

Land Use	Millions of Therms[1]
Residential	1,078
Non-Residential	1,779
Total	**2,857**

Source: California Energy Commission. Energy Consumption Data Management System (2016).
[1] A therm is a unit of heat containing 100,000 British thermal units (Btu).

LIQUID PETROLEUM GAS (PROPANE). Liquefied petroleum gas (LPG) is a mixture of gaseous hydrocarbons, mainly propane and butane that change into liquid form under moderate pressure. LPG (usually called propane) is commonly used as a fuel for rural homes for space and water heating, as a fuel for barbecues and recreational vehicles, and as a transportation fuel. It is normally created as a by-product of petroleum refining and from natural gas production.

LPG is generally an unregulated fuel in California (except for storage and safety issues, which are regulated). Because it is an unregulated commodity, the State does not collect data on LPG sales or usage. The statistics for LPG in the Alternatives to Traditional Transportation Fuels section below were provided by the DOE, EIA, Office of Coal, Nuclear, Electric, and Alternate Fuels. As such, statistics are unavailable for LPG as a fuel for rural homes, for space and water heating, or for barbecues, and none are contained in the body of this section.

TRADITIONAL TRANSPORTATION FUELS (FOSSIL FUELS). Fossil fuels are energy resources that come from the remains of plants and animals that are millions of years old. The three fossil fuels—petroleum oil, natural gas, and coal—are overwhelmingly responsible for providing the

energy that powers our lifestyles and economy, and fuels our transportation systems. They are the bedrock we base our energy mix on, but they are a limited resource. Once they are consumed, they will no longer be part of our energy mix.

A public concern with fossil fuels is that, in addition to their unsustainability as a non-renewable source of energy, there is a negative environmental impact in the use of fossil fuels. The burning of fossil fuels is responsible for emissions that contribute to global climate change, acid rain, ozone problems, and unhealthy air. As such, the development of alternatives to traditional transportation fuels is desirable to improve sustainability and reduce impacts of fossil fuel consumption.

ALTERNATIVES TO TRADITIONAL TRANSPORTATION FUELS. Alternatives to traditional transportation fuels are being developed and introduced into the consumer marketplace. Alternative fuels currently in use in the United States include:

- Compressed natural gas
- Electric (EVC)
- Ethanol, 85 percent (E85)
- Hydrogen (HYD)
- LNG
- LPG

The following information was prepared by the EIA, the independent statistical and analytical agency within the DOE. Each year, the EIA collects data on the number of alternative fuel vehicles (AFVs) supplied, and for a limited set of fleet user groups, the number of AFVs in use and the amount of alternative transportation fuel consumed. The user groups surveyed are Federal and State governments, alternative fuel providers, and transit companies.

ALTERNATIVE FUEL VEHICLES IN USE. An estimated 371,935 alternative fuel vehicles were in use in the United States in 2014, with 42,818 in use in California. See Table 3.15-3, below.

Table 3.15-3: Alternative Fuel Vehicles In Use by Fuel Type (2014)

Fuel Type	United States	California
Compressed Natural Gas (CNG)	24,470	8,601
Electric	8,227	3,138
Ethanol, 85% (E85)	329,846	29,422
Hydrogen	34	27
Liquefied Natural Gas (LNG)	464	413
Liquefied Petroleum Gas (LPG)	8,894	1,217
Total	**371,935**	**42,818**

Source: Energy Information Administration. Alternative Fuels Data Center. Website: http://www.eia.gov/renewable/afv/users.cfm?fs=a (accessed August 2016).

ALTERNATIVE FUEL CONSUMPTION. The estimated consumption of alternative fuels (in thousand gasoline-equivalent gallons) in California during 2014 is shown in Table 3.15-4.

Table 3.15-4: Estimated Consumption of Alternative Fuels in California by Fuel Type (2014) (thousand gasoline-equivalent gallons)

CNG	Electric	E85	Hydrogen	LNG	LPG	Total
67,464	196	1,574	39	6,660	1,479	77,412

Source: Energy Information Administration. Alternative Fuels Data Center. Website: http://www.eia.gov/renewable/afv/users.cfm?fs=a (accessed August 2016).
CNG = compressed natural gas
E85 = Ethanol, 85%
LNG = liquefied natural gas
LPG = liquefied petroleum gas

3.15.3 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences describes the both the direct and indirect energy impacts of the proposed project, which includes construction. Please refer to Section 3.24 of this document, Construction Impacts, for further discussion of the temporary impacts of the proposed project related to energy. Specifically, temporary impacts related to energy are located in Section 3.24.3.15.

3.15.3.1 DIRECT IMPACTS

BUILD ALTERNATIVES. Local energy demand for transportation projects typically is dominated by vehicle fuel usage. Operational energy consumption was estimated for the vehicles (autos and light-, medium-, and heavy-duty trucks) traveling within the I-710 Corridor Project Study Area, which is bounded on the north by State Route 60 (SR-60), on the west by Interstate 110 (I-110), on the south by San Pedro Bay, and on the east by Interstate 605 (I-605), and for those same vehicles traveling throughout the entire region. Energy calculations are based on the vehicle miles traveled (VMT) (numbers of vehicles, distance traveled) and VHT (hours of travel) annually (Tables 3.15-5 and 3.15-6) for the 2012 base year and for each of the year 2035 project alternatives, including the No Build Alternative. An important additional consideration for this project is the effect of ZE/NZE trucks on overall energy use. While these trucks are designed to reduce emissions, their use of energy is not substantially changed from the traditional diesel-powered trucks. Trucks that are electrically powered either have batteries that require charging or fuel cells that consume hydrogen. Trucks that are designated as NZE are typically powered by engines similar to diesel engines but that burn different fuel, such as natural gas. Thus, while ZE/NZE trucks would greatly benefit air quality, it is not possible to determine their effect on the overall energy demand as energy consumption factors for these advance technology trucks are currently not available.

Table 3.15-5: I-710 Corridor Project Operational Annual VMT and VHT – Study Area

Scenario	Annual Study Area VMT & VHT (millions)									
	Autos		Light Trucks		Medium Trucks		Diesel Heavy Trucks		ZE/NZE Heavy Trucks	
	VMT	VHT	VMT	VHT	VMT	VHT	VMT	VHT	VMT	VHT
2012 Existing	67.2	1.84	0.91	**0.025**	0.72	**0.020**	3.43	0.09	0	0
2035 No Build (Alternative 1)	70.1	1.96	1.09	**0.030**	0.83	**0.023**	5.20	0.16	0	0
2035 Alternative 5C	70.3	1.97	1.10	**0.030**	0.83	**0.023**	3.95	0.12	1.26	0.04
2035 Alternative 7	70.4	1.97	1.11	**0.030**	0.84	**0.023**	2.66	0.08	2.66	0.08

Source: AECOM (June 3, 2016).
Note: While the ZE and NZE trucks will consume energy to recharge onboard energy sources, the energy consumption factors for these advance technology trucks are currently not available.
I-710 = Interstate 710
VHT = vehicle hours traveled
VMT = vehicle miles traveled
ZE/NZE = zero emission/near zero emission

Table 3.15-6: I-710 Corridor Project Operational Annual VMT and VHT – Entire Region

Scenario	Annual Study Area VMT & VHT (millions)									
	Autos		Light Trucks		Medium Trucks		Diesel Heavy Trucks		ZE/NZE Heavy Trucks	
	VMT	VHT	VMT	VHT	VMT	VHT	VMT	VHT	VMT	VHT
2012 Existing	334.5	8.76	4.9	0.12	3.66	0.09	19.7	0.43	0	0
2035 No Build (Alternative 1)	403.1	41.4	8.6	0.90	5.30	0.58	34.5	2.65	0	0
2035 Alternative 5C	403.3	41.4	8.6	0.90	5.31	0.58	34.0	2.62	0.48	0.04
2035 Alternative 7	403.4	41.4	8.6	0.92	5.31	0.58	33.6	2.58	0.97	0.07

Source: AECOM (June 3, 2016).
Note: While the ZE and NZE trucks will consume energy to recharge onboard energy sources, the energy consumption factors for these advance technology trucks are currently not available.
I-710 = Interstate 710
VHT = vehicle hours traveled
VMT = vehicle miles traveled
ZE/NZE = zero emission/near zero emission

As described in the *Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (Ramboll-Environ, 2017), *Appendix C, Operational Emissions*, the 4,000 ZE/NZE trucks funded under Alternative 5C represent 24.64 percent of the total I-710 Heavy Duty Truck VMT for the Study Area and 1.39 percent for the entire region (the SCAG Region). Alternative 7 would restrict the freight corridor to ZE/NZE trucks but would allow any truck type on the mainline.

In addition to VMT and VHT, travel conditions within the Study Area also influence fuel consumption rates. Without the capacity improvements proposed in the build alternatives, congested traffic conditions would be more prevalent throughout the Study Area and to a lesser extent, the region. These conditions contribute to a higher energy consumption rate because

vehicles use extra fuel while idling in stop-and-go traffic or moving at slow speeds through congested roadways. As shown in Tables 3.15-5 and 3.15-6, VMT would increase with either build alternative compared to the No Build Alternative due to a number of factors, primarily the project improvements allowing more traffic volume.

The VMT and VHT data from Tables 3.15-5 and 3.15-6 were combined with vehicle miles-per-gallon data from EMFAC2014 by vehicle category and fuel type to estimate the vehicle fuel consumption for each of the scenarios in Tables 3.15-7 and 3.15-8. In order to better distinguish between the project scenarios, the miles per gallon (mpg) data from EMFAC2014 that were published in only five mile per hour (mph) increments were interpolated to provide mpg data in one mph increments.

Tables 3.15-9 and 3.15-10 convert the fuel consumption rates shown in Tables 3.15-7 and 3.15-8 into British thermal units (BTUs) in order to provide a uniform metric to represent energy consumption for the build alternatives, which is then compared against existing year (2012) and 2035 No Build Alternative conditions in the Study Area and the entire region, respectively. Alternative 5C and 7 improvements would include ZE/NZE heavy trucks, increase average travel speeds during peak hours, remove bottlenecks, and reduce delays. However, VMT in the I-710 Corridor Project Study Area would also increase when comparing any of the build alternatives with the 2035 No Build Alternative condition.

While the energy used by roadway lighting and traffic signals is very small compared to the energy used by the vehicles operating on the project roadway, it is expected that the project will place energy efficient lighting fixtures for roadway lighting. These lighting fixtures improvements will reduce the energy used by the project.

Compared to 2012 existing conditions:

- 2035 No Build (Alternative 1) operational energy consumption decreases by 29 percent
- 2035 Alternative 5C operational energy consumption decreases by 35 percent
- 2035 Alternative 7 operational energy consumption decreases by 41 percent

Compared to 2035 No Build conditions (Alternative 1):

- 2035 Alternative 5C operational energy consumption decreases by 8 percent
- 2035 Alternative 7 operational energy consumption decreases by 17 percent

NO BUILD ALTERNATIVE. Under Alternative 1 (No Build), the effects on energy consumption discussed above for the build alternatives would not occur.

Table 3.15-7 I-710 Corridor Project Study Area Energy Consumption – Annual

Scenario	Fuel Type	Autos		Light Trucks		Medium Trucks		Diesel Heavy Trucks		Annual Study Area Energy Consumption	
		Percentage by Fuel	MPG	Percentage by Fuel	MPG	Percentage by Fuel	MPG	Percentage by Fuel	MPG	Gas (millions of gal)	Diesel (millions of gal)
2012 Existing	Gas	99.46%	27.78	96.50%	19.58	97.89%	15.52	12.78%	7.23	2.558	
	Diesel	0.43%	33.90	3.50%	20.05	2.11%	11.74	87.22%	7.36		0.418
2035 No Build (Alternative 1)	Gas	87.34%	46.45	94.16%	37.74	95.90%	28.30	8.19%	7.24	1.433	
	Diesel	1.01%	57.59	5.84%	23.71	4.10%	6.91	91.81%	7.79		0.633
2035 Alternative 5C	Gas	87.34%	46.45	94.16%	37.74	95.90%	28.30	8.19%	7.13	1.424	
	Diesel	1.01%	57.59	5.84%	23.71	4.10%	6.91	91.81%	7.72		0.489
2035 Alternative 7	Gas	87.34%	46.45	94.16%	38.33	95.90%	28.30	8.19%	7.13	1.411	
	Diesel	1.01%	57.59	5.84%	23.87	4.10%	6.91	91.81%	7.72		0.336

Source: URS Corporation and Cambridge Systematics (February 26, 2010) and EMFAC (2014).
Note: Model assumptions: Los Angeles County, temperature 50°F, 50% humidity
°F = degrees Fahrenheit
gal = gallons
I-710 = Interstate 710
MPG = miles per gallon

Table 3.15-8 I-710 Corridor Project Entire Region Energy Consumption – Annual

Scenario	Fuel Type	Autos		Light Trucks		Medium Trucks		Diesel Heavy Trucks		Annual Regional Energy Consumption	
		Percentage by Fuel	MPG	Percentage by Fuel	MPG	Percentage by Fuel	MPG	Percentage by Fuel	MPG	Gas (millions of gal)	Diesel (millions of gal)
2012 Existing	**Gas**	99.46%	28.64	96.50%	20.73	97.89%	16.49	12.78%	7.88	12.38	
	Diesel	0.43%	34.82	3.50%	20.55	2.11%	13.93	87.22%	7.72		2.28
2035 No Build (Alternative 1)	**Gas**	87.34%	17.30	94.16%	13.88	95.90%	10.36	8.19%	3.45	22.24	
	Diesel	1.01%	24.65	5.84%	10.30	4.10%	51.52	91.81%	5.41		6.07
2035 Alternative 5C	**Gas**	87.34%	17.30	94.16%	13.88	95.90%	10.36	8.19%	3.45	22.25	
	Diesel	1.01%	24.65	5.84%	10.30	4.10%	51.52	91.81%	5.41		5.99
2035 Alternative 7	**Gas**	87.34%	17.30	94.16%	13.88	95.90%	10.36	8.19%	3.45	22.24	
	Diesel	1.01%	24.65	5.84%	10.30	4.10%	51.52	91.81%	5.41		5.92

Source: URS Corporation and Cambridge Systematics (February 26, 2010) and EMFAC (2014).
Note: Model assumptions: Los Angeles County, temperature 50°F, 50% humidity
°F = degrees Fahrenheit
gal = gallons
I-710 = Interstate 710
MPG = miles per gallon

Table 3.15-9: I-710 Corridor Project Study Area Operational Energy Consumption – Percent Change

Scenario	Annual BTUs		
	Billion BTUs[1]	% Change from 2012 Existing	% Change from 2035 No Build
2012 Existing	349	–	–
2035 No Build (Alternative 1)	247	-29%	–
2035 Alternative 5C	228	-35%	-8.0%
2035 Alternative 7	161	-41%	-17%

[1] Assumes an energy content of 130,500 BTUs per gallon of diesel fuel and 115,000 BTUs per gallon of gasoline.
BTUs = British thermal units
I-710 = Interstate 710

Table 3.15-10: Entire Region Operational Energy Consumption – Percent Change

Scenario	Annual BTUs		
	Billion BTUs[1]	% Change from 2012 Existing	% Change from 2035 No Build
2012 Existing	1,722	–	–
2035 No Build (Alternative 1)	3,351	95%	–
2035 Alternative 5C	3,319	94%	-0.29%
2035 Alternative 7	3,221	93%	-0.59%

[1] Assumes an energy content of 130,500 BTUs per gallon of diesel fuel and 115,000 BTUs per gallon of gasoline.
BTUs = British thermal units

3.15.3.2 INDIRECT IMPACTS

BUILD ALTERNATIVES. indirect energy impacts consist principally of the ongoing, nonrecoverable energy costs associated with the manufacture and maintenance of vehicles. Indirect manufacturing energy effects involve the one-time, nonrecoverable energy costs associated with the manufacture of vehicles. Indirect construction energy effects involve the one-time, nonrecoverable energy costs associated with construction of roads and structures. Indirect roadway maintenance energy effects involve the ongoing nonrecoverable energy costs associated with maintaining the roads and structures. As described in the *I-710 Corridor Project Energy Technical Report* (2017) this analysis was conducted using the Input-Output Method. This method converts VMT, construction, and maintenance costs into energy consumption based on existing data from other road improvement projects in the United States using conversions listed in the California Department of Transportation (Caltrans) *Energy and Transportation Systems Handbook* (July 1983). It was assumed that the energy requirements

for manufacturing and maintaining vehicles have not changed from those listed in this handbook. Thus, the per-vehicle indirect energy impacts for the build alternatives would be the same and would not change from the existing condition.

Based on the roadway construction energy consumption factor of 27,500 BTU per 1977 construction dollar and the estimated costs to construct the Build alternatives (rolled back to 1977 equivalent), it would take approximately 19.9 trillion BTUs to construct Alternative 5C and 39.9 trillion BTUs to construct Alternative 7. This energy consumption is factored over the study period of 30 years.

Based on the annual urban roadway maintenance energy data in the Caltrans *Energy and Transportation Systems* handbook Table C:14 of 1.634×10^8 BTU per lane-mile for Portland cement concrete pavement and 1.776×10^8 BTU per lane-mile for asphalt concrete pavement, and assuming that the build alternates would have approximately equal amounts of each over the 20 miles of the project, the roadway maintenance energy would be as shown in Table 3.15-11.

Using the annual VMT data shown in Tables 3.15-5 and 3.15-6, and considering that the VMT increases in the Study Area would be due to a combination of factors, including increases in population in the region as well as the proposed improvements under the build alternatives, Table 3.15-11 shows that the build alternatives would result in increases in indirect energy consumption in the Study Area compared to the 2035 No Build condition (Alternative 1), ranging from 300 to 600 percent. Table 3.15-12 shows that for the entire region, the build alternatives would result in an increase in manufacturer- and maintenance-related energy consumption from the 2035 No Build condition (Alternative 1) ranging from 5 to 11 percent.

NO BUILD ALTERNATIVE. Under the No Build Alternative, the indirect effects on energy consumption discussed above for the build alternatives would not occur. Generally, construction energy can be compared to increased roadway maintenance energy if a project is not built. However, there is insufficient information to quantify this energy savings.

3.15.4 CONSISTENCY WITH ENERGY CONSERVATION PLANS

The CEC, the California Public Utilities Commission (CPUC), and the Consumer Power and Conservation Financing Authority (previously called the CPA but which is now defunct) approved the final State of California Energy Action Plan in 2003, which was proposed by a subcommittee of these three agencies. The Plan established shared goals and specific actions to ensure that adequate, reliable, and reasonably priced electrical power and natural gas supplies are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers.

Table 3.15-11: I-710 Study Area Indirect Energy Comparison

Description	Study Area Energy Used (Billion BTU/year)		
	2035 No Build	2035 Alt 5C	2035 Alt 7
Manufacturing			
Auto Manufacturing	98	98	**99**
Truck Manufacturing	11	11	**11**
Project Construction	0	664	1,330
Subtotal	*109*	*773*	*1,440*
Maintenance			
Auto Maintenance	79	79	**80**
Truck Maintenance	21	21	**21**
Road Maintenance	20	20	27
Subtotal	*120*	*121*	*128*
TOTAL	**229**	**894**	**1,568**
Percentage Change	N/A	300%	600%

Sources: California Department of Transportation. *Energy and Transportation Systems Handbook* (1983) and vehicle miles traveled from the project Traffic Study, the *I-710 Corridor Project Energy Technical Report* (June 2017).
Alt = Alternative
BTU = British thermal units
I-710 = Interstate 710
N/A = not applicable

Table 3.15-12: Entire Region Indirect Energy Comparison

Description	Entire Region Energy Used (Billion BTU/year)		
	2035 No Build	2035 Alt 5C	2035 Alt 7
Manufacturing			
Auto Manufacturing	564	564	564
Truck Manufacturing	75	75	75
Project Construction	0	664	1,330
Subtotal	*639*	*1,300*	*1,970*
Maintenance			
Auto Maintenance	455	455	455
Truck Maintenance	140	140	140
Road Maintenance	12,100	12,100	12,100
Subtotal	*12,700*	*12,700*	*12,700*
TOTAL	**13,300**	**14,000**	**14,700**
Percentage Change	N/A	5%	11%

Sources: California Department of Transportation. *Energy and Transportation Systems Handbook* (1983) and vehicle miles traveled from the project Traffic Study, the *I-710 Corridor Project Energy Technical Report* (June 2017).
Alt = Alternative
BTU = British thermal units
N/A = not applicable

In 2005, an updated Energy Action Plan was adopted by the CEC and CPUC to reflect policy changes and actions after 2003.

The State's energy policies have been substantially influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. The CEC's *2007 Integrated Energy Policy Report* (IEPR) advanced policies that would enable the State to meet its energy needs in a carbon-constrained world. That report also provides a comprehensive set of recommended actions to achieve these policies.

Rather than produce a new Energy Action Plan, the CEC and the CPUC have prepared instead the Energy Action Plan – 2008 Update that examines the State's ongoing actions in the context of global climate change. The update was prepared using the information and analysis prepared for the *2007 Integrated Energy Policy Report*, as well as recent CPUC decisions.

As described in Sections 3.15.3.2 and 3.15.3.3, the total indirect energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level, and because the project's total impact to regional energy supplies would be minor, neither of the build alternatives would conflict with California's energy conservation plans as described in the CEC's *2015 Integrated Energy Policy Report.*

Thus, as shown, the project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and not result in any irreversible or irretrievable commitments of energy.

3.15.5 Avoidance, Minimization, and Mitigation Measures

3.15.5.1 Construction Minimization Measures

Construction of any of the build alternatives would not result in adverse impacts related to energy consumption in the Study Area or in the South Coast Air Basin as compared to the No Build conditions under Alternative 1. No measures to address impacts are required. However, in the interest of promoting energy efficiency, the following measure will be implemented as part of the construction of Alternatives 5C and 7.

E-1 Prior to the completion of final design, the California Department of Transportation (Caltrans) shall prepare a construction efficiency plan, which will include the following:

- Select disposal sites as close as practicable to the Interstate 710 (I-710) construction area to minimize haul distances and excavation-related fuel consumption
- Reuse existing rail, steel, and lumber wherever possible, such as for falsework, shoring, and other applications during the construction process
- Recycle asphalt taken up from roadways, if practicable and cost-effective

- Using newer, more energy-efficient equipment and maintain older construction equipment in good working order
- Schedule construction operations to result in the most efficient use of construction equipment possible
- Promoting employee carpooling

3.15.5.2 MAINTENANCE MINIMIZATION MEASURES

Maintenance of any of the build alternatives would not result in adverse impacts related to energy consumption in the Study Area or in the South Coast Air Basin as compared to the No Build Alternative. No measures are required. However, in the interest of promoting energy efficiency, the following measure will be implemented as part of Alternatives 5C and 7.

E-2 Prior to the completion of project construction, Caltrans shall prepare a maintenance efficiency plan which would include the following:

- Maintain maintenance equipment in good working order
- Schedule maintenance operations to result in the most efficient use of maintenance equipment possible

3.15.5.3 OPERATIONAL MINIMIZATION MEASURES

Operation of any of the build alternatives would not result in adverse impacts related to energy consumption in the Study Area or in the South Coast Air Basin as compared to the No Build Alternative. No measures are required. However, in the interest of promoting energy efficiency, the following measure will be implemented as part of Alternatives 5C and 7.

E-3 Prior to completion of final design, Caltrans shall prepare an area lighting plan to identify lighting fixtures that are energy efficient and to identify placement of individual lighting fixtures used for roadway lighting that will provide safety lights for pedestrians and motorists.

3.16 NATURAL COMMUNITIES

This section analyzes the anticipated impacts of the proposed Interstate 710 (I-710) Corridor Project on natural communities and is based on the following documents:

- *I-710 Corridor Project Natural Environment Study* (NES) (June 2017)
- *I-710 Corridor Project Jurisdictional Delineation Report* (May 2012; Appendix E of the NES)
- *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (Memorandum Update) (January 2017)

3.16.1 REGULATORY SETTING

The U.S. Fish and Wildlife Coordination Act (16 United States Code [USC] 661) requires that federal agencies consult with the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and State wildlife agencies for activities that affect, control or modify waters of any stream or bodies of water, in order to minimize the adverse impacts of such actions on fish and wildlife resources and habitat. This consultation is generally incorporated into the process of complying with Section 404 of the Clean Water Act, National Environmental Policy Act (NEPA) or other federal permit, license or review requirements.[1]

This section of the document discusses natural communities of concern. The focus of this section is biological communities, not individual plant or animal species. This section focuses on the ecological function of natural communities within the I-710 Corridor Project Study Area. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily movement. Habitat fragmentation is a process by which an area of habitat becomes isolated from other areas of habitat, often by transportation infrastructure and other human development, thereby lessening its biological value. There are no adopted or proposed Habitat Conservation Plans or Natural Communities Conservation Plans within the I-710 Corridor Project study area; therefore, they are not applicable to the proposed project and are not discussed in this section.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Section 3.20, Threatened and Endangered Species. Wetlands and other waters are discussed in Section 3.17.

[1] National Oceanic and Atmospheric Administration. Damage Assessment, Remediation, and Restoration Program. Website: https://darrp.noaa.gov/fish-and-wildlife-coordination-act.

3.16.2 AFFECTED ENVIRONMENT

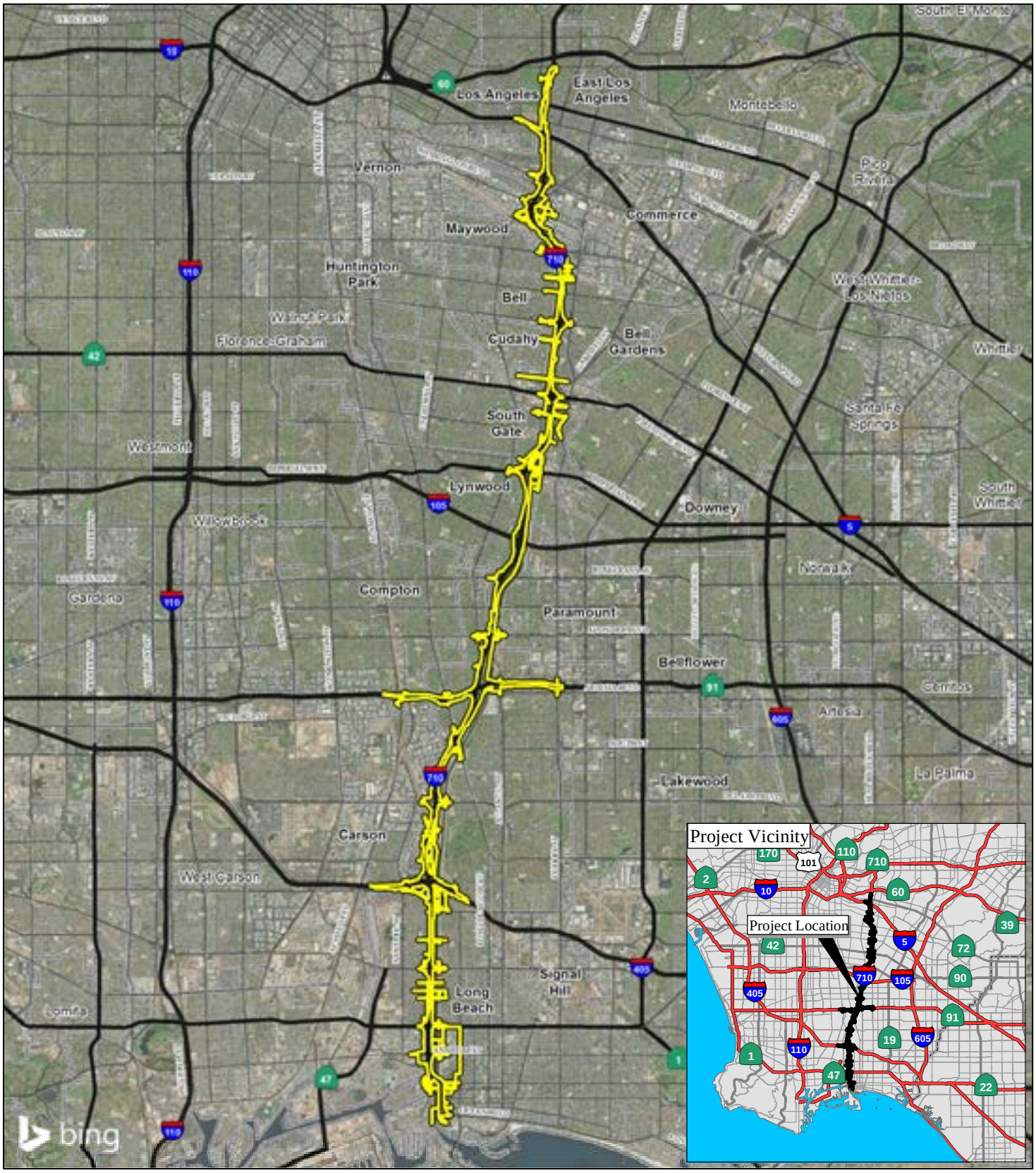
3.16.2.1 BIOLOGICAL STUDY AREA

The "Biological Study Area" (BSA) is the area assessed for biological resources. The BSA is approximately 19 linear miles along the I-710 Corridor, from Ocean Blvd. to State Route 60 (SR-60). The BSA also includes a portion of major transportation corridors connecting to I-710, including Interstate 405 (I-405), State Route 91 (SR-91), Interstate 105 (I-105), and Interstate 5 (I-5), to accommodate the proposed interchange improvements. The BSA encompasses approximately 1,950 acres and is shown in Figure 3.16-1.

3.16.2.2 LAND COVER DESIGNATIONS

Land cover or habitat types located within the BSA are mostly developed (developed/ ornamental/ruderal) but also include aquatic resources. Riparian scrub was the only natural plant community that is addressed in Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986). Waters of the Los Angeles River have been identified and described based on freshwater and intertidal characteristics. Fragments of riparian scrub and freshwater emergent marsh habitats have been identified within the BSA within the Los Angeles River itself, within native habitat restoration areas established in the vicinity of the Los Angeles River, or within tributary drainages. Two general natural community groups of special concern were identified within the BSA: estuarine habitat associated with tidal waters of the lower three miles of the Los Angeles River, and riparian/riverine habitats. Habitats are considered to be of special concern based on (1) Federal, State, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status plants or animals occurring within the BSA. Consulting biologists identified two primary plant communities that are considered important by State and/or local agencies: Estuarine and Riparian/Riverine Habitats. These communities occur with varied abundance within the BSA and are associated with water features that may be considered jurisdictional by the United States Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and/or the Regional Water Quality Control Board (RWQCB). All of the areas identified as a natural community of concern were disturbed from regular flood control maintenance, human encroachment (e.g., homeless encampments), and intrusion by nonnative species. Table 3.16-1 lists the acreage of each of the vegetation communities present within the BSA. Vegetation communities and associated drainage boxes[2] identified within the BSA are illustrated in the maps provided within Appendix R of this RDEIR/SDEIS.

[2] The delineation of drainage boxes identifies the locations of drainage features on the figures. Numbering of drainage boxes was initiated during preparation of the Jurisdictional Delineation. The Los Angeles River and some areas with riparian scrub habitat were not assigned a drainage box number.



LEGEND

Limits of the Biological Study Area (2016)

FIGURE 3.16-1

N

0 6250 12500

FEET

SOURCE: Bing Maps (2014); AECOM (2016)

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I-710 Corridor Project

Biological Study Area

07-LA-710- PM 5.4/24.5

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Table 3.16-1: Acreages of Land Cover or Habitat Types within the Biological Study Area

Natural Community	Total Acres in BSA	Also Associated with Drainage Box(es)
Developed/Ornamental/Ruderal	1,869.43	5, 9, 10, 11, 14, 15, 16, 17, 18, and 24
Estuarine Habitat		
Earthen-Bottom Tidal Waters of the Los Angeles River	14.27	Los Angeles River, south of Willow St.
Riparian/Riverine Habitats		
Freshwater Emergent Marsh	1.86	Portions of the Los Angeles River, 3, 6, and 22
Riparian Scrub	8.54	Portions of the Los Angeles River, 3, 6, 22, and 23
Concrete-Lined Freshwater Waters of the Los Angeles River and Associated Drainages	48.22	1, 2, 4, 12, 13, and 21; also Los Angeles River, north of Willow St.
Open Water	5.34	3
Total	**1,947.66**	**--**

Sources: LSA Associates, Inc. *I-710 Corridor Project Jurisdictional Delineation Report* (2012); *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (2017).
Note: The Dominguez Gap and DeForest Treatment Wetlands contain 9.51 acres of developed/ornamental/ruderal, freshwater emergent marsh, riparian scrub, and open water land cover or habitat types. These treatment wetlands are associated with Drainage Boxes 3, 23, and 24.
BSA = biological study area

DEVELOPED/ORNAMENTAL/RUDERAL. This land cover or vegetation community consists of developed areas such as existing buildings, paved roads, ornamental vegetation, commercial and residential properties, and disturbed areas where invasive plant species are dominant. These upland disturbed areas are grouped together in the land cover mapping because of their generally low habitat value for native plant and wildlife species.

Human-made roadside drainage ditches (concrete v-ditches with absent or marginal ordinary high water mark (OHWMs), isolated freeway drainages, and isolated earthen swales/erosional features) are constructed in upland areas and are likely not USACE jurisdictional. For a complete analysis of all of the drainage features, see Section 3.17, Wetlands.

Some of the areas mapped under this vegetation community consisted predominantly of unmaintained or escaped ornamental vegetation. Dozens of ornamental and fruit trees occur in yards and landscaping. Plant species within this habitat type are typically nonnative, invasive species and include Mexican fan palm (*Washingtonia robusta*), eucalyptus (*Eucalyptus* sp.), Hottentot-fig (*Carpobrotus edulis*), and Bermuda grass (*Cynodon dactylon*). Although these areas contain little to no native vegetation, bat species may roost within various existing buildings or ornamental trees mapped as part of this vegetation community.

Portions of the developed areas that were not paved or landscaped contained naturalized nonnative vegetation dominated by ruderal invasive species. Some of the invasive species most often encountered included Russian thistle (*Salsola tragus*), ripgut brome (*Bromus diandrus*), Bermuda grass, common wild oat (*Avena fatua*), foxtail chess (*Bromus madritensis* ssp. *rubens*), black mustard (*Brassica nigra*), shortpod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), musky stork's bill (*Erodium moschatum*), tocalote (*Centauria melitensis*), bull thistle (*Cirsium vulgare*), and perennial sow-thistle (*Sonchus arvensis*). Many of these areas had been mowed prior to the surveys in 2009 and 2015. Botta's pocket gopher (*Thomomys bottae*) and California ground squirrel (*Spermophilus beecheyi*) burrows were occasionally observed within ruderal grassland areas. The locations of burrows suitable to provide habitat for burrowing owl (*Athene cunicularia*; BUOW) are shown on Figure 2 of the 2015 Phase I and Phase II *Burrowing Owl Survey Report* (2015), which is provided in Appendix C of the NES.

EARTHEN-BOTTOM TIDAL WATERS OF THE LOS ANGELES RIVER. Tidal influence on the Los Angeles River extends north from Queensway Bay to the Willow St. Bridge over the Los Angeles River (MBC Applied Environmental Sciences 1994). Intertidal portions of the shoreline extend from the extreme low to the extreme high water mark, while subtidal areas lie below the extreme low tide zone and are never exposed. The Los Angeles River estuary at this location consists of a natural soft bottom composed of sands and muds. Between Anaheim St. and the 7th St. Bridge, protective riprap cover lines the margins of the river. The halophytic (salt-loving) vegetation found in the estuarine wetland provides a valuable function to the overall wetland ecosystem by anchoring soils and controlling erosion. During surveys conducted in October 2009, intertidal areas of riprap consisted of relatively low species diversity and included barnacles (*Balanus amphitrite* and *B. glandula*), mussels (*Mytilus galloprovincialis* and *Geukensia demissa*), a green algae (*Ulva* sp.), and a filamentous red algae turf. Barnacles exist at the bridge abutments. No rooted eelgrass or kelp forests were observed in the BSA.

Human-made structures (dikes and weirs) and boulders provide roosting habitat for shorebirds, seabirds, and waterfowl during low-flow periods. The rocky tidal portion of the BSA is not considered a sensitive habitat because of the highly variable salinity and temperature regimes and the presence of river-borne sediments that silt over the low-lying riprap. The *Estuarine Resources Environmental Assessment* completed for the I-710 Corridor Project further describes habitat characteristics and lists additional species observed in the tidal waters of the Los Angeles River (Appendix F of the NES) (2009b).

FRESHWATER EMERGENT MARSH. This habitat has been highly affected by the human environment, much like the riparian scrub habitat described above. Freshwater marsh habitat has been identified along narrow margins of the lower Los Angeles River and in the bed of Compton Creek (identified as Drainage Boxes 6 and 22 in the 2017 Jurisdictional Delineation Memorandum Update). Within the BSA, Compton Creek is a trapezoidal channel with an earthen bottom and concrete and grouted riprap banks, and supports riparian vegetation and

perennial flows that create wetland conditions. Freshwater marsh habitat has also been identified in an area surrounded by riparian scrub habitat associated with the Dominguez Gap and DeForest Treatment Wetlands (identified as Drainage Boxes 3 and 23 in the Jurisdictional Delineation). Regular maintenance associated with flood control generally prevents the vegetation from becoming mature. Dominant species found in freshwater marsh habitat include California bulrush, cattails, primrose-willow (*Ludwigia* sp.), and nonnative swamp smartweed (*Persicaria hydropiperoides*).

RIPARIAN SCRUB. Riparian scrub habitat is sporadic within the BSA and is located along the margins of Compton Creek (Drainage Boxes 6 and 22), within vegetated areas of the Los Angeles River margins south of Willow St., and within the native habitat restoration areas associated with the Dominguez Gap and Deforest Treatment Wetlands Project (identified as Drainage Boxes 3 and 23 in the Jurisdictional Delineation). Riparian scrub lines the Los Angeles River shoreline primarily between Willow St. and Pacific Coast Hwy. Between Anaheim St. and 7th St., the riparian margins of the river decrease, and protective riprap lines the margins of the river. At the time of the biological surveys, this habitat was disturbed by litter and human intrusion and was cleared annually (at a minimum) for flood control purposes. Dominant species in riparian scrub include mulefat (*Baccharis salicifolia*), Goodding's willow (*Salix gooddingii*), narrowleaf willow (*Salix exigua*), western goldenrod (*Euthamia occidentalis*), and Fremont's cottonwood (*Populus fremontii*). Occasionally, small stands of marsh species such as California bulrush (*Schoenoplectus californicus*) and cattails (*Typha* sp.) are interspersed with riparian scrub. Nonnative weedy species commonly observed included giant reed (*Arundo donax*), poison hemlock (*Conium maculatum*), broad-leaved peppergrass (*Lepidium latifolium*), and common sunflower (*Helianthus annuus*).

CONCRETE-LINED FRESHWATER WATERS OF THE LOS ANGELES RIVER AND ASSOCIATED DRAINAGES. These human-made jurisdictional areas were identified within the Los Angeles River north of the Willow St. crossing and within unvegetated channels adjacent to the Los Angeles River. These areas typically were unvegetated due to the concrete lining. Islands of sand, rock, or silt are occasionally found upstream of Willow St. and can be colonized by riparian plants that are covered during flood periods. These islands either shift position or are washed away during high flow events. The Los Angeles River and its tributaries connect with a navigable water (the Pacific Ocean) and are, therefore, considered jurisdictional. Along with the freshwater portion of the Los Angeles River, the areas identified as Drainage Boxes 1, 2, 4, 12, 13, and 21 in Appendix H are included in this designation. Following refinement of the project alternatives, Drainage Box 20 is no longer within the BSA.

OPEN WATER. The Dominguez Gap Treatment Wetland (identified as Drainage Box 3 in the Jurisdictional Delineation) contains open water habitat, where fresh water ponds for extended periods of time during the groundwater recharge process and prevents the growth of vegetation.

3.16.2.3 WILDLIFE CORRIDORS/HABITAT FRAGMENTATION

Many wildlife species require large areas of habitat to forage for food, find burrowing/denning or nesting sites, and breed. Corridors linking areas of suitable habitat are important because they allow movement of wildlife from one area of habitat to another. Corridors are often used by juveniles dispersing to new territories. This avoids intraspecific competition in existing habitats and allows the recolonization of areas from which animals have become extirpated. Wildlife movement and habitat fragmentation are greatly affected by roads.

Wildlife crossings are generally structural passages beneath or above roadways. “Wildlife crossing” is the umbrella term encompassing underpasses, overpasses, and culverts. All of these structures provide seminatural corridors above or below roads, and in some cases adjacent to roads, so that animals can safely cross without endangering themselves and motorists. Species of primary interest in this wildlife corridor assessment are medium-sized mammals such as coyote (*Canis latrans*) and bobcat (*Lynx rufus*).

The adverse impacts of I-710 to wildlife movement have long been in place since the construction of the freeway in the late 1950s and 1960s. Wildlife movement across I-710 in the BSA has been substantially constrained for many years by human-made barriers (lack of suitable vegetative cover, existing roadways, storm water conveyance structures, and fencing, along with the associated commercial, industrial, and residential development). The urban setting of the BSA provides limited opportunities for habitat continuity. Nevertheless, the Los Angeles River and adjacent parks, wetlands, and vacant lands do provide a long, linear stretch of area suitable for wildlife, including many species of waterbirds and medium-sized, adaptable mammals such as coyotes.

3.16.3 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24, Construction Impacts, of this document for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, descriptions of temporary impacts related to natural communities are located in Section 3.24.3.16, Natural Communities, in the Construction Impacts section. Any direct or indirect impacts (other than the existing indirect impacts of the existing facility) to natural communities or biological resources that have the potential to occur beyond the BSA (such as water quality impacts) will be avoided or minimized by implementing the avoidance and minimization measures outlined in this section, Section 3.16, Natural Communities, through Section 3.21, Invasive Species, as well as in Section 3.24. There are no impacts, direct or indirect, beyond existing indirect effects of the facility, anticipated to occur beyond the right of way.

3.16.3.1 PERMANENT IMPACTS

For the purposes of impact analysis, a conservative right-of-way footprint was established for each build alternative based on preliminary engineering plans that includes areas of cut and fill; staging areas for construction vehicles, equipment, and materials; haul routes; and water quality treatment features. While some portions of this right-of-way footprint would only be temporarily disturbed during construction and would be revegetated, this revegetation may not fully restore the functions and values of the impacted habitat.

Where the concept plans (see Appendix O of this RDEIR/SDEIS) showed the placement of columns/piers or other roadway features, a direct permanent impact was assumed. Indirect permanent impacts were assumed in areas where shading from a bridge or the elevated freight corridor in Alternative 7 was identified. Therefore, the analysis of impacts conservatively estimates a worst-case impact scenario. In general, Alternative 7 will have greater impacts to natural communities of concern than Alternative 5C because of its larger footprint.

BUILD ALTERNATIVES. Permanent direct and indirect impacts to land cover or habitat types of concern by build alternative are provided in Table 3.16-2 and discussed in more detail below.

ESTUARINE HABITAT. As shown in Table 3.16-2, Alternatives 5C and 7 are expected to result in direct permanent impacts to 0.18 acre or 0.11 acre, respectively, of estuarine habitat (earthen-bottom intertidal portions of the Los Angeles River) due to the construction of abutments and driving of piles, and a reduction in soft-bottom habitat as a consequence of the placement of piers and abutments. Percussive forces generated during pile-driving activities may result in hydroacoustic impacts to animal species, as discussed in Section 3.24.3.20, within this habitat.

In addition to direct permanent impacts, Alternatives 5C and 7 would result in indirect permanent effects to 5.09 acres or 5.02 acres, respectively, of estuarine habitat. Indirect permanent effects would result from permanent shading associated with bridges or elevated roadways. In addition, construction may indirectly affect estuarine habitats permanently through enhancing the germination and proliferation of nonnative invasive plant species. Potential hydraulic effects are associated with bridge modifications and the relocation of a segment of electrical transmission lines along the edge of the river, upstream. However, as analyzed in Section 3.8 of this RDEIR/SDEIS, the proposed modifications would mimic the existing pier configurations upstream and downstream, and there would not be substantial effects to the water surface elevation, velocity of flood flows, sedimentation, or scour in the vicinity of the new piers. Because there are no substantial effects at the location of the modifications, there are no substantial effects to downstream locations, including the estuarine habitat.

Table 3.16-2: Project Impacts to Land Cover or Habitat Types Occurring Within the Biological Study Area

Impacts	Land Cover or Habitat Type							Total (acres)
	Estuarine Habitat[1]	Riparian/Riverine Habitats[1]						
	Earthen-Bottom Intertidal Portions of Los Angeles River	Marsh	Riparian Scrub	Concrete-Lined Freshwater Portions of the Los Angeles River and Associated Drainages	Open Water	Total Riparian/ Riverine Habitats	Developed/ Ornamental/ Ruderal	
Total Acres Within the BSA	**14.27**	**1.86**	**8.54**	**48.22**	**5.34**	**63.96**	**1869.43**	**1947.66**
Alternative 5C								
Permanent (Direct) Impacts	0.18	0.01	0.15	1.39		1.55	0.40	**2.13**
Permanent (Indirect) Impacts	5.09	0.77	2.22	18.02		21.02	10.56	**36.67**
Temporary Impacts	8.34	0.67	1.93	19.34		21.93	25.54	**55.82**
Total Acreage Impacted	**13.61**	**1.45**	**4.30**	**38.75**		**44.50**	**36.50**	**94.62**
% of Total Acreage in BSA Impacted	**95.4%**	**78.0%**	**50.3%**	**80.4%**	**0.0%**	**69.6%**	**2.0%**	**4.9%**
Alternative 7								
Permanent (Direct) Impacts	0.11	0.17	3.90	1.28	5.34	10.69	0.43	**11.23**
Permanent (Indirect) Impacts	5.02	0.65	1.74	21.14		23.53	13.81	**42.36**
Temporary Impacts	8.19	0.66	1.41	23.51		25.59	37.96	**71.74**
Total Acreage Impacted	**13.33**	**1.49**	**7.05**	**45.93**	**5.34**	**59.81**	**52.19**	**125.33**
% of Total Acreage in BSA Impacted	**93.4%**	**79.8%**	**82.5%**	**95.3%**	**100.0%**	**93.5%**	**2.8%**	**6.4%**

[1] Habitats of special concern

Notes: The Design Options have the same habitat impacts as their associated alternative. The Dominguez Gap and DeForest Treatment Wetlands contain marsh, riparian scrub, open water, and developed/ornamental/ruderal land cover or habitat types, which are accounted for in the acreages shown.
Numbers totaled may not comport with values presented in the table due to rounding.
BSA = Biological Study Area

RIPARIAN/RIVERINE HABITATS. This category includes freshwater emergent marsh, riparian scrub, concrete-lined freshwater waters of the Los Angeles River and associated tributaries, and open water. The Dominguez Gap and DeForest Treatment Wetlands contain these riparian habitat types, except for concrete-lined. The I-710 Corridor Project would result in direct and indirect permanent impacts to riparian/riverine natural communities through disturbance and/or removal of existing vegetation. Furthermore, construction may indirectly affect riparian/riverine habitats permanently through shading of the areas below bridges or elevated roads and enhancing the germination and proliferation of nonnative invasive plant species, as described in more detail in Section 3.21.

Permanent impacts to riparian/riverine habitats would be greater under Alternative 7 than under Alternative 5C. As shown in Table 3.16-2, Alternative 7 is expected to result in direct permanent effects to 10.69 acres and indirect permanent effects to 23.53 acres of riparian/ riverine habitats. Alternative 5C would result in permanent direct impacts to 1.55 acres and permanent indirect impacts to 21.02 acres of riparian/riverine habitats. The figures in Appendices I and J of the NES illustrate the locations where riparian/riverine habitats would be impacted by Alternatives 5C and 7, respectively.

Both Alternatives would result in an impact to the Los Angeles River and Compton Creek due to the structural modifications, relocation, and/or replacement of crossing structures at 22 locations (with multiple structures at some locations).

Existing or proposed wetland restoration areas identified in the BSA may be affected by the I-710 Corridor Project. The Los Angeles County Department of Public Works identified the boundaries of County restoration areas (Rivera [December 30, 2009] and Su [January 11, 2009], personal communication). Two areas were found to overlap the limits of the BSA. Project impacts to the Dominguez Gap and DeForest Treatment Wetlands are accounted for in Table 3.16-2 above. Alternative 5C would result in approximately 0.08 acre of temporary impacts to the Dominguez Gap and DeForest Treatment Wetlands and Alternative 7 would result in approximately 9.26 acres of direct permanent impacts and 0.08 acre of temporary impacts to the Dominguez Gap and DeForest Treatment Wetlands.

WILDLIFE CORRIDORS/HABITAT FRAGMENTATION. Wildlife movement across I-710 in the BSA has been substantially constrained for many years by the urbanized nature of the area as well as by human-made barriers (lack of suitable vegetative cover, existing roadways, stormwater conveyance structures, and fencing). The urban setting of the BSA provides limited opportunities for habitat continuity. The BSA also does not contain any critical habitat

linkage areas identified in the South Coast Missing Linkages Project[3] or any Essential Connectivity Areas identified in the California Essential Habitat Connectivity Project[4]. Nevertheless, the Los Angeles River and adjacent parks, wetlands, and vacant lands do provide a long linear stretch of habitat suitable for wildlife, including many species of water birds and medium-sized adaptable mammals such as coyotes.

The I-710 Corridor Project would result in some loss of vacant land but would not increase habitat fragmentation or impede the movement of wildlife in the area. Habitat within the Los Angeles River channel and movement opportunities therein would not be affected by project implementation because the I-710 Corridor Project essentially modifies an existing transportation facility.

Because the I-710 Corridor has restricted wildlife movement and resulted in habitat fragmentation for many years, none of the build alternatives are expected to have an adverse effect on wildlife movement.

NO BUILD ALTERNATIVE. Under Alternative 1, the I-710 Corridor Project would not be constructed. There would be no permanent direct or indirect impacts to natural communities from Alternative 1.

3.16.3.2 PUBLIC HEALTH CONSIDERATIONS

No public health considerations were identified relative to project impacts on natural communities, wildlife corridors, or habitat fragmentation.

3.16.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Measures to address permanent impacts to natural communities of concern are described below. Related measures are also provided in Sections 3.6, 3.19 through 3.21, and 3.24 (Measures CON-NC-1 through CON-NC-16).

The majority of existing estuarine and riparian/riverine communities within the BSA fall under the regulatory jurisdiction of the USACE (pursuant to Section 10 of the RHA and Section 404 of the CWA), the CDFW (pursuant to Section 1602 of the California Fish and Game Code), and the RWQCB (pursuant to Section 401 of the CWA). Compensatory mitigation for these communities would be required to comply with Section 404 of the CWA. Compensatory mitigation will be

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[3] South Coast Wildlands. 2008. *South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion.* Website*:* http://www.scwildlands.org/reports/SCMLRegionalReport.pdf (accessed March 22, 2017).

[4] California Department of Fish and Wildlife. California Essential Habitat Connectivity Project. Website: http://www.scwildlands.org/ reports/SCMLRegionalReport.pdf (accessed March 22, 2017).

developed in accordance with the Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Part 325 and 332, and 40 CFR Part 200). At minimum, these habitats subject to regulatory jurisdiction will be mitigated at a minimum mitigation-to-impact ratio of 2:1 for permanent impacts and 1:1 for temporary impacts. Compensatory mitigation may be in the form of habitat restoration and/or enhancement in on- or off-site areas where similar habitat exists.

Final details for compensatory mitigation would be evaluated through coordination between Caltrans and the resource agencies. Areas within or directly adjacent to the BSA may offer potential mitigation options. Online research (The River Project 2009; Los Angeles County 2009) and communication with agency representatives (L. Torres [Rivers and Mountains Conservancy], J. Casanova [Los Angeles River and San Gabriel Rivers Watershed Council], and D. Rivera [LACDPW], personal communication, December 30, 2009) revealed that a number of restoration opportunities, some still in progress, exist in the vicinity. Portions of the Joint Dominguez Gap and DeForest Treatment Wetlands Project lie within the BSA. Among other potential options, compensation for the I-710 Corridor Project's impacts to tidal waters may be provided through additional funding for the Golden Shore Marine Preserve (Long Beach Natural Areas 2009). The final report has been submitted for the Compton Creek Improvement Project, which may provide a compensatory mitigation opportunity for riparian scrub and/or freshwater emergent marsh. The Rivers and Mountains Conservancy is looking for potential projects for implementation in the Compton Creek Watershed, as well as in the Los Angeles River. These potential opportunities will be investigated in coordination with the resource agencies, the Los Angeles County Department of Public Works (LACDPW), and the Santa Monica Mountains Recreation and Conservation Authority (SMMRCA) throughout the planning phase, final design, and the permitting process.

The following measure shall apply to all build alternatives:

NC-1 The California Department of Transportation (Caltrans) shall prepare a Habitat Mitigation Monitoring Plan (HMMP) that shall comply with all terms and conditions set forth in the permits and opinions issued by the resource agencies and shall include the following provisions:

- Permanent impacts to estuarine and riparian/riverine habitat shall be replaced on or off site at a minimum 2:1 ratio with in-kind habitat. Temporary impacts to estuarine and riparian/riverine habitat shall be replaced at a minimum 1:1 ratio with in-kind habitat restored in place within the Biological Study Area (BSA). If off-site restoration is conducted, it shall be done within the same watershed as the Interstate 710 (I-710) Corridor Project.

- The HMMP shall identify a success criterion of at least 80 percent cover of native riparian vegetation or composition structure similar to that of an appropriate reference site. The reference site shall be determined based on the type of habitat being impacted and the hydrology and surrounding habitat at the proposed mitigation area. Further criteria specified in the HMMP shall include an establishment period for the replacement habitat, regular trash removal, and regular maintenance and monitoring activities to ensure the success of the mitigation plan. After construction, annual summary reports of the biological monitoring shall be provided to the United States Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), the Regional Water Quality Control Board (RWQCB), and the United States Fish and Wildlife Service (USFWS) documenting the monitoring effort. The duration of the monitoring and reporting shall be established by resource agency permit conditions.

3.17 WETLANDS

This section is based on the following documents:

- *I-710 Corridor Project Natural Environment Study* (NES) (June 2017)
- *I-710 Corridor Project Jurisdictional Delineation Report* (May 2012; Appendix E of the NES)
- *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (January 2017)

Detailed discussions and maps of identified jurisdictional features are provided in the Jurisdictional Delineation Report (May 2012).

3.17.1 REGULATORY SETTING

Wetlands and other waters are protected under a number of laws and regulations. At the Federal level, the Federal Water Pollution Control Act, more commonly referred to as the CWA (33 USC 1251 et seq.), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the United States (U.S.), including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (EPA).

The USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with EPA's Section 404(b)(1) Guidelines (EPA 40 Code of Federal Regulations

[CFR] Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practical alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of Federal agencies with regard to wetlands. Essentially, EO 11990 states that a Federal agency, such as FHWA and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction, and (2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCB) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see Section 3.9, Water Quality, for additional details.

3.17.2 AFFECTED ENVIRONMENT

3.17.2.1 USACE AND CDFW JURISDICTION

Areas under the jurisdiction of the USACE differ from those under the jurisdiction of CDFW; therefore, the following text describes the basis of USACE and CDFW jurisdiction over various waters.

USACE jurisdiction extends laterally to the ordinary high water mark (OHWM) or beyond the OHWM to the limit of any adjacent wetlands, if present. The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area."

In this section, USACE jurisdictional areas are described as either wetland or nonwetland areas. The USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions." In order to satisfy the USACE wetland definition, an area must possess three wetland characteristics: (1) hydrophytic vegetation,[1] (2) hydric soils,[2] and (3) wetland hydrology.[3] Generally, nonwetland waters are those within the OHWM that are not wetlands.

The CDFW regulates streams and rivers, which are defined by the presence of a channel, bed, and banks. CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW, which has not defined wetlands for jurisdictional purposes. CDFW generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, alders, and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas. Wetlands not associated with a lake, stream, or other regulated area are generally not subject to CDFW jurisdiction.

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1 Plant life that grows, and is typically adapted for life, in permanently or periodically saturated soils.

2 Soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions (i.e., absence of oxygen) in the upper part.

3 Areas with wetland hydrology are those where the presence of water has an overriding influence on vegetation and soil characteristics due to anaerobic and reducing conditions, respectively.

3.17.2.2 California Coastal Commission Jurisdiction

A portion of the biological study area (BSA) for the I-710 Corridor Project is located within the Long Beach Local Coastal Program (LCP). However, there are no California Coast Commission (CCC) jurisdictional wetlands within the portion of the BSA located in the Coastal Zone. Areas within the Coastal Zone satisfying the USACE jurisdictional criteria for wetlands would also be subject to CCC jurisdiction as wetlands pursuant to the California Coastal Act. However, there are no USACE wetlands in the Coastal Zone portion of the BSA. Drainage Feature 19 (shown on sheet 1 of 20 in Appendix R of this Recirculated Draft Environmental Impact Report/ Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) is a concrete-lined drainage potentially jurisdictional by the USACE within the Coastal Zone, but it does not satisfy USACE or CCC wetland criteria and is no longer within the BSA. Additionally, there are no other areas where hydrophytic vegetation or hydric soils indicators or wetland hydrology occur in the Coastal Zone. Therefore, there are no CCC jurisdictional wetlands within the BSA.

3.17.2.3 Jurisdictional Areas in the I-710 Corridor Biological Study Area

The BSA is approximately 19 linear miles along the Interstate 710 (I-710) corridor, from Ocean Blvd. to State Route 60 (SR-60). The BSA also includes a portion of Interstate 405 (I-405), State Route 91 (SR-91), Interstate 105 (I-105), and Interstate 5 (I-5), to accommodate for proposed interchange improvements. The entire I-710 Corridor Project BSA is located within the Los Angeles River Hydrologic Unit, which drains a watershed of approximately 530,000 acres (824 square miles). The upper portion of the watershed is covered by forest or open space, while the remaining watershed, including the BSA, is highly developed with commercial, industrial, or residential uses. The confluences of two of the eight major tributaries to the Los Angeles River, the Rio Hondo, and Compton Creek occur within the BSA. The Rio Hondo joins the Los Angeles River in the city of South Gate from the east, and Compton Creek joins the Los Angeles River in the city of Long Beach from the northwest. The 2.5 miles of Compton Creek closest to its confluence with the Los Angeles River are soft-bottom. South of Compton Creek, the Los Angeles River flows within a concrete or rock-lined channel into the estuary in Long Beach. The last three miles of the Los Angeles River are soft-bottom, and sides are lined with rock riprap. The Los Angeles River has a relatively permanent (at least three months) flow during the year and has been designated as a traditional navigable water (TNW), under the Clean Water Act (CWA). Some of the tributary drainages have relatively permanent (at least three months) flow during the year and are, therefore, considered jurisdictional by the USACE. The lower reach of the Los Angeles River between an area just south of Willow St. and the Pacific Ocean is subject to daily tidal influences and is, therefore, considered a navigable water of the United States under Section 10 of the Rivers and Harbors Act.

As described in the Jurisdictional Delineation Report (2012) and in the 2017 *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (Appendix E of the NES), there are several drainages within the BSA (including Compton Creek) that connect directly or

indirectly to the Los Angeles River. Numbering of “drainage boxes” was used during preparation of the Jurisdictional Delineation to identify the locations of drainage features on maps. The Los Angeles River was not assigned a drainage box number.

The BSA contains a total of 58.77 acres of Section 404 jurisdictional nonwetland waters, 10.16 acres of Section 404 wetland waters, and 14.42 acres of Section 10 jurisdictional waters within the Section 404 waters (Table 3.17-1). There are a total of 122.36 acres of streambed and associated riparian habitat within the BSA subject to the jurisdiction of CDFW under Section 1600 of the California Fish and Game Code. RWQCB jurisdiction was determined based on the presence of Section 404 jurisdiction, with one exception; the Joint Dominguez Gap and Deforest Treatment Wetlands are not considered USACE jurisdictional, but are likely to be considered jurisdictional by RWQCB. There are a total of 78.54 acres within the BSA under the likely jurisdiction of the RWQCB.

Since there is no public guidance on determining RWQCB jurisdictional areas, RWQCB jurisdiction was determined based on the Federal definition of wetlands (three-parameter) and other waters of the U.S. as recommended by the September 2004 Workplan. This includes the Joint Dominguez Gap and Deforest Treatment Wetlands, which are not considered jurisdictional by the USACE. Although they are not USACE jurisdictional, the RWQCB often asserts jurisdiction over water treatment wetlands under the Porter-Cologne Act, and they are consequently included in the total RWQCB jurisdiction. Similar to the USACE, the RWQCB asserts jurisdiction over roadside drainage ditches on a case-by-case basis, but jurisdiction over such ditches is presumed to coincide for purposes of this analysis.

All of the areas satisfying the USACE jurisdictional criteria for waters of the U.S. and adjacent wetlands, as described above, are also subject to CDFW jurisdiction pursuant to Section 1602 of the California Fish and Game Code. In addition, streambed banks and adjacent riparian areas extending beyond the limits of the USACE jurisdiction are considered subject to CDFW jurisdiction. These areas failed to meet the USACE wetland criteria.

On February 8, 2011, a letter was sent to the USACE with a copy of the draft jurisdictional delineation report, requesting a determination on the jurisdictional status of waters in the BSA. The findings and conclusions regarding the location and extent of wetlands and other waters subject to regulatory jurisdiction represent the professional opinion of the consulting biologists. After requesting supplemental information on several drainages, and revisions to the draft jurisdictional delineation, the USACE provided the approved jurisdictional determination (AJD) on June 8, 2012. The AJD covered Drainage Features 1 through 20. The preliminary findings provided in this section regarding Drainage Features 21, 22, 23, and 24 will need to be verified by the USACE, CDFW, and RWQCB, but not by the CCC because they are not located in the Coastal Zone. In addition, Appendix R of this RDEIR/SDEIS depicts the waters of the U.S. within the BSA relative to the alternatives under consideration.

Table 3.17-1: Summary of Jurisdictional Waters within the I-710 Corridor Project Biological Study Area

Drainage Number	Description	USACE					CDFW		RWQCB	
		Jurisdictional Status	Section 404 Nonwetland Waters (acres)	Section 404 Wetland (acres)	Total Section 404 Area (acres)	Total Section 10 Area (acres)	Likely Jurisdictional Status	Total Potential Area (acres)	Likely Jurisdictional Status	Total Potential Area (acres)
-	Los Angeles River	Jurisdictional[1]	55.52	6.30	61.82	14.42	Jurisdictional	111.95	Jurisdictional	61.82
1	Concrete ditch at bottom of slope	Jurisdictional[1]	0.03	N/A	0.03	N/A	Jurisdictional	0.06	Jurisdictional	0.03
2	Concrete ditch at bottom of slope	Jurisdictional[1]	0.04	N/A	0.04	N/A	Jurisdictional	0.11	Jurisdictional	0.04
3	Artificially created basin	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Jurisdictional	9.26
4	Concrete ditch	Jurisdictional[1]	0.74	0.00	0.74	0.00	Jurisdictional	1.16	Jurisdictional	0.74
5	Concrete ditch	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Nonjurisdictional	0.00
6	Compton Creek	Jurisdictional[1]	0.00	2.60	2.60	0.00	Jurisdictional	4.64	Jurisdictional	2.60
7	Earthen swale	Nonjurisdictional[1]	N/A	N/A	N/A	N/A	Nonjurisdictional	N/A	Nonjurisdictional	N/A
8	Concrete ditch	Nonjurisdictional[1]	N/A	N/A	N/A	N/A	Nonjurisdictional	N/A	Nonjurisdictional	N/A
9	Concrete ditch, no OHWM	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Nonjurisdictional	0.00
10	Isolated freeway drainage	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Nonjurisdictional	0.00
11	Concrete ditch, no OHWM	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Nonjurisdictional	0.00
12	Rio Hondo	Jurisdictional[1]	1.14	0.00	1.14	0.00	Jurisdictional	2.54	Jurisdictional	1.14
13	Rectangular concrete channel	Jurisdictional[1]	1.22	0.00	1.22	0.00	Jurisdictional	1.22	Jurisdictional	1.22
14	Isolated earthen swale and erosional feature	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Nonjurisdictional	0.00
15	Isolated freeway drainage	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Nonjurisdictional	0.00
16	Concrete ditch	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Nonjurisdictional	0.00

Table 3.17-1: Summary of Jurisdictional Waters within the I-710 Corridor Project Biological Study Area

Drainage Number	Description	USACE					CDFW		RWQCB	
		Jurisdictional Status	Section 404 Nonwetland Waters (acres)	Section 404 Wetland (acres)	Total Section 404 Area (acres)	Total Section 10 Area (acres)	Likely Jurisdictional Status	Total Potential Area (acres)	Likely Jurisdictional Status	Total Potential Area (acres)
17	Upland concrete v-ditch	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Nonjurisdictional	0.00
18	Upland concrete v-ditch	Nonjurisdictional[1]	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Nonjurisdictional	0.00
19	Concrete ditch	Nonjurisdictional[1]	N/A	N/A	N/A	N/A	Nonjurisdictional	N/A	Nonjurisdictional	N/A
20	Rectangular concrete channel	Jurisdictional[1]	N/A	N/A	N/A	N/A	Jurisdictional	N/A	Jurisdictional	N/A
21	Concrete trapezoidal Channel	Jurisdictional	0.07	0.00	0.07	0.00	Jurisdictional	0.65	Jurisdictional	0.07
22	Compton Creek	Jurisdictional	0.00	1.26	1.26	0.00	Jurisdictional	1.79	Jurisdictional	1.26
23	Artificially created Wetland	Nonjurisdictional	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Jurisdictional	0.08
24	Earthen drainage path	Nonjurisdictional	0.00	0.00	0.00	0.00	Nonjurisdictional	0.00	Jurisdictional	0.26
Total[1]			**58.77**	**10.16**	**68.93**	**14.42**	**–**	**122.36**	**–**	**78.54**

Source: LSA Associates, Inc. *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (January 2017).
[1] Total may not reflect sum of individual drainages, due to rounding.
BSA = Biological Study Area
CDFW = California Department of Fish and Wildlife
I-710 = Interstate 710
N/A = not applicable
OHWM = ordinary high water mark
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers

The average annual rainfall for the lower Los Angeles watershed area is 9.9 inches.[4] During the 2013–2014 rainy season, the area received approximately 4.11 inches of rainfall.[5] Prior to 1960, 80 percent of the rain water in the Los Angeles River percolated into the ground. Today, that figure is closer to eight percent, with the rest draining into the ocean (The River Project 2009).

3.17.2.4 FUNCTIONS AND VALUES

The functions and values of the identified wetlands and other waters within the BSA of the I-710 Corridor were qualitatively assessed in the Jurisdictional Delineation and the *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (January 2017). All wetlands and other waters have some degree of functionality, and no single wetland or other water can perform all of the functions considered below. The following functions are analyzed at low, moderate, or high value levels. Each drainage box is analyzed in Table 3.17-2 based on the criteria outlined below.

HYDROLOGIC REGIME. This function is the ability of a wetland or stream to absorb and store water below ground. The degree of this saturation is dependent on the soil composition and is affected by prior flooding events. For example, clay soils possess more pore space than sandy soils. However, the smaller pore size slows the rate at which water is absorbed and released, and therefore, clay soil has a lower capacity to store water than sandy soils. The storage of water below ground allows for the fluctuation between anaerobic and aerobic conditions that benefit environmental conditions necessary for microbial cycling.

Drainage Features 3, 6, and 22 have a moderate capacity to absorb and store water. Drainage Feature 3, part of the Joint Dominguez Gap and DeForest Treatment Wetlands system, acts to retain, clean, and infiltrate runoff into the groundwater system. Water in the East Basin (mostly outside the BSA) is transferred to the West Basin (within the BSA) only to the extent that it can infiltrate into the groundwater. Drainage Features 23 and 24 are part of the East Basin. Excess water from the East Basin is conveyed into the Los Angeles River. The West Basin (Drainage Feature 3) has deep soils with a high capacity to absorb and store water, but water is not discharged from the West Basin into the Los Angeles River. Drainage Features 6 and 22, Compton Creek, for the most part is earthen-bottomed within the BSA. It is a narrow channel that contains sufficient sediment to hold water for a long enough period of time to support wetland vegetation.

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[4] Los Angeles County Department of Public Works (LACDPW), Precipitation Map. Website: http://ladpw.org/wrd/precip/alert_rain/normal.cfm (accessed December 8, 2015). Automatic Local Evaluation in Real Time (ALERT) rain gauge data for Station AL314 at the lower Los Angeles River.

[5] LACDPW, ALERT rain gauge data for Station AL314 at the lower Los Angeles River, obtained via email correspondence with Mr. Steven Chang on December 10, 2015.

Table 3.17-2: Functions and Values of Drainages within the I-710 Corridor Project Biological Study Area

Drainage Box Number	Hydrologic Regime	Flood Storage and Flood Flow Modification	Sediment Retention	Nutrient Retention and Transformation	Toxicant Trapping	Social Significance	Wildlife Habitat	Aquatic Habitat
Los Angeles River*	Low/	High	Low/	Low/Moderate	Low/	Moderate/	Low/High	Low/High
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Moderate	High	High	High	High	High	High	High
4	Low	Moderate	Low	Low	Low	Low	Low	Low
5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Moderate	High	Moderate	Moderate	Moderate	Low	Moderate	Moderate
7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Low	Low	Low	Low	Low	Low	Low	Low
10	Low	Low	Low	Low	Low	Low	Low	Low
11	Low	Low	Low	Low	Low	Low	Low	Low
12	Low	High	Low	Low	Low	Low	Low	Low
13	Low	High	Low	Low	Low	Low	Low	Low
14	Low	Low	Low	Low	Low	Low	Low	Low
15	Low	Low	Low	Low	Low	Low	Low	Low
16	Low	Moderate	Low	Low	Low	Low	Low	Low
17	Low	Low	Low	Low	Low	Low	Low	Low
18	Low	Low	Low	Low	Low	Low	Low	Low
19	Low	Low	Low	Low	Low	Low	Low	Low
20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
21	Low	Low	Low	Low	Low	Low	Low	Low
22	Moderate	Moderate	Moderate	Low	Low	Moderate	Moderate	Moderate
23	Low	Moderate	Moderate	Moderate	High	Moderate	Moderate	Moderate
24	Low	Moderate	Moderate	Moderate	High	Moderate	Moderate	Moderate

Source: LSA Associates, Inc. *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (January 2017).
* The Los Angeles River exhibits higher functions and values south of Willow St., where the channel has a natural bottom that allows development of wetlands, shorebird habitat, and high recreational opportunities.
I-710 = Interstate 710
N/A = not applicable

FLOOD STORAGE AND FLOOD FLOW MODIFICATION. This function is determined based on the ability of a wetland or stream at which the peak flow in a watershed can be attenuated during major storm events and during peak domestic flows to take in surface water that may otherwise cause flooding. This is dependent on the size of the wetland or stream, the amount of water it can hold, and its location in the watershed. For instance, larger wetlands or streams that have a greater capacity to receive waters have a greater ability to reduce flooding. In addition, areas high in the watershed may have more ability to reduce flooding in downstream areas, but areas

lower in the watershed may have greater benefits to a specific area. Vegetation, shape, and the configuration of the wetland or stream may also affect flood storage by dissipating the energy of flows during flood events.

Several of the drainages within the BSA were created or modified in order to provide increased flood storage capacity during storm events within the project vicinity. As a result, many of the drainages function at a moderate or high level with regards to flood storage and flood flow modification. The Los Angeles River, as well as Drainage Features 3 (Dominguez Gap Wetlands), 6 (Compton Creek), 12 (Rio Hondo Creek), and 13, function at a high level due to their large size and/or presence of vegetation or other modifications, which would serve to dissipate flood flows downstream. Drainage Features 4, 16, 22, 23, and 24 all function at a moderate level, as they are not as large as the drainages identified above, but provide flood storage and/or flow modification for large areas and have the capacity to receive moderate amounts of flood water. For the most part, flood waters within these drainages are held for only a short time prior to conveyance into the Los Angeles River.

SEDIMENT RETENTION. Removal of sediment is the process that keeps sediments from migrating downstream. This is accomplished through the natural process of sediment retention and entrapment. This function is dependent on the sediment load being delivered by runoff into the watershed. Similar to above, the vegetation, shape, and configuration of a wetland will also affect sediment retention if water is detained for long durations, as would be the case with dense vegetation, a bowl-shaped watershed, or slow-moving water. This function would be demonstrated (i.e., high) if the turbidity of the incoming water is greater than that of the outgoing water.

The majority of the drainages within the BSA have a low ability to remove or trap sediment as they are concrete-lined and unvegetated. Drainage Features 3, 6, 22, 23, and 24 have a moderate or high capacity to trap and retain sediment. Drainage Features 3, 23, and 24 (Joint Dominguez Gap and DeForest Treatment Wetlands) have the ability to retain a substantial amount of sediment as they contain vegetated basins with large capacities. Drainage Features 6 and 22 (Compton Creek), are earthen-bottomed within the BSA. Compton Creek is a narrow channel that contains sufficient sediment and vegetation to trap a moderate amount of sediment prior to conveyance into the Los Angeles River.

NUTRIENT RETENTION AND TRANSFORMATION. Nutrient cycling consists of two variables: uptake of nutrients by plants and detritus turnover, in which nutrients are released for uptake by plants downstream. Wetland systems in general are much more productive with regard to nutrients than upland habitats. The regular availability of water associated with the wetland or stream may cause the growth of plants (nutrient uptake) and associated detritivores and generate nutrients that may be utilized by a variety of aquatic and terrestrial wildlife downstream.

The majority of the drainages within the BSA function at a low level with regards to nutrient retention and transformation. Since most of the drainages are concrete-lined and unvegetated, they do not contribute at all to this function. Earthen-bottomed portions of the Los Angeles River, Compton Creek (Drainage Features 6 and 22), and the Joint Dominguez Gap and DeForest Treatment Wetlands (Drainage Features 3, 23, and 24) have a moderate or high capacity in regard to nutrient retention and transformation.

The earthen-bottomed portions of the Los Angeles River, south of Willow St., contain islands of vegetation that have grown in sediment that was retained during prior storm events. Since waters from this section of the Los Angeles River are almost immediately conveyed into the Pacific Ocean, this drainage does not provide nutrients for downstream vegetation. However, it does function to remove excess nutrients from water prior to conveyance into the Pacific Ocean. The Joint Dominguez Gap and DeForest Treatment Wetlands (Drainage Features 3, 23, and 24) have the ability to retain a moderate to high amount of nutrients as they contain (or will contain, in the case of Drainage Feature 24), significant amounts of wetland vegetation. Compton Creek (Drainage Features 6 and 22) contains a small amount of wetland vegetation that is capable of retaining a moderate amount of nutrients prior to conveyance into the Los Angeles River.

TOXICANT TRAPPING. The major processes by which wetlands remove nutrients and toxicants are as follows: (1) by trapping sediments rich in nutrients and toxicants, (2) by absorption to soils high in clay content or organic matter, and (3) through nitrification and denitrification in alternating oxic and anoxic conditions. Removal of nutrients and toxicants is closely tied to the processes that provide for sediment removal.

The majority of the drainages within the BSA function at a low level in regard to toxicant trapping. Since most of the drainages are concrete-lined and unvegetated, they do not contribute at all to this function. Compton Creek (Drainage Features 6 and 22) and the Joint Dominguez Gap and DeForest Treatment Wetlands (Drainage Features 3, 23, and 24) have a moderate or high capacity in regard to toxicant trapping for the same reasons, as they provide for nutrient retention.

Drainage Features 3, 23, and 24 (Joint Dominguez Gap and DeForest Treatment Wetlands) provide a high level of toxicant trapping, as they contain a large amount of vegetation and sediment.

SOCIAL SIGNIFICANCE. This is a measure of probability that a wetland or stream will be utilized by the public because of its natural features, economic value, official status, and/or location. This includes its being utilized by the public for recreational uses, such as boating, fishing, birding, walking, and other passive recreational activities. In addition, a wetland or stream that is utilized as an outdoor classroom, is a location for scientific study, or is near a nature center would have a higher social significance standing.

The majority of the drainages within the BSA are small concrete-lined drainages adjacent to I-710 or nearby surface streets. Since most of the drainages are flood control structures, public access is generally not permitted. Therefore, most of the drainages do not provide any social significance, as they are not utilized by the public.

The Los Angeles River provides for recreational uses including biking, jogging, and walking, as well as birding and other passive recreational activities. There is a multi-use paved recreational trail along the top of both sides of the Los Angeles River channel throughout the BSA. Wetland areas located at Willow St. are also known birdwatching areas. The Joint Dominguez Gap and DeForest Treatment Wetlands (Drainage Features 3, 23, and 24) also provide public recreational opportunities. Compton Creek (Drainage Features 6 and 22) contains wetland habitat and may provide some opportunity for passive recreation, such as birding, though access to the creek is somewhat restricted.

WILDLIFE HABITAT. General habitat suitability is the ability of a wetland to provide habitat for a wide range of wildlife. Vegetation is a large component of wildlife habitat. As plant community diversity increases along with connectivity with other habitats so does potential wildlife diversity. In addition, a variety of open water, intermittent ponding, and perennial ponding is also an important habitat element for wildlife.

The majority of the drainages within the BSA function at a low level in regard to wildlife habitat. Since most of the drainages are concrete-lined and unvegetated, they contribute only minimally to this function. Earthen-bottomed portions of the Los Angeles River, as well as Drainage Features 3, 6, 22, 23, and 24, have a moderate or high value in regard to wildlife habitat. The earthen-bottomed portions of the Los Angeles River contain wetland areas that attract many avian species. Wetland and riparian habitat within Drainage Features 3, 23, and 24 (Dominguez Gap) provide wildlife habitat for mainly avian species. The small amount of wetland vegetation within Drainage Features 6 and 22 (Compton Creek) provides a moderate amount of wildlife habitat.

AQUATIC HABITAT. The ability of a wetland or stream to support aquatic species requires that there be ample food supply, pool and riffle complexes, and sufficient soil substrate. Food supply is typically in the form of aquatic invertebrates and detrital matter from nearby vegetation. Pool and riffle complexes provide a variety of habitats for species diversity as well as habitat for breeding and rearing activities. Species diversity is directly related to the complexity of the habitat structure.

The majority of the drainages within the BSA function at a low level in regard to aquatic habitat. Since most of the drainages are concrete-lined and unvegetated, they contribute only minimally to this function.

The earthen-bottomed portions of the Los Angeles River contain wetland areas with sufficient sediment and vegetation to support aquatic invertebrates and provide detrital matter. The water is shallow within this area but is sufficient to provide a moderate amount of habitat for aquatic species. Wetland and riparian habitat within Drainage Features 3, 23, and 24 (Joint Dominguez Gap and DeForest Treatment Wetlands) provide aquatic habitat due to the presence of water, sediment and vegetation. The small amount of wetland vegetation within Drainage Features 6 and 22 (Compton Creek) provide a moderate amount of wildlife habitat.

3.17.3 Environmental Consequences

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, the descriptions of temporary impacts related to wetlands and other waters of the United States are located in Section 3.24.3.17, Wetlands and Other Waters of the United States.

3.17.3.1 Permanent Impacts

Build Alternatives. For the purposes of this impact analysis, a conservative right-of-way footprint was established for each build alternative that includes areas of cut and fill, staging areas for construction vehicles, equipment and materials, haul routes, and water quality treatment features. While some portions of this right-of-way footprint would only be temporarily disturbed during construction and would be revegetated with native plant species, it is not expected that this revegetation would fully restore the functions and values of the impacted habitat in some cases.

Table 3.17-3 shows the extent to which each build alternative would affect USACE, RWQCB, and CDFW jurisdictional waters. In addition, Appendix R of this RDEIR/SDEIS depicts the waters of the U.S. in the BSA relative to the alternatives under consideration. In general, Alternative 7 would cause greater impacts to jurisdictional waters than Alternative 5C.

The permanent impacts shown in Table 3.17-3 are based on preliminary engineering plans. Where the project concept plans (see Appendix O of this RDEIR/SDEIS) showed the placement of piles or other roadway features, a direct permanent impact was assumed. Indirect permanent impacts were assumed in areas where shading from a bridge or the elevated freight corridor was identified. Therefore, the analysis of impacts conservatively estimates a worst-case impact scenario wherein all areas within the right-of-way footprint are calculated as permanent impacts, with the exception of shaded areas spanned by bridges (indirect).

Table 3.17-3 also shows the I-710 Corridor Project's impacts to the Joint Dominguez Gap and Deforest Treatment Wetlands Project areas (Drainage Features 3, 23, and 24) that are likely to be considered jurisdictional only by the RWQCB.

Table 3.17-3: Project Impacts to Potentially Jurisdictional Areas

Jurisdictional Areas	Permanent (acres)[1]		Temporary (acres)
	Direct	Indirect	
USACE Jurisdictional Areas			
Alternative 5C	1.74	26.13	30.21
Alternative 7	1.54	28.56	33.70
CDFW Jurisdictional Areas			
Alternative 5C	2.13	36.51	55.73
Alternative 7	1.96	42.20	71.66
RWQCB Jurisdictional Areas			
Alternative 5C	1.74	26.29	30.29
Alternative 7	10.80	28.72	33.79
RWQCB-only Jurisdictional Areas[2]			
Alternative 5C	0.00	0.15	0.08
Alternative 7	9.26	0.16	0.08

Note: Jurisdictional impacts for all Design Options (5C-1A, 2A, or 3A, and 7-1B or 3B) are the same as for their corresponding alternatives.

[1] For purposes of full disclosure pursuant to CEQA and NEPA, permanent impacts are calculated where new structures will occur, regardless of habitat. However, for USACE permitting purposes, changes to jurisdictional areas that are already concrete-lined are considered temporary impacts.

[2] These areas are likely to be only RWQCB jurisdictional.

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers

Based on the information currently available, the worst-case impact scenario associated with Alternative 5C is expected to potentially result in direct permanent impacts to approximately 1.74 acres and, indirect permanent impacts to approximately 26.13 acres of USACE jurisdictional areas. In addition, Alternative 5C is expected to potentially result in direct permanent impacts to approximately 2.13 acres and indirect permanent impacts to approximately 36.51 acres of CDFW jurisdictional areas. Furthermore, Alternative 5C is expected to potentially result in direct permanent impacts to approximately 1.74 acres and indirect permanent impacts to approximately 26.29 acres of RWQCB jurisdictional areas.

The worst-case impact scenario associated with Alternative 7 is expected to potentially result in direct permanent impacts to approximately 1.54 acres and indirect permanent impacts to approximately 28.56 acres of USACE jurisdictional areas. In addition, Alternative 7 is expected to potentially result in direct permanent impacts to approximately 1.96 acres and indirect permanent impacts to approximately 42.20 acres of CDFW jurisdiction. Furthermore, Alternative

7 is expected to potentially result in direct permanent impacts to approximately 10.80 acres and indirect permanent impacts to approximately 28.72 acres of RWQCB jurisdictional areas.

The following describes permanent impacts to the functions and values of wetlands and other waters in the BSA:

HYDROLOGIC REGIME. The majority of the drainages within the BSA have a low ability to absorb and store water as they are concrete-lined. Proposed project impacts within the Los Angeles River include expanded bridge footings with a small footprint that would not substantially affect the existing hydrologic regime. Alternative 5C would not result in any permanent impacts within Drainage Feature 3 (Dominguez Gap Wetlands). Alternatives 7 would result in permanent impacts to Drainage Feature 3. Due to the permanent removal of a large amount of the basins within Drainage Feature 3, the proposed permanent impacts would substantially alter the hydrologic regime of this drainage. Proposed project impacts within Compton Creek (Drainage Features 6 and 22) include expanded bridge footings with a small footprint that would not substantially affect the existing hydrologic regime. Following implementation of the project, with the exception of Drainage Feature 3, all drainages within the BSA would continue to function at the existing level with regard to hydrologic regime.

FLOOD STORAGE AND FLOOD FLOW MODIFICATION. Proposed project impacts within the Los Angeles River, as well as Drainage Features 6 and 22 (Compton Creek), 12 (Rio Hondo Creek), 13, and 21 for Alternative 5C would not substantially alter flood storage or flood flow modification. Proposed project impacts within Drainage Feature 3 (Dominguez Gap Wetlands) for Alternative 7 would result in the loss of the basins west of the Los Angeles River, thereby diminishing flood storage capacity.

SEDIMENT RETENTION. The majority of the drainages within the BSA have a low ability to remove or trap sediment as they are concrete-lined and unvegetated. Therefore, impacts to most of the drainages would not affect sediment retention. Proposed project impacts within the Los Angeles River include expanded bridge footings with a small footprint that would not substantially affect the existing sediment retention capabilities of this drainage. Proposed project impacts to Drainage Feature 3 under Alternative 7 would substantially affect the sediment retention. Proposed project impacts for Alternatives 5C and 7 within Compton Creek (Drainage Features 6 and 22) are minimal and would not substantially affect the existing hydrologic regime.

NUTRIENT RETENTION AND TRANSFORMATION. Proposed project impacts within the Los Angeles River associated with Alternatives 5C and 7 are relatively small and would not substantially affect the existing level of nutrient retention capabilities of this drainage. There are no proposed permanent impacts within Drainage Feature 3 associated with Alternative 5C. Proposed impacts associated with Alternatives 7 would result in the loss of the basins west of the Los Angeles River (Drainage Feature 3) and would substantially reduce its value

related to nutrient retention and transformation. Proposed project impacts within Drainage Features 6 and 22 (Compton Creek) under Alternatives 5C and 7 are minimal and would not substantially affect nutrient retention or transformation.

TOXICANT TRAPPING. Proposed project impacts within the Los Angeles River associated with Alternatives 5C and 7 are relatively small and would not substantially affect the existing low level of toxicant trapping capabilities of this drainage. There are no proposed permanent impacts within Drainage Feature 3 associated with Alternative 5C. Proposed impacts associated with Alternative 7 would result in the loss of Drainage Feature 3 and would substantially reduce its value related to toxicant trapping. Proposed project impacts within Drainage Features 6 and 22 (Compton Creek) for Alternatives 5C and 7 are minimal and would not substantially affect toxicant trapping.

SOCIAL SIGNIFICANCE. Proposed project impacts within the Los Angeles River associated with Alternatives 5C and 7 are relatively small and all social uses would be retained or improved. There are no proposed permanent impacts within Drainage Feature 3 associated with Alternative 5C. Proposed impacts associated with Alternative 7 would result in the loss of Drainage Feature 3 and would substantially reduce the social significance of this drainage because its potential for public use would be eliminated.

WILDLIFE HABITAT. Proposed project impacts to wildlife habitat within the Los Angeles River associated with Alternatives 5C and 7 are relatively small and would not substantially alter wildlife habitat values of this drainage. There are no proposed permanent impacts within Drainage Feature 3 associated with Alternative 5C. Proposed impacts associated with Alternative 7 would result in the loss of the wildlife habitat within Drainage Feature 3 and would eliminate its function as wildlife habitat. Proposed project impacts within Drainage Features 6 and 22 (Compton Creek) for Alternatives 5C and 7 would not result in the loss of a substantial amount of wildlife habitat.

AQUATIC HABITAT. Proposed project impacts within the Los Angeles River associated with Alternatives 5C and 7 are relatively small and would not substantially affect the existing aquatic habitat values of this drainage. There are no proposed permanent impacts within Drainage Feature 3 associated with Alternative 5C. Proposed impacts associated with Alternative 7 would result in the loss of aquatic habitat within this drainage and would eliminate its function as aquatic habitat. Proposed project impacts within Drainage Features 6 and 22 (Compton Creek) for Alternatives 5C and 7 are minimal and would not result in the loss of a substantial amount of aquatic habitat.

NO BUILD ALTERNATIVE. Under Alternative 1, the I-710 Corridor Project would not be constructed. No permanent (direct or indirect) impacts to jurisdictional waters would result from Alternative 1.

3.17.3.2 PUBLIC HEALTH CONSIDERATIONS

No public health considerations exist with regard to project impacts on jurisdictional areas.

3.17.4 AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

The majority of the jurisdictional aquatic resources within Los Angeles County fall under the regulatory jurisdiction of the USACE (pursuant to Section 404 of the CWA) and the CDFW (pursuant to Section 1600 of the California Fish and Game Code). Compensatory mitigation for jurisdictional aquatic resources would be required in order to obtain permits from the USACE and CDFW. Compensatory mitigation will be developed in accordance with the Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332, and 40 CFR Part 200). Typically, aquatic resources subject to USACE and CDFW jurisdiction are mitigated at a minimum mitigation-to-impact ratio of 2:1 for permanent impacts and 1:1 for temporary impacts, which is consistent with USACE and CDFW policies for no net loss of aquatic habitat (e.g., wetlands) standards. Compensatory mitigation may be in the form of habitat restoration and/or enhancement in on- or off-site areas where similar aquatic habitat exists, or a monetary contribution toward an in-lieu fee program, as acceptable by the regulatory agencies. Final details for compensatory mitigation would be evaluated through coordination between Caltrans and the resource agencies. Areas within or directly adjacent to the BSA may offer potential mitigation options. Online research (The River Project 2009; Los Angeles County 2009) and communication with agency representatives (L. Torres [Rivers and Mountains Conservancy], J. Casanova [Los Angeles River and San Gabriel Rivers Watershed Council], and D. Rivera [LACDPW], personal communication, December 30, 2009) revealed that a number of restoration opportunities, some still in progress, exist in the vicinity. Portions of the Joint Dominguez Gap and DeForest Treatment Wetlands Project lie within the BSA. Among other potential options, compensation for the I-710 Corridor Project's impacts to tidal waters may be provided through additional funding for the Golden Shore Marine Preserve (Long Beach Natural Areas 2009). The final report has been submitted for the Compton Creek Improvement Project, which may provide a compensatory mitigation opportunity for riparian scrub and/or freshwater emergent marsh. The Rivers and Mountains Conservancy is looking for potential projects for implementation in the Compton Creek Watershed, as well as in the Los Angeles River. These potential opportunities will be investigated in coordination with the resource agencies, the Los Angeles County Department of Public Works (LACDPW), and the Santa Monica Mountains Recreation and Conservation Authority (SMMRCA) throughout the planning phase, final design, and the permitting process.

Measure NC-1, described in Section 3.16, Natural Communities, will be implemented to address impacts to jurisdictional areas. Additional applicable measures are provided in Section 3.24.4.17 (Measures CON-WET-1 through CON-WET-3).

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3.18 PLANT SPECIES

The analysis of impacts on plant species is based on the following document:

- *I-710 Corridor Project Natural Environment Study* (NES) (June 2017)

3.18.1 REGULATORY SETTING

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) share regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special-status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species Section 3.20, in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC), Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900–1913, and the California Environmental Quality Act, California Public Resources Code, Sections 2100-21177.

3.18.2 AFFECTED ENVIRONMENT

The natural communities in the project Biological Study Area (BSA) include a variety of plant species considered sensitive by USFWS, CDFW, and CNPS. A literature review resulted in a list of 58 special-status plant species that may occur in or within the vicinity of the BSA. Fourteen of these special-status plant species are Federally and/or State-listed as endangered, threatened, candidate, or fully protected species and are discussed in more detail in Section 3.20. However, suitable habitat for all 14 of these species is absent within the BSA.

Further information on special-status plant species, including status, habitat requirements, and potential for occurrence, is summarized in Table 3.18-1.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Aphanisma	*Aphanisma blitoides*	–/–/1B.2	Sandy or clay soils on slopes or bluffs near the ocean, usually in coastal bluff scrub, coastal dunes, or coastal scrub, below 1,000 feet elevation. Known in California from Ventura, Santa Barbara, Los Angeles, Orange, and San Diego Counties. Also occurs in Mexico. Blooms March–June.	A	No sandy or clay soils occur within the BSA.
San Gabriel manzanita	*Arctostaphylos glandulosa* ssp. *gabrielensis*	–/–/1B.2	Rocky areas in chaparral from 1,950 to 5,000 feet elevation. Known only from Los Angeles, Santa Barbara, and San Bernardino Counties, California. Blooms March (evergreen shrub).	A	No chaparral or rocky outcrop in the BSA. BSA is not within the species' range.
Coulter's saltbush	*Atriplex coulteri*	–/–/1B.2	Alkaline or clay soils in ocean bluffs and ridgetops and alkaline low places in coastal bluff scrub, coastal dunes, coastal sage scrub, and valley and foothill grasslands below 1,500 feet elevation. In California, known only from Los Angeles, Orange, Santa Barbara, San Bernardino, San Luis Obispo, Ventura, and San Diego Counties. Also occurs in Mexico. Species has been documented northeast of the I-710/I-405 interchange. Blooms March–October.	A	No alkaline or clay soils or suitable habitat occur within the BSA. Not observed during surveys of area nearest to suitable habitat.
South Coast saltscale	*Atriplex pacifica*	–/–/1B.2	Alkali soils in coastal sage scrub, playas, coastal bluff scrub, coastal dunes, and chenopod scrub below 600 feet elevation, and perhaps formerly up to about 1,400 feet in Los Angeles County. In California, known from the Channel Islands and mainland Los Angeles, San Diego, and Orange Counties. Also occurs in Mexico. Believed extirpated from Ventura County. Blooms March–October.	A	No alkaline soils or other suitable habitat occur within the BSA. Not observed during surveys of area nearest to suitable habitat.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Parish's brittlescale	*Atriplex parishii*	–/–/1B.1	Alkali meadows, vernal pools, chenopod scrub, and playas. Usually on drying alkali flats with fine soils. In California, known from Riverside, San Diego, and Orange Counties. Also occurs in Mexico. Believed extirpated from Los Angeles and San Bernardino Counties. This species has been documented northeast of the I-710/I-405 interchange. Blooms June–October.	A	No alkaline soils or other suitable habitat occur within the BSA. Not observed during surveys of area nearest to suitable habitat.
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	–/–/1B.2	Alkaline soils in scrub and herbaceous communities from 30 to 1,500 feet elevation. In California, known only from Los Angeles, Orange, Riverside, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Santa Barbara and perhaps Los Angeles Counties. Also occurs in Mexico. Blooms April–October.	A	No alkaline soils or other suitable habitat occur within the BSA. Not observed during surveys of area nearest to suitable habitat.
Round-leaved filaree	*California macrophylla*	–/–/1B.2	Clay soils in woodland, scrub, and grassland communities from 50 to 4,000 feet elevation. Known from central and south coastal areas and the Central Valley in California. Also occurs in Oregon and Mexico. Blooms March–May.	A	No clay soils occur within the BSA.
Slender mariposa lily	*Calochortus clavatus* var. *gracilis*	–/–/1B.2	Shaded foothill canyons in areas of chaparral; typically 1,200 to 3,300 feet elevation; known only from San Gabriel Mountains of Los Angeles and San Bernardino Counties. Blooms March.	A	No chaparral or foothill canyons within the BSA. BSA is outside the species' range.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Plummer's mariposa-lily	*Calochortus plummerae*	–/–/4.2	Sandy or rocky sites of (usually) granitic or alluvial material in valley and foothill grassland, coastal scrub, chaparral, cismontane woodland, and lower montane coniferous forest at 300 to 5,600 feet elevation. Known from Santa Monica Mountains to San Jacinto Mountains in Riverside, San Bernardino, Orange, Los Angeles, and Ventura Counties. Blooms May–July.	A	No sandy or rocky soils occur within the BSA.
Intermediate mariposa lily	*Calochortus weedii* var. *intermedius*	–/–/1B.2	Generally rocky areas in hills with annual grassland and coastal sage scrub; typically 600 to 2,800 feet elevation. Los Angeles, Orange, and Riverside Counties. Blooms June–July.	A	No rocky, hilly areas within the BSA. BSA is outside the species' elevational and geographic range.
Lucky morning-glory	*Calystegia felix*	–/–/3.1	Wetland and marshy areas, sometimes alkaline, sometimes artificially watered, from 100 to 700 feet elevation. All of the known extant occurrences are associated with well-watered landscaping on recently completed industrial, commercial, and residential developments in the City of Chino within a historical area of artesian springs. Older collections are from areas that are now heavily urbanized (including one from South Los Angeles and another from Pico Rivera in Los Angeles County). Known to occur only in western San Bernardino County. Presumed extirpated from Riverside and Los Angeles Counties. Blooms March–September (annual or perennial rhizomatous herb).	A	Believed extirpated from Los Angeles County. Areas where it was observed in the County (last in 1902) are now highly urbanized.
Santa Barbara morning-glory	*Calystegia sepium* ssp. *binghamiae*	–/–/1A, * (presumed extinct in CA)	Coastal marshes below 80 feet elevation. Probably extinct. Formerly known from Los Angeles, Orange, Ventura, and Santa Barbara Counties. Blooms April–May.	A	Believed extirpated from Los Angeles County. Known only from historical records. Not observed during surveys of marsh habitat within the BSA.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Lewis's evening primrose	*Camissoniopsis lewisii* (*Camissonia lewisii)*	–/–/3	Sandy or clay areas in coastal scrub, grassland, and woodland below 1,000 feet elevation. In California, known only from Los Angeles and San Diego Counties. Believed extirpated from Orange County. Also occurs in Mexico.	A	No sandy or clay habitat occurs within the BSA.
Southern tarplant	*Centromadia parryi* ssp. *australis*	–/–/1B.1	In vernally wet areas such as edges of marshes and vernal pools, at edges of roads and trails, and in other areas of compacted, poorly drained, or alkaline soils where competition from other plants is limited, often due to disturbance, below 1,400 feet elevation. In California, known only from Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties. Also occurs in Mexico. Blooms May–November.	P, O	Observed in three locations during 2009 surveys. Largest population was approximately 9,000 plants near the I-710/ Rosecrans interchange.
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	–/–/1B.1	Sandy or rocky soils in chaparral, coastal scrub, or woodlands at 100 to 5,600 feet elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties. Blooms April–June (annual herb).	A	No sandy or rocky soils within the BSA. No chaparral, coastal scrub, or woodlands within the BSA.
California saw-grass	*Cladium californicum*	–/–/2B.2	Marshes and seeps below 2,000 feet elevation. In California, known from Inyo, Riverside, Santa Barbara, San Bernardino, and San Luis Obispo Counties. Believed to be extirpated from Los Angeles and perhaps San Bernardino Counties. Also occurs in Arizona, New Mexico, Nevada, Texas, Utah, and Mexico. Blooms June–September.	A	BSA is outside the species' known range (believed extirpated from Los Angeles County). Not observed during the surveys of most likely habitat.
Catalina crossosoma	*Crossosoma californicum*	–/–/1B.2	On rocky sea bluffs, in wooded canyons, and on dry, open sunny spots on rocky clay, below 1,600 feet elevation. Known only from Channel Islands and mainland Los Angeles County. Blooms February–May.	A	No rocky bluffs, canyons, or clay habitats occur within the BSA.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Peruvian dodder	*Cuscuta obtusifolra var. glandulosa*	–/–/2B.2	May be extirpated in California. Formerly found sporadically in freshwater marsh on herbs such as *Alternanthera*, *Dalea, Lythrum, Polygonum,* and *Xanthium* below about 1,600 feet elevation. Reported in California from Los Angeles, San Bernardino, Sonoma, Sutter, Butte, Sacramento, and Merced Counties. Also known from the eastern and southern United States, West Indies, and Mexico. Blooms July–October (annual parasitic vine).	A	Likely extirpated from Southern California. Last documented occurrence in Southern California was 1890 in San Bernardino County. The only other record in Southern California is an undated record for "El Monte."
Many-stemmed dudleya	*Dudleya multicaulis*	–/–/1B.2	Heavy, often clay soils or around granitic outcrops in chaparral, coastal sage scrub, and grassland below 2,600 feet elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. Blooms April–July.	A	No clay, granitic outcrops, or similar habitat occur within the BSA.
Island green dudleya	*Dudleya virens* ssp. *insularis*	–/–/1B.2	Rocky areas in coastal scrub and coastal bluff scrub below 1,000 feet elevation. Known only from Channel Islands and mainland Los Angeles and Ventura Counties. Blooms April–June.	A	No rocky habitat occurs within the BSA.
San Gabriel bedstraw	*Galium grande*	–/–/1B.2	Rocky slopes in chaparral, woodland, and forest at 1,400 to 4,900 feet elevation. Known only from Los Angeles County. Blooms January–July (deciduous shrub).	A	No rocky slopes, chaparral, woodland, or forest within the BSA. BSA is outside the species' range.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Los Angeles sunflower	*Helianthus nuttallii* ssp. *parishii*	–/–/1A, * (presumed extinct in CA)	Marshes and swamps (coastal salt and freshwater) at 30 to 1,600 feet elevation. Species is historically known from Los Angeles, Orange, and San Bernardino Counties, California. Last seen in 1937. Presumed extinct. Plants found in 2002 at Castaic Spring along the Santa Clara River in Los Angeles County were initially reported as possibly this taxon, but instead appear to be hybrids or evolutionary intermediates between *H. nuttallii* and *H. californicus*, based on chromosome counts and pollen morphology (*A Quantitative Analysis of Pollen Variation in Two Southern California Perennial* Helianthus [*Heliantheae: Asteraceae*], J.M. Porter and N. Fraga, 2004). Blooms August–October.	A	Believed extirpated from Los Angeles County. Known only from historical records. Not observed during surveys of marsh habitat within the BSA.
Vernal barley	*Hordeum intercedens*	–/–/3.2	Vernal pools and saline flats and depressions below 3,300 feet elevation. Known from many California counties. Also occurs in Mexico.	A	No vernal pools, saline flats, or depressions occur within the BSA. Not observed in nearest to suitable habitat.
Mesa horkelia	*Horkelia cuneata* ssp. *puberula*	–/–/1B.1	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 200 to 2,700 feet elevation. Occurs in San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Bernardino Counties. Believed extirpated from Riverside and San Diego Counties. Blooms February–July (September).	A	No gravelly or sandy habitat occurs within the BSA.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	–/–/1B.1	Usually alkaline soils in marshes, playas, vernal pools, and valley and foothill grassland below 4,600 feet elevation. Known from Colusa, Merced, Tulare, Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Kern, Los Angeles, and San Bernardino Counties. Also occurs in Mexico. Blooms February–June.	A	Believed extirpated from Los Angeles County. No alkaline soils or other suitable habitat occur within the BSA. Not observed in habitats that are most nearly suitable.
Robinson's pepper-grass	*Lepidium virginicum* var. *robinsonii*	–/–/4.3	Dry soils in coastal sage scrub and chaparral, typically below 1,600 feet elevation. In California, known only from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, and San Diego Counties. Blooms January–July.	A	No coastal scrub or chaparral within the BSA.
San Gabriel linanthus	*Linanthus concinnus*	–/–/1B.2	Lower and upper montane coniferous forest; found on dry rocky slopes, often in Jeffrey pine/canyon oak forest; 5,500 to 9,200 feet elevation; known only from Los Angeles and San Bernardino Counties. Blooms May–July (annual herb).	A	No coniferous forest within the BSA. BSA is outside the species' range.
Orcutt's linanthus	*Linanthus orcuttii*	–/–/1B.3	Openings (often gravelly) in chaparral, pinyon and juniper woodland, and coniferous forest at 3,000 to 7,000 feet elevation. In California, known only from Los Angeles (believed extirpated), Riverside, San Bernardino, and San Diego Counties. Also occurs in Mexico. Blooms May–July.	A	No chaparral or coniferous habitats occur within the BSA.
Santa Catalina Island desert-thorn	*Lycium brevipes* var. *hassei*	–/–/1B.1	Deciduous shrub of coastal bluffs and slopes in coastal bluff scrub and coastal scrub at 30 to 1,000 feet elevation. Known only from Channel Islands (extirpated), one location on Palos Verdes Peninsula in Los Angeles County, and one location in Orange County. Blooms June.	A	No coastal bluff or coastal sage scrub occur within the BSA.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Davidson's bush-mallow	*Malacothanmus davidsonii*	–/–/1B.2	Sandy washes in coastal scrub, riparian woodland, and chaparral at 600 to 2,800 feet elevation. Known only from Los Angeles, Monterey, Santa Clara, San Luis Obispo, and San Mateo Counties, California. Blooms June–January (deciduous shrub).	A	No sandy washes, coastal scrub, riparian woodland, or chaparral within the BSA. BSA is outside the species' range.
California muhly	*Muhlenbergia californica*	–/–/4.3	Stream banks, canyons, and other moist sites in chaparral, coastal sage scrub, coniferous forest, and meadows at 300 to 6,600 feet elevation. Known only from the San Gabriel, San Bernardino, and San Jacinto Mountains of Los Angeles, San Bernardino, and Riverside Counties, California. Blooms July–September.	A	BSA is not within the species' range. No chaparral, coastal sage scrub, coniferous forest, or meadows within the BSA.
Mud nama	*Nama stenocarpum*	–/–/2B.2	Lake shores, riverbanks, and similar intermittently wet areas at 20 to 1,600 feet elevation. Known in California from San Diego, Orange, and Riverside Counties and from San Clemente Island. Believed extirpated from Los Angeles and Imperial Counties. Known also from Baja California and Arizona. Blooms January–July.	A	Believed extirpated from Los Angeles County. Not observed in wet areas within the BSA during special-status plant surveys.
Prostrate vernal pool navarretia	*Navarretia prostrata*	–/–/1B.1	Vernal pools, usually alkaline, from 50 to 2,300 feet) elevation. Known only from Alameda, Los Angeles, Merced, Los Angeles, Orange, Riverside, San Benito, San Diego, San Luis Obispo, and possibly San Bernardino Counties. Species has been documented from approximately one to two miles east of the proposed right-of-way in Downey, approximately one to two miles west of the right-of-way near Compton, and approximately two miles west of the right-of-way north of United States Naval Station Long Beach. Blooms April–June.	A	No vernal pools or other suitable habitat occur within the BSA.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Coast woolly-heads	*Nemacaulis denudata* var. *denudata*	–/–/1B.2	Sandy places such as coastal dunes below 300 feet elevation. Known in California from Orange, Los Angeles, and San Diego Counties. Believed extirpated from Santa Catalina Island. Also occurs in Mexico. Species has been documented from approximately one to two miles east of the proposed right-of-way north of the Long Beach Harbor. Blooms April–September.	A	No sandy soils occur within the BSA.
White rabbit-tobacco	*Pseudognaphalium leucocephalum*	–/–/2B.2	Sand and gravel at the edges of washes or mouths of steep canyons at zero to 7,000 feet elevation. In California, known from Los Angeles, Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Also occurs in Arizona, New Mexico, Texas, and Mexico. Blooms (July) August–November (December).	A	No sandy/gravelly wash habitat occurs within the BSA.
Parish's gooseberry	*Ribes divaricatum* var. *parishii*	–/–/1A	Deciduous shrub of willow swales in riparian habitats at 200 to 1,000 feet elevation. Believed to be extinct. Historical collections from Los Angeles and San Bernardino Counties. Blooms February–April.	A	No willow swales within the BSA. Believed to be extinct. Not observed in riparian habitats.
Sanford's arrowhead	*Sagittaria sanfordii*	–/–/1B.2	Marshes and swamps below 2,100 feet elevation. Occurs in standing or slow-moving fresh water (ponds, marshes, and ditches). Known only from Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Placer, Sacramento, Shasta, San Joaquin, and Tehama Counties. Believed extirpated from Southern California.	A	Not known from Los Angeles County. Believed extirpated from Southern California.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Southern mountains skullcap	*Scutellaria bolanderi* ssp. *austromontana*	–/–/1B.2	Gravelly soils of streambanks or in mesic sites in oak or pine woodland at 1,400 to 6,600 feet elevation. Known from Riverside and San Diego Counties. Believed extirpated from San Bernardino County and perhaps Los Angeles County. Blooms June–August.	A	Site is outside the species' elevation range.
Salt Spring checkerbloom	*Sidalcea neomexicana*	–/–/2B.2	Alkaline springs and brackish marshes below 5,000 feet elevation. In California, known only from Kern, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. Believed extirpated from Los Angeles County. Also known from Arizona, New Mexico, Nevada, Utah, and Mexico. Blooms March–June.	A	No alkali springs or brackish marsh within the BSA.
Estuary seablite	*Suaeda esteroa*	–/–/1B.2	Coastal salt marshes below 15 feet elevation. Occurs along the immediate coast from Santa Barbara County to Baja California. Species has been documented from approximately one to two miles east of the right-of-way north of the Long Beach Harbor. Blooms January–October.	A	No salt marsh within the BSA.
San Bernardino aster	*Symphyotrichum defoliatum*	–/–/1B.2	Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 6,700 feet elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County. Blooms July–November.	P	Not observed during focused surveys of vernally wet sites during the 2009 blooming period. Also not observed during 2015 surveys.
Greata's aster	*Symphyotrichum greatae*	–/–/1B.3	Chaparral and woodland habitats in mesic canyons from 1,000 to 6,600 feet elevation. Known only from Los Angeles, San Bernardino, and Ventura Counties. Blooms July–November.	A	No canyons or similar habitats occur within the BSA.

Table 3.18-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Sonoran maiden fern	*Thelypteris puberula* var. *sonorensis*	–/–/2B.2	Seeps along streams in meadows at 170 to 2,000 feet elevation. Known from western Riverside, southwestern San Bernardino, Santa Barbara, and Los Angeles Counties. Blooms January–September (perennial herb).	A	No seep or meadow habitat within the BSA. BSA is outside the species' known range. Not observed during surveys of most likely habitat.
Eelgrass	*Zostera marina*	HAPC/–	Widespread in Northern Hemisphere estuaries and bays, zero to seven feet below mean low tide. Provides habitat and structure for benthic invertebrates and many other organisms.	A	Currently not known to occur in the Los Angeles River system, although present elsewhere along the Long Beach shoreline.

Source: LSA Associates, Inc. *I-710 Corridor Project Natural Environment Study* (June 2017).

Habitat Present/Absent: Absent (A) - no habitat present and no further work needed. Habitat Present (P) – habitat is, or may be present. Species observed during surveys (O) – Based on the literature review the species has been observed within the area of the BSA. Critical Habitat (CH) – Project footprint is located within designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC); Federal Habitat Area of Particular Concern (HAPC) United States Fish and Wildlife Service Birds of Conservation Concern (BCC); California Endangered (CE); California Threatened (CT); Fully Protected Species (CFP); California Species of Special Concern (CSC); California Special Plant (CSP), California Special Animal (CSA), California Native Plant Society (CNPS); 1A, Plants presumed extinct in California; 1B, Plants considered by CNPS to be rare, threatened, or endangered in California and elsewhere, 2, Plants considered by CNPS to be rare, threatened, or endangered in California, but more common elsewhere; 3, Plants about which more information is needed – a CNPS review list; CNPS threat categories: 0.1-Seriously threatened in California (high degree/immediacy of threat); 0.2-Fairly threatened in California (moderate degree/immediacy of threat); 0.3-Not very threatened in California (low degree/immediacy of threats or no current threats known)

BSA = Biological Study Area
CNPS = California Native Plant Society
I-405 = Interstate 405
I-710 = Interstate 710

3.18.2.1 SPECIAL-STATUS PLANT SPECIES REQUIRING SURVEYS

Southern tarplant (*Centromadia parryi* ssp. *australis*), previously known as *Hemizonia parryi* ssp. *Australis*, is a yellow-orange flowered plant that occurs in seasonally wet saline or alkaline soils of the southern California coast and into northern Baja California. Southern tarplant is listed by the CNPS as a rare, threatened, or endangered species in California and elsewhere (CNPS 1B). This native annual plant is typically found in sunny areas where competition from other plants is limited by alkalinity, seasonal soil saturation, or the impacts of human disturbance. Numbers of individuals can vary widely at a given location from year to year, depending on recent disturbance and seasonal precipitation. Populations are expected to be larger in years of average or above average rainfall.

Southern tarplant was observed in three locations within the BSA during the 2009 botanical surveys conducted during the blooming period for this species (May through November). No additional locations were observed during the 2011 or 2015 surveys. The largest population consisted of approximately 9,000 plants just north of the Interstate 710 (I-710)/Rosecrans Ave. interchange on the east side of I-710. Approximately 90 plants were found in sunny areas near the I-710/Atlantic Blvd. interchange, and six plants were found southeast of the I-710/Interstate 405 (I-405) interchange. There is no critical habitat for this species within the BSA.

3.18.3 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, descriptions of temporary impacts related to plant species are located in Section 3.24.3.18, Plant Species.

3.18.3.1 PERMANENT IMPACTS

BUILD ALTERNATIVES. Alternative 5C, including the Design Options, would result in direct permanent impacts to two populations of southern tarplant. Alternative 7, including its Design Options, would result in direct permanent impacts to all three populations of southern tarplant, including the largest population near Rosecrans Ave. Table 3.18-2 indicates the type of impacts and quantifies the total square footage of southern tarplant that would be impacted by each alternative.

Table 3.18-2: Impacts to Southern Tarplant by Alternative

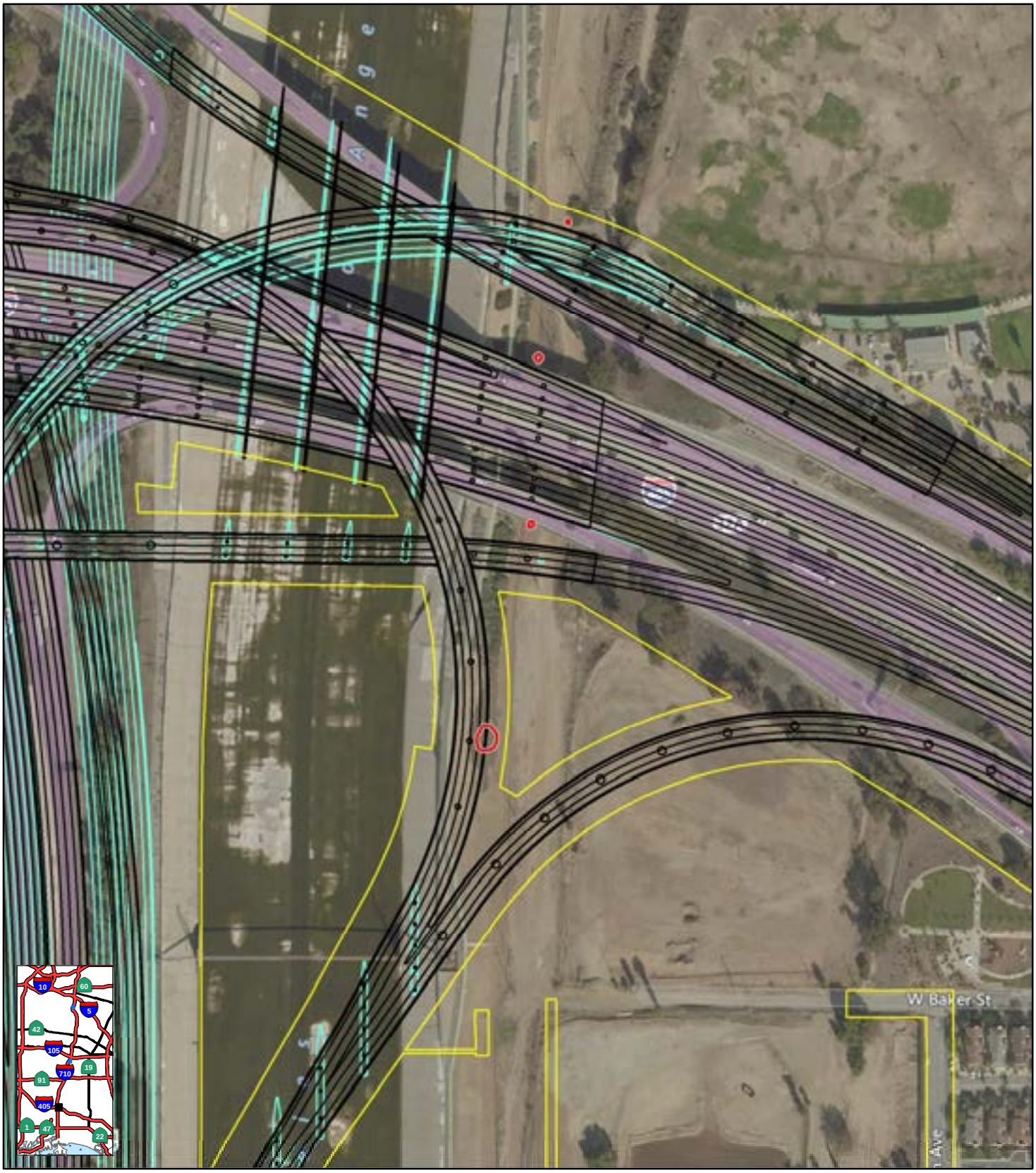
Alternative	Direct Permanent Impacts (square feet)	Temporary Impacts (square feet)
Alternative 5C	22,667	5
Alternative 7	27,704	26

Source: LSA Associates, Inc. *I-710 Corridor Project Natural Environment Study* (June 2017).

As proposed, the elevated freight corridor structure will span over the populations, creating some degree of permanent shade where sunny conditions currently exist. Since the southern tarplant is a sun-loving species, shading is anticipated to result in an adverse impact to the portions of the populations lying below the proposed elevated structures. Alternatives 5C and 7 would result in indirect permanent impacts to southern tarplant from shading. The build alternatives are not expected to result in permanent indirect impacts to southern tarplant due to emissions, climate or micro-climate change, or fugitive dust beyond the existing conditions. Anticipated impacts to the populations of southern tarplant from Alternatives 5C and 7 are shown in Figures 3.18-1, 3.18-2, and 3.18-3.

Permanent impacts to this species cannot be avoided by the I-710 Corridor Project. As shown in Table 3.18-3, Alternative 5C would result in the loss of the two smaller populations of southern tarplant, and Alternative 7 would result in the loss of all three populations, including the largest population near the I-710/Rosecrans Ave. interchange. Although the listing status of the southern tarplant (CNPS 1B) does not offer it legal protection under CESA, the species is rare and declining in population and is, therefore, considered to be special-status. The populations of southern tarplant found within the BSA are located in areas where the CNPS had either presumed the species to be extirpated or the species' occurrence was unknown. Despite the overall quality of the habitat in the BSA being poor, given the fact that I-710 and other urban development surrounds the population boundaries, these tarplant populations have persisted while the majority of the historic populations in the vicinity of I-710 have been removed by urban development.

Temporary impacts may occur in staging, access, and equipment laydown areas during construction. As stated above, temporary impacts to plant species are discussed further in Section 3.24.3.18, Plant Species.



Limit of the Biological Study Area (2016)

Specific Occurences of Southern Tarplant (LSA, 2009)

Alternative 5C/DV 1A, 2A,and 3A Geometrics

Alternative 7/DV 1B and 3B Geometrics

FIGURE 3.18-1

I-710 Corridor Project

Impacts to I-405 Interchange

Population of Southern Tarplant

07-LA-710- PM 5.4/24.5

EA 249900; EFIS 0700000443

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FEET

SOURCE: Bing Maps (2014); AECOM (2016)

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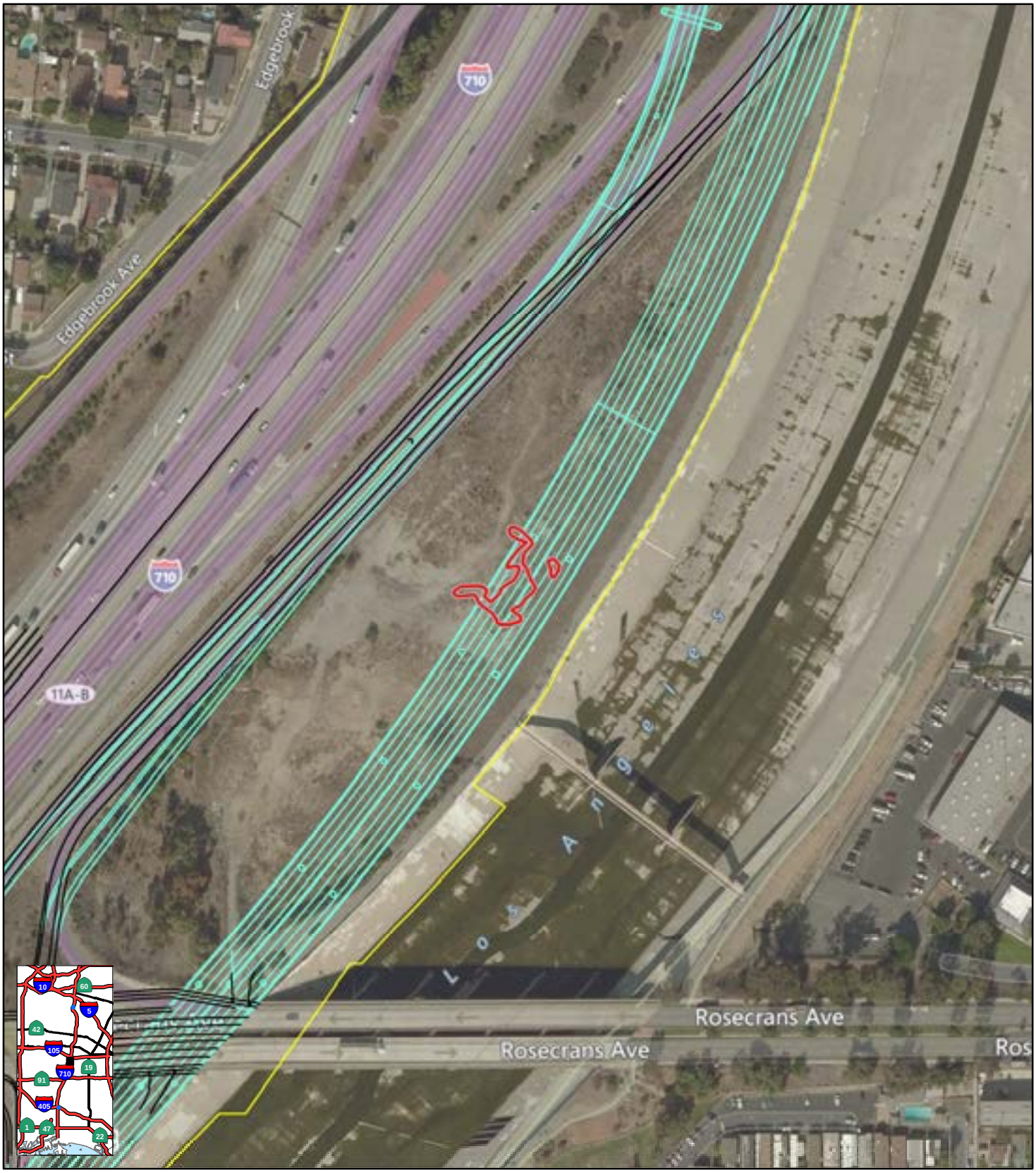

Limit of the Biological Study Area (2016)

Specific Occurences of Southern Tarplant (LSA, 2009)

Alternative 5C/DV 1A, 2A,and 3A Geometrics

Alternative 7/DV 1B and 3B Geometrics

FIGURE 3.18-2

I-710 Corridor Project

Impacts to Rosecrans Population of Southern Tarplant

07-LA-710- PM 5.4/24.5

EA 249900; EFIS 0700000443

0 100 200

FEET

SOURCE: Bing Maps (2014); AECOM (2016)

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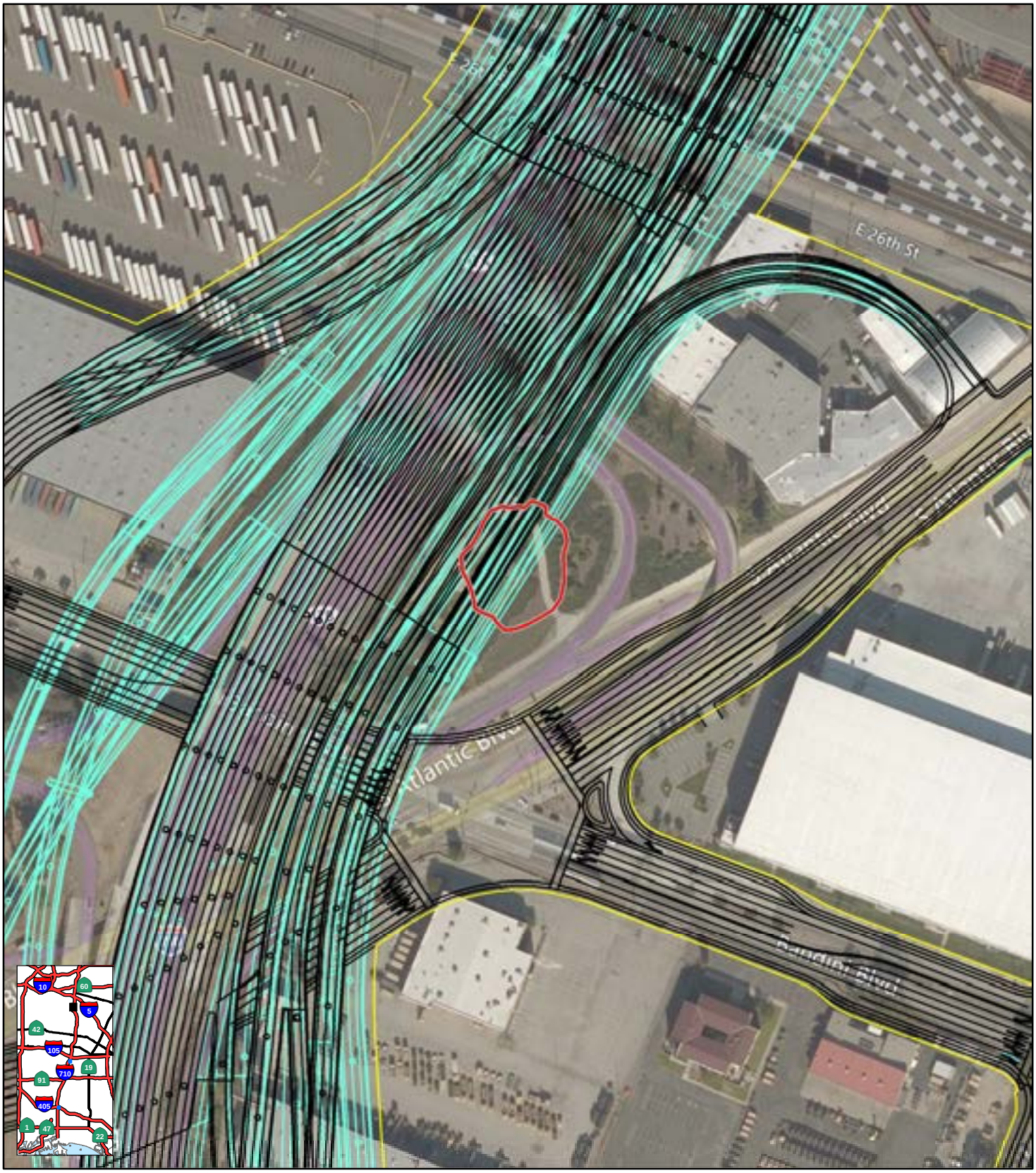

Limit of the Biological Study Area (2016)

Specific Occurences of Southern Tarplant (LSA, 2009)

Alternative 5C/DV 1A, 2A,and 3A Geometrics

Alternative 7/DV 1B and 3B Geometrics

FIGURE 3.18-3

I-710 Corridor Project
Impacts to Atlantic/Bandini
Population of Southern Tarplant
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

0 100 200
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SOURCE: Bing Maps (2014); AECOM (2016)

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Table 3.18-3: Alternative and Design Option Impacts to Southern Tarplant Populations

Location of Population (from south to north)	Number of Individual Plants in Population	Square Footage of Population	Alternative 5C (1A, 2A, or 3A)	Alternative 7 (1B or 3B)
Southeast of I-710/I-405 Interchange	6	1,028	X	X
I-710/Rosecrans Ave. Interchange	8,800	5,063		X
Atlantic Blvd./Bandini Blvd. Interchange	90	21,640	X	X
Total	**8,896**	**27,731**	**--**	**--**

Source: LSA Associates, Inc. *I-710 Corridor Project Natural Environment Study* (June 2017).
I-405 = Interstate 405
I-710 = Interstate 710

NO BUILD ALTERNATIVE. Under Alternative 1, the I-710 Corridor Project would not be constructed. Therefore, there would be no permanent impacts to special-status plant species from Alternative 1.

3.18.3.2 PUBLIC HEALTH CONSIDERATIONS

No public health considerations were noted in regard to project impacts on plants.

3.18.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Minimization efforts are warranted to minimize disturbance to larger portions of the populations than is necessary to improve the I-710 Corridor. The avoidance and minimization measures outlined in Section 3.16, Natural Communities and Section 3.24, Construction Impacts (particularly Measures CON-NC-2, CON-INV-1, CON-NC-8, CON-NC-10, CON-NC-14, CON-NC-15, CON-NC-16, CON-PS-1, and CON-INV-3), will be implemented to avoid and minimize impacts to southern tarplant.

PS-1 In order to mitigate for impacts to southern tarplant, the affected southern tarplant populations will be relocated from within the BSA to nearby protected open space areas in order to maintain these few remaining populations within the vicinity of the I-710 Corridor. Otherwise, to compensate for the loss of these populations, collection and scattering of seed in sunny areas with suitable soil and hydrologic conditions in the region, such as in areas adjacent to existing and remaining populations, during the appropriate time of year may improve the potential for populations of this species to remain stable in future years. Consultation with the CDFW would be completed prior to the restoration effort.

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3.19 ANIMAL SPECIES

The analysis of impacts on animal species is based on the following document:

- *I-710 Corridor Project Natural Environment Study* (NES) (June 2017)

3.19.1 REGULATORY SETTING

Many State and Federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 3.20. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] 715-715s)
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the California Fish and Game Code
- Section 4150 and 4152 of the California Fish and Game Code

3.19.2 AFFECTED ENVIRONMENT

The Interstate 710 (I-710) Corridor Project Biological Study Area (BSA) supports suitable habitat for a variety of special-status wildlife species. Areas along the Los Angeles River south of the I-710/Willow St. interchange provide the most valuable habitat for shorebirds in the BSA. After a thorough literature review, it was determined that 117 special-status wildlife species that are not Federally and/or State-listed as Threatened or Endangered have the potential to occur within the vicinity of the BSA. Further information on these species, including their status, habitat requirements, and potential for occurrence, is summarized in Table 3.19-1. Federally and/or State-listed, candidate, or proposed endangered or threatened species, or are considered California Fully Protected (CFP) species by the State, are discussed in Section 3.20, Threatened and Endangered Species. Locations of selected special-status animal species observed within the vicinity of the BSA are shown on Figure 3.19-1.

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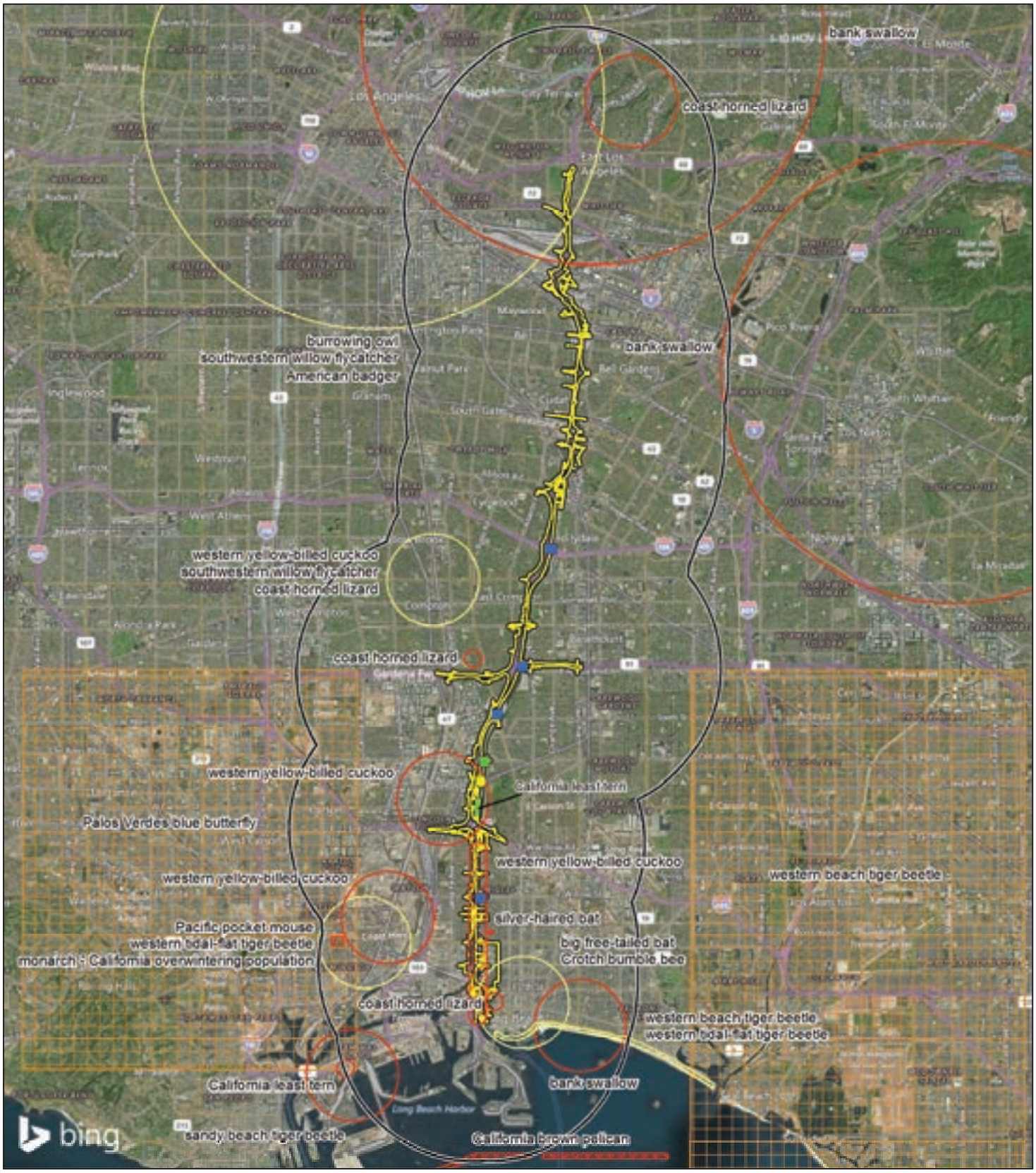

Limits of the Biological Study Area (2016)
BSA 3-mile Buffer
Dominguez Gap - CA Least Tern Area
Burrowing Owl Sighting (LSA, 2009)
Potential occurence of silver-haired bat
Yuma myotis occurrence

CNDDB Species Type with Accuracy Assessment
Animal (80m)
Animal (specific)
Animal (non-specific)
Animal (circular)
Multiple (non-specific)
Multiple (circular)
Sensitive Element Occurrences (Commercial only)

N

0 7700 15400
FEET

SOURCE: Bing Maps (2014); AECOM (2016); CNDDB (10/2016)

FIGURE 3.19-1

I-710 Corridor Project RDEIR/SDEIS

Special-status Animal Species in Vicinity of the Biological Study Area

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
INVERTEBRATES					
Mimic tryonia (California brackish water snail)	*Tryonia imitator*	–/CSA	Inhabits coastal lagoons, estuaries, and salt marshes from Sonoma County to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	A	Formerly occurred in Long Beach; now apparently extirpated from the Los Angeles River.
Busck's gallmoth	*Eugnosta busckana*	–/CSA	Known occurrences in Loma Linda in San Bernardino County, Beverly Terrace and El Segundo in Los Angeles County, and west Riverside in Riverside County. Known to inhabit coastal bluff vegetation and sand dune habitat.	A	Suitable coastal dune or coastal scrub habitat not present within the BSA.
Monarch butterfly (overwintering concentrations)	*Danaus plexippus*	–/CSA	Winter roost sites extend along the coast from northern Mendocino County to Baja California. Roosts located in wind-protected tree groves (eucalyptus, pine, and cypress), with nectar and water sources nearby.	P	Suitable winter roost sites may be present in developed areas within and adjacent to the BSA.
Wandering skipper	*Panoquina errans*	–/CSA	Southern California coastal salt marshes. Requires moist salt grass for larval development. There are occurrences of this species east-southeast of the BSA from 1989.	A	Probably occurred formerly, but there appears to be no suitable habitat remaining in the BSA.
Western tidal-flat tiger beetle	*Cicindela gabbii*	–/CSA	Dark-colored mud of estuaries and mudflats along the coast of Southern California and northern Baja California.	A	Formerly occurred in Wilmington and Long Beach but now apparently extirpated from Los Angeles County.
Sandy beach tiger beetle	*Cicindela hirticollis gravida*	–/CSA	Inhabits clean, dry sand along the sea coast from the San Francisco Bay area to Baja California.	A	Formerly occurred at Terminal Island and Long Beach but now apparently extirpated from Los Angeles County.
Western beach tiger beetle	*Cicindela latesignata latesignata*	–/CSA	Beaches and mudflats from Los Angeles County to northern Baja California.	A	Formerly occurred in San Pedro and Long Beach but now apparently extirpated from Los Angeles County.
Senile tiger beetle	*Cicindela senilis frosti*	–/CSA	Known from dark-colored mud and dry saltpan in central and Southern California.	A	Formerly occurred in Long Beach but now apparently extirpated from Los Angeles County.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Globose dune beetle	*Coelus globosus*	–/CSA	Sand dunes along the Pacific Coast from Mendocino County to northern Baja California.	A	Suitable habitat is not present within the BSA.
Dorothy's El Segundo Dune weevil	*Trigonoscuta dorothea dorothea*	–/CSA	Associated with coastal and desert dune habitat where it feeds on various plants. Coastal species are sometimes common among the roots of beach grass. Known to occur in Los Angeles and Orange County.	A	Suitable habitat is not present within the BSA.
Crotch bumble bee	*Bombus crotchii*	–/CSA	Inhabits open grassland and scrub habitats primarily in California.	A	Suitable habitat is not present within the BSA.
FISH					
Arroyo chub	*Gila orcuttii*	–/CSC	Perennial streams or intermittent streams with permanent pools; slow-water sections of streams with mud or sand substrates; spawning occurs in pools. Native to the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita River systems; introduced in the Santa Ynez, Santa Maria, Cuyama, and Mojave River systems and smaller coastal streams.	A	Still occurs in upper reaches of the Los Angeles River but is apparently extirpated downstream.
Santa Ana speckled dace	*Rhinichthys osculus* ssp. 3	–/CSC	Primarily clear, well-oxygenated moving water (especially shallow, rocky riffles and runs) in the headwaters of the Los Angeles, San Gabriel, and Santa Ana Rivers.	A	Still occurs in upper reaches of the Los Angeles River but is apparently extirpated downstream.
AMPHIBIANS					
Coast Range newt (Los Angeles County south)	*Taricha torosa torosa*	–/CSC	Southern populations are found on the coastal slope from Los Angeles to near the Mexican border. They generally inhabit mesic habitats such as oak woodland and require streams or pools for breeding.	A	Historical records from Long Beach and Palos Verdes Peninsula; now extirpated from the Los Angeles Basin.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Western spadefoot	*Spea hammondii*	–/CSC	Grasslands and other relatively open habitats; requires pools (persisting for at least three weeks) for breeding; burrows in loose soils during the dry season. Found in the Central Valley and foothills, coast ranges, and inland valleys to northwestern Baja California.	A	Occurred historically, but now extirpated from the Los Angeles Basin.
REPTILES					
Western pond turtle	*Emys marmorata*	–/CSC	Inhabits permanent or nearly permanent water below 6,000 feet from the San Francisco Bay area south to northern Baja California. Absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Requires basing sites such as partially submerged logs, rocks, or open mud banks.	A	Occurred formerly but is now extirpated from the lower Los Angeles River.
Blaineville's horned lizard (coast horned lizard)	*Phrynosoma blainvillii (Phrynosoma coronatum blainvilii)*	–/CSC	Wide variety of habitats, including CSS, grassland, and riparian woodland; typically on or near loose sandy soils; coastal and inland areas from Ventura County to Baja California.	A	Previously known from the area, but now apparently extirpated from the lower Los Angeles River.
Coastal western whiptail	*Aspidoscelis tigris stejnegeri*	–/CSA	Wide variety of habitats, including CSS, sparse grassland, and riparian woodland; coastal and inland valleys and foothills; Ventura County to Baja California.	P	Apparently never documented along the lower Los Angeles River and unlikely to be found within the BSA.
Silvery legless lizard	*Anniella pulchra pulchra*	–/CSA	Fossorial. Inhabits loose soil and humus from Central California to northern Baja California.	P	May persist along the lower Los Angeles River but is unlikely to be found within the BSA.
Rosy boa	*Charina trivirgata*	–/CSC	Inhabits rock outcrops and rocky shrublands from southwestern California to northern Baja California.	A	Presumably extirpated from the lower Los Angeles River.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
San Bernardino ring-necked snake	*Diadophis punctatus modestus*	–/CSA	Along drainage courses, in mesic chaparral and oak and walnut woodland communities. Moist habitats of southwestern California from approximately Ventura to Orange Counties.	P	Probably persists along the lower Los Angeles River but is unlikely to be found within the BSA, although potential habitat is present.
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	–/CSC	Coastal chaparral, washes, sandy flats, and rocky areas from San Luis Obispo County to northwestern Baja California.	A	Presumably extirpated from the lower Los Angeles River.
South coast garter snake	*Thamnophis sirtalis* ssp.	–/CSC	Occurs in marsh and upland habitats near permanent water with riparian vegetation; coastal slope from Ventura to San Diego Counties.	A	Occurred in the area historically but is now apparently extirpated from Los Angeles County.
Two-striped garter snake	*Thamnophis hammondii*	–/CSC	Highly aquatic. Only in or near permanent sources of water. Streams with rocky beds supporting willows or other riparian vegetation. From Los Angeles County to northwestern Baja California.	P	Apparently never documented along the lower Los Angeles River and unlikely to be found within the BSA, although potential habitat is present.
BIRDS					
Fulvous whistling-duck	*Dendrocygna bicolor*	–/CSC (nesting)	Fresh and brackish shallow water and cultivated fields, primarily in tropical and subtropical regions around the world.	A	Probably nested formerly within the BSA but is now essentially extirpated from California.
Aleutian cackling goose	*Branta hutchinsii leucopareia*	FD/CSA (wintering)	Nests on the Aleutian Islands and winters primarily in cultivated fields in California.	P	Probably occurred regularly within the BSA in the past and has been recorded within the BSA since 2014.
Brant	*Branta bernicla*	–/CSC (wintering)	Cosmopolitan. Nests in arctic tundra and winters primarily in coastal estuaries and lagoons in the temperate zone.	P	Probably a regular visitor within the BSA historically, but now a very rare visitor to the lower Los Angeles River channel. Has been occasionally recorded within the BSA since 2014.
Redhead	*Aythya americana*	–/CSC (nesting)	Freshwater marshes for nesting; also estuaries, bays, and lakes in winter. Breeds from Canada to Mexico and winters south to Central America.	P	Probably nested formerly within the BSA, but never confirmed. Now a rare visitor on the lower Los Angeles River and off-channel ponds.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Pink-footed shearwater	*Puffinus creatopus*	BCC/–	Pelagic. Nests on islands off the coast of Chile and ranges at sea north to Alaska.	A	No oceanic waters within the BSA.
Black-vented shearwater	*Puffinus opisthomelas*	BCC/-	Pelagic. Nests on islands off the west coast of Mexico and ranges at sea north to California and occasionally beyond.	A	No oceanic waters within the BSA.
Ashy storm-petrel	*Oceanodroma homochroa*	BCC/CSC (nesting)	Pelagic. Nests on islands off the coasts of California and Baja California, and generally ranges at sea in the vicinity.	A	No oceanic waters within the BSA.
Magnificent frigatebird	*Fregata magnificens*	BCC/–	Primarily inhabits coastal waters. Nests on tropical American islands and the Cape Verde Islands off west Africa. Ranges at sea into subtropical waters and occasionally beyond.	A	Extremely rare in California, with no known records within the BSA.
California brown pelican	*Pelecanus occidentalis californicus*	FD/CD, CFP (nesting, roosting)	Nests on islands off Southern California and western Mexico, and ranges along the immediate coast and varying distances at sea to Canada and southern Mexico.	P, O	Forages regularly in estuarine portions of the Los Angeles River. One along the river in Paramount in July 2008 was exceptionally far upriver. Observed during biological surveys in 2009 (Appendix B of the NES).
American bittern	*Botaurus lentiginosus*	–/CSA	Nests in freshwater and brackish marshes across much of North America; winters south to Central America.	P	Formerly an uncommon nesting species within the BSA; now a scarce nonbreeding visitor.
Least bittern	*Ixobrychus exilis*	BCC/CSC (nesting)	Occurs locally in freshwater marshes across much of southern North America and northern South America.	P	Probably nested within the BSA formerly; now a rare visitor at best.
Great blue heron	*Ardea herodias*	–/CSA (rookery site)	Rookeries consist of a colony of breeding animals. Usually nests in trees, but also on large bushes, poles, reed beds, and even the ground. Frequents a wide range of wetland habitats at other times of year. Widespread in North America; winters to northern South America.	P, O	Probably nested within the BSA historically but is not known to do so currently. There are small rookeries along the San Gabriel River and in urban park lakes (such as Echo Park near downtown Los Angeles) in habitats similar to those found along the lower Los Angeles River. Observed during biological surveys in 2009 (Appendix B of the NES).

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Great egret	*Ardea alba*	–/CSA (rookery site)	Occurs in a wide range of wetland habitats in much of the temperate and tropical zones worldwide. Nests primarily in trees.	P, O	Probably nested within the BSA historically but is not known to do so currently. There are small rookeries along the San Gabriel River in habitats similar to those found along the lower Los Angeles River. Observed during biological surveys in 2009 (Appendix B of the NES).
Snowy egret	*Egretta thula*	–/CSA (rookery site)	Occurs in a wide range of wetland habitats throughout much of the Americas. Nests primarily in trees.	P, O	Probably nested within the BSA historically but is not known to do so currently. There are small rookeries along the San Gabriel River in habitats similar to those found along the lower Los Angeles River. Observed during biological surveys in 2009 (Appendix B of the NES).
Black-crowned night-heron	*Nycticorax nycticorax*	–/CSA (rookery site)	Occurs in a wide range of wetland habitats in much of the temperate and tropical zones worldwide. Nests primarily in trees, sometimes in urban habitats.	P, O	Probably nested within the BSA historically but is not known to do so currently. Rookeries are known from urban residential areas near the lower San Gabriel River, and such rookeries could exist somewhere along the lower Los Angeles River. Observed during biological surveys in 2009 (Appendix B of the NES).
White-faced ibis	*Plegadis chihi*	–/CSA (rookery site)	Freshwater wetlands in temperate and tropical North and South America. Usually nests in emergent vegetation or low trees and shrubs over shallow water.	P, O	Probably nested formerly within the BSA, but never confirmed. Now a regular nonbreeding visitor, primarily in the fall. Observed during biological surveys in 2009 (Appendix B of the NES).

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Wood stork	*Mycteria americana*	–/CSC	Freshwater and brackish wetlands in southern North America and much of South America.	P	Formerly an occasional visitor from Mexico, where populations have declined so much that future occurrences are unlikely.
Osprey	*Pandion haliaetus*	–/CSA (nesting)	Estuaries, rivers, lakes, and marshes in much of the temperate and tropical world. Nests primarily on trees and other structures.	P, O	Not known to have nested within the BSA but is increasing as a breeder in coastal Southern California. Observed during biological surveys in 2009 (Appendix B of the NES).
White-tailed kite	*Elanus leucurus*	–/CFP (nesting)	Open country in South America and southern North America. Nests in trees.	P	Probably nested within the BSA formerly but is now only a scarce visitor.
Northern harrier	*Circus cyaneus*	–/CSC (nesting)	Open country in the northern Temperate Zone worldwide. New World birds winter south to Central America.	P	Probably nested within the BSA formerly but is now only an uncommon visitor.
Cooper's hawk	*Accipiter cooperii*	–/CSA (nesting)	Primarily forests and woodlands throughout North America. Nests in trees.	P, O	Seen regularly along entire Los Angeles River channel and may nest within the BSA. Is now a rather common and widespread breeder in urban areas through the Los Angeles Basin. Populations of this and other urban raptor species may be checked in part by large-scale trapping and shooting by roller pigeon fanciers (documented by USFWS and CDFW).
Ferruginous hawk	*Buteo regalis*	BCC/CSA (wintering)	Open country in western North America; north to Canada in summer and south to Mexico in winter.	A	Probably occurred regularly historically and occasional visitors may still occur, but no suitable habitat for long-term presence.
Golden eagle	*Aquila chrysaetos*	BCC/CFP nesting, wintering)	Generally open country of the Temperate Zone worldwide. Uncommon resident in southwestern California.	A	Probably occurred regularly within the BSA historically, but now only very rarely.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Merlin	*Falco columbarius*	–/CSA (wintering)	Open fields; breeds in the Holarctic Region and winters south to the tropics. Uncommon fall migrant and winter visitor to southwestern California.	P	Regularly forages within the BSA. Has increased greatly as a wintering species in the Los Angeles Basin and regularly forages along the length of the Los Angeles River.
American peregrine falcon	*Falco peregrinus anatum*	FD,BCC/ CD,CFP (nesting)	Widespread, but scarce and local throughout North America. Nests on buildings and bridges in the Los Angeles Basin.	P, O	Nests in the Port of Los Angeles and regularly forages within the BSA. Observed during biological surveys in 2009 (Appendix B of the NES).
Lesser sandhill crane	*Grus canadensis canadensis*	–/CSC (wintering)	Nests in low-lying tundra and marshy areas from northeastern Siberia across northern North America. Winters primarily in agricultural fields and wet prairie in the southern United States and northern Mexico.	A	May have occurred historically, but habitat is now unsuitable within the BSA.
Black oystercatcher	*Haematopus bachmani*	BCC/CSA (nesting)	Primarily rocky areas along the immediate coastline from Alaska to Baja California.	P	Numerous records from rocky areas at the mouth of the Los Angeles River.
Mountain plover	*Charadrius montanus*	BCC/CSC (wintering)	Nests in dry, open prairies and grasslands in central North America; winters in the southwestern United States and northern Mexico.	A	Probably a regular winter visitor historically, but no suitable remains within the BSA.
Lesser yellowlegs	*Tringa flavipes*	BCC/–	Nests on tundra and in woodlands in northern North America and winters from the coastal and southern United States to South America; widespread migrant elsewhere.	P	Uncommon transient along the lower Los Angeles River.
Whimbrel	*Numenius phaeopus*	BCC/–	Circumpolar: nests in arctic and subarctic tundra and migrates for the rest of the year to fields and a wide range of wetland habitats in temperate and tropical areas around the world.	P	Uncommon transient along the lower Los Angeles River.
Long-billed curlew	*Numenius americanus*	BCC/CSA (nesting)	Primarily nests on prairies and grassy meadows, near water, in interior western North America. Winters primarily along the Pacific and Gulf of Mexico coasts from the southern United States to Central America.	P, O	Scarce transient along the lower Los Angeles River. Observed during biological surveys in 2009 (Appendix B of the NES).

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Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Marbled godwit	*Limosa fedoa*	BCC/–	Nests primarily on grasslands, marshes, and ponds in south-central Canada; winters on both coasts from the United States to Central America.	P, O	Uncommon transient along the lower Los Angeles River. Observed during biological surveys in 2009 (Appendix B of the NES).
Roselaar's red knot	*Calidris canutus roselaari*	BCC/–	Nests on barren tundra on Wrangle Island and in northwestern Alaska. Winter range and migratory routes poorly known, but may include the Pacific coast of Southern California.	P	Species is rare but probably annual as a fall transient (remaining into early winter as conditions allow) along the lower Los Angeles River; however, there is no information on the subspecies of knots in Los Angeles County.
Short-billed dowitcher	*Limnodromus griseus*	BCC/–	Nests on muskegs, wet meadows, and marshy coastal tundra from southern Alaska across North America to Labrador. Winters along both coasts from temperate North America to tropical South America.	P	Fairly common fall transient (mainly early July to mid-September) along the lower Los Angeles River.
Cassin's auklet	*Ptychoramphus aleuticus*	BCC/CSC (nesting)	Pelagic. Nests on islands off the coast from Alaska to west Mexico, and generally ranges at sea in the vicinity.	A	No oceanic waters within the BSA.
Caspian tern	*Hydroprogne caspia*	BCC/CSA (nesting)	Seacoast, bays, estuaries, lakes, marshes, and rivers around much of the world.	P	Nests at Terminal Island in Los Angeles Harbor and forages regularly in estuarine portions of the Los Angeles River and occasionally farther upstream.

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Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Forster's tern	*Sterna forsteri*	–/CSA (nesting)	Nests in freshwater and salt marshes locally across temperate North America; winters from the coastal and southern United States through Central America.	P, O	Species is not documented as breeding in Los Angeles County, although small numbers occurred throughout the spring and summer at Willow St. in some years in the 1990s and early 2000s. Up to 140 birds, including begging juveniles, were along the Los Angeles River at Willow St. in late July 2000, but these were likely dispersing family groups from the nearest breeding colonies in Orange County. Observed during biological surveys in 2009 (Appendix B of the NES).
Elegant tern	*Thalasseus elegans*	–/CSA (nesting)	Strictly coastal; nests in Southern California and western Mexico and winters south to Chile.	P, O	Nests at Terminal Island in Los Angeles Harbor and forages regularly in estuarine portions of the Los Angeles River. Observed during biological surveys in 2009 (Appendix B of the NES).
Black skimmer	*Rynchops niger*	BCC/CSC (nesting)	Nests primarily on sandy beaches, shell banks, and small islands in coastal areas locally from the southern United States to South America; more widespread otherwise, extending to bays, lagoons, and mudflats.	P	Nests at Terminal Island in Los Angeles Harbor and forages regularly in estuarine portions of the Los Angeles River. Birds were seen well upstream in Paramount (around Rosecrans Ave.) in July 2002 and July 2006.
Flammulated owl	*Otus flammeolus (Psiloscops flammeolus)*	BCC/CSA	Nests in pine and oak woodland in interior western North America and winters in southern Mexico and Central America.	A	No suitable habitat within the BSA.

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Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Burrowing owl	*Athene cunicularia*	BCC/CSC (burrow and some wintering sites)	Open country in much of North and South America.	P, O	Former resident (e.g., in open fields at California State University, Dominguez Hills until the early 1980s). Occasional migrants and wintering birds still occur, but species is believed to be extirpated as a nesting species within the BSA. Individual owls were observed south of the Compton Creek channel on three separate occasions (October and December 2009; December 2015) (Burrowing Owl Survey Reports, Appendix C of the NES).
Long-eared owl	*Asio otus*	–/CSC (nesting)	Scarce and local in forests and woodlands throughout much of the Northern Hemisphere. Sensitive to human disturbance on nesting grounds.	A	Former resident in willow woodlands along the Los Angeles River; no suitable habitat remains within the BSA.
Short-eared owl	*Asio flammeus*	–/CSC (nesting)	Open country, usually with tall grass, in scattered regions around the Northern Hemisphere.	A	Former winter visitor but not known to have nested in the Los Angeles Basin; now even rare as a nonbreeding visitor.
Black swift	*Cypseloides niger*	BCC/CSC (nesting)	Nests at scattered locations through western North America and the Caribbean south to Central America; montane in Southern California. Presumably winters in South America.	A	Rare migrant in the Los Angeles Basin, including the lower Los Angeles River.
Costa's hummingbird	*Calypte costae*	CSA (nesting)	Primarily deserts, arid brushy foothills, and chaparral in the southwestern United States and northwestern Mexico.	P	Probably occurs in small numbers as a transient and winter visitor (nearly year-round), but natural arid scrub breeding habitat is absent. May occasionally breed where the right mix of exotic flowering sages and other plants grow; flowering sages have been used extensively in landscaping along the banks of the lower Los Angeles River.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Allen's hummingbird	*Selasphorus sasin*	BCC/CSA (nesting)	Chaparral, open oak woodland, riparian woodland, and residential areas on the breeding grounds from southwestern Oregon to southwestern California; primarily montane woodland on the wintering grounds in central Mexico.	P, O	Fairly common resident within the BSA. Species is abundant, adaptable, and increasing throughout urban Southern California and is expected anywhere there is a mix of exotic flowering trees and shrubs. Observed during biological surveys in 2009 (Appendix B of the NES).
Lewis's woodpecker	*Melanerpes lewis*	BCC/CSA (nesting)	Nests in open forest and woodlands in interior western North America and winters slightly to the south and west.	A	A rare migrant in the Los Angeles Basin, with no known records within the BSA.
Nuttall's woodpecker	*Picoides nuttallii*	BCC/CSA (nesting)	Oak, pine-oak, and riparian woodland in California and northwestern Baja California.	A	Occasional visitors may occur, but suitable habitat for nesting appears to be absent within the BSA. Generally scarce to uncommon in wooded parks and residential areas in the lower Los Angeles Basin.
Olive-sided flycatcher	*Contopus cooperi*	BCC/CSC (nesting)	Nests in coniferous forests in northern and western North America and winters in South America.	A	Uncommon transient within the BSA.
Loggerhead shrike	*Lanius ludovicianus*	BCC/CSC (nesting)	Open country in much of North America, but declining in many areas, including southwestern California.	P, O	Nested along the lower Los Angeles River in Long Beach and Cudahy as recently as 2002 and 2004, but now probably extirpated as a nesting species. Has greatly declined as a wintering species in the area as well, but one was seen by the consulting biologist south of East Florence Ave. in December 2009 (Appendix B of the NES).

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
California horned lark	*Eremophila alpestris actia*	–/CSA (nesting)	Open grasslands and fields, agricultural areas from northern coastal California to northwestern Baja California.	P	Probably bred as recently as the mid-1980s in open areas around Carson, but perhaps no longer breeds in coastal Los Angeles County. Now only a rare nonbreeding visitor.
Purple martin	*Progne subis*	–/CSC (nesting)	Breeds locally in a wide range of habitats across much of North America; nests in cavities. Winters primarily in South America.	A	Nested historically in the Los Angeles Basin, but now believed to be extirpated as a nesting species in Los Angeles County. Occasional transient on the Los Angeles River in recent years.
Oak titmouse	*Baeolophus inornatus*	BCC/CSA (nesting)	Primarily oak woodland from southern Oregon to southern Baja California Sur.	A	Occasional visitors may occur, but suitable habitat for nesting is absent within the BSA.
Coastal cactus wren	*Campylorhynchus brunneicapillus*	BCC/CSA	Primarily lowland arid scrub with cactus in Mexico and the southwestern United States.	A	May have occurred within the BSA historically, but no suitable habitat is present now. The nearest known populations are on the Palos Verdes Peninsula near San Pedro and in the Montebello Hills.
Clark's marsh wren	*Cistothorus palustris clarkae*	–/CSC	Local resident in freshwater marshes on the coastal slope from Los Angeles County to northwestern Baja California.	P	Perhaps a rare resident within the BSA; observed in the off-channel marsh south of the Del Amo St. crossing of the Los Angeles River in 2008.
Yellow warbler	*Setophaga petechia (Dendroica petechia)*	BCC/CSC (nesting)	Nests in riparian woodland in the western United States and northwestern Baja California; more widespread in brushy areas and woodlands during migration and winter, when occurring from western Mexico to northern South America.	P, O	Formerly nested along much of the lower Los Angeles River (and still does so fairly commonly along the soft-bottom reach from the Griffith Park area downstream through the Glendale Narrows), but only marginally suitable nesting habitat remains within the BSA. Common migrant and rare winter visitor in the area. Observed during biological surveys in 2009 (Appendix B of the NES).

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Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Saltmarsh common yellowthroat	*Geothlypis trichas sinuosa*	BCC/CSC	Nests primarily in brackish and freshwater marshes in the San Francisco Bay area and disperses, at least formerly, along the California coast as far as Humboldt Bay and San Diego.	P	Recorded historically in the Los Angeles Basin, but may no longer occur as frequently as it once did.
Yellow-breasted chat	*Icteria virens*	–/CSC (nesting)	Riparian thickets of willows and brushy tangles near watercourses. Nests in riparian woodland throughout much of western North America. Winters in Central America.	A	Nested formerly along the lower Los Angeles River, but suitable nesting habitat is now absent. Currently a scarce transient in the area.
Green-tailed towhee	*Pipilo chlorurus*	BCC/–	Nests in chaparral and other brushy habitats primarily in the interior western United States; winters in brushy habitats primarily in Mexico and the southwestern United States.	A	Rare migrant and winter visitor within the BSA.
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	–/CSA	Steep, rocky CSS and open chaparral habitats, particularly scrubby areas mixed with grasslands. From Santa Barbara County to northwest Baja California.	A	Probably never common along the lower Los Angeles River, and now all suitable habitat is gone.
Brewer's sparrow	*Spizella breweri*	BCC/CSA (nesting)	Nests in brushland, especially sagebrush, in the interior western United States; winters in brushy areas in the southwestern United States and northwest Mexico.	A	Rare migrant and winter visitor within the BSA.
Lark sparrow	*Chondestes grammacus*	–/CSA (nesting)	Open situations with scattered bushes or trees. Breeds throughout much of western North America and winters from the southern United States to southern Mexico.	A	Occasional visitors may occur, but suitable nesting habitat is now absent within the BSA.
Large-billed Savannah sparrow	*Passerculus sandwichensis rostratus*	–/CSC (wintering)	Nests in brackish marshes in the northern Gulf of California and disperses widely to littoral habitats from Southern California to western Mexico.	P	Once occurred commonly at the mouth of the Los Angeles River, but there are apparently no recent records. Given several recent records from the Los Angeles Harbor to Playa del Rey, the occasional sighting near the mouth of the river is to be expected.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Grasshopper sparrow	*Ammodramus savannarum*	–/CSC (nesting)	Grasslands of North America and northern South America.	A	Historically a regular nesting species in the vicinity of the BSA, but no suitable habitat remains.
Oregon vesper sparrow	*Pooecetes gramineus affinis*	BCC/CSC (wintering)	Nests in lower valleys and plains in western Washington, western Oregon, and extreme northwestern California. Winters almost exclusively in low-elevation grasslands in central and Southern California.	A	Probably once a regular winter visitor in the vicinity of the BSA, but no suitable habitat remains.
Fox sparrow	*Passerella iliaca*	BCC/–	Nests in various brushy habitats across northern and western North America; winters in coastal and southern United States.	P	Uncommon winter visitor within the BSA.
Tricolored blackbird	*Agelaius tricolor*	BCC/CSC (nesting)	Open country in western Oregon, California, and northwestern Baja California. Nests primarily in freshwater marshes.	A	Formerly nested in the vicinity of the BSA but has not been known to do so for many years. Still occurs as a nonbreeding visitor in the area (e.g., one observed along the lower Los Angeles River on August 8, 2008).
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	–/CSC (nesting)	Nests in freshwater marshes in central-western North America and disperses to open, cultivated land and marshes as far as southern Mexico.	A	Formerly nested in the vicinity of the BSA but has not been known to do so for many years. Still occurs as a nonbreeding visitor in the area (e.g., birds seen along the Los Angeles River at Del Amo St. in September 2008 and September 2009).
Lawrence's goldfinch	*Spinus lawrencei (Carduelis lawrencei)*	BCC/CSA (nesting)	Oak woodland chaparral, riparian woodland, and other habitats in arid regions, but usually near water; from northern California to northern Baja California, but periodically wandering throughout much of western North America.	A	Occasional visitors may occur, but suitable habitat for nesting is absent within the BSA.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
MAMMALS					
South coast marsh vole	*Microtus californicus stephensi*	–/CSC	Tidal marshes in Los Angeles, Orange, and southern Ventura Counties.	A	Probably occurred in the vicinity of the BSA historically, but there appears to be an insufficient amount of habitat at this time. However, it is unknown to what extent this subspecies might range into other coastal habitats.
San Diego desert woodrat	*Neotoma lepida intermedia*	–/CSC	Frequents poorly vegetated arid lands and is especially associated with cactus patches. Occurs along the Pacific slope from about San Luis Obispo County to northwest Baja California.	A	Probably occurred within the BSA historically, but no suitable habitat remains.
Southern grasshopper mouse	*Onychomys torridus ramona*	–/CSC	Primarily open scrub habitats of southwestern California and northwestern Baja California.	A	Probably occurred within the BSA historically, but no suitable habitat remains.
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	–/CSC	Open country of coastal Southern California and northern Baja California.	A	Occurred within the BSA historically but has been extirpated from most of the Los Angeles Basin.
Southern California saltmarsh shrew	*Sorex ornatus salicornicus*	–/CSC	Coastal marshes in Los Angeles, Orange, and Ventura Counties. Requires dense vegetation and woody debris for cover.	A	May have occurred within the BSA historically, but no suitable habitat remains.
California leaf-nosed bat	*Macrotus californicus*	–/CSC	Western United States and northwestern Mexico. In California, primarily occupies low-lying desert areas, roosting in caves, mines, and old buildings with warm, stable temperatures. Rarely uses bridges for roosting. Historic records extend west to near Chatsworth, Los Angeles County, but most populations from the California coastal basins are believed to be extirpated.	A	May have occurred within the BSA historically, but no suitable roosting habitat is present in the vicinity of the BSA, and coastal California populations in general are presumed extirpated.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Mexican long-tongued bat	*Choeronycteris mexicana*	–/CSC	Uses a variety of habitats from the southwestern United States through Central America. In California, this species has been observed in San Diego County, likely as a seasonal migrant. Feeds on nectar and pollen of night-blooming succulents; may visit hummingbird feeders. Roosts in caves, mines, and occasionally buildings. Not known to use bridges for roosting.	A	Foraging and roosting habitat is not present within the BSA. There are no known records in the vicinity of the BSA.
Western mastiff bat	*Eumops perotis californicus*	–/CSC	Ranged historically throughout much of the southwestern United States and northwestern Mexico. In California, most records are from rocky areas at low elevations. Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, trees, and tunnels throughout southwestern California. May roost in tall bridges.	P	Although only marginally suitable roosting habitat is present in the BSA, numerous historic roosting areas exist in the Los Angeles Basin. In addition, foraging habitat is present along the Los Angeles River, and this species is known to forage over large distances from roost sites.
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	–/CSC	Varied habitats, but usually associated with high cliffs or rocky areas. Spotty distribution, ranging from Southern California and southwestern Arizona through central Mexico. Roosts primarily in cliffs and rock crevices; may use buildings for roosting. Rarely roosts in bridges.	P	Although roosting is unlikely within the BSA, foraging habitat is present along the Los Angeles River, and this species is known to forage over large distances from roost sites. Recorded from Harbor City and Inglewood.
Big free-tailed bat	*Nyctinomops macrotis*	–/CSC	Mainly inhabits rugged, rocky habitats in arid southwestern North America. Feeds principally on large moths. Roosts primarily in cliffs and rock crevices, and rarely in buildings, caves, and tree cavities. Not known to use bridges for roosting.	P	Although roosting is unlikely within the BSA, foraging habitat is present along the Los Angeles River, and this species is known to forage over large distances from a roost site. Recorded from Long Beach and Los Angeles.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Western red bat	*Lasiurus blossevillii*	–/CSC	Ranges from southwestern Canada through the western United States and Middle America to South America. Forages over a wide range of habitats but is often associated with intact riparian habitat, particularly with willows, cottonwoods, and sycamores. Typically solitary, roosting in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	P	Not known to use bridges for roosting but may roost in large-leaved trees along portions of the Los Angeles River and adjacent residential areas. Foraging habitat is present along the Los Angeles River.
Hoary bat	*Lasiurus cinereus*	–/CSA	Widespread in North America (and Hawaii). Forages over a wide range of habitats but prefers open habitats with access to water and trees for roosting. Typically solitary, roosting in the foliage of shrubs or coniferous and deciduous trees. Roosts are usually near the edge of a clearing.	P	Not known to use bridges for roosting but may roost in trees along portions of the Los Angeles River or in adjacent residential areas. Foraging habitat is present along the river. Recorded throughout the Los Angeles area.
Western yellow bat	*Lasiurus xanthinus*	–/CSC	Varied habitats from the southwestern United States to southern Mexico; often associated with palms and desert riparian habitats. In Southern California, occurs in palm oases and in residential areas with untrimmed palm trees. Roosts primarily in trees, especially the dead fronds of palm trees, although it has also been documented to roost under the leaves of deciduous trees such as cottonwoods.	P	Not known to use bridges for roosting but may roost in palms along portions of the Los Angeles River and adjacent residential areas. Foraging habitat is present along the Los Angeles River. Recorded from Garden Grove.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Townsend's big-eared bat	*Corynorhinus townsendii*	–/CSC	Ranges from southwestern Canada through the western United States to southern Mexico. Requires caves, mines, tunnels, buildings, or other similar structures for roosting. Occasionally roosts in hollow spaces of bridges or buildings. Will occasionally roost in hollow trees. Highly sensitive to disturbance.	A	Known to occasionally roost in the hollow spaces of bridges. Marginally suitable foraging habitat is present along the Los Angeles River. However, this species is not expected within the BSA due to its extremely low tolerance for urbanization and disturbance, and lack of historic records in the area.
Spotted bat	*Euderma maculatum*	–/CSC	Found in widely scattered localities in western North America from southern British Columbia to central Mexico. Occurs in a range of habitats, from arid, low desert habitats to high-elevation conifer forests. Roosts in crevices and caves, usually high in fractured cliff/rock faces; not known to use bridges or buildings for roosting. Can forage over wide distances.	P	No known records and no roosting habitat in the vicinity of the BSA, but the species can travel widely when foraging.
Pallid bat	*Antrozous pallidus*	–/CSC	Varied habitats in western North America, including grasslands, shrublands, woodlands, deserts, and forests. Primarily day roosts in bridges, hollows or crevices of trees, or buildings. Occasionally roosts in mines, caves, and cliff/rock crevices. Night roosts may be more open sites, such as porches, open buildings, and bridges.	P	Known to frequently roost in bridges. Foraging habitat is present along the Los Angeles River. Recorded throughout the Los Angeles area, including Long Beach.
Silver-haired bat	*Lasionycteris noctivagans*	–/CSA	Primarily associated with north temperate-zone conifer and mixed conifer/hardwood forests across southern Canada and most of the United States. May be found in the winter and during seasonal migration in lower, xeric habitats. Roosts mainly in hollows or crevices of trees, but may also roost in rock crevices, mines, or caves. May forage a considerable distance from its roosting area.	P	Rarely uses bridges for roosting, but may roost in trees within the BSA and forage along the Los Angeles River. Recorded from Bellflower and Long Beach. May be present at one bridge location within the BSA, but data collected during nighttime emergence and acoustic surveys was inconclusive (Appendix D of the NES).

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Western small-footed myotis	*Myotis ciliolabrum*	–/CSA	Found across much of North America, primarily in relatively arid wooded and brushy uplands near water. Individuals are known to roost singly or in small groups in cliff and rock crevices, buildings, concrete overpasses, caves, and mines.	P	Known to occasionally roost in bridges. Foraging habitat is present along the Los Angeles River.
Long-eared myotis	*Myotis evotis*	–/CSA	Found throughout much of North America, in semi-arid shrublands, chaparral, and agricultural areas, but is usually associated with coniferous forests. Roosts under exfoliating tree bark and in hollow trees, caves, mines, and crevices in cliffs/rocks. Sometimes roosts in buildings and bridges.	P	Known to occasionally roost in bridges. Foraging habitat is present along the Los Angeles River, and the species has been recorded as close as Arroyo Seco.
Fringed myotis	*Myotis thysanodes*	–/CSA	Range is patchy in western North America from sea level to 9,350 feet; most common at middle elevations. Appears to be most common in drier woodlands but is found in a wide variety of habitats, including desert scrub, mesic coniferous forest, grassland, and sage-grass steppe. Roosts primarily in large trees and snags, as well as in caves and mines. Also roosts in buildings, rock crevices, cliff faces, and bridges.	A	May have occurred within the BSA historically, but no suitable habitat remains. No known records from the vicinity of the BSA.
Long-legged myotis	*Myotis volans*	–/CSA	Widespread in western North America, primarily in coniferous forests, but also occurs seasonally in riparian and desert habitats. Utilizes abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows within snags as summer day roosts; caves and mine tunnels are used as hibernacula. Commonly forages in and around the forest canopy.	A	May have occurred within the BSA historically, but no suitable habitat remains. No known records from the vicinity of the BSA.

Table 3.19-1: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Yuma myotis	*Myotis yumanensis*	–/CSA	Occurs in a variety of habitats in western North America, including riparian habitats, arid scrublands and deserts, and forests. Optimal habitats are open forests and woodlands with sources of water over which to feed. Roosts in buildings, mines, caves or crevices, and under bridges. May occasionally roost in swallow nests.	P, O	Known to frequently roost in bridges. Observed roosting and foraging along the Los Angeles River from SR-91 to Willow St. during 2009 surveys. Was confirmed to be day roosting at two bridge locations and was observed foraging at another location during nighttime emergence and acoustic surveys.
American badger	*Taxidea taxus*	–/CSC	Occurs throughout much of North America. Primary habitat requirements seem to be sufficient food and friable soils in relatively open uncultivated ground in grasslands, woodlands, and desert.	A	Probably occurred within the BSA historically, but no suitable habitat remains.
Ringtail	*Bassariscus astutus*	–/CFP	Woody and rocky areas of the southwestern United States and most of Mexico.	A	May have occurred within the BSA historically, but no suitable habitat remains.

Source: LSA Associates, Inc. *I-710 Corridor Project Natural Environment Study* (June 2017).

Habitat Present/Absent: Absent (A) - no habitat present and no further work needed. Habitat Present (P) – habitat is, or may be present. (O) – Based on the literature review and field surveys, the species has been observed within the BSA. Critical Habitat (CH) – Project footprint is located within designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

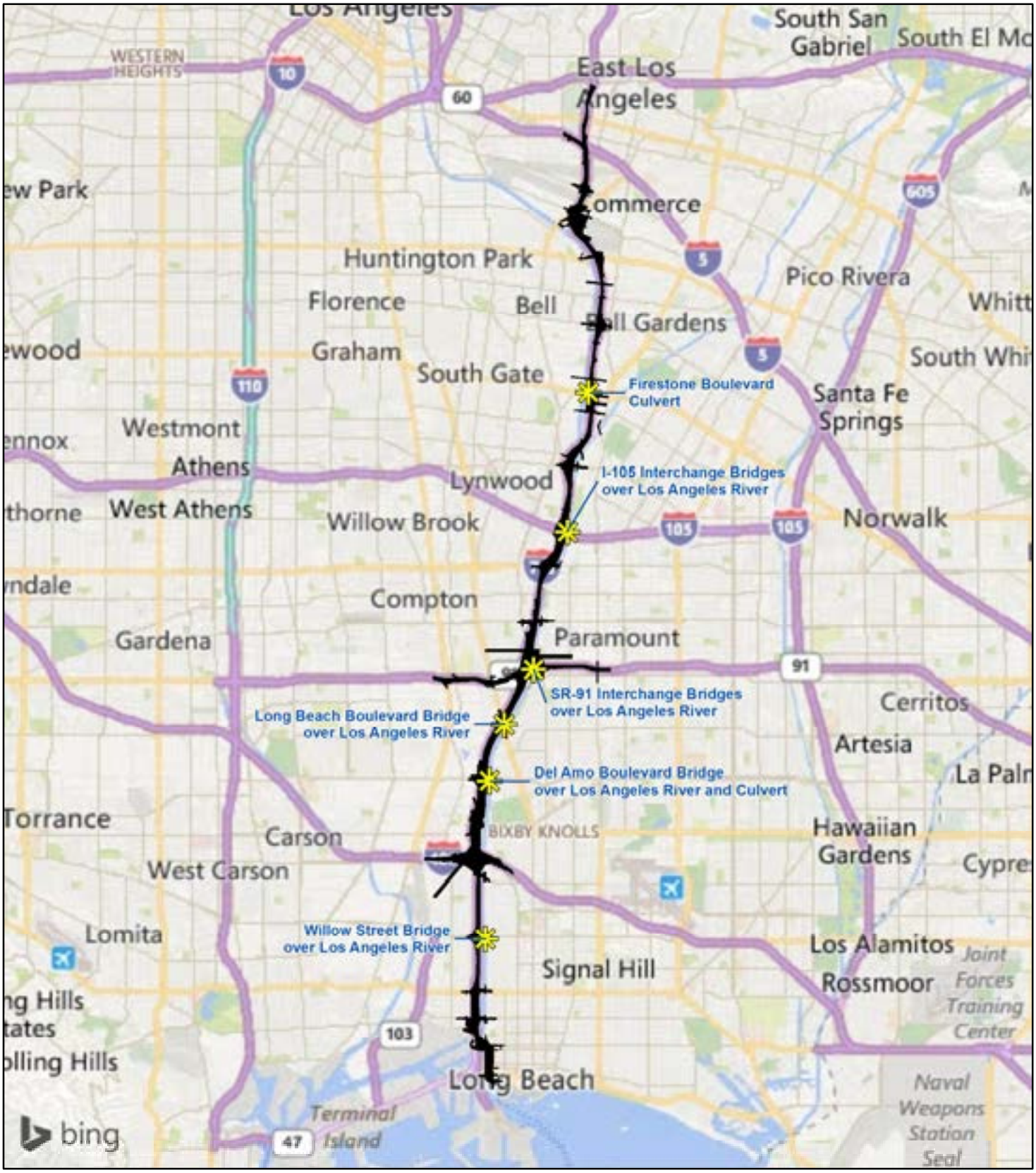
Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC); Federally Delisted (FD); United States Fish and Wildlife Service Birds of Conservation Concern (BCC); California Endangered (CE); California Threatened (CT); California Delisted (CD), California Fully Protected Species (CFP); California Species of Special Concern (CSC); California Special Plant (CSP), California Special Animal (CSA)

BSA = biological study area
CDFW = California Department of Fish and Wildlife
CSS = coastal sage scrub
I-405 = Interstate 405
NMFS = National Marine Fisheries Service
SR-91 = State Route 91
USFWS = United States Fish and Wildlife Service

3.19.2.1 SPECIAL-STATUS ANIMAL SPECIES REQUIRING SURVEYS

Focused surveys were conducted in 2009 and 2015 for burrowing owl (*Athene cunicularia*) and special-status bat species. Survey results were as follows:

- **Burrowing Owl:** Phase I, Phase II, and Phase III protocol surveys conducted for burrowing owl are described in Attachment C of the NES. Individual owls were observed south of the Compton Creek channel on two separate occasions (October and December 2009) using burrows approximately 150 feet from one another in an area with numerous burrows, south of the mouth of Compton Creek (see Figure 3.19-1). It could not be determined whether or not these were the same burrowing owl (BUOW) that were observed on two separate occasions. Although no pairs were observed, the area is large enough to support a pair. An individual BUOW was also observed at this location on December 7, 2015. No other burrowing owls were found during the 2009 or 2015 surveys. There is no critical habitat for this species within the BSA.
- **Special-Status Bat Species:** Daytime bat habitat assessments and nighttime emergence surveys performed for bat species are described in Appendix D of the NES. During the 2009 and 2015 bat habitat suitability assessments, suitable roosting habitat for bats was observed in various bridge and culvert structures throughout the BSA, including the Del Amo Blvd. bridge and its adjacent culvert, the SR-91 bridge over the Los Angeles River, the SR-91 bridge over Compton Creek, I-105 over the Los Angeles River, the Firestone Blvd. culvert, the Long Beach Blvd. bridge, and the Willow St. bridge, and bats and/or bat sign confirming bat presence were observed in several of these structures (see Figure 3.19-2). Nighttime surveys were performed in 2009, and at a small portion of suitable roost sites observed during the assessments. Buildings situated within the BSA may also provide potential bat-roosting habitat; however, no buildings were examined during the surveys due to lack of access. Some of the mature trees (including palm trees) within the BSA may be used as roosts by foliage-roosting special-status bat species such as western red bat (*Lasiurus blossevillii*), western yellow bat (*Lasiurus xanthinus*), and hoary bat (*Lasiurus cinereus*). In addition, some bat species including Yuma myotis (*Myotis yumanensis*) are known to roost in swallow mud nests such as those found throughout the BSA. Yuma myotis and silver-haired bat (*Lasionycteris noctivagans*) were the only bat species with special-status that were observed during these surveys; however, since nighttime surveys were performed in a small portion of the BSA, it is possible that other special-status bat species also occur within the BSA. Other common species of bats visually and acoustically detected within the BSA during nighttime emergence and acoustic surveys in 2009 included big brown bat (*Eptesicus fuscus*) and Mexican free-tailed bat. In addition, inconclusive acoustic data from the 2009 surveys suggest the potential presence of California myotis.



LEGEND

Roosting confirmed (bats or bat sign)

I-710 Footprint

FIGURE 3.19-2

I-710 Corridor Project
RDEIR/SDEIS

Locations of Confirmed Bat Roosts
07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

0 1.25 2.5
Miles

SOURCE: Bing Maps (2014); AECOM (2016)

I:\URS0801\GIS _MOD\MXD\EIR_EIS\Chapter3\Bat_Roosts_Overview.mxd (6/1/2017)

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No sign or indication of a large group of bats, such as a large maternity colony, was observed during the daytime or nighttime surveys; however, smaller maternity colonies were observed at some structures during the focused surveys. Maternity colonies may also be present in other structures within the BSA, particularly those situated along the Los Angeles River. No bats were directly observed at the sites surveyed during the 2015 daytime habitat assessment. There is no critical habitat for any bat species within the BSA.

3.19.2.2 OTHER SPECIAL-STATUS ANIMAL SPECIES NOT REQUIRING SURVEYS

Of the special-status species mentioned above and included in Table 3.19-1, those that occur in Natural Habitats and that were observed within the BSA during the 2009 surveys include great blue heron, great egret, snowy egret, black-crowned night heron, white-faced ibis (*Plegadis chihi*), osprey, long-billed curlew, marbled godwit, Forster's tern (*Sterna forsteri*), elegant tern (*Thalasseus elegans*), and yellow warbler. Of the special-status species mentioned above and included in Table 3.19-1, those that occur in Developed/Ornamental/Ruderal Habitats and that were observed within the BSA during the 2009 surveys include Cooper's hawk, Allen's hummingbird, and loggerhead shrike. Several monarch butterfly individuals were observed at Santa Cruz Park within the southern portion of the BSA during the 2015 surveys. Although the remaining special-status species were not observed during the surveys, the surveys were not focused on these species. In addition, it is possible for them to move onto the site prior to construction. While much of the habitat within the BSA is disturbed, developed, or degraded by the presence of nonnative species, some suitable habitat exists within the BSA. There is no critical habitat for any special-status species within the BSA.

3.19.3 ENVIRONMENTAL CONSEQUENCES

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, descriptions of temporary impacts related to animal species are located in Section 3.24.3.19, Animal Species.

3.19.3.1 PERMANENT IMPACTS

BUILD ALTERNATIVES.

BURROWING OWL. At this time, the BUOW(s) found in the fall/winter of 2009 and 2015 are best considered wintering individual(s) likely to leave the BSA in the spring because the vast majority of BUOWs in coastal Southern California are only wintering owls. Following refinement of the project alternatives since 2009, the location where BUOW individuals were observed is now outside the BSA; therefore, no direct impacts by either Alternative 5C or Alternative 7 would occur in the area where BUOW presence was confirmed. However, BUOW presence in 2009 and 2015 demonstrates that open areas within the BSA and its

vicinity do still provide habitat for BUOW despite the species' much-reduced presence within the Los Angeles Basin. Therefore, there is a potential for BUOW to be present at the time of construction for the build alternatives, and preconstruction surveys are recommended, including protocol breeding season surveys in areas containing suitable habitat and burrows.

Due to its larger footprint, Alternative 7 may have a greater impact on the potential BUOW habitat areas within the BSA than Alternative 5C. Impacts to these habitat areas are discussed in Section 3.16, Natural Communities. There is no critical habitat for this species within the BSA; therefore, no critical habitat will be impacted by the proposed project. Potential construction-related impacts to BUOW are discussed in Section 3.24, Construction. Measures described in Section 3.19.4, Avoidance, Minimization, and/or Mitigation Measures; Section 3.16, Natural Communities; and Section 3.24, Construction Impacts, will be implemented to address impacts to this special-status animal species. Following implementation of these measures, impacts to BUOW from the proposed project would be reduced or avoided.

SPECIAL-STATUS BAT SPECIES. Permanent impacts would be similar for either Alternative 5C or Alternative 7, since the vast majority of structures housing or potentially housing bats, including the multiple bridge and culvert structures where roosting bats (including special-status bat species) and/or sign of roosting bats were observed during the focused surveys performed in 2009 and 2015, will be subject to impacts in all alternatives. For example, Willow St. Bridge is a confirmed bat-roosting site that will be widened for both alternatives. However, there are a few notable differences between the alternatives. Although the project footprint for Alternative 7 is larger than that of Alternative 5C, Alternative 5C would result in impacts to several structures potentially used by bats for roosting that are not part of the Alternative 7 project footprint, including SR-91 over Compton Creek, Artesia Blvd. over Compton Creek, the Compton Channel culvert beneath Artesia Blvd., the SR-91 Santa Fe Ave. Undercrossing, the SR-91 Alameda St. Undercrossing, the Slauson Ave. bridge over the Los Angeles River, the I-710 3rd St.. Overcrossing, and structures associated with the SR-60/I-710 interchange. Alternative 7 would result in impacts to one structure that is not part of the Alternative 5C project footprint. This structure, a railroad bridge over the West Basin of the Dominguez Gap Wetlands, has a moderate-to-high probability of being used by bats for roosting.

Indirect permanent issues associated with human encroachment, such as the introduction of nonnative species and trash, from either Build Alternative 5C or 7 would permanently contribute to the degradation of foraging habitat (e.g., riparian/riverine vegetation) and, therefore, result in permanent impacts to special-status bat species.

Project impacts from either Build Alternative 5C or 7 may also include direct mortality to bats; however, direct mortality of bats can be avoided or minimized by having a qualified bat biologist humanely evict and/or exclude bats from areas where direct impacts could occur. In addition, construction could temporarily impede access to roost sites (existing and future) in the crevices or cavities of bridges, culverts, and other structures, or result in the permanent loss of an existing roost site. Only a portion of roosting habitat (existing and future) may be permanently altered by the I-710 Corridor Project, and provision of alternative roosting habitat would serve to minimize or mitigate these impacts by providing alternate roost sites during construction and avoiding net loss of roosting habitat. Contingent upon project design, the widening and modification of bridge and culvert structures may increase future potential roosting habitat. The I-710 Corridor Project is not expected to substantially affect long-term use of the structures by bats because humanely excluding bats from areas where they may be subject to direct impacts during project construction will minimize the likelihood of direct mortality, and because there will be no net loss of bat-roosting habitat if alternate roosting habitat is installed at a 1:1 ratio where permanent impacts to bat-roosting habitat do occur. There is no critical habitat for any bat species within the BSA; therefore, no critical habitat will be impacted by the proposed project.

Specific measures described in Section 3.19.4, Avoidance, Minimization, and/or Mitigation Measures; Section 3.16, Natural Communities; and Section 3.24, Construction Impacts, (specifically, Measures CON-AS-6, CON-AS-7, CON-AS-8, CON-AS-9, CON-AS-10, and CON-AS-12) will be implemented to avoid and minimize impacts to special-status bat species. Following implementation of these measures, impacts to special-status bat species from the proposed project will be reduced or avoided**.**

OTHER SPECIAL-STATUS ANIMAL SPECIES NOT REQUIRING SURVEYS. The I-710 Corridor Project is not expected to directly affect any of these species as a result of the avoidance and minimization measures described below in Section 3.19.4; however, the project is expected to have permanent indirect and temporary impacts to these species through the loss of potential habitat. As stated above, temporary impacts related to animal species are discussed in Section 3.24.4.18, Animal Species. There is no critical habitat for any special-status species within the BSA; therefore, no critical habitat will be impacted by the proposed project. As discussed under Section 3.19.2.2, the following species were observed within the BSA: great blue heron, great egret, snowy egret, black-crowned night heron, white-faced ibis (*Plegadis chihi*), osprey, long-billed curlew, marbled godwit, Forster's tern (*Sterna forsteri*), elegant tern (*Thalasseus elegans*), and yellow warbler in natural habitats, and Cooper's hawk, Allen's hummingbird, loggerhead shrike, and monarch butterfly in developed/ornamental/ruderal habitats.

All of these species have a low to moderate regular occurrence probability, are widespread in distribution, and are not State or federally listed as threatened or endangered. Due to its

larger footprint, Alternative 7 may have a greater impact on the habitats within the BSA that are utilized by these species than Alternative 5C. Impacts to these habitats are discussed in Section 3.16, Natural Communities. Measures described in Section 3.16, Natural Communities, and Section 3.24, Construction Impacts, will be implemented to avoid and minimize impacts to special-status animal species. Following implementation of these measures, impacts to special-status animal species from the proposed project will be avoided or minimized.

MIGRATORY BIRDS. New bridge structures, or significant changes to existing bridge structures, could result in occasional bird strikes. The potential for bird-vehicle collisions cannot be quantified but is recognized as a potentially significant effect. In general, changes to the flow of traffic parallel to the Los Angeles River in what is already a heavily used traffic corridor (and transmission corridor) are not expected to result in an increase in bird-vehicle collisions. The free movement of birds up and down the river is of critical importance, however, so special attention must be paid to any changes to existing bridges or to the addition of new bridges over the river. For this reason, the avoidance and minimization measure described in Section 3.19.4 is expected to address this issue. The measure states that new and renovated bridges will be designed to ensure the safety of birds flying up and down the Los Angeles River. Suitable fencing or other structural features on the sides of bridges would direct flying birds up and out of the way of traffic, as well as restrict litter and debris from falling into the Los Angeles River during regular operation. Additionally, specific bridge designs will only be adopted after consultation with the USFWS and CDFW. Because much of the habitat that may be suitable for these species is already fragmented or otherwise affected by human disturbance in the BSA and because suitable habitat is located in relatively small areas within the BSA, permanent impacts to these species with regard to habitat loss and habitat fragmentation are expected to be extremely minimal, if at all. Similarly, hydraulic changes to the Los Angeles River could alter the value of the habitat in the lower portion of the river. Potential hydraulic effects are associated with bridge modifications and the relocation of a segment of electrical transmission lines along the edge of the river. However, the proposed modifications would mimic the existing pier configurations upstream and downstream, and there would be no substantial effects to the water surface elevation, velocity of flood flows, sedimentation, or scour in the vicinity of the new piers. Because there are no substantial effects at the location of the modifications, there are no substantial effects to downstream locations. Final design of channel modifications and associated hydraulic analysis would require USACE approval.

Due to its larger footprint, Alternative 7 may have a greater impact on the habitats within the BSA utilized by migratory birds than Alternative 5C. Impacts to these habitats are discussed in Section 3.16, Natural Communities. Measures described in Section 3.16, Natural Communities, and Section 3.24, Construction Impacts, will be implemented by Caltrans to avoid and minimize impacts to migratory birds. Following implementation of these

measures, impacts to migratory birds from the proposed project will be avoided or minimized.

NO BUILD ALTERNATIVE. Under Alternative 1, the I-710 Corridor Project would not be constructed. There would be no permanent impacts to animals from the No Build Alternative.

3.19.3.2 PUBLIC HEALTH CONSIDERATIONS

No public health considerations were identified with regard to project impacts on animals.

3.19.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

In addition to measures described in Section 3.16, Natural Communities; Section 3.20, Threatened and Endangered Species, and Section 3.24, Construction Impacts (particularly Measures CON-AS-1 through CON-AS-14), the following measure will be implemented by Caltrans to avoid and minimize impacts to special-status animal species.

AS-1 New, replacement, and renovated bridges will be designed to ensure the safety of birds flying up and down the Los Angeles River. Suitable fencing or other structural features on the sides of bridges would direct flying birds up and out of the way of traffic, at the same time not serving as dangers themselves, as well as restrict litter and debris from falling into the Los Angeles River during regular operation. Other design measures will be considered if they accomplish the same results. In addition to review and certification by the bridge design and the California Department of Transportation (Caltrans) District Non-Standard Special Provisions (NSSP) team, final bridge design will be reviewed and approved by the Caltrans District 7 biologist, in consultation with the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW).

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3.20 THREATENED AND ENDANGERED SPECIES

The analysis of impacts of the proposed project on threatened and endangered species is based on the following document:

- *I-710 Corridor Project Natural Environment Study* (NES) (June 2017)

3.20.1 REGULATORY SETTING

The primary Federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, Federal agencies, such as the Federal Highway Administration (FHWA), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both the FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Another Federal law, the Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and

managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas. Additional Federal laws include the Marine Life Protection Act, the Marine Mammal Protection Act (MMPA), and the U.S. Fish and Wildlife Coordination Act (16 USC 661).

3.20.2 Affected Environment

On April 16, 2009, May 23, 2012, and again on June 12, 2017 the USFWS provided a list of Federally listed as endangered, threatened, proposed, and candidate species that may occur in the vicinity of the Interstate 710 (I-710) Corridor Project. In addition, the NMFS provided a similar list on December 13, 2016 and on June 12, 2017. These lists are included in Appendix J of this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS). Other consultation to date between the California Department of Transportation (Caltrans), as assigned by FHWA pursuant to the FESA, with the USFWS and the NMFS is summarized below.

On September 29, 2008, the USFWS issued a response letter to the *Notice of Preparation (NOP) to Prepare a Draft Environmental Impact Report for the I-710 Corridor Project, Los Angeles County, California – FWS-LA-08B0786-08TA0998*. The letter discussed USFWS concerns regarding the I-710 Corridor Project's potential impacts to migratory birds, least Bell's vireo, habitat creation areas, and four Federally listed or candidate plant species.

On September 29, 2008, the USFWS declined Caltrans' invitation to become a cooperating agency for the I-710 Corridor Project due to workload constraints. The USFWS agreed to provide technical assistance as a participating agency.

On April 16, 2009, the USFWS provided a list of Federally listed as endangered, threatened, proposed, and candidate species that may occur in the vicinity of the I-710 Corridor Project (Appendix A) (USFWS 2009). On September 24, 2009, the consulting biologist had a phone discussion with Sally Brown (Biologist) of the USFWS Carlsbad office regarding concerns for the I-710 Corridor Project. USFWS concerns included the potential for the project to stir up contaminated sediments during pile driving and bridge demolition, to cause contamination of aquatic resources with lead-based paint during bridge demolition, and to result in bird strikes from the new bridges.

On December 14 and 15, 2009, the consulting biologist discussed project impacts on essential fish habitat (EFH) and marine mammals with NMFS biologists Bryant Chesney and Monica Deangeles.

On March 24, 2011, the consulting biologist had an informal consultation phone call with Sally Brown (Biologist) of the USFWS Carlsbad office regarding the Biological Assessment (BA) and surveys for the Brand's star phacelia.

On August 22, 2012, the USFWS submitted a comment letter on the Draft EIR/EIS.

On June 6, 2017, the USFWS provided an official list of Federally listed as endangered, threatened, proposed, and candidate species that may occur in the vicinity of the I-710 Corridor Project.

On June 12, 2017, Caltrans coordinated with Penny Ruvelas (Long Beach Office Branch Chief - Protected Resources Division of NMFS) regarding an updated list of Federally listed as endangered, threatened, proposed, and candidate species that may occur in the vicinity of the I-710 Corridor Project (Appendix A) (NMFS 2017). Ms. Ruvelas provided further direction regarding species likelihood to occur in the BSA, listing status changes, and inclusion of additional species.

On June 12, 2017, Caltrans coordinated with Jay Ogawa of NMFS regarding informal consultation for EFH, marine mammals, and steelhead.

3.20.2.1 PLANT SPECIES

After a thorough literature review, it was determined that 14 plant species that are Federally and/or State-listed, candidate, or proposed endangered or threatened have the potential to occur within the vicinity of the Biological Study Area (BSA). However, for all of these plant species, either suitable habitat does not exist within the BSA or the species was not observed during field surveys; therefore, they are not discussed further in this section. Further information on these species is summarized in Table 3.20-1, including status, habitat requirements, and potential for occurrence.

3.20.2.2 ANIMAL SPECIES

After a thorough literature review, it was determined that 42 animal species or habitats that are Federally and/or State-listed, candidate, or proposed endangered or threatened, or regulated by the NMFS have the potential to occur within the vicinity of the BSA. Suitable habitat does not exist within the BSA for 40 of these animal species. With the exception of the Southern California steelhead Distinct Population Segment (DPS), green sea turtle, western snowy plover, California least tern (CLT), California sea lion, and EFH, all other animal species that lack suitable habitat in the BSA or that will not be affected by the project (e.g., abalones or whales) are not discussed further in this section. Steelhead, green sea turtle, CLT, California sea lion, and EFH are exceptions because they may occur within the BSA, and downstream effects to these species warrant consideration. The USFWS specifically requested full consideration of the western snowy plover. Further information on each of these species is

summarized in Table 3.20-2, including status, habitat requirements, and potential for occurrence.

SOUTHERN CALIFORNIA STEELHEAD DPS

The Southern California steelhead DPS is Federally listed as an endangered species. This DPS includes potential populations from rivers and smaller streams from Santa Barbara County to the Mexican border. This steelhead DPS is a winter run species and typically moves upstream towards its spawning areas when winter rains increase river flows. Steelhead occur in the coastal marine waters off the southern California coast, but based on available data, it appears to be extirpated from the Los Angeles River (Friends of the Los Angeles River, 2008). If steelhead does occur in the Los Angeles River, it is likely to be only as an occasional stray near the mouth of the river.

Table 3.20-1: Threatened and Endangered Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Marsh sandwort	*Arenaria paludicola*	FE/CE/1B.1	Found in freshwater marshes from ten to 560 feet elevation, where it grows up through dense mats of *Typha*, *Juncus*, *Scirpus*, etc. Presently known to occur only in San Luis Obispo County. Believed extirpated from Los Angeles, San Francisco, Santa Cruz, Riverside, and San Bernardino Counties, and from the State of Washington. Last known record of this species in Riverside, San Bernardino, or Los Angeles Counties is from 1900. Blooms May–August.	A	Believed extirpated in Los Angeles County. Last record is from 1900. Not observed in marsh habitat within the BSA during special-status plant surveys in 2009.
Braunton's milk-vetch	*Astragalus brauntonii*	FE/–/1B.1	Considered a limestone endemic and dependent on fire. Usually on sandstone with carbonate layers following fire, but may follow other disturbance and occur on stiff gravelly clay soils over granite. Typically associated with the fire-dependent chaparral habitat on limestone and on downwash sites below 2,100 feet elevation. Known only from Los Angeles, Orange, Riverside, and Ventura Counties. Blooms January–August.	A	No carbonates, stiff gravelly clay, or chaparral occur within the BSA.
Ventura marsh-milk vetch	*Astragalus pycnostachyus* var. *lanosissimus*	FE/CE/1B.1	Coastal salt marsh within reach of high tide or protected by barrier beaches, or more rarely near seeps on sandy bluffs, below 120 feet elevation. Known only from Santa Barbara and Ventura Counties. Believed extirpated from Los Angeles and Orange Counties.	A	No salt marsh or suitable habitat occur within the BSA.
Coastal dunes milk-vetch	*Astragalus tener* var. *titi*	FE/CE/1B.1	Moist, sandy depressions of coastal dunes and bluffs, or clay terraces, below 160 feet elevation. Known to occur only in Los Angeles County. Believed extirpated from Los Angeles County. May also be extirpated from San Diego County. Blooms March–May.	A	No coastal dunes, bluffs, or clay terraces occur within the BSA. Believed extirpated in Los Angeles County.
Nevin's barberry	*Berberis nevinii*	FE/CE/1B.1	Gravelly wash margins in alluvial scrub, or coarse soils and rocky slopes in chaparral; typically 900 to 2,700 feet elevation; Los Angeles, San Bernardino, Riverside, and San Diego Counties. Blooms March–June (evergreen shrub, survey year-round).	A	No alluvial scrub or chaparral within the BSA. BSA is outside the species' expected range.

Table 3.20-1: Threatened and Endangered Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
San Fernando Valley spineflower	*Chorizanthe parryi* var. *fernandina*	FC/CE/1B.1	Sandy soils in coastal scrub, primarily in northeastern Western Transverse Ranges and San Gabriel Mountains at ten to 4,000 feet elevation. Known only from Los Angeles and Ventura Counties. Presumed extirpated from Orange County and the Los Angeles Basin. Blooms April–June (annual herb).	A	No sandy areas or coastal scrub within the BSA. BSA is outside the species' range.
Salt marsh bird's-beak	*Chloropyron (Cordylanthus) maritimum* spp. *maritimum*	FE/CE/1B.2	Coastal dunes and salt marshes below 100 feet elevation. In California, known from Los Angeles, Orange, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Historical collections referred to this taxon from alkaline meadow in vicinity of San Bernardino Valley are intermediate to *C. maritimus* ssp. *canescens*. Species has been documented from approximately two miles west and east of the right-of-way north of Long Beach Harbor. Also occurs in Mexico. Blooms May–October.	A	No dunes or salt marshes occur within the BSA.
Slender-horned spineflower	*Dodecahema leptoceras*	FE/CE/1B.1	In the Vail Lake area, occurs in gravel soils of Temecula arkose deposits in openings in chamise chaparral. In other areas, occurs in sandy cobbly riverbed alluvium in alluvial fan sage scrub (usually late seral stage), on floodplain terraces and benches that receive infrequent overbank deposits from generally large washes or rivers. Most often found in shallow, silty depressions dominated by leather spineflower (*Lastarriaea coriacea*) and other native annual species, and often associated with cryptogamic soil crusts composed of bryophytes, algae and/or lichens. Occurs at 600 to 2,500 feet elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties, California. Blooms April–June (annual herb).	A	No chaparral or alluvial fan sage scrub within the BSA. BSA is not within the species' range.

Table 3.20-1: Threatened and Endangered Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
San Diego button-celery	*Eryngium aristulatum var. parishii*	FE/CE/1B.1	Vernal pools and similar mesic habitats in coastal scrub and grassland at 50 to 2,000 feet elevation. In California, known only from Los Angeles, Orange, Riverside and San Diego Counties. In Riverside County, known only from the Santa Rosa Plateau. Also occurs in Mexico. Blooms April–June (annual or perennial herb).	A	No vernal pools or similar habitats within the BSA. No records from Los Angeles County in over 100 years.
Gambel's water cress	*Nasturtium gambelii*	FE/CT/1B.1	Marshes and swamps from 20 to 1,100 feet elevation. Currently believed to occur in California only in Santa Barbara and San Luis Obispo Counties. There are historical records from Los Angeles, Orange, San Diego, and San Bernardino Counties, although the San Diego County records may be based on misidentification of another species. Also occurs in Baja California. Blooms April–October.	A	Believed extirpated from Los Angeles County. Not observed in wet areas within the BSA during special-status plant surveys.
Moran's navarretia	*Navarretia fossalis*	FT/–/1B.1	In vernal pools, playas, shallow freshwater marshes, and similar sites at 100 to 4,300 feet elevation. In California, known only from Los Angeles, San Luis Obispo, Riverside, and San Diego Counties. Also occurs in Mexico. Blooms April–June.	A	No vernal pools or other suitable habitat occur within the BSA.
California orcutt grass	*Orcuttia californica*	FE/CE/1B.1	Vernal pools from 50 to 2,200 feet elevation. In California, known from Los Angeles, Ventura, Riverside, and San Diego Counties. Also occurs in Mexico. Species has been documented from approximately one to two miles east of the proposed right-of-way in Downey. Blooms April–August.	A	No vernal pools occur within the BSA. Not observed in wet areas during the special-status plant surveys.
Lyon's pentachaeta	*Pentachaeta lyonii*	FE/CE/1B.1	Clay soils in edges of openings in fire-adapted coastal sage scrub and chaparral on saddles between hills, on the tops of small knolls, or in flat areas at the base of slopes, particularly where soil crust results in less competition from annual grasses, from 100 to 2,100 feet elevation. Occurs only in the Santa Monica Mountains in eastern Ventura and western Los Angeles Counties and in the western Simi Hills in Ventura County. Based on historical records, it once occurred on the Palos Verdes Peninsula and on Santa Catalina Island, but has not been seen at these locations since 1910 and 1855,	A	No clay habitats occur within the BSA. Believed to be extirpated from the area.

Table 3.20-1: Threatened and Endangered Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
			respectively, and is assumed to be extirpated from those areas. Species has been documented from approximately two miles west of the right-of-way north of United States Naval Station Long Beach. Blooms March–August.		
Brand's star phacelia	*Phacelia stellaris*	FC/–/1B.1	Sandy openings, sandy benches, dunes, sandy washes, or river floodplains in coastal sage scrub at 20 to 1,300 feet elevation. In western Riverside County, species appears to be restricted to sandy washes and benches in alluvial floodplains. In California, known only from Los Angeles (believed extirpated), Riverside, and San Diego Counties. Species has been documented from approximately one to two miles east of the proposed right-of-way in Downey. Blooms March–June.	A	No sandy soils or other suitable habitat occur within the BSA.

Source: LSA Associates, Inc. *I-710 Corridor Project Natural Environment Study* (June 2017).

Habitat Present/Absent: Absent (A) - no habitat present and no further work needed. Habitat Present (P) – habitat is, or may be present. Species observed during surveys (O) – Based on the literature review the species has been observed within the area of the BSA.

Status: Federal Endangered (FE); Federal Threatened (FT); Federal Candidate (FC); California Endangered (CE); California Threatened (CT); California Special Animal (CSA), California Native Plant Society (CNPS); 1B, Plants considered by CNPS to be rare, threatened, or endangered in California and elsewhere; CNPS threat category: 0.1-Seriously threatened in California (high degree/immediacy of threat)

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
INVERTEBRATES					
Black abalone	*Haliotis cracherodii*	FE/-	Crevices, cracks, and holes of intertidal and shallow subtidal rocks generally in areas of moderate to high surf. Considered locally extinct in most locations south of Point Conception, California.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). No suitable habitat within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
White abalone	*Haliotis sorenseni*	FE/-	Open low and high relief rock or boulder habitat that is interspersed with sand channels. Usually found at depths of 80-100 feet. Occur more frequently at the offshore islands of southern California.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). No suitable habitat within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Riverside fairy shrimp	*Streptocephalus woottoni*	FE/CSA	Inhabits vernal pools or other seasonal pools at least 12 inches in depth. Feeds on microscopic organisms such as bacteria and protozoa. Dried eggs will survive in the soil through the dry seasons until pools are formed by rainwater. Native to southern California and Baja California.	A	Suitable habitat not present within the BSA.
Palos Verdes blue butterfly	*Glaucopsyche lygdamus palosverdesensis*	FE/CSA	Restricted to the cool, fog-shrouded, seaward side of the Palos Verdes Hills in Los Angeles County. Dependent on host plant *Astragalus trichopodus* var. *lonchus*.	A	Outside the subspecies' known range.

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
FISH and ESSENTIAL FISH HABITAT					
Essential Fish Habitat (Groundfish, Coastal Pelagic Species, and Highly Migratory Species)		-/- protected under the MSA	Waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity.	P	Included on the NMFS species list for the proposed project (Appendix A of the NES). The southernmost extent of the project is located within the lower reaches of the Los Angeles River in an area designated as EFH by NMFS, though it is unlikely that any species included in the Management Plans would occur within the BSA.
Mohave tui chub	*Siphateles bicolor mohavensis (Gila bicolor mohavensis)*	FE/CE, CFP	Endemic to the Mojave River basin and adapted to alkaline, mineralized waters. Needs deep pools, ponds, or slough-like areas. Needs vegetation for spawning. Now extirpated from the botanic garden in Palos Verdes where it was transplanted in 1970.	A	BSA is outside the species' range.
Giant manta ray	*Manta birostris*	FPT/--	Circumglobal species typically found in tropical and subtropical waters, but can also be found in temperate waters. Has been documented as far north as southern California.	A	Directed to include this species in the biological analysis per Caltrans correspondence with NMFS. BSA represents the northern Extent of Occurrence and Area of Occupancy for this species and there are no records of this species occurring within or near the BSA, which does not provide suitable habitat. This species is not expected to occur within the BSA.
Green sturgeon (southern DPS)	*Acipsenser medirostris*	FT/CSC	Near shore marine waters, bays and estuaries, spawns in rivers in deep fast water over large cobbles, but also clean sand to bedrock. Southern most spawning population in the Sacramento River.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). No recent records of this species occurring within or near the BSA. The estuarine habitats within the

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
					BSA do not provide suitable habitat. This species is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Santa Ana sucker	*Catostomus santaanae*	FT/CSC	Historic range includes the Los Angeles, San Gabriel, and Santa Ana River drainage systems in Southern California. An introduced population also occurs in the Santa Clara River drainage system in Southern California. Found in shallow, cool, running water.	A	Still occurs in upper reaches of the Los Angeles River but is apparently extirpated downstream.
Scalloped hammerhead shark - Eastern Pacific DPS	*Sphyrna lewini*	FT/--	Circumglobal species that lives in coastal warm temperate and tropical seas. It occurs over continental and insular shelves, as well as adjacent deep waters, but is seldom found in waters cooler than 22° C. It ranges from the intertidal and surface to depths of up to 450-512m with occasional dives to even deeper waters.	A	Directed to include this species in the biological analysis per Caltrans correspondence with NMFS. Species may occur in nearby waters during periods of warmer water (e.g., El Nino conditions). However, there are no records of this species occurring within or near the BSA, and the BSA does not provide suitable habitat. This species is not expected to occur within the BSA.
Steelhead - Southern California DPS	*Oncorhynchus mykiss irideus*	FE/CSC	This anadromous species requires small, low-flowing streams with gravel beds with protective cover and adequate food to complete its lifecycle. Historically occurred in larger coastal drainages from Point Conception to northern Baja California. The southernmost populations now appear to be in Malibu and San Mateo Creeks.	A	Included on the NMFS species list for the proposed project (Appendix A), but this species appears to be extirpated from the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Southern	*Oncorhynchus*	FE/CSC	This anadromous species requires small, low-	A	BSA is outside the species' current

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
steelhead (Southern California ESU)	*mykiss irideus*		flowing streams with gravel beds with protective cover and adequate food to complete its lifecycle. Historically occurred in larger coastal drainages from Point Conception to northern Baja California. The southernmost populations now appear to be in Malibu and San Mateo Creeks.		range.
Tidewater goby	*Eucyclogobius newberryi*	FE/CSC	Found in shallow lagoons up to 15 feet in depth and lower stream reaches; needs fairly still but not stagnant water and high oxygen levels. Brackish water habitats along the California coast from the Agua Hedionda Lagoon in San Diego County to the mouth of the Smith River, in shallow lagoons and lower stream reaches.	A	Formerly occurred in Ballona Creek estuary; now apparently extirpated from Los Angeles County.
AMPHIBIANS					
Arroyo toad	*Anaxyrus californicus*	FE/CSC	Washes and arroyos with open water; sand or gravel beds, for breeding, pools with sparse overstory vegetation. Coastal streams and a few desert streams from Los Angeles County to Baja California.	A	Occurs in headwaters of the Los Angeles River, but apparently never recorded on the river proper.
California red-legged frog	*Rana draytonii*	FT/CSC	Streams with slow-moving water and deep pools; dense, shrubby riparian vegetation at pool edges. Coastal streams from Marin County to northwestern Baja California, but extirpated from most of southwestern California.	A	May have occurred historically but is now extirpated from the Los Angeles Basin.
Southern mountain yellow-legged frog	*Rana muscosa*	FE/CE, CSC	Inhabits ponds, tarns, lakes, and streams at moderate to high elevations in the Transverse Ranges of Southern California, but is possibly on the verge of extinction.	A	Outside known range of the species.
REPTILES					
Olive Ridley sea	*Lepidochelys*	FT/–	Worldwide in warm marine waters. Mainly a pelagic	A	Included on the NMFS species list for

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
turtle	*olivacea*		sea turtle, but has been known to inhabit coastal areas, including bays and estuaries. Nests on sandy beaches along tropical coasts, but within the United States.		the proposed project (Appendix A of the NES). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Leatherback sea turtle	*Dermochelys coriacea*	FE/–	The most migratory and wide ranging of sea turtle species. Nests on sandy beaches along tropical coasts, but can forage in temperate coastal waters.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
North Pacific loggerhead sea turtle	*Caretta caretta*	FE/–	Worldwide in tropical and temperate marine waters. Forages in lagoons and bays. Nests on coarse-grained beaches along tropical coasts. Only known nesting areas in North Pacific are in southern Japan. Most records in California are of juveniles off the coast.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Green sea turtle	*Chelonia mydas*	FT/–	Worldwide in warm marine waters near shorelines such as lagoons and bays with beds of eelgrass, seaweeds, or mangroves; open ocean during dispersal and/or migration. Nests on sandy beaches along tropical coasts. In Southern California, aggregations occur in areas with artificially warm water from power plant outfalls in the south San	P	Not expected to occur due to lack of suitable foraging habitat (e.g., eelgrass beds) and source of warm water. May occasionally occur downstream from the BSA, in the vicinity of the mouth of the Los Angeles River. Proposed affect but is not likely to adversely affect this

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
			Diego Bay and at the mouth of the San Gabriel River.		species with implementation project may of the Avoidance, Minimization, and Mitigation Measures. The proposed project will have no effect on designated critical habitat for this species.
BIRDS					
Bald eagle	*Haliaeetus leucocephalus*	FD, BCC/CE (nesting, wintering)	Primarily near seacoasts, rivers, swamps, and large lakes throughout much of North America.	A	Probably never common within the BSA and now only a rare visitor (e.g., one observed along the Los Angeles River in Long Beach in November 2004); some birds found in coastal Los Angeles County in recent years originated as released birds on the Channel Islands.
Swainson's hawk	*Buteo swainsoni*	BCC/CT (nesting)	Nests in open country throughout much of interior western North America and winters primarily in South America.	A	Does not nest on the coastal slope of Southern California but migrates through the entire region (less commonly along the coast). Has been observed in the vicinity of the BSA.
California black rail	*Laterallus jamaicensis coturniculus*	BCC/CT, CFP	Shallow margins of fresh and saltwater marshes from Central California to northern Baja California; very local in occurrence.	A	Probably occurred historically, but never confirmed within the BSA.
Light-footed clapper rail	*Rallus longirostris levipes*	FE/CE, CFP	Coastal salt marshes from Santa Barbara County to northern Baja California.	A	Former resident in the mouth of the Los Angeles River but now extirpated from Los Angeles County.

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Greater sandhill crane	*Grus canadensis tabida*	–/CT, CFP (nesting, wintering)	Nests in marshy areas across southern Canada and the northern United States. Winters primarily in agricultural fields and wet prairie in the southern United States and northern Mexico.	A	May have occurred historically, but habitat is now unsuitable within the BSA.
Western snowy plover (coastal population)	*Charadrius alexandrinus nivosus*	FT, BCC/CSC (nesting)	Sandy beaches and dry mud or salt flats, Washington to western Mexico. After being extirpated from Los Angeles County for more than 60 years, breeding was recently documented on protected beaches of Santa Monica Bay.	A	No nesting habitat remains within the BSA, but occasional visitors are seen along the lower Los Angeles River.
Scripp's murrelet	*Synthliboramphus scrippsi*	FC, BCC/CT (nesting)	Pelagic. Nests on islands off the coasts of Southern California and northwest Mexico, and generally ranges at sea in the vicinity.	A	No oceanic waters within the BSA.
California least tern	*Sternula antillarum browni*	FE/CE, CFP (nesting)	Nests along the coast from San Francisco Bay to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates. Winters primarily off the Pacific coast of northern South America.	P	Nests at Terminal Island in Los Angeles Harbor and forages regularly in estuarine portions of the Los Angeles River. Recent sightings upstream have included juveniles and/or family groups foraging at Willow St., I-405, and off-channel ponds at the Dominguez Gap Wetlands. Proposed project may affect, but is not likely to adversely affect this species with implementation of the Avoidance, Minimization, and Mitigation Measures. The proposed project will have no effect on designated critical habitat for this species.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT, BCC/CE	Breeds and nests in extensive stands of dense cottonwood and willow riparian forest along broad, lower flood bottoms of larger river systems.	A	Formerly a fairly common nesting species within the BSA, but no suitable habitat remains.

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
			Widespread but local in western North America; very rare and local in California. Winters in South America.		
Willow flycatcher	*Empidonax traillii*	BCC/CE (nesting)	Breeds primarily in moist, brushy thickets and riparian woodland (especially with willow) across much of temperate North America; winters in Central and South America. The southwestern willow flycatcher (*E. t. extimus*) is a rare and local breeder in the southwestern United States and northwestern Mexico.	A	The southwestern willow flycatcher was once a common nesting species along the lower Los Angeles River, but the population is much reduced and suitable habitat for nesting now appears to be absent within the BSA. The subspecies *E. t. brewsteri* is an uncommon migrant along the lower Los Angeles River.
Least Bell's vireo	*Vireo bellii pusillus*	FE/CE (nesting)	Formerly occurred in well-established riparian areas from north-central California to Baja California. Now absent from northern portions of its range, but populations in Southern California are growing in response to intense management efforts. Winters primarily in western Mexico.	A	Formerly common along the lower Los Angeles River, but only marginally suitable habitat for nesting remains. Has recently been recorded at DeForest Park and the ponds south of Del Amo St. in Long Beach in the winter and spring. Due to the species having only limited, marginally suitable habitat for nesting in the BSA, the proposed project may affect but is not likely to adversely affect this species.
Bank swallow	*Riparia riparia*	–/CT (nesting)	Nests locally in near-vertical river banks, primarily in temperate regions around the northern hemisphere; winters primarily in the tropics.	A	Nested historically in the Los Angeles Basin, but now believed to be extirpated as a nesting species in Los Angeles County. Scarce transient in recent years, mainly in the late summer and early fall.

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Coastal California gnatcatcher	*Polioptila californica californica*	FT/CSC	Inhabits CSS in low-lying foothills and valleys in cismontane southwestern California and northwestern Baja California.	A	Recorded three times in recent years along the lower Los Angeles River, but suitable CSS habitat is no longer present within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Belding's Savannah sparrow	*Passerculus sandwichensis beldingi*	–/CE	Coastal salt marshes from Santa Barbara County to northern Baja California.	A	Nested historically within the lower reaches of the Los Angeles River, but suitable nesting habitat is now absent.
MAMMALS					
Pacific pocket mouse	*Perognathus longimembris pacificus*	FE/CSC	Historically occupied open habitats on sandy soils along the coast from Los Angeles to the Mexican border. Now known from only four sites in Orange and San Diego Counties.	A	Collected from Wilmington in 1865 and probably occurred in the vicinity of the BSA at that time. Not recorded on the shores of San Pedro Bay since. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Lesser long-nosed bat	*Leptonycteris yerbabuenae*	FE/CSA	Occurs in Sonoran desert scrub, semi-desert grasslands, and lower oak woodlands from Arizona and New Mexico to El Salvador, and has been recorded in southwestern California. Frugivorous and nectivorous; highly associated with plants such as agave, saguaro, and ocotillo as a source of food. Roosts in caves and mines; not known to use bridges for roosting. Capable of migrating long distances.	A	Foraging and roosting habitat is not present within the BSA. There are no known records in the vicinity of the BSA.

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
California sea lion	*Zalophus californianus*	-/- protected under the MMPA	Occurs in Pacific coastal marine waters from Vancouver Island to the Galapagos Islands.	P, O	Rare in the BSA but occasionally forages downstream in estuarine portions of the Los Angeles River. An individual was seen in September 2009 during wildlife surveys north of Pacific Coast Hwy. Due to the infrequent presence of this species in the BSA, the proposed project may affect but is not likely to adversely affect this species.
Guadalupe fur seal	*Arctocephalus townsendi*	FT/CFP protected under the MMPA	Tropical waters of the Southern California/ Mexico region. Non-migratory and their breeding grounds (rocky habitats and caves) are almost entirely on Guadalupe Island, Mexico. Small populations off of Southern California at San Miguel Island.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). Highly unlikely to occur within the BSA or in offshore waters. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Blue whale	*Balaenoptera musculus*	FE/- protected under the MMPA	Worldwide, from sub-polar to sub-tropical latitudes. Found in coastal waters, but are thought to occur generally more offshore than other whales. Forages off California coast in summer.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Fin whale	*Balaenoptera physalus*	FE/- protected under the MMPA	Deep, offshore waters of all major oceans, primarily in temperate to polar latitudes, and less commonly in the tropics.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Humpback whale - Central American DPS	*Megaptera novaeangliae*	FE/- protected under the MMPA	Uses the waters (Pacific Ocean) of Central America for the purpose of breeding and reproduction, but migrates off the coast of California in summer/fall to feeding areas.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Humpback whale - Mexico DPS	*Megaptera novaeangliae*	FT/- protected under the MMPA	Uses the waters (Pacific Ocean) of Mexico for the purpose of breeding and reproduction, but migrates off the coast of California in summer/fall to feeding areas.	A	Included on the NMFS species list for the proposed project (Appendix A). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA.
Southern resident killer whale	*Orcinus orca*	FE/- protected under the MMPA	Most abundant in colder waters, but also occur, though at lower densities, in tropical, subtropical, and offshore waters.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES).). Per Caltrans correspondence with NMFS, this species is extremely unlikely to occur as far south as the BSA. This species is not expected to occur within the BSA. Proposed project will have no

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
					effect on this species or on the designated critical habitat for the species.
North Pacific right whale	*Eubalaena japonica*	FE/- protected under the MMPA	Primarily polar and sub-polar regions of the Pacific Ocean, though sightings have been reported as far south as central Baja California in the eastern North Pacific. They primarily occur in coastal or shelf waters, although movements over deep waters are known. Migratory patterns of the North Pacific right whale are unknown, although it is thought the whales spend the summer on high-latitude feeding grounds and migrate to more temperate waters during the winter.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.
Sei whale	*Balaenoptera borealis*	FE/- protected under the MMPA	Prefer subtropical to subpolar waters on the continental shelf edge and slope worldwide. Usually observed in deeper waters of oceanic areas far from the coastline.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.

Table 3.20-2: Threatened and Endangered Animal Species and NMFS-Regulated Resources Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Sperm whale	*Physeter macrocephalus*	FE/- protected under the MMPA	Temperate to tropical waters in deep waters typically far from land.	A	Included on the NMFS species list for the proposed project (Appendix A of the NES). May occasionally occur in offshore waters from the BSA, but is not expected to occur within the BSA. Proposed project will have no effect on this species or on the designated critical habitat for the species.

Source: LSA Associates, Inc. *I-710 Corridor Project Natural Environment Study* (June 2017).

Habitat Present/Absent: Absent (A) - no habitat present and no further work needed. Habitat Present (P) – habitat is, or may be present. (O) – Based on the literature review and field surveys, the species has been observed within the BSA.

Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed Threatened (FPT); Federal Candidate (FC); Federally Delisted (FD); United States Fish and Wildlife Service Birds of Conservation Concern (BCC); California Endangered (CE); California Threatened (CT); California Delisted (CD), California Fully Protected Species (CFP); California Species of Special Concern (CSC); California Special Animal (CSA)

BSA = biological study area
CSS = coastal sage scrub
DPS = Distinct Population Segment
EFH = Essential Fish Habitat
ESU = Evolutionarily Significant Unit
I-405 = Interstate 405
MMPA = Marine Mammal Protection Act
MSA = Magnuson-Stevens Fishery Conservation and Management Act
NES = Natural Environment Study
NMFS = National Marine Fisheries Service

GREEN SEA TURTLE

The green sea turtle is Federally listed as a threatened species. The green sea turtle is most widely distributed in tropical ocean waters, but has been found in areas of southern California, including artificially warm water in south San Diego Bay and at the mouth of the San Gabriel River. Green sea turtles have been observed in the Long Beach area (particularly in the vicinity of the San Gabriel River mouth), but not within the I-710 Corridor Project BSA. The potential for this species to occur in the Los Angeles River is considered very low. No critical habitat has been designated for the green sea turtle outside of the Caribbean Basin.

WESTERN SNOWY PLOVER (COASTAL POPULATION)

The coastal population of the western snowy plover is Federally listed as a threatened species and is a California Species of Special Concern. The coastal population of western snowy plover nests along the coast from Washington to northwestern Mexico. Snowy plovers nested on the coast of Los Angeles County through at least 1949 but were then extirpated. Successful nesting was first documented again in 2017. Occasional non-breeding visitors are seen along the lower Los Angeles River. Critical habitat was designated in 2012. The closest areas so designated are at Hermosa State Beach and Bolsa Chica State Beach.

CALIFORNIA LEAST TERN

CLT is Federally listed as an endangered species and is State listed as an endangered species. Nesting CLT is also listed as a California Fully Protected species. CLT is a colonial breeder that nests along the coast from San Francisco Bay to Baja California. CLT nests at Terminal Island in the Port of Los Angeles (POLA). Foraging birds regularly visit the Los Angeles River mouth below the Queensway Bridge and occasionally upstream. CLT are rare away from the estuarine portions of the Los Angeles River but have been recorded north to Interstate 5 (I-5) and in off-channel ponds east of the river. CLT are typically present in California from the first week of April to the first week of September. No critical habitat has been designated for CLT.

3.20.2.3 SPECIES PROTECTED UNDER THE MARINE MAMMAL PROTECTION ACT

The California sea lion (*Zalophus californianus*) is one of the most common and widespread marine mammals along the California coast. The California sea lion is not a Federally listed species or California species of special concern; however, it is protected under the Marine Mammal Protection Act (MMPA) and, therefore, is addressed in regard to potential effects from the I-710 Corridor Project.

The California sea lion is occasionally found within the BSA in the lower reaches of the Los Angeles River, primarily south of Ocean Blvd. Individuals occasionally stray upstream as far north as Willow St. (e.g., one was seen by a survey team north of Pacific Coast Hwy. on September 4, 2009), although the generally shallow depth and the lack of haul-out sites (low-lying docks, piers, platforms, or sandy shoreline beaches) limit their occurrence. Haul-out sites

are necessary for seals for mating and giving birth, but not all haul-out sites are for reproduction. Other benefits of haul-out sites may include predator avoidance, thermal regulation, social activity, parasite reduction, and rest. There is no critical habitat for this species within the BSA.

3.20.2.4 Fisheries Protected under the Magnuson-Stevens Fishery Conservation and Management Act

Despite the relatively disturbed nature of the Los Angeles River, portions of this river within the BSA still provide habitat for a number of fish species. These fish inhabit Queensway Bay and may occasionally move upstream to tidal and freshwater portions of the Los Angeles River. As explained in more detail in the *Estuarine Resources Environmental Assessment* (Appendix F of the NES), ichthyoplankton (fish eggs and larvae) in the Lower Los Angeles River varies both spatially and seasonally. Species occurring in greatest abundance include gobies (Gobidae family), northern anchovy (*Engraulis mordax*), slough anchovy (*Anchoa delicatissima*), and white croakers (*Genyonemus lineatus*). Other eggs and larvae occurring in the river include spotted turbot (*Pleuronichthys ritteri*), hornyhead turbot (*Pleuronichthys verticalis*), California lizard fish (*Synodus lucioceps),* and California tonguefish (*Symphurus atricaudus*). Overall, ichthyoplankton species richness and density is higher in the Los Angeles River during the winter, primarily due to an increase in the number of cheekspot goby. There is no critical habitat for any fish species within the BSA.

3.20.2.5 Essential Fish Habitat

Essential Fish Habitat (EFH) includes those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. For the purpose of interpreting the definition of EFH, “waters” includes aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” refers to the habitat required to support a sustainable fishery and the managed species contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

The southernmost extent of the I-710 Corridor Project is located within the lower reaches of the Los Angeles River in an area designated as EFH by the NMFS (Erlandson, personal communication, December 14, 2009) for Groundfish, Coastal Pelagic Species, and Highly Migratory Species. An *Estuarine Resources Environmental Assessment* (January 2010) was prepared for the I-710 Corridor Project and can be found in Appendix F of the NES. Previous studies were examined as well.

As a nursery site for numerous fish species, Queensway Bay provides EFH for Coastal Pelagic Species (northern anchovy, Pacific sardine [*Sardinops sagax*], Pacific mackerel [*Scomber japonicus*], and jack mackerel [*Trachurus syymetricus*]) and Pacific Coast Groundfish (leopard shark [*Triakis semifasciata*], spiny dog fish shark [*Squalus acanthias*], and California sculpin

[*Clinocottus recalvus*]). These species occasionally use Queensway Bay for reproduction and development and are included in the Pacific Coast Groundfish, Coastal Pelagic Species and Highly Migratory Species Fisheries Management Plans. However, the only one of these species that would be expected to occur within the lower reaches of the Los Angeles River is the northern anchovy. The majority of the anchovy population is expected to occur outside of the BSA in Queensway Bay and San Pedro Bay at depths greater than 12 feet.

3.20.3 Environmental Consequences

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, descriptions of temporary impacts related to threatened and endangered species are located in Section 3.24.3.20, Threatened and Endangered Species.

3.20.3.1 Permanent Impacts

Build Alternatives

Southern California Steelhead DPS. Based on available data, steelhead appear to be extirpated from the BSA. Steelhead are large, highly mobile fish and would likely move out of the area if disturbed by construction activities (e.g., pile-driving). Nonetheless, in the unlikely event that steelhead are present in the BSA, implementation of the measures outlined for fish in general should avoid and minimize potential impacts to this species. At this time, Alternative 5C may have a greater impact on the habitat (estuarine) within the BSA that could potentially be utilized by this species than Alternative 7. The riverine habitat upstream of the estuarine habitat within the BSA is primarily concrete-lined and does not provide suitable habitat for steelhead. Impacts to estuarine habitat are discussed in Section 3.16, Natural Communities.

Green Sea Turtle. Although no green sea turtles were observed in the BSA, any green sea turtles that might visit the area around the mouth of the Los Angeles River could be affected indirectly by changes in water quality originating upstream. Such changes could involve increased pollution levels, increased turbidity, or impacts on the sea grasses and algae on which green sea turtles feed. However, by implementing the measures outlined in Section 3.16, Natural Communities, no noticeable changes in water conditions would occur. There is no critical habitat for this species within the BSA; therefore, no critical habitat would be impacted by the proposed project.

Alternative 5C may have a greater impact on the habitat (estuarine) within the BSA that could potentially be utilized by this species than Alternative 7. Impacts to estuarine habitat are discussed in Section 3.16, Natural Communities.

Concurrence from the USFWS would be necessary through informal consultation with Caltrans as assigned by FHWA pursuant to FESA. A "may affect but not likely to adversely affect" determination is anticipated regarding the green sea turtle. Concurrence with the USFWS will be requested after a preferred alternative is identified prior to completion of the Final EIR/EIS.

WESTERN SNOWY PLOVER (COASTAL POPULATION). The coastal population of the western snowy plover could be affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the invertebrates on which they feed. New bridge designs could result in occasional bird strikes. However, by following the measures outlined in Sections 3.16, Natural Communities, and 3.19, Animal Species, no noticeable changes in water conditions or bird strike frequency would occur. There is no critical habitat for this species within the BSA; therefore, no critical habitat would be impacted by the proposed project.

Due to its larger footprint, Alternative 7 may have a greater impact on habitats within the BSA that are utilized by this species than Alternative 5C. Impacts to these habitats are discussed in Section 3.16, Natural Communities.

Concurrence from the USFWS would be necessary through informal consultation with Caltrans as assigned by FHWA pursuant to FESA. A "may affect but not likely to adversely affect" determination is anticipated regarding the coastal population of the western snowy plover. Concurrence with the USFWS will be requested after a preferred alternative is identified prior to completion of the Final EIR/EIS.

CALIFORNIA LEAST TERN. CLT could be affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the fish on which they feed due to shading. New and heightened bridge structures and increased traffic levels may result in an increase in bird strikes. However, by following the measures outlined in Sections 3.16, Natural Communities, and 3.19, Animal Species, and any additional measures identified during USFWS consultation, no noticeable changes in water conditions or bird strike frequency would occur. This species is absent from California for more than half of the year. Other than potential long-term impacts on fish populations (CLT's food source), there would be no potential impacts when the species is absent. There is no critical habitat for this species within the BSA; therefore, no critical habitat will be impacted by the proposed project.

Due to its larger footprint, Alternative 7 may have a greater impact on habitats within the BSA that are utilized by this species than Alternative 5C. Impacts to these habitats are discussed in Section 3.16, Natural Communities.

Concurrence from the USFWS would be necessary through informal consultation with Caltrans as assigned by FHWA pursuant to FESA. A "may affect but not likely to adversely affect" determination is anticipated regarding the CLT. Concurrence with the USFWS will be requested after a preferred alternative is identified prior to completion of the Final EIR/EIS.

SPECIES PROTECTED UNDER THE MARINE MAMMAL PROTECTION ACT . All build alternatives would include the driving of piers/support structures on the following bridges within the lower Los Angeles River that could affect California sea lions: 7th St. bridge, Anaheim St. bridge, Pacific Coast Hwy. bridge, Hill St. bridge, and Willow St. bridge. A new bridge will be constructed over the lower Los Angeles River at 7th St. and a pedestrian bridge will be added at Hill St., while Anaheim St., Pacific Coast Hwy., and Willow St. will be expanded. Additional details regarding the methods and materials for pile driving (e.g., alignment, size, and height of the elevated structure; duration of construction; use of steel or concrete casings) were unknown at the time the NES was prepared. Design details such as these will not be known until the I-710 Corridor Project advances to the final design phase. Nonetheless, the percussive forces generated during any pile-driving activities may result in injury to California sea lions within and adjacent to the BSA where estuarine habitat exists.

The I-710 Corridor Project may be able to drive the piles at a sound level less than the threshold that has been identified as harmful to marine mammals such as California sea lions. A sound level below 190 decibels (dB) re 1 micro-Pascal (microPa) root mean square (rms) would not result in a Level A harassment of pinnipeds and the onset of temporary threshold shifts (TTS) in pinniped hearing (NMFS 2003). The driving of the steel piles could exceed the Level A harassment levels if no attenuation methods are implemented. Use of appropriate attenuation methods during pile driving, such as bubble curtains or blocks, is expected to reduce the sound pressure levels below the harassment level.

Construction and expansion of the four bridges in the lower Los Angeles River would also bring construction personnel and equipment into the area where California sea lions may occur. Although there would be an incremental increase in activity due to bridge construction, the Los Angeles River typically draws large numbers of people engaged in recreational and commercial activities. The temporary presence of construction personnel is not expected to adversely impact sea lions.

Construction and expansion of the four bridges in the lower Los Angeles River would not alter movement of California sea lions through the channel. While dewatering of the entire Los Angeles River would not occur, some minimal isolation of work (e.g., an air bubble curtain system or air-filled isolation casings around bridge support structures) may be required during bridge construction; this impact would be temporary during the period of pile driving and bridge deck construction. Once the pile driving and bridge construction are

completed, the bridges would not impede the movement of California sea lions through the channel.

Project activity on dry land is not expected to impact California sea lions, provided that sediments and construction materials are retained on land and measures are implemented to prevent the movement of soil, concrete, and other construction materials into the Los Angeles River channel. There is no critical habitat for this species within the BSA; therefore, no critical habitat will be impacted by the proposed project.

Alternative 5C may have a greater impact on the habitat (estuarine) within the BSA that could potentially be utilized by this species than Alternative 7. Impacts to estuarine habitat are discussed in Section 3.16, Natural Communities.

FISHERIES PROTECTED UNDER THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT Alternatives 5C and 7 will include driving of piers/support structures in tidal waters across the Los Angeles River at the 7th St., Anaheim St., Pacific Coast Hwy., Hill St., and Willow St. crossings. Furthermore, numerous pilings would be required upstream of tidal waters in the freshwater areas of the Los Angeles River to accommodate improvements to other crossing structures. Relevant information for pile driving, such as alignment, number, size, methods, materials, or duration, could not be determined at the time the NES was prepared. Design details such as these will not be known until the I-710 Corridor Project advances to the final design phase. Nonetheless, the percussive forces generated during pile-driving activities may result in injury and death to fish within the impact area. The following analysis is based on the *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish*, prepared for Caltrans in November 2015. Both the peak sound pressure level and the sound exposure level may result in damage to the auditory tissue of fishes or their temporary hearing loss. Temporary hearing loss occurs at lower levels than auditory tissue damage and is dependent on the size of the fish, with smaller fish being affected at lower levels than larger fish. In addition to the direct impacts of hearing loss and auditory tissue damage, sound levels from pile driving may also result in indirect impacts, such as the inability to avoid predators or to detect prey and the inability to communicate or detect the environment.

In addition to auditory tissue damage and temporary hearing loss, increased sound levels associated with pile driving may also affect fish by causing physiological and anatomical damage. Nonauditory tissue damage may include capillary rupture in skin, neurotrauma, eye hemorrhage, swim bladder rupture, and death of individual fish. Such impacts may be the result of single or repeated exposure to elevated sound levels.

Construction of the bridges may also alter movement of fish through the mouth of the Los Angeles River. While dewatering of the entire Los Angeles River will not occur, some minimal isolation of work (e.g., an air bubble curtain system or air-filled isolation casings

around bridge support structures) may be required during bridge construction; this impact would be temporary during the period of pile driving and bridge deck construction. Once the pile driving and bridge construction are completed, the bridges would not impede the movement of fish through the channel.

Construction of the I-710 Corridor Project on dry land is not expected to impact fish, provided that sediments and construction materials are retained on land and measures are implemented to prevent the movement of soil, concrete, and other construction materials into the river channel. There is no critical habitat for any fish species within the BSA; therefore, no critical habitat will be impacted by the proposed project.

Alternative 5C may have a greater impact on the habitat (estuarine) within the BSA that could potentially be utilized by this species than Alternative 7. Impacts to estuarine habitat are discussed in Section 3.16, Natural Communities.

ESSENTIAL FISH HABITAT. The I-710 Corridor Project would have a temporary adverse impact on Coastal Pelagic and Groundfish Management Plan Species. The I-710 Corridor Project would not permanently impede movement of fish into and out of the Los Angeles River corridor. Construction would have a temporary impact on fish that inhabit the river during pile-driving operations and potential isolated dewatering activities. In addition to the injury and mortality that may result from pile driving and dewatering, pile driving and dewatering would likely make the channel bottom in the vicinity of the bridges unsuitable for fish during these operations. This would be a temporary loss of habitat, and no permanent impacts would occur to the habitat except for a minimal loss of channel bottom where the piles would be placed. In addition, no permanent impacts would occur from dewatering activities, as dewatering materials would be removed upon completion of bridge construction.

Alternative 5C may have a greater impact on the habitat (estuarine) within the BSA that could potentially be utilized by this species than Alternative 7. Impacts to estuarine habitat are discussed in Section 3.16, Natural Communities.

3.20.3.2 NO BUILD ALTERNATIVE

Under Alternative 1, the I-710 Corridor Project would not be constructed. There would be no permanent impacts to threatened or endangered species from the No Build alternative.

3.20.3.3 PUBLIC HEALTH CONSIDERATIONS

No public health considerations were identified with regard to project impacts on threatened or endangered species.

3.20.4 Avoidance, Minimization, and/or Mitigation Measures

The measures described in Section 3.9, Water Quality (WQ-1 through WQ-3); Section 3.16, Natural Communities (NC-1); Section 3.19, Animal Species (AS-1); and Section 3.24, Construction Impacts (specifically, Measures CON-TES-1 through CON-TES-4 in Section 3.24.4.20), will ensure that effects to Southern California steelhead, green sea turtle, the coastal population of western snowy plover, California least tern, California sea lion, and Essential Fish Habitat are absent or minimal from implementation of any of the proposed build alternatives; therefore, specific compensatory mitigation is not warranted.

3.21 INVASIVE SPECIES

This section discusses impacts on the spread of invasive species and is based on the *I-710 Corridor Project Natural Environment Study* (NES) (June 2017).

3.21.1 REGULATORY SETTING

On February 3, 1999, President William J. Clinton signed Executive Order EO 13112 requiring Federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued on August 10, 1999, directs the use of the State's invasive species list currently maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

3.21.2 AFFECTED ENVIRONMENT

The California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory is based on information submitted by members, land managers, botanists, and researchers throughout the state as well as published sources. The inventory highlights nonnative plants that are serious problems in wildlands (natural areas that support native ecosystems, including national, state, and local parks, ecological reserves, wildlife areas, national forests, Bureau of Land Management [BLM] lands, etc.). The inventory categorizes plants as High, Moderate, or Limited based on the species' negative ecological impact in California. Plants categorized as "High" have severe ecological impacts. Plants categorized as "Moderate" have substantial and apparent, but not severe, ecological impacts. Plants categorized as "Limited" are invasive, but their ecological impacts are minor on a statewide level.

A total of 31 exotic plant species occurring on the Cal-IPC Inventory were identified within the Biological Study Area (BSA). Of these species, there are three listed with a High rating, including Hottentot-fig (*Carpobrotus edulis*), giant reed (*Arundo donax*), and pampas grass (*Cortaderia* sp.). Sixteen of the species are listed with a Moderate rating, including poison hemlock (*Conium maculatum*), sticky eupatorium (*Ageratina adenophora*), bull thistle (*Cirsium vulgare*), black mustard (*Brassica nigra*), shortpod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), edible fig (*Ficus carica*), tree of heaven (*Ailanthus altissima*), tree tobacco (*Nicotiana glauca*), Mexican fan palm (*Washingtonia robusta*), ripgut brome (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), tall fescue (*Festuca arundianacea*), foxtail barley (*Hordeum murinum*), Italian ryegrass (*Lolium multiflorum*), and African fountain grass (*Pennisetum setaceum*). Twelve of the species are listed with a Limited rating, including African brass-buttons (*Cotula coronopifolia*), bristly ox-tongue (*Picris echioides*), wild radish (*Raphanus*

sativus), five-hook bassia (*Bassia hyssopifolia*), Russian thistle (*Salsola tragus*), castor bean (*Ricinus communis*), black locust (*Robinia pseudoacacia*), American pokewood (*Phytolacca americana*), English plantain (*Plantago lanceolata*), kikuyugrass (*Pennisetum clandestinum*), smilo grass (*Piptatherum miliaceum*), and rabbitfoot grass (*Polypogon monspeliensis*).

3.21.3 Environmental Consequences

The following discussion of environmental consequences only describes the permanent impacts of the proposed project. Please refer to Section 3.24 of this document, Construction Impacts, for a discussion of the temporary impacts of the proposed project for each resource area. Specifically, descriptions of temporary impacts related to invasive species are located in Section 3.24.3.21, Invasive Species.

3.21.3.1 Permanent Impacts

Build Alternatives. Construction of the I-710 Corridor Project has the potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway. The potential spread of *Caulerpa taxifolia* (a nonnative seaweed) during construction and/or operation of the facilities is not expected because the invasive species was not observed in the BSA during the Estuarine Resources Environmental Assessment surveys. Nevertheless, preventative measures will be taken to prevent the spread of this species in accordance with the National Marine Fisheries Service (NMFS) Control Protocol. Impacts associated with Alternative 7 would be greater than impacts associated with Alternative 5C, given the larger area of disturbance associated with the freight corridor.

No Build Alternative. Alternative 1 would have no effect on the spread of invasive species.

3.21.3.2 Public Health Considerations

No public health considerations were identified with regard to project impacts from the spread of invasive species.

3.21.4 Avoidance, Minimization and/or Mitigation Measures

Measures CON-INV-1 through CON-INV-3 in Section 3.24.2.1 of this RDEIR/SDEIS address invasive species concerns immediately prior to and during construction. In compliance with EO 13112, the California Department of Transportation (Caltrans) shall implement the following measure to address invasive species following completion of construction:

IS-1 A weed abatement program would be developed to minimize the importation of nonnative plant material after construction. Eradication strategies would be employed should an increase in invasive plants occur.

At a minimum, this program would include:

- After construction, affected areas adjacent to native vegetation would be revegetated with plant species approved by the California Department of Transportation (Caltrans) District Biologist that are native to the vicinity.
- After construction, all revegetated areas would avoid the use of species listed in the California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory that have a high or moderate rating.
- Eradication procedures (e.g., spraying and/or hand weeding) would be outlined should an infestation occur; the use of herbicides would be prohibited within and adjacent to native vegetation, except as specifically authorized and monitored by the Caltrans District Biologist.
- Weed abatement would be targeted for areas that do not contain ruderal native vegetative species such as milkweed.

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3.22 Relationship Between Local Short-Term-Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

3.22.1 Introduction

Implementation of the Interstate 710 (I-710) Corridor Project build alternatives will result in attainment of short-term and long-term transportation objectives at the expense of some short-term economic impacts and some long-term social, aesthetic, and land use impacts. The I-710 Corridor Project is based on State, regional, and local comprehensive-based planning efforts that consider the need for present and future traffic requirements within the context of present and future transportation and goods movement needs. As an important corridor for goods movement, the I-710 Corridor Project is an integral component of the long-range planning for Los Angeles County and the southern California region.

3.22.2 Environmental Consequences

3.22.2.1 Build Alternatives

Both build alternatives would have similar impacts unless otherwise stated.

Short-term losses and impacts of the I-710 Corridor Project would include:

- Economic losses experienced by businesses from relocations or traffic detours.
- Temporary construction impacts to residents and visitors such as increased noise, impaired air quality from dust and debris, increased nighttime light, blocked viewsheds, and motorized and nonmotorized traffic delays or detours.
- Temporary loss of productivity on and near sites used as the temporary construction staging areas.
- Temporary construction impacts to utility services, such as service interruptions or accidental damage to facilities.
- Disruption of recreational activities at Cesar E. Chavez Park due to the reconfiguration of the park to accommodate the proposed improvements under all build alternatives. Disruption of recreational activities at Parque Dos Rios due to partial acquisition and a temporary construction easement (TCE) under Alternative 5C and full acquisition under Alternative 7. Disruption of activities at the Compton Hunting and Fishing Club due to relocation of this property under all build alternatives. Disruption of activities at the Compton Homing Pigeon Club due to relocation of this property under Alternative 7.

Short-term benefits of the I-710 Corridor Project would include:

- Increased jobs and revenue generated during construction.

Long-term losses resulting from the I-710 Corridor Project would include:

- Permanent impacts to wetlands and natural communities.
- Permanent increase in some air pollutant concentrations at a few locations near the I-710 Corridor.
- Permanent impacts to residents and visitors in some locations as a result of increased noise levels, increased nighttime light, and altered viewsheds.
- Permanent increase in noise levels near the I-710 Corridor.
- Permanent consumption of materials and energy during construction.
- Permanent removal of residential and nonresidential uses and possible permanent loss of those uses in the I-710 Corridor communities if they are not relocated within their existing communities.

Long-term gains of the I-710 Corridor Project would include:

- An improvement of the regional transportation network in this part of Los Angeles County.
- Improvement of vehicle, person, and goods movement travel times in the I-710 corridor to more effectively serve existing and future travel demand between the Ports of Los Angeles and Long Beach [Ports] and freeways (Interstate I-405, State Route 91 [SR-91], Interstate 105 [I-105], Interstate 5 [I-5], State Route 60 [SR-60], and Interstate 10 [I-10]), intermodal rail yards, warehouses, and cargo distribution points.
- Improvement to air quality and reduction of public health risk.
- Improvement to motorist, bicyclist, and pedestrian safety as congestion-related accidents will be reduced, sidewalks will be improved, roadway shoulders on arterial overcrossings of I-710 will be improved, and access to bikeways and trails will be maintained.
- Improvements to access and congestion relief on local roadways and highways.
- Economic benefits associated with accommodating future growth in goods movement.
- Improvement to water resources and storm water management facilities due to treatment of surface water runoff that is currently untreated, including surface water and flood plains.
- Provision of abandoned highway rights of way for use at Cesar E. Chavez Park that result in a larger, contiguous park.
- Provision of programmatic funding to area communities for projects intended to improve community health.

3.22.2.2 NO BUILD ALTERNATIVE

As stated previously in Chapter 2.0 of this Recirculated Draft EIR/Supplemental Draft EIS, Alternative 1 includes other transportation improvements that are already programmed and/or committed to be constructed by 2035. These programmed and/or committed transportation improvements would provide the benefits of reduced travel times and improved efficiency for the movement of vehicles, people, and goods; however, they would also result in the irreversible/irretrievable commitment of resources. Alternative 1 would not result in the construction of the I-710 Corridor Project. Therefore, Alternative 1 would not provide the benefits of the reduced travel times and improved efficiency for the movement of vehicles, people, and goods that would result from implementation of the I-710 Corridor Project.

3.22.3 CONCLUSIONS

Implementation of the I-710 Corridor Project would result in trade-offs between addressing transportation needs and goals (short- and long-term) and adverse environmental impacts (short- and long-term).

The I-710 Corridor Project would provide a safer, more efficient, and less congested route for the transportation of people and goods in an area anticipated to experience major goods movement growth. The I-710 Corridor Project would provide increased capacity and a separated freight movement corridor (under Alternative 7) to accommodate this growth and provide roadway geometrics to meet State highway design standards.

As discussed in Section 3.5, Traffic and Transportation, the existing roads and intersections in the Study Area will operate at unacceptable levels of service into 2035 without implementation of the I-710 Corridor Project. The I-710 Corridor Project would serve to improve traffic conditions in the region. The long-term benefits to the community (through transportation improvements) will be weighed against the short-term and long-term environmental impacts of the I-710 Corridor Project.

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3.23 Irreversible and Irretrievable Commitments of Resources That Would Be Involved in the Proposed Project

3.23.1 Build Alternatives

Construction of the build alternatives involves a commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the Interstate 710 (I-710) Corridor Project is considered an irreversible commitment during the time period that the land is used for the highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. There is no reason to believe such a conversion would ever be necessary or desirable for the foreseeable future.

The following irreversible and irretrievable commitments of resources from the physical and natural environment would occur as a result of the build alternatives:

- **Paleontological Resources.** Excavation associated with construction of the build alternatives could encounter paleontological resources. That excavation could result in permanent irretrievable adverse impacts to paleontological resources in the following Holocene to Pleistocene deposits: Young Alluvial Fan and Valley Deposits, Undivided; Young Alluvial Flood Plain Deposits; Old Alluvial Fan Deposits, Undivided; and Old Paralic Deposits, Undivided.
- **Archaeological Resources.** No archaeological resources requiring evaluation were identified through archival research, Native American consultation, or the field survey. However, excavation associated with construction of the build alternatives could encounter archeological resources. That excavation could result in permanent irretrievable adverse impacts to archeological resources. The *Archaeological Sensitivity Study* (February 2017) identifies areas that are more likely to have the potential for previously unrecorded archaeological resources.
- **Estuarine Habitat.** The build alternatives include improvements to bridges that are located within tidal waters which are the same for Alternatives 5C and 7. Alternatives 5C and 7 are expected to result in direct permanent impacts to 0.18 acre and 0.11 acre, respectively, of estuarine habitat (earthen-bottom intertidal portions of the Los Angeles River) due to the construction of abutments and driving of piles, and a reduction in soft-bottom habitat as a consequence of the placement of piers and abutments. In addition to direct permanent impacts, Alternatives 5C and 7 would result in indirect permanent effects to 5.09 acres or 5.02 acres, respectively, of estuarine habitat. Indirect permanent effects would result from permanent shading associated with bridges or elevated roadways. In addition, construction may indirectly affect estuarine habitats permanently through enhancing the germination and proliferation of nonnative invasive plant species.

- **Riparian/Riverine Habitat.** Permanent impacts to riparian/riverine habitats would be greater under Alternative 7 than under Alternative 5C. Alternative 7 is expected to result in direct permanent effects to 10.69 acres and indirect permanent effects to 23.53 acres of riparian/riverine natural communities. Alternative 5C would result in permanent direct impacts to 1.55 acres and permanent indirect impacts to 21.01 acres of riparian/riverine habitats. Therefore, the build alternatives would result in permanent irretrievable adverse impacts to riparian/riverine habitats, although mitigation would be provided to replace this loss.
- **Jurisdictional Waters.** The build alternatives are expected to result in direct and indirect permanent impacts to United States Army Corps of Engineers (USACE)/ Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) jurisdictional waters. Therefore, the build alternatives would result in permanent irretrievable adverse impacts to USACE/RWQCB and CDFW jurisdictional waters although mitigation would be provided to replace this loss.
- **Construction.** In addition to the commitments of resources from the physical and natural environments, considerable amounts of fossil fuels, labor, public capital, and highway construction materials such as cement, aggregate, bituminous material, and steel would be expended and not retrievable following construction of the I-710 Corridor Project. Additionally, large amounts of labor and natural resources are used in the making of construction materials, and these are generally not retrievable. However, they are not in short supply, and their use would not have an adverse effect upon continued availability of these resources. Construction of the I-710 Corridor Project would also require a substantial one-time expenditure of public (and possibly private) funds, which are not retrievable. Savings in travel time, improved transportation system efficiency, and improved public health and safety would offset this use of materials, labor, resources, and funds. In addition to the costs of construction and right-of-way would be the ongoing costs for roadway maintenance, including pavement, roadside litter/sweeping, signs and markers, structural, electrical, and storm maintenance.

The commitment of these resources to the I-710 Corridor Project enables residents, workers, travelers, and others in the immediate area, region, and state to benefit from the improved quality of the transportation system in Los Angeles County. These benefits would consist of improved air quality, efficiency of goods movement, accessibility, travel time, and safety, the benefits of which are expected to outweigh the commitment of these resources.

3.23.2 No Build Alternative

Alternative 1 would not result in the construction of the I-710 Corridor Project. Therefore, Alternative 1 would not result in the irretrievable commitment of the resources required to construct the I-710 Corridor Project. Alternative 1 would also not provide the benefits of the

reduced travel times and improved efficiency for the movement of vehicles, people, and goods that would result from implementation of the I-710 Corridor Project.

As stated previously in Chapter 2.0 of this Recirculated Draft Environmental Impact Report/ Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS), Alternative 1 includes additional transportation improvements that are already funded and/or committed to be constructed by or before the planning horizon year of 2035. Therefore, there would be irretrievable commitments of resources resulting from these other transportation improvements, but not as a result of the I-710 Corridor Project.

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3.24 CONSTRUCTION IMPACTS

This section describes the construction methods and related types of impacts considered for the build alternatives. Construction methods are the basis for assessing and qualifying the potential environmental impact from construction activities. These construction methods will be used to prepare, construct, and implement the typical highway and freight corridor improvements that make up the build alternatives.

3.24.1 CONSTRUCTION METHOD APPROACH

This section identifies the types of construction associated with the alternatives, describes the typical sequence and methods for each type of construction (mainline/interchanges and freight corridor), and discusses potential construction-related impacts.

3.24.1.1 HIGHWAY IMPROVEMENT PROCESS

CONSTRUCTION WORKSITE CHARACTERISTICS. The worksite for a highway capacity improvement project is the existing highway right of way and additional right of way (including any temporary construction easements) that has been acquired for the project. The defining characteristic of this worksite is the need to maintain traffic on the existing highway during construction of the improvement. During construction, traffic will first be shifted to one side of the existing roadway while the opposite side is improved (e.g., new retaining walls and pavement installed to widen the roadway, barriers installed or replaced), then traffic will be shifted back onto the newly improved portion while the other side is improved. Operational issues associated with construction require coordination between the Construction Contractors and responsible agencies.

TYPICAL CONSTRUCTION SEQUENCE. The typical construction sequence will be:

- Pre-construction activities
- Mobilization and site preparation—Clear any remaining buildings or other improvements from any new right of way.
- Initial traffic control phase—Implement a plan for the temporary protection and direction of traffic. The initial traffic control plan phase may include construction of new sound walls along the new edge of the right of way.
- Repeat for each traffic control phase—Remove the portions of existing structures; construct the portions of new structures and bridges, existing structure widening, and existing embankment widening or excavations; and widen pavement and install temporary pavement markings. Repeat for the next phase of the traffic control plan.
- Final traffic control plan phase—Construct new wearing surface across entire width of each direction of roadway and install final pavement markings.

- Finishes—Construct elements such as signage and landscaping (this phase may start prior to the final traffic control phase).

PRE-CONSTRUCTION ACTIVITIES. Pre-construction activities will include the following:

- Coordination with affected Interstate 710 (I-710) Corridor cities.
- Develop project aesthetics plan within public participation framework.
- Coordination with utility providers and appropriate potholing and other activities to locate and clearly mark the types and locations of all utility facilities in the project disturbance limits.
- Coordination with utility providers on protection in place, relocation, and/or removal of utility facilities in the disturbance limits.
- Execution of detailed soils and geotechnical testing.
- Execution of hazardous waste contamination testing and site remediation, as needed.

MOBILIZATION AND SITE PREPARATION. The key mobilization activity will be to develop a traffic control plan for the temporary protection and direction of traffic. As part of this, coordination with emergency service providers regarding detours and other traffic conditions will be ongoing.

The proposed project is expanding the highway right of way; therefore, site preparation will include:

- Installation of fencing around construction and staging areas.
- Delineation of disturbance limits and any environmentally sensitive areas or other areas to be avoided.
- Clearing, grading, and preparation of the field office location(s) and staging areas.
- Moving construction equipment to the staging areas and around the construction areas.
- Clearing the new right of way of conflicting structures, obstructions, and utilities.

The proposed project includes replacing existing structures and pavement; therefore, an aggregate (pavement) crushing plant to recycle used pavement into new aggregate may be established. The crushing plant would not be mobilized until sufficient material has been removed to allow several months of continuous operation. (If the project does not require recycling, the Construction Contractor would dispose of the waste material, either as embankment material or at a disposal site.)

Best management practices (BMPs) would be implemented on an ongoing basis, consistent with the needs for each construction activity.

INITIAL TRAFFIC CONTROL PHASE. Each traffic control phase would shift traffic away from that phase's work zone and would install temporary barriers to protect workers in the work zone from traffic. The shift can use some combination of closed lanes, narrowed lanes, and the pavement shoulder for through traffic.

EARTHWORK. The Construction Contractor would construct the required retaining walls, embankments, and excavations. The design would attempt to balance cut and fill requirements, but severe terrain or urban conditions may require imported fill or exported cut material. If the overall schedule permits, the embankments would be allowed to consolidate for a year or two before pavement is placed on them. The Construction Contractor would route any existing drainage that crosses the alignment through new and extended pipes or box culverts. The Construction Contractor would install inlets and pipes, detention basins, and outfalls for roadway drainage.

STRUCTURES. The Construction Contractor would construct grade separation, drainage, and other bridges or concrete boxes as required.

PAVEMENT. The Construction Contractor would finish grading the new roadbed, install subbase, base rock, and bridge approach slabs, and may pave the new roadway. Any new pavement would drain to the inlets previously constructed. The Construction Contractor would construct any transition sections required. The Construction Contractor would install pavement markings on the completed roadway.

REPEAT FOR EACH TRAFFIC CONTROL PHASE. Subsequent traffic control phases would shift traffic onto the completed portion of the work to create a new work zone. The Construction Contractor would construct/reconstruct the portion of the pavement and structures in the new work zone, then shift the traffic to a new traffic control phase until all new pavement and structures are complete.

FINAL TRAFFIC CONTROL PLAN PHASE. For some roadway widening, when the temporary barrier is removed, the Construction Contractor will overlay a new pavement wearing surface across the entire roadway width. This paving could be done at night, when traffic volumes are reduced, and may take several nights. The Construction Contractor will install temporary pavement markings as the new top layer is installed. The Construction Contractor will install permanent markings after the new pavement has aged for a week.

FINISHES. Construction of the new pavement wearing course and markings may complete the project, or construction may continue with shoulder barriers, signage, and landscaping.

3.24.2 TYPICAL CONSTRUCTION IMPACTS

This section describes construction impacts that are typical to all build alternatives. Temporary impacts to affected resources are described in Section 3.24.3.

- Traffic plan lane closures and lane narrowing would divert more traffic demand than would be added as a result of construction traffic.
- The existing roadway drainage would be disrupted during construction. The Construction Contractor would use silt fences, hay bales, and other measures to control runoff and erosion.
- Roadway widening would generate waste pavement and waste structural concrete that would either be recycled or placed in landfills.
- Most roadway widening activities would not increase the ambient highway noise level. Demolition and pile driving are inherently noisy and would be audible at nearby land uses, but these activities and their associated noise would also be of comparatively short duration compared to the paving activities.
- Much of the work involved in setting up the traffic control phases, demolishing existing structures, and final paving would take place at night, when traffic volumes are less. The night worksites would be illuminated, and the illumination may have an impact on adjacent land uses.
- Roadway projects would generate short-term pollutant noise increases and air emissions (fugitive dust emissions, mobile source emissions and asbestos) (see Section 3.24.3.13 for more detail regarding temporary impacts to air quality[1]).

3.24.3 CONSTRUCTION IMPACTS ON SPECIFIC RESOURCES

3.24.3.1 LAND USE

The information in this section is based on the following documents:

- *Community Impact Assessment* (CIA) (July 2017)
- *Section 4(f) Evaluation* (July 2017)

Construction would temporarily affect nearby land uses. Temporary construction impacts would include disruption of local traffic patterns and access to residences and businesses; increased traffic congestion; and increased noise, vibration, and dust. Although some businesses could

[1] Caltrans has not adopted the SCAQMD thresholds for air quality analyses.

close or relocate during a prolonged construction period, this impact would be localized and would not likely result in long-term changes in land use.

Table 3.24-1 lists the temporary direct and indirect impacts to parks and recreation facilities by the build alternatives.

The construction of the build alternatives would also result in temporary effects related to access at/around 17 parks and recreational facilities, which would be addressed in the Transportation Management Plan (TMP) and may include detours.

In addition, construction either of the build alternatives would result in temporary impacts to pedestrian and bicyclist access points to regional and local trails and bikeways (including the Los Angeles River Trail and the Rio Hondo Trail), as well as short-term closures of portions of the bikeways located in the vicinity of new and/or modified interchanges where construction activities would occur. Closures would be temporary and could range from a few days to several months in duration, depending on the project construction activities at a given trail crossing. Alternative/detour routes for the trails would be provided whenever a closure is needed. While these impacts would cease after completion of construction, measures are provided in Section 3.24.4.1 to minimize impacts and maintain connectivity and access for pedestrians and bicyclists during construction.

3.24.3.2 GROWTH

The information in this section is based on the following documents:

- *Community Impact Assessment* (CIA) (July 2017)
- *I-710 Railroad Goods Movement Study* (2009)
- *Model Input Data and Key Assumptions Technical Memorandum for Goods Movement* (2013)
- *I-710 Travel Demand Modeling Methodology Report* (2017)
- *I-710 EIR/EIS Initial Feasibility Analysis* (2009)

Construction activities related to the I-710 Corridor Project would occur over an extended time period, and construction of the build alternatives would result in an increase in construction-related (direct and indirect) jobs (see Section 3.3.1 for additional detail). These direct and indirect employee needs would likely be accommodated by the existing labor pool within the Study Area since the unemployment rate in the Study Area currently ranges from 2.8 percent to 8.1 percent. Therefore, because of the availability of workers in the local communities, construction of the build alternatives would not increase demand for population or housing in the Study Area and would not result in additional growth-related effects related to population and housing growth.

3.24.3.3 COMMUNITY IMPACTS

The information in this section is based on the following document:

- *Community Impact Assessment* (CIA) (July 2017)

BUILD ALTERNATIVES. Construction of the improvements for the build alternatives is anticipated to result in short-term access disruptions related to construction and therefore result in a short-term impact to community character and cohesion. Table 3.24-2 lists the short-term access disruptions to community facilities by the build alternatives.

Table 3.24-1: Temporary Direct and Indirect Impacts to Park and Recreational Facilities

Park	Address	Owner/ Operator	Direct or Indirect Impact
Cesar E. Chavez Park	401 Golden Ave.	City of Long Beach	During construction of the build alternatives, parts of Cesar E. Chavez Park may be temporarily closed to public access, to protect the safety of park users and the project construction workers. The closed areas would not be used for any construction activities and would be returned to public use in the same or better condition as when the areas were closed off to public access. Also during construction of Alternative 5C and Alternative 7, approximately 21.9 acres of Cesar E. Chavez Park would be required for a TCE (only 19 acres would be exclusively required for the TCE because 2.90 acres of the TCE area would be permanently incorporated), which includes 0.41 acre of land for a detour road in the park during construction of realigned Broadway. Under Alternative 5C and Alternative 7, the removal of the basketball courts west of Cesar E. Chavez Elementary School would be required. However, the basketball courts would be replaced following construction.
Wrigley Heights South (Planned)	Along Los Angeles River between Wardlow Rd. and I-405	City of Long Beach	During construction, the build alternatives would result in temporary impacts to access along Wardlow Rd.; however, a TMP (see CON-TR-1) would be prepared to minimize access impacts and provide detours and alternate access points. These impacts would cease once construction was complete.

Table 3.24-1: Temporary Direct and Indirect Impacts to Park and Recreational Facilities

Park	Address	Owner/ Operator	Direct or Indirect Impact
Tanaka Park	1400 W. Wardlow Rd.	City of Long Beach	During construction, the build alternatives would result in temporary impacts to access along Wardlow Rd.; however, a TMP (see CON-TR-1) would be prepared to minimize access impacts and provide detours and alternate access points. These impacts would cease once construction was complete.
The Fitting Studio Golf Facility	3701 Pacific Pl.	Private	During construction, the build alternatives would result in temporary impacts to access along Pacific Pl.; however, a TMP (see CON-TR-1) would be prepared to minimize access impacts and provide detours and alternate access points. These impacts would cease once construction was complete.
Rancho Rio Verde Riding Club	1000 W. Carson St.	Private	During construction, the build alternatives have the potential to result in temporary impacts to access on W. Carson St. However, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Coolidge Park	352 E. Neece St.	City of Long Beach	During construction, the build alternatives would result in temporary impacts to access along Artesia Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize access impacts and provide detours and alternate access points. These impacts would cease once construction was complete.
Maywood River Park	5000 Slauson Ave.	City of Maywood	During construction, the build alternatives would result in temporary impacts to access to the park from Slauson Ave.; however, a TMP (see CON-TR-1) would be prepared to minimize access impacts and provide alternate access points, if necessary. These impacts would cease once construction was complete.
Spane Park	14400 Gundry Ave.	City of Paramount	During construction, the build alternatives would result in temporary impacts to access along Rosecrans Ave.; however, a TMP (see CON-TR-1) would be prepared to minimize access impacts and provide detours and alternate access points. These impacts would cease once construction was complete.
Ralph C. Dills Park	6500 San Juan St.	City of Paramount	During construction, the build alternatives would result in temporary impacts to access along Rosecrans Ave.; however, a TMP (see CON-TR-1) would be prepared to minimize access impacts and provide detours and alternate access points. These impacts would cease once construction was complete.

Table 3.24-1: Temporary Direct and Indirect Impacts to Park and Recreational Facilities

Park	Address	Owner/ Operator	Direct or Indirect Impact
Meadows Park	15753 Gundry Ave.	City of Paramount	During construction, the build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Imperial Equestrian Center	5543 Leeds St., South Gate	Private	During construction, the build alternatives have the potential to result in temporary impacts to access along Imperial Hwy. west of the equestrian center; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours). These potential impacts would cease once construction was complete.
Parque Dos Rios	Adjacent to Los Angeles River, north of Imperial Hwy., and east of I-710	Watershed Conservation Authority	During construction, Alternative 5C would require the use of 0.26 acre from this park for a TCE. Also, both build alternatives have the potential to result in temporary impacts to access along Imperial Hwy.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete. See Appendix B, Section 4(f)/6(f) Evaluation, for more details on impacts at Parque Dos Rios.
Bandini Park	4725 Astor Ave.	City of Commerce	Alternative 5C and Alternative 7 would each require a 0.11-acre TCE and temporary closures of the park during construction to protect the safety of park visitors and project construction workers. Additionally, under both build alternatives, temporary closures of portions of the park would occur during construction to protect the safety of park visitors and project construction workers.
River Park	River Rd.	City of Cudahy	During construction, both Alternative 5C and Alternative 7 have the potential to result in temporary impacts to access to the park from Clara St.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide alternative access points, if necessary. These potential impacts would cease once construction was complete.
Clara Park	4835 Clara St.	City of Cudahy	During construction, both Alternative 5C and Alternative 7 have the potential to result in temporary impacts to access to the park from Clara St.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide alternative access points, if necessary. These potential impacts would cease once construction was complete.

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
I-710 = Interstate 710
TCE = Temporary Construction Easement
TMP = Transportation Management Plan

Table 3.24-2: Temporary Direct and Indirect Impacts to Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Richard N. Slawson Southeast Occupational Center	5500 Rickenbacker Rd., Bell	LAUSD	During construction, the I-710 Corridor Project Build Alternatives have the potential to result in temporary impacts to access along Rickenbacker Rd.; however, a TMP (see CON-TR-1) would be prepared to minimize impact and provide detours. These potential impacts would cease once construction was complete.
Atlantic Library	2269 Atlantic Blvd.	City of Commerce	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Atlantic Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impact and provide detours. These potential impacts would cease once construction was complete.
Whaley Middle School	14401 S. Gibson Ave.	Compton Unified School District	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Rosecrans Ave.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Dominguez High School	15301 S. San Jose Ave.	Compton Unified School District	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Kelly Elementary School	2320 E. Alondra Blvd.	Compton Unified School District	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Walton Middle School	901 W. Greenleaf Dr.	Compton Unified School District	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Greenleaf Dr.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
El Camino College Compton Center	1111 E. Artesia Blvd.	Compton Community College District	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Artesia Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Church of Christ	2301 E. Alondra Blvd., Compton	Private	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.

Table 3.24-2: Temporary Direct and Indirect Impacts to Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
New Brighter Day Baptist Church	1911 E. Alondra Blvd., Compton	Private	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
The Girls' and Boys' Town of Compton	15116 S. Gibson Ave., Compton	Private	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Gibson Ave.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Ellen Ochoa Learning Center	5027 Live Oak St.	LAUSD	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Florence Ave; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Fire Station No. 3	1222 Daisy Ave.	City of Long Beach	During construction, the build alternatives have the potential to result in temporary impacts to access along Anaheim St.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Fire Station No. 11	160 E. Market St.	City of Long Beach	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Long Beach Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Fire Station No. 12	6509 Gundry Ave.	City of Long Beach	During construction, the build alternatives have the potential to result in temporary impacts to access along Willow St.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Fire Station No. 13	2475 Adriatic Ave.	City of Long Beach	During construction, build alternatives have the potential to result in temporary impacts to access along Artesia Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Long Beach West Division Police Station	1835 Santa Fe Ave.	City of Long Beach	During construction, the build alternatives have the potential to result in temporary impacts to access along Pacific Coast Hwy.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.

Table 3.24-2: Temporary Direct and Indirect Impacts to Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Cesar Chavez Elementary School	730 W. 3rd St.	LBUSD	The school is not located adjacent to the I-710 mainline, and improvements to the downtown area would not result in direct impacts to this school. Under both build alternatives, temporary construction impacts would occur at the adjacent Cesar Chavez Park, with which the elementary school has a joint use agreement. Additionally, depending on the details of the joint use agreement, it may be necessary for the City of Long Beach and the LBUSD to amend the agreement based on the reconfigured park. See Appendix B, Section 4(f)/6(f) Evaluation, for more details on impacts at Cesar Chavez Park. A TMP (see CON-TR-1) would be prepared to minimize impacts at the park that may have indirect impacts on this school.
Zion Evangelical Church	W. 14th St.	Private	During construction, the build alternatives have the potential to result in temporary impacts to access along Anaheim St.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Foursquare Church	17th St.	Private	During construction, the build alternatives have the potential to result in temporary impacts to access along Pacific Coast Hwy.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Long Beach Bible Institute	455 E. Artesia Blvd., Long Beach	Private	During construction, Alternative 5C would have the potential to result in temporary impacts to access along Artesia Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Fire Station No. 3	930 S. Eastern Ave.	Los Angeles County Fire Department	During construction, the I-710 Corridor Project build alternatives (Options 3A and 3B), have the potential to result in temporary impacts to access to Eastern Ave. and Whittier Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide alternative access points, if necessary. These potential impacts would cease once construction was complete.
Lynwood High School	4050 Imperial Hwy.	LUSD	During construction, the build alternatives have the potential to result in temporary impacts to access along Imperial Hwy.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Lynwood Adult Education School	4050 Imperial Hwy.	LUSD	During construction, the build alternatives have the potential to result in temporary impacts to access along Imperial Hwy.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.

Table 3.24-2: Temporary Direct and Indirect Impacts to Community Facilities

Facility	Address	Owner/ Operator	Direct or Indirect Impact
Heliotrope Avenue Elementary School	5911 Woodlawn Ave.	LAUSD	During construction, the build alternatives have the potential to result in temporary impacts to access along Slauson Ave.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Maywood Elementary School	5200 Cudahy Ave.	LAUSD	During construction, the build alternatives have the potential to result in temporary impacts to access along Slauson Ave.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Apostolic Christian Church	Located along Alamo Ave.	Private	During construction, the build alternatives have the potential to result in temporary impacts to access along Slauson Ave.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Zamboni Middle School	15733 Orange Ave.	PUSD	During construction, the build alternatives have the potential to result in temporary impacts to access along Alondra Blvd.; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Fire Station 54	4867 Southern Ave.	Los Angeles County Fire Department	During construction, the build alternatives have the potential to result in temporary impacts to access along Firestone Blvd. and Southern Ave., northwest and west of the fire station; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction is complete.
Fire Station 57	5720 Gardendale St.	Los Angeles County Fire Department	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Imperial Hwy., and Garfield Ave. north of the fire station; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.
Hollydale Community Church	11801 Utah Ave.	Private	During construction, the I-710 Corridor Project build alternatives have the potential to result in temporary impacts to access along Imperial Hwy. which is north of this place of worship, and Garfield Ave., which is south of this place of worship; however, a TMP (see CON-TR-1) would be prepared to minimize impacts and provide detours. These potential impacts would cease once construction was complete.

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).
I-710 = Interstate 710
LAUSD = Los Angeles Unified School District
LUSD = Lynwood Unified School District
TMP = Transportation Management Plan

In addition, temporary jobs would be created by the construction of the build alternatives. As shown in Table 3.24-3, construction employment has two components, direct and indirect.

Table 3.24-3: Estimated Construction Employment for the I-710 Corridor Improvement Project

Estimated Capital Construction Costs[1]			Estimated Employment Generated[2]		
			Direct Jobs	Indirect Jobs	Total Jobs
Alternative 5C		$3.59 billion	34,238	65,647	99,885
Alternative 5C	Option 1A	$3.59 billion	34,238	65,647	99,885
	Option 2A	$3.62 billion	34,524	66,195	100,719
	Option 3A	$3.69 billion	35,192	67,475	102,667
Alternative 7		$6.32 billion	60,274	115,568	175,842
Alternative 7	Option 1B	$6.33 billion	60,369	115,750	176,119
	Option 3B	$6.44 billion	61,418	117,762	179,180

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).

[1] Capital construction costs from AECOM (Draft Project Report, April 2017). Amount does not include right of way or support costs.

[2] ARTBA estimates every $1 billion invested in highways supports 27,823 jobs, including 9,537 on-site construction jobs, 4,324 jobs in supplier industries, and 13,962 jobs throughout the rest of the economy.

ARTBA = American Road and Transportation Builders Association

I-710 = Interstate 710

The direct component is the number of construction jobs that are created to complete the I-710 Corridor Project. The indirect component is the additional employment and business activity that would be generated in the regional economy by the initial construction expenditure for the I-710 Corridor Project. Alternative 5C and its options would generate between 34,238 and 35,192 direct and between 65,647 and 67,475 indirect construction jobs, for a total of between 99,855 and 102,667 construction jobs. These construction jobs would generate temporary employment and revenues for both the local and regional economies. Alternative 7 and its options would generate the highest number of temporary jobs, for a total of between 175,842 and 179,180 construction jobs.

A TMP, as described in Chapter 2.0 and Section 3.24.4.5, would also be implemented for the I-710 Corridor Project in a cost-efficient and timely manner with minimal interference to the traveling public. The TMP, when implemented, would minimize construction-related traffic delay by the effective application of traditional traffic mitigation strategies and innovative combinations of public and motorist information, demand management, incident management, system management, alternative route strategies, construction strategies, and other strategies.

Additionally, temporary construction impacts would occur under each build alternative and would occur for property owners whose properties are fully acquired and require relocation. These property owners would be temporarily impacted during the relocation process.

Lastly, construction activities would temporarily affect environmental justice populations. Temporary construction impacts would include disruption of local traffic patterns and access to residences and businesses, increased traffic congestion, and increased noise, vibration and dust. However, construction activities would provide jobs, which would benefit local economies that include minority and low-income populations.

3.24.3.4 UTILITIES/EMERGENCY SERVICES

The information in this section is based on the following documents:

- *Utility Impacts Report* (November 2011)
- *North Utility Study Final Draft Preliminary Strategies Report* (September 2016)
- *Utility Relocation Strategies Report, Central Segment* (June 2016)
- *South End Utility Study* (November 2016)
- *Community Impact Assessment* (CIA) (July 2017)

BUILD ALTERNATIVES. Regarding emergency services, some adverse effects on fire protection and law enforcement protection service providers within the Study Area would occur under construction phases of either Alternative 5C or Alternative 7. There are nine fire stations and two police stations that are located within 0.5 mile of the I-710 Corridor Project improvements. The fire stations, that are within 0.5 mile of the proposed project improvements, include five stations in the City of Long Beach, one station in the community of East Los Angeles, two stations in the City of South Gate, and one station in the City of Vernon. The police stations, that are within 0.5 mile of the proposed project improvements, include two stations in the City of Long Beach.

The following describes impacts associated with both of the build alternatives (Alternative 5C and Alternative 7) relating to fire stations and police stations located within 0.5 mile of the proposed project improvements.

CITY OF LONG BEACH

- **FIRE STATION NO. 1 (100 MAGNOLIA AVE.)** – This fire station is not located adjacent to the I-710 mainline, and proposed project improvements would not result in direct or indirect impacts to this fire station.
- **FIRE STATION NO. 3 (1222 DAISY AVE.)** – This fire station is not located adjacent to the I-710 mainline, and improvements to Anaheim St. would not result in direct impacts to this

fire station. During construction, the I-710 Corridor build alternatives have the potential to result in temporary impacts to access along Anaheim St.; however, a TMP would be prepared to minimize impacts and provide detours. These impacts would occur only during project construction.

- **FIRE STATION NO. 11 (160 E. MARKET ST.)** – This fire station is not located adjacent to the I-710 mainline, and improvements to Long Beach Blvd. would not result in direct impacts to this fire station. However during construction, the I-710 Corridor build alternatives have the potential to result in temporary impacts to access along Long Beach Blvd. A TMP would be prepared to minimize impacts and provide detours. These impacts would occur only during project construction.
- **FIRE STATION NO. 12 (6509 GUNDRY AVE.)** – This fire station is not located adjacent to the I-710 mainline, and improvements to Willow St. would not result in direct impacts to this fire station. During construction, the I-710 Corridor build alternatives have the potential to result in temporary impacts to access along Willow St.; however, a TMP would be prepared to minimize impacts and provide detours. These impacts would occur only during project construction.
- **FIRE STATION NO. 13 (2475 ADRIATIC AVE.)** – This fire station is not located adjacent to the I-710 mainline, and improvements to Artesia Blvd. would not result in direct impacts to this fire station. During construction, the I-710 Corridor build alternatives have the potential to result in temporary impacts to access along Artesia Blvd.; however, a TMP would be prepared to minimize impacts and provide detours. These impacts would occur only during project construction.
- **LONG BEACH SOUTH DIVISION – POLICE STATION (400 W. BROADWAY ST.)** – This police station is not located adjacent to the I-710 mainline, and proposed project improvements would not result in direct or indirect impacts to this fire station.
- **LONG BEACH WEST DIVISION – POLICE STATION (1835 SANTA FE AVE.)** – This police station is not located adjacent to the I-710 mainline, and improvements to Pacific Coast Hwy. would not result in direct impacts to this station. During construction, the I-710 Corridor build alternatives have the potential to result in temporary impacts to access along Pacific Coast Hwy.; however, a TMP would be prepared to minimize impacts and provide detours. These impacts would occur only during project construction.

COMMUNITY OF EAST LOS ANGELES

- **FIRE STATION NO. 3 (930 S. EASTERN AVE.)** – Improvements to the I-710 mainline would not result in direct impacts to this fire station. In addition, this fire station is not located along arterials impacted as a result of the I-710 Corridor Project build alternatives. Therefore, the I-710 Corridor Project build alternatives would not result in direct impacts to this fire station. During construction, the I-710 Corridor build alternatives have the potential to result in temporary impacts to Eastern Ave. and Whittier Blvd., however, a

TMP would be prepared to minimize impacts and provide alternative access points, if necessary. These potential impacts would occur only during project construction.

CITY OF SOUTH GATE

- **FIRE STATION NO. 54 (4867 SOUTHERN AVE.)** – This fire station is not located adjacent to the I-710 mainline, and improvements to Southern Ave. would not result in direct impacts to this fire station. During construction, the I-710 Corridor build alternatives have the potential to result in temporary impacts to access along Firestone Blvd. and Southern Ave.; however, a TMP would be prepared to minimize impacts and provide detours. These impacts would occur only during project construction.

- **FIRE STATION NO. 57 (5720 GARDENDALE ST.)** – This fire station is not located adjacent to the I-710 mainline, and improvements to Imperial Hwy. and Garfield Ave. would not result in direct impacts to this fire station. During construction, the I-710 Corridor build alternatives have the potential to result in temporary impacts to access along Imperial Hwy. and Garfield Ave.; however, a TMP would be prepared to minimize impacts and provide detours. These impacts would occur only during project construction.

Regarding utilities, both Alternatives 5C and 7 would result in indirect and temporary impacts to a number of utility providers. There are a total of 68 service providers in the Study Area. These providers include, but are not limited to, the Southern California Edison (SCE) and their 220-kilovolt and 66-kilovolt distribution and transmission lines, Verizon Business and Time Warner fiber optic and cable utility lines, and twelve-duct sets of underground AT&T lines, among several other utility types and providers. The alternatives would require various relocations of utility alignments. Impacts associated with these relocations would include traffic disruption during construction, the need for construction staging areas and temporary construction easements, the reconstruction of city streets from trenching, and the presence of construction equipment and dump trucks during construction. These impacts would be minimized with implementation of the TMP discussed below in Measure CON-TR-1 in Section 3.24.4.

- **ALTERNATIVE 5C.** Construction activities that require closures of travel lanes and ramps under Alternative 5C could generally result in traffic delays that could affect the ability of fire, law enforcement, and emergency service providers to meet response time goals within the Study Area. Because specific construction staging plans have not been developed yet, details regarding the location of or duration of traffic delays due to lane closures or ramp closures beyond those discussed above are not available.

- **ALTERNATIVE 7.** Construction activities that require closures of travel lanes and ramps would also occur under Alternative 7. Therefore, the implementation of Alternative 7 could also result in traffic delays that could affect the ability of fire, law enforcement, and emergency service providers to meet response time goals within the Study Area.

Because specific construction staging plans have not been developed yet, details regarding the location of or duration of traffic delays due to lane closures or ramp closures beyond those discussed above are not available.

3.24.3.5 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

The information in this section is based on the following documents:

- *Freeway Traffic Operations Analysis Report* (March 2017)
- *Intersection Traffic Impact Analysis Report* (March 2017)

During construction, the I-710 Corridor Project would result in temporary impacts to traffic circulation due to traffic diversions resulting from temporary closures to local roadways, sidewalks and bikeways, and freeway lanes and ramps. As is typical with major highway improvements, many of the details of the construction process would be determined during the design phase of the project. An analysis of the potential impacts to traffic and transportation, including to pedestrian and bicycle facilities, is included in the *Intersection Traffic Impact Analysis Report* (March 2017). The analysis discusses the levels of service expected during construction and provides a general description of anticipated ramp closures during construction.

Additionally, an evaluation of damage to the pavement surface on local roadways that could occur due to project-related construction traffic would be completed. Increased vehicle trip and the movement of heavy equipment along existing roadways would likely result in increased wear-and-tear to pavement surfaces in the vicinity of the project construction area. New pavement would be provided on local arterials that connect to or cross over (or under) I-710 where such roadways would be directly affected by project construction. For those roadways that could be used as temporary detour routes during construction, there is insufficient design and construction information at this time to identify the routing or duration of any such detours.

A TMP would be implemented for the I-710 Corridor Project in order to construct the project in a cost-efficient and timely manner with minimal interference to the traveling public. The TMP would also address changes in pedestrian and bicycle circulation and provide measures to minimize the adverse effects of construction activities on pedestrian and bicycle travel within the Study Area.

3.24.3.6 VISUAL/AESTHETICS

The information in this section is based on the following documents:

- *I-710 Corridor Project Visual Impact Assessment* (VIA) (February 2017)
- *I-710 Corridor Aesthetic Master Plan* (February 2015)

ALTERNATIVE 5C. Short-term visual impacts under Alternative 5C would occur to sensitive viewers during the construction period and include views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of the I-710 widening and structures, construction vehicles, and construction staging areas. Sensitive viewers adjacent to the I-710 Corridor Project would experience elevated visual impacts, including light and glare effects if artificial lighting is used during construction. Construction activities are temporary, and the adverse visual impacts related to construction activity would cease after completion of construction. The effects of vegetation clearing would gradually improve over time as landscaping for the I-710 Corridor Project matures.

ALTERNATIVE 7. Short-term visual impacts under Alternative 7 would include similar effects as described above under Alternative 5C, but would also include construction of the freight corridor. As the freight corridor would be an elevated structure for the majority of the I-710 Corridor Project, visual impacts would be greater during construction than those of Alternative 5C due to the more extensive amount of construction activities and a longer duration of construction.

3.24.3.7 CULTURAL RESOURCES

The information in this section is based on the following technical reports:

- *Supplemental Historic Property Survey Report* (April 2017)
- *Supplemental Historical Resources Evaluation Report* (April 2017)
- *Supplemental Archaeological Survey Report* (February 2017)

Impacts to cultural resources may result from construction of any of the build alternatives. Impacts to cultural resources are considered permanent, not temporary, as discussed in Section 3.7 and in Chapter 4.0, *CEQA*.

3.24.3.8 HYDROLOGY AND FLOODPLAIN

This section is based on the following documents:

- *Flood Control Facilities Report* (January 2017)
- *Water Quality Assessment Report for the Interstate 710 Corridor Project* (March 2017)
- *Preliminary On-Site Hydrology Report* (December 2016)

ALTERNATIVE 5C. Construction equipment would be operated within the Los Angeles River and Compton Creek 100-year floodplains during construction of the bridge and levee improvements discussed under permanent impacts in Section 3.8. Following the completion of construction

activities within the 100-year floodplain, the disturbed area would be returned to the existing condition.

Construction activities have the potential to impact the natural and beneficial values of the Los Angeles River and Compton Creek by impacting water quality and jurisdictional waters. As discussed in Section 3.24.3.9, potential impacts to water quality could occur during construction of Alternative 5C due to increased erosion or accidental spills. However, BMPs, including erosion control measures, would be implemented during the construction of Alternative 5C to reduce impacts to water quality. In addition, as discussed in Section 3.24.3.17, prior to clearing or construction, highly visible barriers (such as orange construction fencing, stakes, or flags) would be installed around riparian/riverine vegetation to be preserved that would minimize impacts to jurisdictional waters during construction. Therefore, with the measures presented in Sections 3.24.4.9 and 3.24.4.17, construction of Alternative 5C would not result in short-term adverse impacts to natural and beneficial floodplain values.

ALTERNATIVE 7. The temporary impacts discussed above under Alternative 5C would be applicable to floodplain impacts to the Los Angeles River, Compton Creek, and the Rio Hondo Channel under Alternative 7. However, because more improvements within the 100-year floodplain are proposed under Alternative 7 than under Alternative 5C, a greater area of the floodplain would be temporarily impacted for a longer duration under Alternative 7. Temporary construction impacts that are unique to Alternative 7 would occur to the Atlantic Blvd. on-ramp to northbound I-710 within the Los Angeles River floodway. Erosion control measures and BMPs similar to those described above for Alternative 5C would reduce impacts to water quality in similar ways when implemented under Alternative 7.

3.24.3.9 WATER QUALITY AND STORMWATER RUNOFF

This section is based on the following document:

- *Water Quality Assessment Report* (March 2017)

ALTERNATIVE 5C. Evaluation of construction impacts focus on the effects to existing water quality associated with stormwater runoff from the construction site. This construction work involves the removal of the existing structures and construction of the new highway alignments and related improvements. The construction phase of the project has the potential to impact the present and future water quality of the receiving waters through the transport of pollutants and mobilization of construction equipment within waterways. The primary impact locations having the greatest risk to water quality are areas at or adjacent to the highway and stormwater discharge points. This includes working on structures that are located within the Los Angeles River channel.

Events such as the accidental discharge of waste products produced during construction are of primary concern. Pollutants can range from trash left on the structures to petroleum hydrocarbons that have spilled in active construction areas and construction staging areas. Equipment that is operated in the vicinity of the channels within the construction area may leak petroleum compounds and contaminate areas of the work site. In addition, staging areas utilized for the fueling of equipment also are subject to this risk. Other concerns for discharge of hazardous materials that might degrade water quality include areas set aside for the cleaning of equipment over the course of the construction period. Elevated levels of pH as well as suspended and dissolved solids are water quality parameters of concern.

Construction sites tend to disturb soil and promote erosion of channel banks. The maximum total disturbed soil area for Alternative 5C would be 1,424 acres. Under Design Options 1A, 2A, and 3A, the disturbed soil area would consist of 1,524.2 acres, 1,518.6 acres, and 1,521.8 acres, respectively. At some locations, the beds and banks of the affected channel structures would be modified during construction of replacement bridges. Additionally, although the Los Angeles River and related channels are currently concrete-lined, soil erosion from nearby areas could allow for the transport of solid material through surface runoff into the channels, increasing total suspended solid (TSS) levels.

Alternative 5C requires the partial removal and demolition of some existing structures. Alternative 5C would have some construction over and adjacent to the local water bodies and would disturb existing channel bottom sediments. Any construction work within the channel areas would likely result in sediment resuspension and dispersal into the water column of the channels. However, work within any channels would be limited to non-flood season as much as practicable. Additionally, coordination with the National Weather Service and the USACE regarding storm and flood events would occur. A safety plan for flood events would be in place, including plans for evacuation of personnel and equipment in the event of storm flows or an anticipated storm event.

For the entire length of the I-710 Corridor Project, two primary levels of construction would occur: heavy construction that would disturb sediment (such as excavation of the channel bottom or foundation demolition) and light construction with minimal resuspension effects (e.g., pile driving for the erection of false work). Regardless of the type of construction activities, some resuspension of fine-grained bottom sediments would occur.

Anticipated construction activities within the Los Angeles River channel include the following:

- Excavation of existing channel levees
- Demolition of existing bridge structures
- Installation of cofferdams and/or shoring

- Pile driving within the existing channel or tidal waters
- Securing of floating work platforms to the existing channel bottom
- Erection of construction forms
- Placement of structural concrete
- Finishing of bridge structures, including painting, sandblasting, and cleanup

As required by the Construction General Permit, a Risk Level Determination of 2 was developed for each segment or subsegment. The sediment risk was calculated to be *medium* and, the receiving water risk level was determined to be *low* for the Los Angeles River Reach 2 and *high* for the Los Angeles River Reach 1, the Los Angeles River Estuary, and Dominguez Channel based on the information regarding TMDL and beneficial uses in the Caltrans Water Quality Planning Tool. The Risk Determination Spreadsheet was used to calculate the combined project risk level for each segment and subsegment using the found information. Therefore, the combined risk level for the project was determined to be Risk Level 2. The construction activity that has the greatest potential to impact groundwater involves the removal and disposal of groundwater during the excavation required for the structural I-710 foundations. The construction of support structures may require the use of either the cast-in-drilled-hole (CIDH) or cast-in-steel-shell (CISS) methods. In the CIDH method, a hole is drilled, filled with slurry to prevent cave-ins, and then pumped with concrete (which displaces the slurry and is reused). In areas of high groundwater, the hole is expected to passively fill with groundwater, which would be removed prior to filling the hole with slurry and concrete (i.e., dewatering). The removed groundwater would then be disposed of according to the selected method. This construction activity is not expected to affect groundwater movement because of the use of slurry to prevent caving and groundwater movement. The amount of dewatering necessary would be determined by the Construction Contractor's method of construction and relative groundwater elevation.

During construction, applicable construction site BMPs would be incorporated into the construction documents, including temporary soil stabilization, sediment and tracking control, and waste management. Groundwater removed during dewatering operations would be disposed of off-site at approved locations or treated on site and incorporated into the grading operations. These requirements are specified in the measures provided in Section 3.24.4.9, below.

With the incorporation of the proposed site-specific BMPs during the construction phase of the I-710 Corridor Project, no adverse impacts to water quality due to construction of the proposed improvements are anticipated.

ALTERNATIVE 7. Water quality impacts during construction of Alternative 7 would be similar to those discussed above under Alternative 5C. However, temporary water quality impacts would be greater because more improvements are proposed under Alternative 7; therefore, there

would be more disturbed soil area and more work within and adjacent to the water bodies within the project area. The disturbed area under Alternative 7 would consist of 1,640.7 acres, and under Design Options 1B and 3B, the disturbed soil area would consist of 1,730.2 acres and 1,738.7 acres, respectively. Design Option 7ZE would not change construction practices and, therefore, would feature the same disturbed soil area as Alternative 7.

3.24.3.10 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

The information in this section is based on the following documents:

- *Geotechnical Final Report* (January 2010)
- *Geotechnical Memorandum* (Department of Transportation Division of Engineering Services, Geotechnical Service, May 2010) (for the northern portion of the Study Area)
- *Water Quality Assessment Report* (WQAR) (March 2017) (referenced for evaluating temporary erosion-related impacts)

BUILD ALTERNATIVES. Temporary impacts are related to construction activities. Each of the build alternatives would alter existing landforms due to grading and construction activities. Construction activities may also temporarily disturb soil outside the facility footprint, but within the project right of way, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased possibility of soil erosion.

During construction of the proposed project, excavated soil would be exposed, and there would be an increased potential for soil erosion compared to existing conditions. Additionally, during a storm event, soil erosion could occur at an accelerated rate. Worker safety hazards resulting from erosion during construction activities would be minimized with implementation of the requirements outlined in the General Construction Permit and the erosion and sediment control BMPs identified in the Storm Water Pollution Prevention Plan (SWPPP). The proposed project would be required to adhere to the requirements of the General Construction Permit and implement erosion and sediment control BMPs specifically identified in a project SWPPP in order to keep sediment from moving off site into receiving waters. Refer to Section 3.24.3.9 for additional information regarding construction-related water quality issues and mitigation.

Construction activities for the build alternatives could be impacted by ground motion from seismic activities if an earthquake were to occur during construction. Additionally, in the event of a seismic event, liquefaction could occur as a result of shallow groundwater mixing with surface soils. Implementation of safe construction practices and compliance with California Department of Transportation (Caltrans) and California Division of Occupational Safety and Health Administration (Cal-OSHA) requirements would minimize any impacts to worker safety during construction activities.

These temporary impacts would occur for both of the build alternatives, but would be greater under Alternative 7 due to the freight corridor component of that alternative.

3.24.3.11 PALEONTOLOGY

The information in this section is based on the following document:

- *Paleontological Resources Identification and Evaluation Report* (June 2017)

BUILD ALTERNATIVES. Direct impacts to paleontological resources would result from construction of any of the build alternatives but not from operation of the facility itself. Impacts to paleontological resources are considered permanent, not temporary, as discussed in Section 3.11 of this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS).

3.24.3.12 HAZARDOUS WASTE/MATERIALS

The information in this section is based on the following document:

- *Initial Site Assessment* (ISA) (March 2017)

BUILD ALTERNATIVES. Hazardous materials may be encountered during excavation and construction activities for both Alternative 5C and Alternative 7. Any contamination encountered during construction and excavation activities for the build alternatives would be properly handled, removed, remediated, and/or disposed of according to all applicable regulations. For these reasons, implementation of the build alternatives would not increase public health risks related to hazardous waste and materials in the short term and would decrease these risks in the long term as a result of the cleanup and remediation of any hazardous waste contamination on properties that would be acquired for the project.

To ensure that no risk is posed to project construction workers and the general public during construction, any property acquired must be free of hazardous wastes prior to the start of construction. Thus, if a build alternative is selected for implementation, each property to be acquired would require testing in order to characterize specific soil and/or groundwater contaminants on the property. If contaminated soils and/or groundwater contaminants are identified through site characterization, then a site-specific hazardous waste remediation plan would be developed for the appropriate removal and disposal of contaminated soil and/or groundwater. In addition, a remediation plan and site closure plan, if required, would be implemented to clean up the site and provide for any subsequent monitoring of the site to ensure that the contamination has been remediated below environmental regulatory thresholds.

Contamination may be encountered during construction and excavation activities at those properties that require additional remediation; residual contamination may be encountered

during construction and excavation activities at those properties that have received regulatory agency closure; and waste materials may be encountered during construction and excavation activities at those properties that operated as waste disposal sites. Specifically, relocation of several railroad lines near Washington Blvd. would be required as part of both alternatives of the I-710 Corridor Project. Sampling for contaminants commonly found in association with railroads will be conducted as total petroleum hydrocarbons, lead, and arsenic are likely to be present at levels that would require action once the soil is encountered or moved. During grading or excavation within the railroad right of way, hazardous concentrations of the contaminants listed above could be released into the environment and affect construction workers.

A soil investigation will be conducted prior to any soil excavation within the I-710 Corridor Project. The purpose of the investigation would be to assess the potential presence of hazardous contaminants and to determine disposal options if necessary for the contaminated soil. The soil investigation would consist of an aerially deposited lead (ADL) investigation (along I-710) and investigation for other contaminants of concern due to impacts from adjoining properties. Considering the history and nature of activities conducted at some of the sites located within the ISA study area, contaminated groundwater may be encountered during construction. Dewatering of contaminated groundwater during construction of both Alternatives 5C and 7 could impair adjacent surface waters. A groundwater evaluation will be conducted to determine the location of any groundwater contamination.

Site investigations would be undertaken on all hazardous materials sites within the right of way for either of the build alternatives to determine whether hazardous materials are present on site. Hazardous material spills associated with any acquired property would be removed and remediated prior to construction of either of the build alternatives.

Elevated concentrations of ADL may be present along existing roadways that would be modified by either of the build alternatives. During grading activities, there is the possibility of hazardous concentrations of ADL to be released into the environment and affect construction workers. A soil investigation will be conducted to determine the extent of ADL-contaminated soils adjacent to I-710.

Structures that would be removed or modified as part of either of the build alternatives could contain asbestos-containing materials (ACM), polychlorinated biphenyls (PCBs), and/or lead-based paint (LBP), which could be released into the environment if not properly handled and removed for disposal. A predemolition survey for ACM and LBP will be conducted to determine the presence of ACM and LBP materials within structures to be demolished.

Preliminary findings regarding utilities that may be potentially impacted by the I-710 Corridor Project including their relocation strategies can be found in the various utility studies and Section 3.4 of this RDEIR/SDEIS. These utilities include petroleum pipelines that would require

relocation and/or would be exposed during construction. Based on the presence and contents of these pipelines, it is likely that during relocation and/or construction, impacts to the subsurface could be encountered. Impacts to the subsurface encountered from these pipelines would be the responsibility of the pipeline owner.

Any transformers that would be removed or relocated during construction of either of the build alternatives would be considered PCB-containing unless labeled or tested otherwise. Leaking transformers that impact adjacent soils would be a concern during project construction because they could affect construction workers and the environment.

Yellow traffic stripe and pavement-marking materials (paint, thermoplastic, permanent tape, and temporary tape) that would be removed as part of the project could contain elevated concentrations of metals such as lead. Removal of these materials during project construction could affect construction workers and the surrounding environment. Yellow tape and paint would be tested for metals, such as lead, prior to removal and disposal.

California Government Code 4216 requires that any operator or excavator call Underground Services Alert of California ("DigAlert") two working days before any planned excavation by dialing 811. Delineation of the proposed excavation area is mandatory. The area to be excavated should be marked with water soluble or chalk-based white paint on paved surfaces or with other suitable markings such as flags or stakes on unpaved areas prior to calling DigAlert.

When the preferred alternative is selected, and its initial implementation phase identified, an updated ISA and preliminary site investigation (PSI) would be conducted in consultation with Caltrans staff during the preparation of the Final EIR/EIS for the Initial Phase of the Preferred Alternative for those properties identified in the ISA as an environmental concern to the Initial Phase of the I-710 Corridor Project. A parcel-by-parcel investigation would be performed for properties that have been identified as environmental concerns and have the potential to impact the initial phase of the project and, hence, help refine the cost of the initial phase for programming and funding. These investigations will be conducted between the RDEIR/SDEIS and the Final EIR/EIS because, due to the large number of properties of environmental concern for both build alternatives, hazardous waste concerns will not be a differentiating factor in identifying a preferred alternative.

Previously unknown contaminants could be encountered at the properties to be acquired as part either of the build alternatives due to poor housekeeping, improperly stored chemicals, or past spills. If not handled properly, these contaminants could affect construction workers and the surrounding environment.

ALTERNATIVE 5C. Hazardous materials may be encountered during excavation and construction activities for Alternative 5C.

The database review identified 118 site listings associated with the parcels within Alternative 5C, 17 of which would pose a potential environmental concern during construction of Alternative 5C. Seven of these sites had on-line file information available for review; the remaining ten listings identified for Alternative 5C require additional information (i.e., file review) to evaluate potential impacts to the I-710 Corridor Project, due to the lack of information available in the agency database reports. The remaining ten listings that require additional information associated with Alternative 5C include:

- Parcel #06101, #06102, and #06103
- Parcel #12220 and #12221
- Parcel #14448
- Parcel #15233, #15231, and #15232
- Parcel #15234
- Parcel #15235
- Parcel #18218–#18226 and #18243–#18268
- Parcel #19116
- Parcel #40105
- Parcel #40106

Additional review of information in agency files is required to evaluate potential impacts to the proposed project from the sites. Once the preferred design alternative has been selected, these file reviews would be completed as part of the focused parcel-by-parcel study.

During the database review, ten solid waste sites were identified within or potentially within the proposed I-710 Corridor Project disturbance limits. These sites are previously discussed in Table 3.12-5 in Section 3.12, Hazardous Waste/Materials. Waste materials may be encountered during construction and/or excavation activities at those properties that operated as waste disposal sites and therefore, these sites are considered to be sites of potential environmental concern.

ALTERNATIVE 7. Temporary impacts during construction of Alternative 7 would be similar to those discussed above for Alternative 5C. However, different database sites of potential environmental concern would be encountered during construction of Alternative 7. During the database review, 126 listings were identified that were associated with the parcels within Alternative 7. Of these listings, 19 sites were identified and considered to represent an environmental concern to the project disturbance limits during construction under Alternative 7. However, online agency file review information was only available for ten of the 19 sites. Additional review of information in agency files is required to evaluate potential impacts to the

proposed project from the remaining nine sites. These nine sites are associated with the following parcel numbers:

- Parcel #06101, #06102, and #06103.
- Parcel #12220 and #12221
- Parcel #14448
- Parcel #15233, #15231, and #15232
- Parcel #15234
- Parcel #15235
- Parcel #18218
- Parcel #19116
- Parcel #18218, #18219–#18226, and #18243–#18266

Once the preferred design alternative has been selected, these file reviews would be completed as part of the focused parcel-by-parcel study.

A total of 32 adjoining properties of known or potential concern were identified during the agency database review, and could be impacted during construction of either of the build alternatives. Information is available in on-line databases for 15 of these 32 listed sites. The remaining 17 adjoining properties identified during the agency database review are also considered to have the potential to create an environmental concern to the I-710 Corridor Project. Additional information is required (i.e., file review) to determine the potential impact from these 17 adjoining properties, which include:

- 970 Chester Pl., Long Beach
- 620 San Francisco Ave., Long Beach
- 1250 West 7th St., Long Beach
- 929 West Anaheim St., Long Beach
- 702 West Anaheim St., Long Beach
- 960 De Forest Ave., Long Beach
- 100 West Victoria St., Long Beach
- 1500 Hughes Way, Long Beach
- 19402 Susana Rd., Compton
- 157 East Stanley St., Compton

- 2820 East Alondra Blvd., Compton
- 6300 Alondra Blvd., Paramount
- 5211 Southern Ave., South Gate
- 9510 Garfield Ave., South Gate
- 4000 East Washington Blvd., City of Commerce
- 4400 Washington Blvd., City of Commerce
- 1365 South Eastern Ave., City of Commerce

3.24.3.13 AIR QUALITY

CONSTRUCTION IMPACTS. The information in this section is based on the following document:

- *Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (AQ/GHG/ HRA Technical Study) (June 2017)

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment also are anticipated and would include carbon monoxide (CO), nitrogen oxide (NO_X), volatile organic compounds (VOCs), particulate matter less than ten microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and toxic air contaminants such as diesel particulate matter (DPM). Ozone is a regional pollutant that is derived from NO_X and VOCs in the presence of sunlight and heat.

Site preparation and roadway construction would involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. If not properly controlled, these activities would temporarily generate PM_{10}, $PM_{2.5}$, and small amounts of CO, sulfur dioxide (SO_2), NO_X, and VOCs. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local roadways, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

According to the conceptual construction schedule used to develop the construction emissions analysis, some of the conceptual construction phases would take more than five years to complete. However, construction would not occur at any one location for more than five years. Therefore, construction-related emissions may be considered temporary; subsequently, any construction-related $PM_{2.5}$ and PM_{10} emissions due to this project were not included in the hot-spot analysis. This project would comply with the South Coast Air Quality Management District (SCAQMD) Fugitive Dust Rule for fugitive dust during construction of this project. In addition, per the Transportation Conformity Rule, the project would be required to comply with any $PM_{2.5}$ and PM_{10} control measures in the State Implementation Plan. Therefore, excavation, transportation, placement, and handling of excavated soils would result in no visible dust migration. In addition, a water truck or tank would be available within the project limits at all times to suppress and control the migration of fugitive dust from earthwork operations.

Construction activities for large development projects are estimated by the United States Environmental Protection Agency (EPA) to add 1.2 tons of fugitive dust per acre of soil disturbed per month of activity. If water or other soil stabilizers are used to control dust, the emissions can be reduced by up to 50 percent. The Caltrans Standard Specifications (Section 18) pertaining to dust minimization requirements require use of water or dust palliative compounds and would reduce potential fugitive dust emissions during construction.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_X, VOCs, and some soot particulate (PM_{10} and $PM_{2.5}$) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

SO_2 is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Off-road diesel fuel meeting Federal standards can contain up to 5,000 parts per million (ppm) of sulfur, whereas on-road diesel is restricted to less than 15 ppm of sulfur. However, under California law and California Air Resources Board (ARB) regulations (Title 13, California Code of Regulations, [CCR] Sections 2281-2285), off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel, so SO_2 related issues due to diesel exhaust would be minimal.

ODORS. Some phases of construction, particularly asphalt paving, would result in short-term odors in the immediate area of paving sites. Such odors would be quickly dispersed below detectable thresholds as distance from the sites increases.

NATURALLY OCCURRING ASBESTOS. The project is located in Los Angeles County, which is among the counties listed as containing serpentine and ultramafic rock. However, the project site is not located within the region of the County known to contain serpentine or ultramafic rock.

Therefore, the impact from naturally occurring asbestos during project construction would be minimal to none.

CONSTRUCTION EMISSIONS. As analyzed in the AQ/GHG/HRA Technical Study (2017), the emissions of criteria air pollutants and greenhouse gases from construction activities were estimated using a modified version of the Road Construction Emissions Model (Version 8.1.0), developed by Sacramento Metropolitan Air Quality Management District (SMAQMD) (hereafter referred to as the "modified SMAQMD Model"). The model can be used to estimate both vehicle/ equipment exhaust and fugitive dust. The methodology used for estimating fugitive dust emissions is a simplified method that is based on the maximum area disturbed per day. The vehicle exhaust emissions are estimated using the equipment activity data and emission factors derived from the ARB OFFROAD and EMFAC2014 model runs. Emission factors for on-road vehicles used in the SMAQMD Model are specific to the Sacramento area. Therefore, these were replaced with emission factors specific to Los Angeles County. Further, the SMAQMD Model stops at calendar year 2025. For any construction years beyond 2025, appropriate emission factors from ARB were incorporated as discussed in Appendix B of the AQ/GHG/HRA Technical Study (2017).

The construction of the project was analyzed for seven segments (created for preliminary engineering of the project) along the 18-mile length of the project. Construction may or may not occur on different segments (or parts of these segments) over the same time interval. However, to have a conservative estimate of maximum daily emissions, construction emissions were calculated for a "worst-case" scenario that assumed, among other things, that construction would occur simultaneously in the seven segments. Details about the assumptions, method, and results of this "worst-case" construction scenario may be found in Appendix B of the AQ/GHG/HRA Technical Study (2017).

Tables 3.24-4 summarize the peak-day emissions of criteria pollutants for both build alternatives for the "worst-case" construction scenario. These emissions would not occur in one location, but would be spread out along the I-710 Corridor among the seven segments. It should be noted that it would be extremely unlikely that the worst-case construction scenario could occur.

Table 3.24-4: Criteria Pollutant Mass Emissions for Construction

Pollutant	Peak Day (all segments total) (lbs/day)		Peak Day (maximum single segment) (lbs/day)		SCAQMD CEQA Threshold (lbs/day)
	Alternative 5C	Alternative 7	Alternative 5C	Alternative 7	
NO_X	1,200	1,200	280	240	100
CO	1,100	1,100	220	200	550
PM_{10}	680	800	190	240	150
Exhaust	49	47	3.8	3.6	-

Fugitive Dust	630	750	180	240	-
$PM_{2.5}$	180	200	42	53	55
Exhaust	45	42	3.4	3.3.	-
Fugitive Dust	130	160	38	50	-
VOC	120	130	27	14	75
SO_x	2.9	2.9	.50	0.49	150

Source: Ramboll-Environ. *Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study, Appendix B* (June 2017).
Notes: Emissions are from construction equipment/activities. Emissions estimates are conservative in that they do not assume use of green construction equipment. Values for exhaust and fugitive dust are not peak values, but represent the constituents of PM_{10} and $PM_{2.5}$ on the peak day. Assumed that all seven segments are constructed simultaneously (maximum construction duration 87.4 months). All numbers are rounded to an integer value.

CEQA = California Environmental Quality Act
CO = carbon monoxide
I-710 = Interstate 710
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
PM_{10} = particulate matter less than ten microns in diameter
SCAQMD = South Coast Air Quality Management District
SO_x = sulfur oxides
VOC = volatile organic compound

The single-segment peak-day emissions may be spread out along the entire length of that segment (1.4 to 4.7 miles). Construction phasing and additional mitigation measures, if feasible, would reduce peak-day emissions. Construction minimization measures are discussed in Section 3.24.4.13.

3.24.3.14 NOISE

The information in this section is based on the following documents:

- *Traffic Noise Study Report* (May 2016)
- *Noise Abatement Decision Report* (June 2017)

CONSTRUCTION VIBRATION. Vibration generated by construction equipment can result in varying degrees of ground vibration, depending on the equipment. The operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings situated on soil near the active construction area respond to these vibrations, which range from imperceptible to low rumbling sounds with perceptible vibrations and slight damage at the highest vibration levels. Typically, construction-related vibrations do not reach vibration levels that would result in damage to nearby structures. However, old and fragile structures would require special consideration to avoid damage.

The Caltrans *Transportation- and Construction-Induced Vibration Guidance Manual* (Caltrans, September 2013) shows that the vibration damage threshold for continuous/frequent intermittent sources is 0.25 peak particle velocity (PPV) (inches per second [in/sec]) for historic and sensitive buildings, 0.3 PPV (in/sec) for old residential structures, and 0.5 PPV (in/sec) for new residential structures. The same manual shows the vibration annoyance potential criteria to be barely perceptible at 0.01 PPV (in/sec), distinctly perceptible at 0.04 PPV (in/sec), strongly

perceptible at 0.1 PPV (in/sec), and severe at 0.4 PPV (in/sec). Both of these thresholds were used to evaluate short-term, construction-related groundborne vibration.

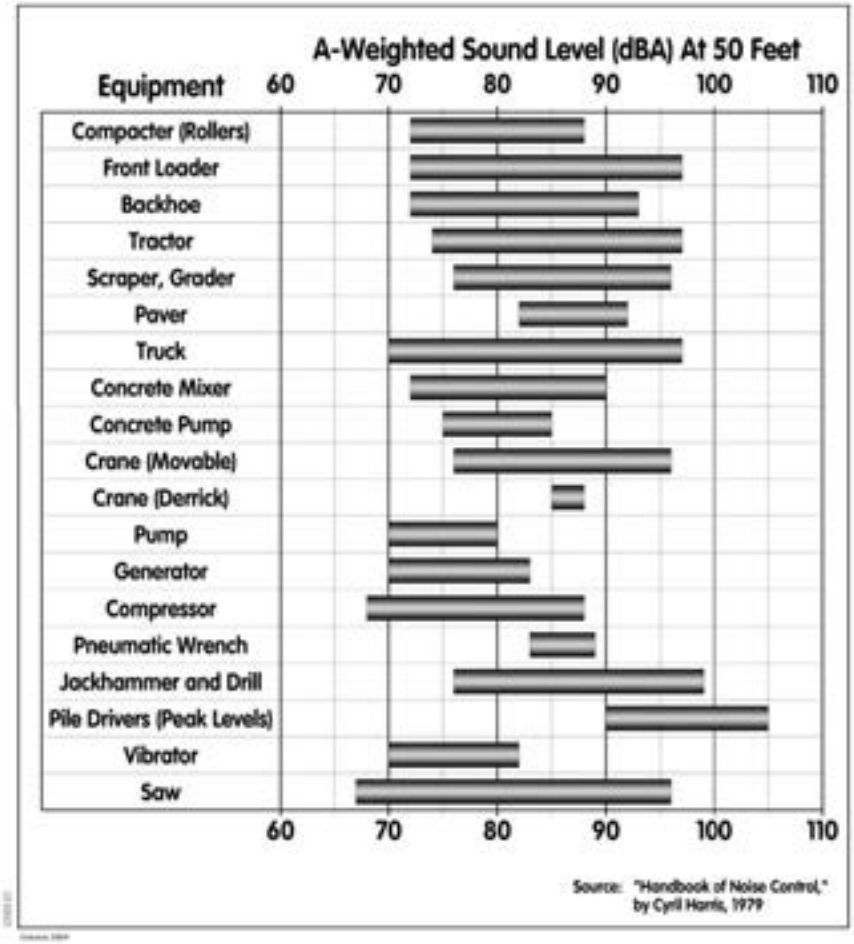
The proposed project may require the use of pile drivers and other heavy-tracked construction equipment may be required for project construction. The Federal Transit Administration (FTA), in its *Transit Noise and Vibration Assessment* (FTA 2006), shows that a typical-impact pile driver would generate approximately 0.644 PPV (in/sec) when measured at 25 feet. It also shows that typical heavy-tracked construction equipment would generate approximately 0.003 to 0.089 PPV (in/sec) when measured at 25 feet.

Potential pile driving activities would be located within existing channel or tidal waters and approximately 50 feet from the closest residence. Therefore, residences located 50 feet from pile driving activities would be subject to a vibration level of 0.3 PPV. This vibration level would be considered to be strongly perceptible and would have the potential to damage the residential structure because the structure would be considered old. Other construction equipment and activities would generate vibration levels much lower than those of pile driving and would therefore result in lower vibration levels at adjacent receiver locations. Residences located further than 50 feet from these activities would experience decreasing vibration levels the further away from the pile driving activities in which residences are located. No adverse temporary groundborne vibration impacts are anticipated as a result of pile driving with implementation of avoidance and minimization measures described in Section 3.24.4.14, to conduct pre- and post-construction surveys and alternatives to pile driving, respectively, for residential structures that are located 50 feet or closer from pile driving activities.

CONSTRUCTION NOISE. During construction of the project, noise from construction activities may occasionally dominate the noise environment in the immediate project area. Construction noise is regulated by Caltrans Standard Specifications, Section 14-8.02, “Noise Control.” These requirements state that noise levels generated during construction would be controlled and monitored and not to exceed 86 dBA L_{max} at 50 feet from the job site between the hours of 9:00 p.m. to 6:00 a.m.

Figure 3.24-1 summarizes noise levels produced by construction equipment that would be commonly used on roadway construction projects. As indicated, equipment involved in construction would be expected to generate noise levels ranging from 70 to 90 A-weighted decibels (dBA) at a distance of 50 feet. Noise produced by construction equipment would reduce over distance at a rate of about six dBA per doubling of distance. Normally, construction noise levels should not exceed 86 dBA maximum instantaneous noise level (L_{max}) at a distance of 50 feet. No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with the Caltrans standard specifications and would be short-term, intermittent, and dominated by local traffic noise.

Figure 3.24-1 Construction Equipment Noise Levels



3.24.3.15 ENERGY

The information in this section is based on the following document:

- *I-710 Corridor Project Energy Technical Report* (June 2017)

Indirect construction energy effects involve the one-time, nonrecoverable energy costs associated with construction of roads, structures, and vehicles. Based on the roadway construction energy consumption factor of 27,500 BTU per 1977 construction dollar and the estimated costs to construct the build alternatives (rolled back to the 1977 equivalent), it would take approximately 20 trillion British thermal units (BTUs) to construct Alternative 5C and approximately 40 trillion BTUs to construct Alternative 7. As described in Section 3.15, Energy, there are small direct energy savings with the build alternatives, so the payback period for the

energy consumed during construction would not be quantifiable. However, similar to other completed major infrastructure construction projects in Southern California, because the construction energy consumed would be such a small fraction of regional energy consumption, the construction of any of the build alternatives would not be likely to create a noticeable impact on short-term energy demand during project construction.

3.24.3.16 NATURAL COMMUNITIES

This section is based on the following documents:

- *Natural Environment Study* (NES) (June 2017)
- Jurisdictional Delineation Report (May 2012)
- *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (January 2017)

Temporary impacts to natural communities may occur during construction where habitats are temporarily disturbed during grading or other activities, as shown in Section 3.16, Natural Communities. In general, Alternative 7 would result in greater temporary impacts than Alternative 5C due to the increased number of structural columns/piers associated with Alternative 7.

Implementation of the measures described in Section 3.24.4.16, Natural Communities, 3.24.4.19, Animal Species, and 3.24.4.21, Invasive Species would ensure that temporary impacts to natural communities are avoided or minimized.

BUILD ALTERNATIVES.

ESTUARINE HABITAT. Temporary effects are anticipated to include construction-related effects such as dust, potential fuel spills from construction equipment, and unauthorized activities of equipment or personnel outside designated construction areas, as well as operational effects such as effects on adjacent habitats caused by stormwater runoff, traffic, and litter. Temporary effects would also result in areas chosen for staging, areas directly adjacent to the placement of abutments and piers during construction, and areas beneath bridges to be demolished and removed. These construction-related effects can cause temporary water quality impacts to the Los Angeles River, which then affect the estuarine habitat present. Temporary impacts would also result in areas chosen for staging, in areas directly adjacent to the placement of abutments and piers during construction and dewatering activities, and in the areas beneath bridges to be demolished and removed. While dewatering of the entire Los Angeles River would not occur, some minimal isolation of work may be required to minimize downstream impacts such as turbidity (e.g., an air bubble curtain system or air-filled isolation casings around the bridge support structures). Temporary impacts to estuarine habitat would be the same for both the build alternatives

because the proposed improvements to the four bridges (7th St., Anaheim St., Pacific Coast Hwy., and Willow St. within the City of Long Beach) that are located within tidal waters are the same for Alternative 5C and Alternative 7. As shown in Section 3.16, Natural Communities, Alternative 5C is expected to result in temporary effects to approximately 8.34 acres of estuarine habitat while Alternative 7 would result in 8.19 acres of estuarine habitat. The figures in Appendices I and J of the NES (June 2017) illustrate the locations where estuarine habitat would be impacted by Alternative 5C and Alternative 7, respectively.

RIPARIAN/RIVERINE HABITATS. Temporary effects are anticipated from the placement of staging areas, construction of piers and abutments, and demolition and removal of existing bridges. Additional temporary indirect effects would include construction-related effects such as dust, potential fuel spills from construction equipment, possible night lighting during construction, and activities of equipment or personnel outside designated construction areas, as well as operational issues such as effects on adjacent habitats caused by stormwater runoff, traffic, and litter. Temporary effects would also result in areas chosen for staging, areas directly adjacent to the placement of abutments and piers during construction, and areas beneath bridges to be demolished and removed. While dewatering of the entire Los Angeles River would not occur, some minimal isolation of work may be required to minimize downstream impacts such as turbidity (e.g., an air bubble curtain system or air-filled isolation casings around bridge support structures). These construction-related effects can cause temporary water quality impacts to the Los Angeles River, which then affect riparian/riverine habitat present.

Temporary impacts to riparian/riverine habitats would be greater from Alternative 7 than from Alternative 5C, due to its slightly larger footprint associated with the freight-corridor. As shown in Section 3.16, Natural Communities, Alternative 5C is expected to potentially result in temporary impacts to 21.93 acres of riparian/riverine natural communities overall, 19.34 acres of which would be concrete-lined freshwater portions of the Los Angeles River and associated drainages. Alternative 7 is expected to potentially result in temporary impacts to 25.59 acres of riparian/riverine natural communities, and 23.51 acres of which would be concrete-lined freshwater areas. Further, Alternative 5C and Alternative 7 would each result in approximately 0.08 acre of temporary impacts to the Dominguez Gap and DeForest Treatment Wetlands, which are proposed and/or existing Los Angeles County Department of Public Works (LACDPW) restoration areas. The figures in Appendix R of the RDEIR/SDEIS illustrate the locations in which riparian/riverine habitats would be impacted by Alternative 5C and Alternative 7, respectively.

WILDLIFE CORRIDORS/HABITAT FRAGMENTATION. Temporary impacts during pile-driving activities could have an effect on marine mammals (California sea lion [*Zalophus californianus*]), migratory birds, and fisheries. The percussive forces generated during any pile-driving activities associated with the four southernmost bridges may result in injury to California sea lions swimming in the estuarine portion of the Los Angeles River within and adjacent to the Biological Study Area (BSA). Migratory birds could be affected during pile-driving activities and other types of construction along the length of the corridor.

Both build alternatives would include construction or expansion of a number of piers on the following four bridges over the lower Los Angeles River that could affect California sea lions and estuarine fisheries: the 7th St. bridge, the Anaheim St. bridge, the Pacific Coast Hwy. bridge, and the Willow St. bridge. A new bridge would be constructed over the lower Los Angeles River at 7th St., while the Anaheim St., Pacific Coast Hwy., and Willow St. bridges would be expanded. Construction and expansion of the bridges in the lower Los Angeles River would not alter the movement of California sea lions through the channel. Under Alternative 5C only, a pedestrian bridge would be added at Hill St. However, some minimal isolation of work areas (e.g., air bubble curtain system or air-filled isolation casings) in the Los Angeles River may be required to minimize indirect impacts (e.g., turbidity). These isolated work areas would be unavailable for use by wildlife. This unavailability would be temporary while work is taking place on and around bridge support structures. Once the work was completed, the bridges would not impede the movement of California sea lions through the channel.

As discussed in Section 3.24.3.19, Animal Species, portions of the Los Angeles River within the BSA provide habitat for a number of fish and bird species. Fish inhabiting Queensway Bay may occasionally move upstream to tidal and freshwater portions of the Los Angeles River. Fish and birds moving in the river may be affected by bridge construction, particularly during pile-driving activities. Construction of the bridges may also alter the movement of fish and birds through the mouth of the Los Angeles River. This impact would be temporary during the period of pile driving and bridge deck construction. Once the pile driving was completed, the bridges would not impede the movement of fish or birds through the channel.

3.24.3.17 WETLANDS AND OTHER WATERS

This section is based on the following documents:

- *Natural Environment Study* (June 2017)
- *Jurisdictional Delineation Report* (May 2012)
- *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (January 2017)

As shown in Section 3.17, Wetlands and Other Waters of the United States, the proposed project may result in temporary effects through the degradation of jurisdictional areas as a result of placement of staging areas, construction of piles and abutments, and demolition and removal of existing bridges. Additional temporary indirect effects would include construction-related effects such as dust, potential fuel spills from construction equipment, and activities of equipment or personnel outside designated construction areas, as well as operational effects such as effects on adjacent habitats caused by stormwater runoff, traffic, and litter. Temporary effects would also result in areas chosen for staging, in areas directly adjacent to placement of abutments and piles during construction, and in areas beneath bridges to be demolished and removed.

Temporary impacts to jurisdictional areas would be greater from Alternative 7 than from Alternative 5C. There would be 30.21 acres of United States Army Corps of Engineers (USACE) jurisdictional areas would be temporarily impacted under Alternative 5C, whereas 33.70 acres would be temporarily impacted under Alternative 7. Alternative 5C would result in temporary impacts to 30.29 acres of Regional Water Quality Control Board (RWQCB) jurisdictional areas, whereas Alternative 7 would temporarily impact 33.79 acres of RWQCB jurisdictional areas. Under both Alternatives 5C and 7, 0.08 acre of RWQCB-only jurisdictional area would be temporarily impacted. However, Alternative 5C would result in 55.73 acres of temporary impacts to California Department of Fish and Wildlife (CDFW) jurisdictional areas, and Alternative 7 would temporarily impact 71.66 acres of CDFW jurisdictional areas. For more information on these temporary impacts to jurisdictional areas, refer to Table 3.17-3 in Section 3.17, *Wetlands*. Additionally, Alternative 7 would result in temporary impacts to the three additional areas noted in Section 3.17.3.1 in the discussion of permanent impacts.

Implementation of the measures described in Section 3.24.4.16, Natural Communities and Section 3.24.4.17, Wetlands and Other Waters would ensure that temporary impacts to wetlands and other waters are avoided or minimized.

3.24.3.18 Plant Species

This section is based on the following document:

- *Natural Environment Study* (June 2017)

Temporary impacts to populations of southern tarplant could result from implementation of any of the build alternatives. During construction, grading, staging, or other construction-related activities could disrupt populations located below the elevated corridor to be constructed as part of Alternative 7. In general, Alternative 7 would result in greater temporary impacts to the populations of southern tarplant than Alternative 5C though both alternatives would result in some impacts to populations of southern tarplant. Implementation of the measures described in

Section 3.24.4.16, Natural Communities, and Section 3.24.4.18, Plant Species, would ensure that temporary and indirect impacts to southern tarplant are avoided or minimized.

3.24.3.19 ANIMAL SPECIES

This section is based on the following document:

- *Natural Environment Study* (June 2017)

BURROWING OWL. Temporary impacts to burrows that could be used by the owls (BUOW) may result from all build alternatives. Construction activities may cause potential direct impacts from equipment, noise, light, and vibration resulting in, for example, direct mortality, crushing of burrows, and nest abandonment, and may cause potential indirect effects, such as habitat alteration and behavior modification. Should burrows be permanently impacted, burrowing owls would likely disperse to adjoining areas and construct new burrows in place of those that were destroyed from project implementation. Implementation of the measures described in Section 3.24.4.16, Natural Communities, and Section 3.24.4.19, Animal Species, would ensure that temporary impacts to burrowing owl are absent or minimal.

SPECIAL-STATUS BAT SPECIES. All build alternatives could result in temporary impacts to roosting bats during construction, including impeded access to day- and/or night-roosting sites in the crevices or cavities of bridges, culverts, and other structures. Day roosts where female bats congregate to give birth and rear young (maternity roosts) are considered vital to the survival of local populations, whereas when a night roost (a structure in which bats roost during the evening between foraging bouts) is eliminated, the energy required for bats to successfully utilize the surrounding foraging area may be negatively affected. Although a day roost may double during the evening as a night roost if it is close to a foraging area, night roosts are used only in the evening.

Project effects to special-status bat species (including but not limited to Yuma myotis and silver-haired bat, and foliage-roosting species such as western red bat, western yellow bat, and hoary bat) would also include temporary indirect disturbance (such as noise, vibration, dust, night lighting, and human encroachment) from construction. In addition, construction could temporarily impede access to roost sites (existing and future) in the crevices of bridges, culverts, and overhead structures. Although none of the structures identified as day and/or night roosts appear to be utilized by large numbers of bats, if several structures in a given area would be impacted at one time, there may be an impact with regard to the availability of suitable crevices for roosting. The avoidance and minimization measures described in Section 3.24.4.19 would ensure that temporary effects to bat species are absent or minimal from implementation of either of the proposed alternatives.

OTHER SPECIAL-STATUS ANIMAL SPECIES NOT REQUIRING SURVEYS. Temporary impacts to all animal species would be greater from implementation of Alternative 7 than from Alternative 5C, given the greater amount of habitats affected by the larger footprint of Alternative 7.

Temporary impacts to other nonlisted special-status species could occur during construction from temporary indirect disturbance (noise, vibration, dust, night lighting, and human encroachment). Construction could temporarily impede movement along the Los Angeles River. These special-status animal species could be affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the fish on which they feed. However, by following the avoidance and minimization measures described in Section 3.24.4.19, temporary impacts to other special-status animal species are not expected to be substantial.

3.24.3.20 THREATENED AND ENDANGERED SPECIES

This section includes animal species and habitat that are Federally and/or State-listed, candidates, or proposed endangered or threatened or regulated by National Marine Fisheries Service (NMFS) and is based on the following document:

- *Natural Environment Study* (June 2017)

SOUTHERN CALIFORNIA STEELHEAD DPS. Based on available data, steelhead appear to be extirpated from the BSA. Steelhead are large highly mobile fish and would likely move out of the area if disturbed by construction activities (e.g., pile-driving). Nonetheless, in the unlikely event that steelhead are present in the BSA, the mitigation measures outlined for fish in general in Section 3.24.4.9, Water Quality; Section 3.24.4.16, Natural Communities; Section 3.24.4.19, Animal Species; and Section 3.24.4.20, Threatened and Endangered Species, should avoid and minimize potential impacts to this species. Before in-water construction begins, including moving work barges into the BSA, consultation with the NMFS under Section 7 of the Federal Endangered Species Act will be required.

GREEN SEA TURTLE. All build alternatives proposed for the I-710 Corridor Project would include driving pilings in tidal waters across the Los Angeles River at the 7th St., Anaheim St., and Pacific Coast Hwy. crossings. Under Alternative 5C, a total of 24 river channel structures (roadway bridges) would be modified, including 22 Los Angeles River locations, one Compton Creek location, and one Rio Hondo location; with Alternative 7, a total of 33 channel structures would be affected, including 28 Los Angeles River locations, four Compton Creek locations, and one Rio Hondo location. Construction of new columns or piers and extension of existing piers would occur at each of these locations. A greater number of pilings would be required upstream of tidal waters in freshwater areas of the Los Angeles River to accommodate improvements to various bridges.

Any green turtles that might visit the area around the mouth of the Los Angeles River (outside of the BSA) could be temporarily affected indirectly by changes in water quality originating upstream. Such changes could involve increased pollution levels, increased turbidity, or impacts on sea grasses and algae on which green turtles feed. Although green sea turtles are not anticipated to be affected by the I-710 Corridor Project, the avoidance and minimization measures described in Section 3.24.4.9, Water Quality; Section 3.24.4.16, Natural Communities; Section 3.24.4.19, Animal Species; and Section 3.24.4.20, Threatened and Endangered Species, are expected to avoid and minimize impacts to green sea turtle, if present.

WESTERN SNOWY PLOVER (COASTAL POPULATION). Temporary impacts to the coastal population of western snowy plover could occur during construction from temporary indirect disturbance (noise, vibration, dust, night lighting, and human encroachment). Construction could temporarily impede movement along the Los Angeles River. Furthermore, western snowy plover could be temporarily affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the fish on which they feed. By following the avoidance and minimization measures outlined in Section 3.24.4.9, Water Quality; Section 3.24.4.16, Natural Communities; Section 3.24.4.19, Animal Species; and Section 3.24.4.20, Threatened and Endangered Species, no noticeable changes in water conditions would occur.

CALIFORNIA LEAST TERN. Temporary impacts to California least tern could occur during construction from temporary indirect disturbance (noise, vibration, dust, night lighting, and human encroachment). Construction could temporarily impede movement along the Los Angeles River. Furthermore, California least terns could be temporarily affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the fish on which they feed. By following the avoidance and minimization measures outlined in Section 3.24.4.9, Water Quality; Section 3.24.4.16, Natural Communities; Section 3.24.4.19, Animal Species; and Section 3.24.4.20, Threatened and Endangered Species, no noticeable changes in water conditions would occur.

SPECIES PROTECTED UNDER THE MARINE MAMMAL PROTECTION ACT. Temporary impacts to marine mammals (California sea lion) would be the same from implementation of any of the build alternatives. Construction and expansion of four bridges in the lower Los Angeles River would bring construction personnel and equipment into the area where California sea lions may occur. Although there would be an incremental increase in activity due to bridge construction, the Los Angeles River typically draws large numbers of people engaged in recreational and commercial activities. Therefore, the temporary presence of construction personnel is not expected to adversely impact sea lions.

It is anticipated that most California sea lions would avoid the BSA, but it is possible that some individuals may be present in the work area at various times during construction activity. Measures proposed in the Fisheries Management Plan to be prepared for the I-710 Corridor Project would provide avoidance and minimization measures that would be suitable for California sea lions, should they be present in the lower Los Angeles River during construction. Therefore, an Incidental Harassment Authorization and associated Marine Mammal Monitoring Plan issued under the authority of Section 101 (a) (5) (D) of the Marine Mammal Protection Act would not be required, although changes in NMFS personnel could potentially result in a different conclusion.[1] Further coordination with the NMFS will be conducted prior to construction.

The percussive forces generated during any pile-driving activities may result in injury to California sea lions within and adjacent to the BSA, where estuarine habitat exists. Prior studies have shown that loud underwater sounds, such as those produced by in-water pile driving, can have detrimental effects on marine mammals. However, some minimal isolation of work areas (e.g., air bubble curtain system or air-filled isolation casings) in the Los Angeles River may be required to minimize indirect impacts (e.g., turbidity). These isolated work areas would be unavailable for use by wildlife. This unavailability impact would be temporary while work is taking place on and around bridge support structures. Additionally, implementation of avoidance and minimization measures described for water quality in Section 3.9, for estuarine/open water and riparian/riverine natural communities in Section 3.16 and for construction in Section 3.24 (Section 3.24.4.9, Water Quality; Section 3.24.4.16, Natural Communities; Section 3.24.4.19, Animal Species; and Section 3.24.4.20, Threatened and Endangered Species) is expected to ensure that temporary effects to marine mammals and other aquatic species would be minimal.

Project activity on dry land is not expected to impact California sea lions, provided that sediments and construction materials are retained on land and measures are implemented to prevent the movement of soil, concrete, and other construction materials into the Los Angeles River channel.

FISHERIES PROTECTED UNDER THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT. Fish moving through the river may be directly affected by bridge construction, particularly during the pile-driving activities. As previously noted, all build alternatives would include driving pilings in tidal waters across the Los Angeles River at the 7th St., Anaheim St., and Pacific Coast Hwy. crossings. The percussive forces generated during pile-driving activities may result in injury and death to fish within the impact area. Injury includes damage to the auditory tissue of fishes or temporary hearing loss (THL). Temporary hearing

[1] National Marine Fisheries Service. DeAngeles, personal communication (December 15, 2009).

loss occurs at lower levels than auditory tissue damage and would be dependent on the size of the fish, with smaller fish being affected at lower levels than larger fish. In addition to the direct effect of hearing loss of auditory tissue damage, sound levels from pile driving may also result in indirect effects such as inability to avoid predators or detect prey and inability to communicate or detect the environment (Caltrans' *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish* [Guidance for Effects of Pile Driving on Fish], November 2015).

In addition to auditory tissue damage and temporary hearing loss, increased sound levels associated with pile driving may also affect fish by causing permanent physiological and anatomical damage. Nonauditory tissue damage may include capillary rupture in skin, neurotrauma, eye hemorrhage, swim bladder rupture, and death of individual fish (Caltrans' Guidance for Effects of Pile Driving on Fish [2015]). Such impacts may be the result of single or repeated exposure to elevated sound levels.

The acoustic impact area for the I-710 Corridor Project is estimated to extend from bank to bank and upstream and downstream 1,000 meters from each crossing. This area is estimated using calculations in the Caltrans' *Guidance for Effects of Pile Driving on Fish* (2015).

Pile driving can be accomplished with sound levels that are below the peak and cumulative single event noise level for fish. Through the use of proper equipment and attenuation methods (if needed), pile driving for the bridge can be completed within the acoustic limits established in the Caltrans' *Guidance for Effects of Pile Driving on Fish* (2015). This technical guidance has been adopted by the National Oceanographic and Atmospheric Administration (NOAA) Fisheries, the United States Fish and Wildlife Service (USFWS), Caltrans, the CDFW, and the Oregon Department of Transportation.

Construction of the bridges may also alter movement of fish through the mouth of the Los Angeles River. However, some minimal isolation of work areas (e.g., air bubble curtain system or air-filled isolation casings) in the Los Angeles River may be required to minimize indirect impacts (e.g., turbidity). These isolated work areas would be unavailable for use by wildlife. This unavailability impact would be temporary while work is taking place on and around bridge support structures. Once the work is completed, the bridges would not impede the movement of fish through the channel. Additionally, implementation of avoidance and minimization measures listed in Section 3.24.4.9, Water Quality; Section 3.24.4.16, Natural Communities; Section 3.24.4.19, Animal Species; and Section 3.24.4.20, Threatened and Endangered Species, is expected to ensure that temporary effects to fish would be minimal.

Construction of the I-710 Corridor Project on dry land is not expected to impact fish, provided that sediments and construction materials are retained on land and measures are implemented to prevent the movement of soil, concrete, and other construction materials into the river channel.

ESSENTIAL FISH HABITAT. The I-710 Corridor Project would have a temporary adverse effect on Coastal Pelagic Management Plan Species. The I-710 Corridor Project would not impede movement of fish into and out of the Los Angeles River corridor, as no coffer dams or dewatering are proposed. Construction would have a temporary effect on fish that inhabit the river during pile-driving operations, as described above. In addition to the injury and mortality that may result from pile driving, pile driving would likely make the channel bottom in the vicinity of the bridges unsuitable for fish during pile-driving operations. However, implementation of avoidance and minimization measures listed in Section 3.24.4.9, Water Quality; Section 3.24.4.16, Natural Communities; Section 3.24.4.19, Animal Species; and Section 3.24.4.20, Threatened and Endangered Species is expected to ensure that temporary effects to fish would be minimal.

Informal consultation with the NMFS regarding impacts to EFH in the lower reaches of the Los Angeles River would be necessary for potential impacts to northern anchovy. At a minimum, the avoidance and minimization measures described in Sections 3.9, 3.16, and 3.24 will be implemented to avoid and minimize impacts to EFH.

3.24.3.21 INVASIVE SPECIES

Impacts related to invasive species are considered permanent impacts because the introduction of invasive species into previously undisturbed areas would permanently affect the habitat. Therefore, impacts related to invasive species are described in Section 3.21, Invasive Species under permanent impacts. However, implementation of avoidance and minimization measures listed in Section 3.24.4.16, Natural Communities, and Section 3.24.4.21, Invasive Species, is expected to ensure that impacts are avoided or minimized.

3.24.3.22 CUMULATIVE IMPACTS

Temporary cumulative impacts as a result of the proposed project, in combination with other past, present and future projects, are anticipated to occur if projects are under construction concurrently (see Table 3.25-2 in Section 3.25, Cumulative Impacts, which lists the planned construction schedule for major projects in the Study Area), but are not considered to be adverse. All temporary impacts described in the above sections, as well as impacts for other projects in the Study Area, would each be minimized or mitigated and will, therefore, not have an adverse cumulative impact on humans or the physical environment. Additionally, it is possible that, if more than one project is being constructed in the same general area, there could be a cumulative effect on consumption of local resources such as fuel, energy, construction materials, etc. Temporary cumulative impacts to traffic and circulation can also result from the construction of more than one project in a general area. In this case, TMPs for each project would be coordinated to ensure adequate circulation in the area.

3.24.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following avoidance, minimization, and/or mitigation measures are proposed to reduce the construction impacts of the I-710 Corridor Project build alternatives. Unless otherwise noted, the following measures apply to both Alternative 5C and Alternative 7.

3.24.4.1 LAND USE

As previously discussed in this section, the build alternatives would result in temporary land use impacts from construction of the I-710 Corridor Project. Measures are provided below to reduce these impacts. In addition, as part of the TMP specified in Mitigation Measure CON-TR-1, a plan to maintain business access would also be provided. Avoidance, minimization, and mitigation measures to reduce construction impacts to parks and recreational trails are described in Section 3.1.3.3 of this RDEIR/SDEIS.

CON-LU-1 During construction, the California Department of Transportation (Caltrans) will require the Construction Contractor to maintain vehicular, bicycle, and pedestrian access to businesses within the construction area throughout the construction period. If existing access points are disrupted, alternative access will be provided. Appropriate signage and temporary sidewalks will be provided as needed throughout construction, and the Construction Contractor will provide and maintain appropriate signage to direct pedestrian, bicycle, and vehicular traffic to businesses via alternate routes. Disabled access will also be maintained during construction.

CON-LU-2 During construction, Caltrans will require establishment of one or more public information field office(s) near the construction site(s). The field office(s) will serve the following purposes:

- Provide the community and businesses with a physical location where information pertaining to construction can be obtained in both English and Spanish, including information on lane, street, and ramp closures, including pedestrian and bicycle facility closures and applicable detours.
- Enable Caltrans staff to facilitate communication between Caltrans staff and residents and business operators.
- Notify property owners, residences, and businesses of major construction activities (e.g., utility relocation/disruption, rerouting of delivery trucks) at least 14 days prior to the disruption.
- Respond to phone inquiries.

- Coordinate business outreach programs, specifically to increase participation in the planning, construction, operation, and maintenance of the project by small businesses, minority-owned businesses, and women-owned businesses in the Study Area.
- Conduct periodic informational meetings regarding upcoming construction to provide a forum for interested parties to voice concerns about the construction process.

CON-PR-1 **DEVELOPMENT OF CLOSURES OF THE LOS ANGELES RIVER AND RIO HONDO TRAILS**. Prior to any temporary closures of the Los Angeles River Trail and/or the Rio Hondo Trail, Caltrans will require the Construction Contractor to meet with LACDPW to review the location and need for each closure. Detours for each closure will be developed in consultation with the LACDPW.

CON-PR-2 **SIGNING FOR DETOURS OF THE LOS ANGELES RIVER AND RIO HONDO TRAILS.** Caltrans will require the Construction Contractor to develop signs directing trail users to alternative routes in consultation with LACDPW and the local jurisdictions through which detours will be routed. Appropriate directional and informational signage will be provided by the Construction Contractor prior to each closure and far enough away from the closure, so that trail users will not have to backtrack to get to the detour route.

CON-PR-3 **CONTACT INFORMATION DURING CLOSURES AND DETOURS OF THE LOS ANGELES RIVER AND RIO HONDO TRAILS**. Caltrans will require the Construction Contractor to provide a contact number and other information to trail users to contact the Construction Contractor regarding upcoming or active trail closures. The Construction Contractor will also be required to provide that information to the LACDPW and the City Public Works Departments in the jurisdictions where the closures/detours are located.

CON-PR-4 **RESTORATION OF CLOSED AREAS ON THE LOS ANGELES AND RIO HONDO TRAILS.** Caltrans will require the Construction Contractor to return trail segments closed temporarily during construction to the Los Angeles County Department of Public Works (LACDPW) in their original, or better, condition after completion of construction, and the ownership of those temporarily closed areas will remain with the original owner (the LACDPW).

3.24.4.2 GROWTH

There are no temporary adverse growth-related effects of the build alternatives; therefore, no avoidance, minimization, and/or mitigation measures are required.

3.24.4.3 COMMUNITY IMPACTS

The build alternatives have the potential to result in temporary impacts to access, potentially resulting in a short-term impact to community character and cohesion. A minimization measure is included in Section 3.24.4.5 of this RDEIR/SDEIS to further reduce potential temporary impacts to access as a result of construction.

3.24.4.4 UTILITIES/EMERGENCY SERVICES

The build alternatives would result in temporary impacts to fire, law enforcement, and emergency service response times as a result of construction. The following measures are provided below to reduce these impacts.

CON-U&ES-1 **FIRE, LAW ENFORCEMENT, EMERGENCY SERVICES AND SCHOOL DISTRICTS.** Prior to and during construction, Caltrans and the Construction Contractor will coordinate all temporary ramp closures and detour plans with fire, emergency medical, and law enforcement providers, as well as with local jurisdictions' Departments of Public Works, to minimize temporary delays in emergency response times as part of the Transportation Management Plan (TMP), including the identification of alternative routes and routes across the construction areas for emergency vehicles, developed in coordination with the affected agencies.

In addition, as part of the TMP, prior to and during construction, Caltrans and the Construction Contractor will coordinate all temporary ramp closures and detour plans with local school districts and individual schools as identified by the school districts to minimize temporary delays to school bus services and to minimize effects on students who walk to school, including ensuring that pedestrian detours are safe for student use. This coordination will include the identification of alternative bus and pedestrian travel routes including routes to and around construction areas to and from individual schools.

CON-U&ES-2 **UTILITIES.** Major utility relocations will be subject to preparation of Specific Utility Relocation Plans. For temporary impacts, the Specific Utility Relocation Plans will include (Specific Utility Relocation Plan elements for permanent impacts are included in Section 3.4, Utilities and Emergency Services):

- Description of proposed changes/demolition of existing facilities.
- Identification of potential conflicts that need to be resolved with the relocation plan, including temporary roads and staged construction.
- A work plan that describes the nature of the construction activity, haul routes, a construction transportation management plan if warranted, hours of construction, construction duration and schedule, planned service interruptions, if any, types of construction activities, and anticipated noise level.
- A summary of existing and planned Utility Team Coordination Meetings that will include all utility companies and local jurisdictions' Departments of Public Works affected by the project. The meetings will occur during the final design phase and include final design and construction staging. The meeting participants will discuss and plan a workable sequence of utility alterations so that the utility work can be coordinated and, where possible, completed in advance of highway work. Topics to be addressed include sensitive environmental areas, hazardous material sites, erosion controls during construction, and any community events that will be occurring during construction and need to be accommodated.
- A determination if a community meeting will be held prior to the issuance of demolition and grading permits. Community meetings will be held for major utility relocations that are (1) within 500 feet of residences or schools, and (2) that will require construction duration of 30 days or more. Caltrans will hold a community pre-construction meeting, in concert with the Construction Contractor, to provide information regarding the construction schedule and activities. The construction information will include the location and duration of each construction activity, whether or not and, if applicable, the specific location, days, frequency, and duration of the pile driving that will occur, construction transportation management plans, and any accommodation of community events that will be occurring during the construction period. Notification of this meeting will be provided to owners and occupants within 500 feet of the utility relocation site.

CON-U&ES-3 Prior to grading activities, Caltrans will require the Construction Contractor to notify Underground Service Alert at least two days prior to

excavation by calling 811 to require that all utility owners within the project disturbance limits identify the locations of underground transmission lines and facilities.

3.24.4.5 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

Implementation of the I-710 Corridor Project would cause temporary impacts during the construction phase. The following measure is proposed to address these impacts.

CON-TR-1 **TRANSPORTATION MANAGEMENT PLAN.** Prior to construction, Caltrans will prepare a TMP to address short-term traffic impacts during construction of the Interstate 710 (I-710) Corridor Project. The objectives of the TMP are to:

- Maintain traffic safety during construction
- Maintain an acceptable level of traffic flow throughout the transportation system during construction
- Minimize traffic delays and facilitate reduction in the overall duration of construction activities
- Minimize detours and impacts to, and maintain connectivity for, pedestrians and bicyclists
- Foster public awareness of the project and construction-related impacts

The TMP will include the elements recommended in the Caltrans TMP Guidelines (November 2015), including:

- Public Information and Outreach
- Traveler Information Strategies
- Incident Management
- Construction Strategies
- Demand Management
- Alternate Route Strategies

Also, to be consistent with the Caltrans *Complete Intersections Guide: A Guide to Reconstructing Intersections and Interchanges for Bicycles and Pedestrians* (2010), the TMP will consider the short-term project effects on all travel modes including pedestrians, bicyclists, and transit users to minimize closures and the effects of temporary detours on those

travelers. The TMP will include public outreach, including information on current and upcoming project construction activities, lane and other closures, detours, and other information to assist residents, students, visitors, and business patrons to more effectively travel around and in the vicinity of active construction areas.

CON-TR-2 Prior to construction, an evaluation of damage to the pavement surface on local roadways that may occur due to project-related construction traffic will be completed. New pavement will be provided on local arterials that connect to or cross over (or under) I-710 where such roadways will be directly affected by project construction after project completion in the vicinity of each arterial.

CON-TR-3 To minimize travel time delays on I-710 during project construction, Caltrans and Metro will work with area transit operators to implement a Transit Subsidy Program that will provide discounted transit fares in areas impacted by construction as well as performing outreach and marketing to incentivize use of transit during construction periods.

3.24.4.6 VISUAL/AESTHETICS

Visual impacts associated with construction will be experienced by viewers in the area, however, visual impacts related to construction will be temporary. Measures to avoid, minimize, or reduce the adverse visual impacts that may result from construction of the I-710 Corridor Project will be achieved by requiring the Construction Contractor to construct the project in accordance with the Caltrans Standard Construction Specifications, which include appropriate measures to address visual impacts during construction. Therefore, no additional measures are necessary.

3.24.4.7 CULTURAL RESOURCES

The cultural resource studies for the I-710 Corridor Project identified three historic properties that would be impacted by all of the build alternatives; however, the features that qualify the resources as a historic property and/or a historical resource would not be impacted. The Archaeological Sensitivity Study (2017) identifies three areas within the Supplemental APE that exhibit the possibility to contain previously unrecorded archaeological resources. The following measures would be implemented to address the discovery of cultural resources or human remains during project construction:

CON-CUL-1 If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted

until a qualified archaeologist can assess the nature and significance of the find.

CON-CUL-2 If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities will cease in any area or nearby area suspected to overlie remains, and the County of Los Angeles (County) Coroner will be contacted. Pursuant to Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission, which will then notify the Most Likely Descendant (MLD). At that time, the District 7 Environmental Branch Chief or the District 7 Native American Coordinator will be contacted so that he/she may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

CON-CUL-3 Caltrans will develop a project-level Programmatic Agreement (PA) following submittal of a Supplemental Finding of Effect document. Also, an Historic Properties Treatment Plan (HPTP) will be developed by a qualified archaeologist in consultation with Caltrans PQS Principal Investigator-Prehistoric or Historic Archaeology to plan for the identification, evaluation, and treatment of archaeological resources should they be discovered during construction. The draft HPTP will be attached to the project-level PA. Caltrans will continue consultation with the SHPO on the preparation of the project-level PA and the HPTP following submittal of the Supplemental Finding of Effect.

3.24.4.8 HYDROLOGY AND FLOODPLAIN

Measures to minimize temporary construction impacts on the natural and beneficial floodplain values related to water quality are discussed in Section 3.24.4.9. Measures to minimize temporary construction impacts to jurisdictional waters are discussed in Section 3.24.4.17.

3.24.4.9 WATER QUALITY

Compliance with standard requirements and permits listed below would minimize short-term, construction-related impacts to water quality.

CON-WQ-1 Caltrans will require the Construction Contractor to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006--DWQ, NPDES No. CAS000002) and any subsequent permit as they

relate to construction activities for the project. This will include submission of the Permit Registration Documents, including a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement to the State Water Quality Control Board (SWRCB) at least 14 days prior to the start of construction. The SWPPP will meet the requirements of the Construction General Permit and will identify pollutant sources associated with construction activities; identify non-stormwater discharges; develop a water quality monitoring and sampling plan; and identify, implement, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants associated with the construction site. The BMPs identified in the SWPPP will be implemented during project construction. A Notice of Termination will be submitted to the SWRCB upon completion of construction and the stabilization of the site.

CON-WQ-2 Caltrans will require the Construction Contractor to comply with the provisions of the Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties, Order No. R4-2013-0095, NPDES No. CAG994004, as they relate to discharge of non-stormwater dewatering wastes for the project, including monitoring and reporting requirements. This includes complying with the prescribed Monitoring and Reporting Program and submitting to the Los Angeles Regional Water Quality Control Board (RWQCB) a NOI at least 45 days prior to the start of non-stormwater dewatering discharge. In addition, a Notice of Termination will be submitted upon completion of dewatering discharge.

3.24.4.10 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

While implementation of construction practices would reduce the I-710 Corridor Project's risk for geologic hazards such as soil erosion and slope instability, the measure listed below would reduce potential temporary construction impacts and would apply to all build alternatives.

CON-GEO-1 Caltrans will prepare a quality assurance/quality control plan that will be maintained during construction. The plan will include observing, monitoring, and testing by a geotechnical engineer and/or geologist during construction to confirm that geotechnical/geologic recommendations are fulfilled, or if different site conditions are encountered, appropriate changes are made to accommodate such issues. The geotechnical engineer will prepare weekly reports while grading excavation and construction activities are underway.

3.24.4.11 PALEONTOLOGY

Impacts to paleontological resources are considered permanent, not temporary. However, permanent impacts to paleontological resources would likely be limited to construction phases of the project. Therefore, the following avoidance and minimization measures are proposed.

CON-PAL-1 In accordance with the Paleontological Mitigation Plan (refer to PAL-1 in Section 3.11), a pre-construction field survey shall be conducted in areas identified as having high paleontological sensitivity after vegetation and paving have been removed, followed by salvage of any observed surface paleontological resources prior to the beginning of additional grading.

CON-PAL-2 During construction excavation, a qualified vertebrate paleontological monitor shall initially be present on a full-time basis whenever excavation will occur within the sediments that have a high paleontological sensitivity rating and on a spot-check basis for excavation in sediments that have a low sensitivity rating. Monitoring may be reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating (monitoring reductions, when they occur, will be determined by the qualified Principal Paleontologist in consultation with the Caltrans Resident Engineer [RE]). The monitor shall inspect fresh cuts and/or spoils piles to recover paleontological resources. With the RE's approval, the monitor shall temporarily divert construction equipment away from the immediate area of the discovery. The monitor shall be equipped to rapidly stabilize and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, Caltrans shall consider using heavy equipment on site to assist in the removal and collection of large materials.

3.24.4.12 HAZARDOUS WASTE/MATERIALS

The measures below would substantially reduce temporary adverse impacts related to hazardous materials and hazardous wastes during construction.

CON-HW-1 During construction, the Construction Contractor will test and remove yellow traffic stripes and pavement marking material in accordance with Standard Special Provision 14-11.12.

CON-HW-2 If suspect hazardous waste or underground tanks are encountered during construction, the Construction Contractor will stop work and follow the procedures outlined in Appendix E of the Caltrans' *Unknown Hazards Procedures for Construction.*

CON-HW-3 During preparation of Plans, Specifications, and Estimates, Metro's contractor (with oversight from Caltrans) will conduct a groundwater evaluation to assess disposal alternatives for groundwater encountered during construction and to comply with the requirements of the NPDES permitting process.

3.24.4.13 AIR QUALITY

Construction of the I-710 Corridor Project would result in temporary adverse impacts related to fugitive dust and construction equipment and vehicle emissions. Particularly sensitive populations, such as children and seniors, would be taken into consideration. Places where sensitive populations congregate, such as daycare facilities, hospitals and clinics, would be identified and where possible, strategies and technologies would be used in combination to reduce the impacts of air pollution as identified by the *Gateway Cities Air Quality Action Plan Final Report* (Gateway Cities Council of Governments 2013). The standard conditions and SCAQMD Rule 403 (fugitive dust) would substantially reduce potential adverse short-term air quality impacts during construction of the I-710 Corridor Project as described below, although Caltrans has not formally adopted the SCAQMD thresholds. In addition, dependent upon the agency that administers the construction contract, all applicable measures from the SCAG RTP/SCS intended to reduce GHG emissions will be included in the Plans, Specifications, and Estimates package prepared for the project (formalized as Measure CON-AQ-17, below). In particular, Measure CON-AQ-15 below would implement the provision of Metro Board Motion 22.1 to implement best available control technology construction equipment as defined by the California Air Resources Board.

CON-AQ-1 The Construction Contractor will comply with Caltrans Standard Specifications.

- Section 7, "Legal Regulations and Responsibility to the Public," addresses the Construction Contractor's responsibility on many items of concern, such as compliance by the Construction Contractor with laws and regulations and responsibilities for public safety and convenience. Section 7-1.03 specifically requires application of a dust palliative for the prevention or alleviation of dust nuisance, and Section 7-1.04, "Public Safety," specifically states "Control dust resulting from the work, inside and outside the right-of-way."
- Section 13 is directed at water pollution control and specifically, Section 13-5 discusses temporary soil stabilization.
- Section 14, "Environmental Stewardship," includes specifications relating to environmental compliance and environmental resource

management. Specifically, Section 14-9 includes specifications relating to air quality, including 14-9.02, Air Pollution Control, which directs the Construction Contractor to comply with applicable air pollution control rules, regulations, ordinances and statutes.

CON-AQ-2 The Construction Contractor will apply water or dust-palliative per Caltrans Standard Specifications Section 18 or applicable air district regulations, whichever are more stringent for air quality, to the site and equipment as frequently as necessary to control fugitive dust emissions. South Coast Air Quality Management District (SCAQMD) Rule 403 will also be followed.

CON-AQ-3 The Construction Contractor will spread soil binder on any unpaved roads used during construction and all project construction parking areas, consistent with storm water pollution control requirements (Caltrans Standard Specifications Section 13-5).

CON-AQ-4 Section 13 of the Caltrans Standard Specifications discusses Water Pollution Control. Specifically, Section 13-5, “Temporary Soil Stabilization,” directs the Construction Contractor to utilize various methods to control and minimize wind erosion, among other occurrences, that will also alleviate instances of fugitive dust.

CON-AQ-5 The Construction Contractor will properly tune and maintain construction equipment and vehicles. The Construction Contractor will use low-sulfur fuel in all construction equipment as provided in California Code of Regulations (CCR) Title 17, Section 93114.

CON-AQ-6 The Construction Contractor will develop and implement a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction fugitive dust impacts to adjacent land uses.

CON-AQ-7 The Construction Contractor will locate equipment and materials storage sites as far away from adjacent residential and park uses as practical. The Construction Contractor will keep construction areas clean and orderly.

CON-AQ-8 The Construction Contractor will establish Environmentally Sensitive Areas (ESAs) for sensitive air receptors within which construction activities involving extended idling of diesel equipment will be prohibited

to the extent feasible. In addition, a strong anti-idling policy will be implemented at all construction sites as part of an air quality impact training program that will include education on potential health risks to nearby receptors and ways to reduce emissions, including no idling, use of PM filters, use of alternative fuels, etc.

CON-AQ-9 The Construction Contractor will use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on off-site roads used by construction traffic, consistent with storm water pollution control requirements (Caltrans Standard Specifications Section 13-7).

CON-AQ-10 The Construction Contractor will cover all loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to reduce particulate matter less than ten microns in size (PM10) and the deposition of particulate matter during transportation.

CON-AQ-11 The Construction Contractor will remove dust and mud deposited on paved public roads due to construction activity and traffic to decrease particulate matter, consistent with storm water pollution control requirements (Caltrans Standard Specifications Section 13-7).

CON-AQ-12 The Construction Contractor will route and schedule construction traffic to avoid peak travel times as much as possible and to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

CON-AQ-13 The Construction Contractor will install mulch or plant vegetation as soon as practical after grading to reduce windblown particulates in the area.

CON-AQ-14 During clearing, grading, earthmoving, or excavation operations, excessive fugitive dust emissions will be controlled by regular watering or other dust preventive measures using the following procedures, as specified in the SCAQMD Rule 403. All material excavated or graded will be sufficiently watered to prevent excessive amounts of dust. Watering will occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day. All material transported on site or off site will be either sufficiently watered or securely covered to prevent excessive amounts of dust. The area disturbed by clearing, grading, earth moving, or excavation operations will be minimized so as to prevent excessive amounts of dust. These control techniques will be

indicated in project specifications. Visible dust beyond the property line emanating from the project will be prevented to the maximum extent feasible.

CON-AQ-15 Construction equipment used during project construction will meet equivalent emissions performance to that of United States Environmental Protection Agency (EPA) Tier 4 standards and California Air Resources Board (ARB) requirements for non-road engines, depending on the responsible agency that administers the construction contract and the availability of construction equipment compliant with these standards. If Metro administers the construction contract, then Metro's Green Construction Policy would be utilized.

CON-AQ-16 Caltrans will instruct the Construction Contractor to comply with ARB's anti-idling rule, which prohibit diesel truck idling in excess of five minutes.

CON-AQ-17 The following measures from Appendix G of the 2012 SCAG RTP/SCS Programmatic Environmental Impact Report and the 2016 SCAG RTP/SCS will be implemented during construction:

- Excavating and grading activities will cease during second stage smog alerts and periods of high winds.
- Construction roads that have high traffic volumes will be surfaced with base material, decomposed granite, or otherwise stabilized or paved.
- Traffic speeds on all unpaved surfaces will not exceed 25 miles per hour.
- To the extent possible, construction activity should utilize electricity from on-site power poles rather than diesel and/or gasoline powered generators.
- A person or persons will be appointed to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site. Their duties should include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons should be provided to the local air district prior to the start of construction as well as posted on site over the duration of construction.
- Appropriate wind-breaks will be installed at the construction site to minimize windblown dust.

- Land disturbance will be minimized.
- Unnecessary vehicular and machinery activities will be minimized.
- The contractor will be required to assemble a comprehensive inventory list of all heavy-duty off-road equipment that could be used an aggregate of 40 or more hours for the project and prepare a plan for approval by SCAQMD demonstrating achievement of the applicable percent reduction for a ARB-approved fleet.
- Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, will be required to obtain ARB Portable Equipment Registration with the State or a local district permit. Appropriate consultations with the ARB or the SCAQMD will occur to determine registration and permitting requirements prior to equipment operation at the site.
- EPA's National Clean Diesel Program will be implemented.
- Diesel- or gasoline-powered equipment will be replaced by the lowest emitting feasible for each piece of equipment from among these options: electric equipment whenever feasible or gasoline-powered equipment if electric infeasible.
- If cranes are required for construction, they shall be rated at 200 hp or greater and equipped with Tier 4 or equivalent engines.
- Alternative diesel fuels, such as Clean Fuels Technology (water emulsified diesel fuel) or O_2 diesel ethanol-diesel fuel (O_2 Diesel) in existing engines, will be used.
- "Clean construction equipment fleet," defined as a fleet mix cleaner than the State average, will be included in all construction contracts.
- All off-road and portable diesel-powered equipment will be fueled with ARB-certified motor vehicle diesel fuel (non-taxed version suitable for use off-road).
- Electric fleet or alternative-fueled vehicles will be used where feasible including methanol, propane, and compressed natural gas.
- On-road, heavy-duty trucks that meet the ARB's 2007 or cleaner certification standards for on-road diesel engines, and compliance with State on-road regulations.

- Idle reduction technology, defined as a device that is installed on the vehicle that automatically reduces main engine idling and/or is designed to provide services, e.g., heat, air conditioning, and/or electricity to the vehicle or equipment that would otherwise require the operation of the main drive engine while the vehicle or equipment is temporarily parked or is stationary, will be used.
- Minimize idling time either by shutting off equipment when not in use or limit idling time to three minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the three-minute idling limit. The Construction Contractor shall maintain a written idling policy and distribute it to all employees and subcontractors. The on-site construction manager shall enforce this limit.
- Diesel idling within 1,000 feet of sensitive receptors will be prohibited.
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors.
- The number of construction equipment in operation simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
- The engine size of the construction equipment shall be the minimum practical size.
- Catalytic converters shall be installed on gasoline-powered equipment.
- Signs shall be posted in designated queuing areas and job sites to remind drivers and operators of the idling limit.
- Construction worker trips shall be minimized by providing options for carpooling and by providing for lunch on site.
- Use of new or rebuilt equipment.
- Use of low-rolling resistance tires on long haul class 8 tractor-trailers.
- Install a ARB-verified, Level 3 emission control device, e.g., diesel particulate filters, on all diesel engines.

3.24.4.14 NOISE

During construction, the following measures to minimize the temporary noise impacts from construction will be implemented.

CON-N-1 Equipment noise control will be utilized and applied to revising old equipment and designing new equipment to meet specified noise levels during construction of the proposed project.

CON-N-2 The Construction Contractor will utilize in-use noise control where existing equipment is not permitted to produce noise levels in excess of specified limits.

CON-N-3 The Construction Contractor will implement site restrictions during construction activity in an attempt to achieve noise reduction through modifying the time, place, or method of operation of a particular source.

CON-N-4 The Construction Contractor will implement personal training of operators and supervisors to become more aware of the construction site noise problems.

CON-N-5 The Construction Contractor will implement equipment noise control that is needed to reduce the noise emissions from construction sites by mandating specified noise levels for the design of new equipment and updating old equipment with new noise control devices and techniques, as described below:

- Mufflers are very effective devices, which reduce the noise emanating from the intake or exhaust of an engine, compressor, or pump. The fitting of effective mufflers on all new equipment and the retrofitting of mufflers on existing equipment will be necessary to yield an immediate noise reduction at all types of road construction sites.
- Sealed and lubricated tracks for crawler mounted equipment will lessen the sound radiated from the track assembly resulting from metal-to-soil and metal-to-metal contact. Contractors, site engineers, and inspectors will ensure that the tracks are kept in excellent condition by periodic maintenance and lubrication.
- Lowering exhaust pipe exit heights closer to the ground can result in an off-site noise reduction. Barriers are more effective in attenuating noise when the noise source is closer to ground level.

- General noise control technology can have substantially quieter construction equipment when manufacturers apply state-of-the-art technology to new equipment or repair old equipment to maintain original equipment noise levels.

CON-N-6 The Construction Contractor will implement in–use site noise control measures that are necessary to prevent existing equipment from producing noise levels in excess of specified limits. Any equipment that produces noise levels less than the specified limits will not be affected. However, those exceeding the limit will be required to meet compliance by repair, retrofit, or replacement. New equipment with the latest noise-sensitive components and noise control devices are generally quieter than older equipment, if properly maintained and inspected regularly. It will be repaired or replaced if necessary to maintain the in-use noise limit. All equipment applying the in-use noise limit will achieve an immediate noise reduction if properly enforced.

CON-N-7 The Construction Contractor will apply site restrictions to achieve noise reduction through different methods, resulting in an immediate reduction of noise emitted to the community without requiring any modification to the source noise emissions. The methods include shielding with barriers for equipment and site, truck rerouting and traffic control, time scheduling, and equipment relocation. The effectiveness of each method depends on the type of construction involved and the site characteristics.

- Shielding with barriers will be implemented at an early stage of a project to reduce construction equipment noise. The placement of barriers must be carefully considered to reduce limitation of site access. Barriers may be natural or man-made, such as excess land fill used as a temporary berm strategically placed to act as a barrier. They may also include the construction of soundwalls as the first order of work, if their construction will not be precluded by other construction activities, so that the walls may help to abate construction noise.
- Efficient rerouting of trucks and control of traffic activity on construction sites will reduce noise due to vehicle idling, gear shifting, and accelerating under load. Planning proper traffic control will result in efficient workflow and reduce noise levels. In addition, rerouting trucks does not reduce noise levels but transfers noise to other areas that are less sensitive to noise.

- Time scheduling of activities will be implemented to minimize noise impacts on exposed areas. Local activity patterns and surrounding land uses must be considered in establishing site curfews. However, limiting working hours can decrease productivity. Sequencing the use of equipment with relatively low noise levels versus equipment with relatively high noise levels during noise-sensitive periods will be an effective noise control measure.
- Equipment location will be as far from noise-sensitive land use areas as possible. The Construction Contractor will substitute quieter equipment or use quieter construction processes at or near noise-sensitive areas.

CON-N-8 The Construction Contractor(s) and their employees will be educated via a training program to be sensitive to noise impact problems and noise control methods. This may be one of the most cost-effective ways to help operators and supervisors become more aware of the construction site noise problem and to implement the various methods of improving the conditions. The Construction Contractor will conduct a training program for equipment operators to instruct them in methods of operating their equipment to minimize environmental noise. Many training programs are presently given on the subject of job safety. This can be extended to include the impacts due to noise and methods of abatement.

CON-N-9 A pre- and post-construction survey will be conducted for residential structures located within 100 feet of pile driving locations to determine whether any new cracks or other damage have occurred. The proposed project will be responsible for the cost of damage to structures resulting from project construction.

CON-N-10 The Construction Contractor will be required to utilize alternatives to pile driving such as pre-drilling and cast-in-place will be required to limit vibration generation to a negligible amount.

3.24.4.15 ENERGY

Construction of any of the build alternatives will not result in adverse direct or indirect impacts related to energy consumption in the Study Area nor in the South Coast Air Basin (Basin) compared to the No Build conditions under Alternative 1. The following avoidance, minimization, or mitigation measures will be implemented. Additional measures have been provided in Section 3.15.5 of the Energy section of this RDEIR/SDEIS in the interest of promoting energy efficiency.

CON-E-1 Prior to the completion of final design, Caltrans shall prepare a construction efficiency plan, which will include the following:

- Select disposal sites as close as practicable to the I-710 construction area to minimize haul distances and excavation-related fuel consumption.
- Reuse existing rail, steel, and lumber wherever possible, such as for falsework, shoring, and other applications during the construction process.
- Recycle asphalt taken up from roadways, if practicable and cost-effective.
- Using newer, more energy-efficient equipment and maintain older construction equipment in good working order.
- Schedule construction operations to result in the most efficient use of construction equipment possible.
- Promoting employee carpooling.

CON-E-2 Prior to the completion of project construction, Caltrans shall prepare a maintenance efficiency plan which will include the following:

- Maintain maintenance equipment in good working order.
- Schedule maintenance operations to result in the most efficient use of maintenance equipment possible.

3.24.4.16 NATURAL COMMUNITIES

Measures to avoid and minimize temporary impacts to natural communities of concern are described below. Related measures are also provided in Section 3.24.4.9, Water Quality, and Sections 3.24.4.17 through 3.24.4.21. Caltrans would implement the following measures to avoid and minimize effects to estuarine habitat:

CON-NC-1 Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around sensitive habitats adjacent to the project footprint under the guidance of a biological monitor to designate ESAs to be preserved. No grading or fill activity of any type will be permitted within these ESAs. In addition, no construction activities, materials, or equipment will be allowed within the ESAs. All construction equipment will be operated in a manner so as to prevent accidental damage to nearby preserved areas. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within the ESAs. Silt

fence barriers will be installed at ESA boundaries to prevent accidental deposition of fill material in areas where the ESA is immediately adjacent to planned grading activities.

CON-NC-2 A biologist will monitor construction within the vicinity of estuarine and riparian/riverine habitats for the duration of the project to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly implemented.

CON-NC-3 A biological monitor will be present during all vegetation clearing to flush any wildlife species present prior to construction.

CON-NC-4 An employee education program for all construction personnel will be developed and implemented by the biological monitor prior to construction. At a minimum, the program will include the following topics: (1) responsibilities of the biological monitor; (2) delineation and installation of visible barriers of ESAs; (3) limitations on all movement of those employed on site, including ingress and egress of equipment and personnel, to designated construction zones (personnel shall not be allowed access to ESAs); (4) on-site pet prohibitions; (5) use of trash containers for disposal and removal of trash; (6) project features designed to reduce the impacts to listed species and habitat and promote continued successful occupation of adjacent habitat areas; (7) identification and information regarding special-status species (e.g., burrowing owl, southern tarplant, eelgrass); and (8) identification and information regarding invasive species (e.g., *Caulerpa taxifolia*).

CON-NC-5 Preconstruction surveys for eelgrass will be conducted by a qualified biologist. Eelgrass warrants a strong protection strategy because of the important biological, physical, and economic values it provides, as well as its importance to managed species under the Magnuson-Stevens Fishery Conservation and Management Act. If eelgrass is present at that time, work will be stopped within a 100-foot radius of discovery and a qualified biological monitor will be notified.

CON-NC-6 The use of rodenticides, herbicides, insecticides, or other chemicals that could potentially harm listed species shall be prohibited in and adjacent to sensitive habitats. Use of rodenticides, herbicides, insecticides, or other chemicals in other areas will be monitored by a qualified biologist to ensure no accidental effects in sensitive habitats.

CON-NC-7 A Habitat Mitigation and Monitoring Plan (HMMP) that is acceptable by the USACE, the CDFW, and the RWQCB is expected to be required as a condition of the permit approvals required from each agency. If required, the HMMP will be developed and submitted to the applicable resource agencies for approval as part of the regulatory permit application.

CON-NC-8 A construction SWPPP and soil erosion and sedimentation plan will be developed by the Construction Contractor to minimize erosion and identify specific pollution prevention measures that will eliminate or control potential point and nonpoint pollution sources on site during and following the project's construction phase. The SWPPP will identify specific BMPs to be implemented during project construction so as not to cause or contribute to an exceedance of any water quality standard. A Storm Preparation and Evacuation Plan shall be prepared as part of the SWPPP prepared for the project. The plan shall include a requirement that no work shall occur within drainages during storm events. In addition, the SWPPP will contain provisions for changes to the plan such as alternative mechanisms, if necessary, during project design and/or construction to achieve the stated goals and performance standards.

CON-NC-9 All avoidance, minimization, and mitigation measures identified in the Habitat Mitigation Monitoring Plan (HMMP), the Fisheries Management Plan, and the SWPPP will be followed.

CON-NC-10 BMPs will be included in the Fisheries Management Plan and/or SWPPP to limit the resuspension of sediment and to manage resuspended sediment during construction in and adjacent to the Los Angeles River, particularly to limit the spread of contaminated sediment. These BMPs may include cofferdams, silt or turbidity curtains, or other watertight barricades surrounding the work areas that will contain resuspended sediment in the work area until it settles.

CON-NC-11 All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated nonsensitive upland habitat areas. The designated upland areas will be located in such a manner as to prevent runoff from any spills from entering sensitive habitats and waters of the United States.

CON-NC-12 In addition to specific BMPs identified in the SWPPP, project construction shall be carried out under standard BMPs (e.g., no staging or vehicle repair in sensitive areas, implementation of erosion control measures, and fuel spill cleanup). During project construction, the proper use and

disposal of oil, gasoline, diesel fuel, antifreeze, lead paint, and other toxic substances shall be enforced. No construction materials, equipment, debris, or waste shall be placed or stored where it may be subject to tidal erosion and dispersion. Construction materials shall not be stored in direct contact with the soil anywhere along the project alignment.

CON-NC-13 Measures to contain all contaminated soils and material, including contaminated topsoil and lead-based paint from demolished bridges, shall be in place prior to and during soil moving (e.g., grading) and demolition activities. All contaminated soils and material shall be removed from the BSA and disposed of at an approved disposal site.

CON-NC-14 Construction techniques utilized within and adjacent to the Los Angeles River channel will be designed to minimize effects on downstream conditions (e.g., flow rate or turbidity). During low flow, there will be no substantial contribution to or disruption of normal processes downstream. However, some minimal isolation of work may be required to minimize turbidity (e.g., air bubble curtain system or air-filled isolation casings around bridge support structures). Any potential disruption during storm events will be inconsequential amid typical high-volume flows.

CON-NC-15 All debris generated during bridge construction and deconstruction will be prevented from settling into the Los Angeles River. When work is taking place over the Los Angeles River, floating booms (and/or other acceptable equipment) shall be used to contain debris. All construction-related debris shall be removed no later than the end of each day.

CON-NC-16 Operation of equipment and stockpiling of materials in storm channels, including the Los Angeles River, must be avoided during times of high flow. If such work is occurring, weather forecasts and storm predictions shall be closely monitored, and equipment and materials that could be affected by storms or other high-flow events shall be removed from the channel prior to such events.

3.24.4.17 WETLANDS AND OTHER WATERS OF THE UNITED STATES

In addition to the above measures for natural communities, the following measures would be implemented to avoid and minimize temporary impacts to jurisdictional areas.

CON-WET-1 Prior to the start of construction, Caltrans shall apply for and obtain an appropriate permit from the USACE for placement of fill in jurisdictional

wetlands or waters pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act, respectively.

CON-WET-2 Prior to the start of construction, Caltrans shall apply for and obtain a Lake or Streambed Alteration Agreement (SAA) from the CDFW for impacts to riparian and streambed areas under the jurisdiction of Section 1602 of the Fish and Game Code.

CON-WET-3 Prior to the start of construction, Caltrans shall apply for and obtain a Water Quality Certification from the RWQCB for effects to jurisdictional wetlands pursuant to Section 401 of the CWA.

3.24.4.18 PLANT SPECIES

Minimization efforts are warranted to minimize temporary disturbance to larger portions of the populations than is necessary to improve the I-710 Corridor. In addition to the above measures for natural communities, the following measure would be implemented to avoid and minimize impacts to southern tarplant.

CON-PS-1 During construction, Caltrans shall ensure that a qualified biologist will monitor construction within the vicinity of southern tarplant populations for the duration of the project to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly implemented.

3.24.4.19 ANIMAL SPECIES

In addition to the above measures for natural communities, the following measures would be implemented by Caltrans to avoid and minimize impacts to special-status animal species.

CON-AS-1 A biologist will monitor construction within the vicinity of burrowing owl (BUOW) locations (if present) for the duration of the project to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly implemented.

CON-AS-2 In order to avoid effects to nesting birds, bridge demolition, native vegetation removal, or tree-trimming (native or exotic) activities will occur outside of the nesting bird season (February 15–September 1). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist must conduct a pre-construction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist,

and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.

CON-AS-3 On-site pets and the deliberate feeding of wildlife shall be prohibited.

CON-AS-4 Within 30 days prior to any phase of construction, pre-construction surveys will be conducted to ensure that any BUOW that may occupy the site are not affected by construction activities. These pre-construction surveys are also required in order to demonstrate compliance with the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. If any of the pre-construction surveys determine that BUOW are present, mitigation measures may be required. The specifics of the required measures shall be coordinated between Caltrans District Biologist and the resource agencies.

CON-AS-5 If any of the pre-construction surveys determine that BUOW are present, one or more of the following measures may be required: (1) avoidance of active nests and surrounding buffer area during construction activities; (2) passive relocation of individual owls; (3) active relocation of individual owls; and (4) preservation of on-site habitat with long-term conservation value for the owl. The specifics of the required measures shall be coordinated between the Caltrans District Biologist and the resource agencies.

CON-AS-6 In June or July at least one year prior to construction, a qualified bat biologist shall survey structures that may be subject to impacts from the project to assess their potential for use as maternity roosts, since maternity colonies are generally formed in late spring. The qualified bat biologist shall also perform pre-construction surveys at these structures during the fall or winter season, since bat roosts can change seasonally and bats may over-winter at some locations where they are not present during the summer months. The maternity season and pre-construction surveys shall include a combination of structure inspection, exit counts, and acoustic surveys, and shall also include a component to determine whether night-roosting bats are present. If a maternity roost is found, no work will take place on that structure until the end of the maternity season and exclusion devices are installed by a qualified bat biologist. All bat preconstruction survey methods shall be coordinated between the Caltrans District Biologist and the CDFW.

CON-AS-7 In order to prevent effects to bridge- and crevice-roosting bats (including bat maternity colonies), existing bridges with potential habitat identified during the pre-construction surveys shall have bat exclusion devices installed between September 1 and November 30 (with consideration of weather conditions) to exclude bats from directly affected work areas and avoid potential direct mortality. Exclusions are not always appropriate, and the decision of whether or not to implement a humane eviction/exclusion of bats shall be made on a case-by-case basis in consultation with a qualified bat biologist, and the complete eviction of roosting bats from a structure shall be avoided unless deemed necessary to avoid direct impacts to bats. Installation of the exclusion devices shall be conducted under the guidance of a qualified bat biologist and will be limited if weather conditions are such that they will be harmful to evicted species (e.g., cold temperatures, high winds). Such exclusion efforts must be continued to keep the directly affected work area(s) of direct impacts free of bats until the completion of construction, or until a qualified bat biologist determines that project activities will not result in negative impacts to bats. In conjunction with the humane eviction/exclusion, alternative bat-roosting habitat shall be installed to minimize temporary or permanent impacts to bat-roosting habitat. All exclusion techniques shall be coordinated between the Caltrans District Biologist and the CDFW.

CON-AS-8 To minimize direct impacts to bats from the temporary loss of roosting habitat during a humane eviction or exclusion, alternate bat-roosting habitat structures shall be installed prior to the eviction/exclusion of bats from that structure. The design, numbers, and locations of these roost structures should be determined in consultation with a qualified bat biologist. If permanent, direct impacts to bat-roosting habitat are anticipated, alternate roosting habitat shall be provided at a 1:1 ratio to ensure no net loss of bat roosting habitat. All bat-roosting habitat mitigation shall be coordinated between the Caltrans District Biologist and the CDFW.

CON-AS-9 In order to avoid impacts to maternity-roosting bats and nonvolant (flightless) juvenile bats, tree removal or trimming (particularly of palm and eucalyptus trees) activities will occur outside of the bat maternity season (April 1–August 31); this time period coincides with the clearing and grubbing restrictions typically associated with the bird nesting season. If tree trimming or removal of large trees or palm trees cannot be avoided during the bat maternity season, these trees should be surveyed

by a qualified bat biologist prior to removal and/or monitored during removal to ensure that no roosting bats are present.

CON-AS-10 In order to prevent effects to bridge- and crevice-nesting birds (e.g., swifts and swallows), bird exclusion devices shall be installed between September 1 and December 31 (with consideration of weather conditions) at existing bridges where potential habitat is identified during the pre-construction surveys. Installation of the exclusion devices will be conducted under the guidance of a qualified biologist (in coordination with a qualified bat biologist to ensure no impacts to bats such as incidental entrapment occur) and will be limited if weather conditions are such that they will be harmful to evicted species (e.g., cold temperatures). Such exclusion efforts must be continued to keep the structures free of birds until the completion of construction. All exclusion techniques shall be coordinated between the Caltrans District Biologist and the resource agencies.

CON-AS-11 In order to prevent project effects to bridge-nesting birds (i.e., swallows), all bird nests shall be removed prior to construction from existing bridges where work will be conducted between February 15 and September 1. Nests shall be removed under the guidance and observation of a qualified biologist prior to February 15 of that year, before the swallow colony returns to the nesting site. Removal of swallow nests that are under construction must be repeated as frequently as necessary to prevent nest completion or until a nest exclusion device is installed (such as netting, plastic sheeting, or a similar mechanism that keeps birds from building nests) is installed. Nest removal and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts must be continued to keep the structures free of swallows until September 1 or completion of construction. All nest exclusion techniques will be coordinated between the Caltrans District Biologist and the resource agencies.

CON-AS-12 Some species of bat, including Yuma myotis, are known to roost within swallow nests. Although swallow nests will be removed outside of the swallow nesting season, bats may roost in these mud nests at any time of the year. Therefore, if swallow nests are removed to prevent swallows from nesting within the project area during construction activities, they should be removed in a manner that ensures they do not fall to the ground. To the greatest extent possible, mud nests should be removed by scraping them from the attachment surface and keeping the nest intact

until it is examined and determined unoccupied by a qualified bat biologist. This examination should occur concurrently or immediately following the removal of each mud nest.

CON-AS-13 Construction work in the vicinity of the Los Angeles River, adjacent parks, wetlands, and vacant lands will be limited to daylight hours to minimize disturbance to wildlife movement to the best extent feasible. However, this may be difficult to achieve since most highway construction in the region is conducted at night to avoid impacting commuter traffic. If work must be done at night, noise and lighting will be directed away from the Los Angeles River, adjacent parks, wetlands, and vacant lands.

CON-AS-14 The Los Angeles River corridor will be kept clear of all equipment or structures that could potentially serve as barriers to wildlife passage.

3.24.4.20 THREATENED AND ENDANGERED SPECIES

In addition to the avoidance and minimization measures described in Section 3.24.4.9, Water Quality, and Section 3.24.4.16, Natural Communities, the following measures will ensure that temporary effects to Southern California steelhead, green sea turtle, coastal population of the western snowy plover, California least tern, California sea lion, and Essential Fish Habitat are absent or minimal from implementation of any of the proposed build alternatives:

CON-TES-1 A Fisheries Management Plan is expected to be required through informal consultation with the National Marine Fisheries Service (NMFS). If required, a Fisheries Management Plan will be developed and submitted to the NMFS for approval prior to completion of the final design. The Fisheries Management Plan will also be submitted to the United States Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW), as necessary, for information and permit condition compliance. The Fisheries Management Plan will contain provisions for changes to the plan such as alternative mechanisms, if necessary, during project design and/or construction to achieve the stated goals and performance standards.

CON-TES-2 A biological monitor will be on site during pile-driving activities in the Los Angeles River to monitor fish that may become injured or killed during the pile driving. All pile driving and bridge construction will take place during daylight hours. If fish are observed to be injured or killed, pile driving will cease, and the CDFW and NMFS will be contacted to determine appropriate steps to avoid additional effects to the fish. The results of the

pile-driving monitoring will be reported to Caltrans within two weeks following the completion of pile-driving activities at each location.

CON-TES-3 To minimize impacts of pile driving in the Los Angeles River, minimal impact construction equipment and methods (e.g., a vibrating driver, crane, vibratory hammer, or hydraulic press) will be used during construction.

CON-TES-4 To minimize impacts of pile driving in the Los Angeles River, sound levels will be monitored during pile-driving activities in the Los Angeles River to ensure that peak sound levels do not exceed the threshold for injury to fish (206 maximum or peak measured decibel level [dB_{peak}] or 183 dB sound exposure level [SEL]). If sound levels exceed threshold, additional mitigation measures (e.g., work when the current is reduced, using a hydraulic hammer, the smallest hammer needed to advance the pile, air bubble curtain system, or air-filled isolation casings) will be developed in consultation with the resource agencies.

3.24.4.21 INVASIVE SPECIES

In compliance with Executive Order (EO) 13112, and federal and State protocols, Caltrans shall implement the following measures:

CON-INV-1 Prior to construction, a *Caulerpa taxifolia* (nonnative seaweed/algae) survey will be conducted according to the National Marine Fisheries Service (NMFS) Control Protocol in the Biological Study Area (BSA). If this species is found, then protocols for the eradication of *Caulerpa* will be implemented to remove this species from the I-710 Corridor Project Study Area. The 2008 Caulerpa Control Protocol will be followed, which requires survey results to be submitted to the NMFS and CDFW within 15 days of completion. This protocol also requires that the NOAA and CDFW be notified within 24 hours if *Caulerpa* is identified at a permitted project site.

CON-INV-2 Prior to the use of equipment in aquatic situations, the equipment will be thoroughly cleaned and inspected to prevent the introduction of nonnative aquatic species, especially mollusks, in accordance with CDFW Aquatic Invasive Species Decontamination Protocol.

CON-INV-3 A weed abatement program will be developed to minimize the importation of nonnative plant material during and after construction. Eradication strategies will be employed should an increase in invasive plants occur.

At a minimum, this program would include:

- During construction, the Construction Contractor shall inspect and clean construction equipment at the beginning and end of each day and prior to transporting equipment from one project location to another.
- During construction, soil and vegetation disturbance will be minimized to the greatest extent feasible.
- During construction, the Construction Contractor shall ensure that all active portions of the construction site are watered a minimum of twice daily or more often when needed due to dry or windy conditions to prevent excessive amounts of dust.
- During construction, the Construction Contractor shall ensure that all material stockpiled is sufficiently watered or covered to prevent excessive amounts of dust.
- During construction, soil/gravel/rock will be obtained from weed-free sources.
- Only certified weed-free straw, mulch, and/or fiber rolls will be used for erosion control.
- After construction, affected areas adjacent to native vegetation will be revegetated with plant species approved by the Caltrans District Biologist that are native to the vicinity.
- After construction, all revegetated areas will avoid the use of species listed in California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory that have a high or moderate rating.
- Eradication procedures (e.g., spraying and/or hand weeding) will be outlined should an infestation occur; the use of herbicides will be prohibited within and adjacent to native vegetation, except as specifically authorized and monitored by the Caltrans District Biologist.

3.24.4.22 CUMULATIVE

Should all or part of the I-710 Corridor Project be under construction at the same time as any of the major projects listed in Table 3.25-2 in Section 3.25, Cumulative Impacts, of this RDEIR/SDEIS, the following measure would be implemented:

CON-CUM-1 Prior to completion of Plans, Specifications, and Estimates for construction, Caltrans shall consult with the lead agencies of other major projects within two miles of the I-710 Corridor Project to ensure that the construction plans are coordinated and do not result in conflicts regarding construction staging areas, roadway closures, or detour routes.

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3.25 CUMULATIVE IMPACTS

This section discusses the cumulative impacts of the Interstate 710 (I-710) Corridor Project. Construction and operation of either of the two build alternatives evaluated in this Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) could result in direct and/or indirect impacts that, when combined with other projects, would contribute to cumulative impacts to resources of concern.

3.25.1 REGULATORY SETTING

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the Study Area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act (CEQA) Guidelines, Section 15130, describe when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under National Environmental Policy Act (NEPA), can be found in 40 Code of Federal Regulations (CFR), Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

3.25.2 METHODOLOGY

The cumulative impacts analysis for the I-710 Corridor Project was developed by following the eight-step process as set forth in the *Guidelines for Preparers of Cumulative Impact Analysis* (California Department of Transportation [Caltrans, June 2005]), posted on the Caltrans Standard Environmental Reference (SER) website (http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm). The eight-step process is as follows:

1. Identify the resources to consider in the cumulative impacts analysis by gathering input from knowledgeable individuals and reliable information sources. This process is initiated during project scoping and continues throughout the NEPA/CEQA analysis.
2. Define the geographic boundary or Resource Study Area (RSA) for each resource to be addressed in the cumulative impacts analysis.
3. Describe the current health and historical context of each resource.
4. Identify the direct and indirect impacts of the proposed project that might contribute to a cumulative impact on the identified resources.
5. Identify a set of other current and reasonably foreseeable future actions or projects and their associated environmental impacts to include in the cumulative impacts analysis.
6. Assess cumulative impacts.
7. Report the results of the cumulative impacts analysis.
8. Assess the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact.

As specified in the Caltrans guidance, if the proposed project would not result in a direct or indirect impact to a resource, it would not contribute to a cumulative impact on that resource. This cumulative impacts analysis includes resources that would be substantially impacted by the project, as well as resources that are currently in poor or declining health or that would be at risk even if project impacts were not substantial.

Examples of reasonably foreseeable actions include: future development for which a General Plan or Specific Plan has been adopted that designates future land uses; projects for which the applicable jurisdiction has received an application for site development; or infrastructure improvement projects planned by the local jurisdiction or another public agency. The reasonably foreseeable actions used in this cumulative impacts analysis were based on information provided by the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, which identified approved and pending developments proposed in proximity to the Study Area. For the purposes of this cumulative impacts analysis, *proximity to the Study Area* is encompassed by the RSA defined for each environmental topic listed below in accordance with the *Guidelines for Preparers of Cumulative Impact Analysis* (Caltrans, June 2005). These files were cross-checked against files maintained by the State of California, Office of Planning and Research. Information on future transportation projects was provided by Caltrans, Southern California Association of Governments (SCAG), Los Angeles County Metropolitan Transportation Authority (Metro), and the Gateway Cities Council of Governments (Gateway Cities COG). The Port of Los Angeles (POLA) and the Port of Long Beach (POLB) (collectively known as the Ports) also identified Port improvement projects that should be

considered in the cumulative impacts analysis. The reasonably foreseeable actions are listed in Table 3.25-1 and shown on Figure 3.25-1. Although all of the projects listed in Table 3.25-1 have the potential to result in cumulative impacts together with the I-710 Corridor Project, a subset of major projects expected to have a greater potential for adverse impacts on the environment were researched and analyzed in greater depth for purposes of this cumulative analysis. These projects and their anticipated construction schedules are listed in Table 3.25-2 and are discussed in the Environmental Consequences section.

3.25.3 RESOURCES EXCLUDED FROM CUMULATIVE IMPACTS ANALYSIS

The I-710 Corridor Project involves improving an existing freeway in order to improve air quality and reduce public health risk, improve mobility, reduce delay, improve safety features, and address projected growth in population, employment, and economic activities related to goods movement. Based on the scope of the project, the affected environment of the Study Area, and the technical studies prepared for this RDEIR/SDEIS, the following resources would not be substantially impacted by the proposed project and are not at risk:

- **Farmlands and Timberlands:** There are no timberlands or prime, unique, or soils of local significance for farmlands within the general Study Area. Therefore, there are no recognized environmental concerns related to farmlands and timberlands for any of the build alternatives.
- **Hazardous Waste and Materials:** As discussed in Section 3.12 of this RDEIR/SDEIS, operation and maintenance of the facilities proposed as part of Alternatives 5C and 7 would not introduce new sources of hazardous waste and materials, but would continue existing exposure to the transport of hazardous waste and materials associated with vehicles currently utilizing the I-710 Corridor. The build alternatives would improve safety for vehicles transporting hazardous materials. Routine maintenance activities would be required to follow applicable regulations with respect to handling and disposal of potentially hazardous materials. No new permanent hazardous waste/materials impacts beyond existing conditions related to hazardous materials are anticipated as a result of the build alternatives; therefore, there would be no adverse cumulative effects related to hazardous waste and materials.

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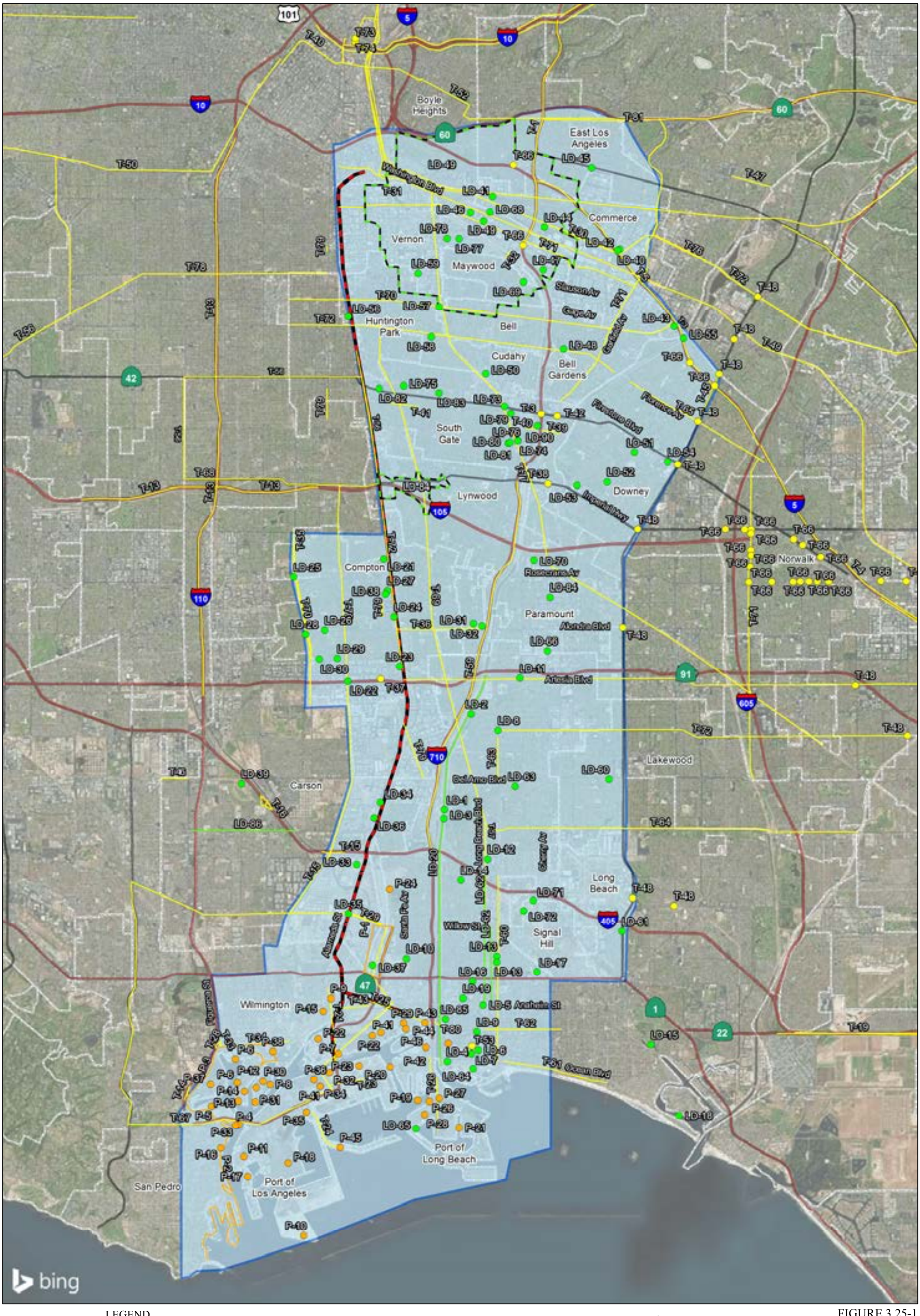

Projects Not Mapped

Projects with no discrete location
P-25: Advanced Transportation Management Information System (ATMIS)
P-39: Port of Los Angeles Master Plan Update
P-40: Port of Long Beach Deep Draft Navigation Study
T-57: Positive Train Control

Projects with unknown locations
T-22: ACTA Track Realignment, West Basin Rail Yard–Rail Enhancement Project

Projects not located within extent of map
T-2: SR 710 North Study
T-7: I 10/I 605 Direct Connector Project
T-8: I-10 (add one HOV Lane from I-605 to SR-57/71 and I-210)
T-10: I-10 (I-605 to Puente Ave)
T-11: I-10 (Puente Ave to Citrus)
T-12: I-10 (Citrus to SR 57/71)
T-18: SR 60 Freeway Improvement Project
T-20: SR-22 (SR-55 to I-405)
T-49: High Speed Rail
T-75: Bridge across Los Angeles River–Metro Orange Line Extension
LD-87: SR-710 Surplus Property Sales

SOURCE: Bing (2008); TBM (2007)

FIGURE 3.25-1

I-710 Corridor Project
Cumulative Projects

07-LA-710- PM 5.4/24.5
EA 249900; EFIS 0700000443

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Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
Transportation Projects						
T-1	I-710 Long Life Pavement Rehabilitation Project (Atlantic Ave. to I-10)	No	California Department of Transportation (Caltrans)	▪ The project would rehabilitate this segment of the route by overlaying the existing mainline pavement with asphalt concrete (AC), upgrading the median barrier, and constructing maintenance pullouts along the route to enhance safety for maintenance crews. Project will widen shoulders and structures to current standards. Project will also install fiber optic lines for Closed Circuit Television (CCTV), Changeable Message Signs (CMS), Ramp Metering System (RMS), and Traffic Monitoring System (TMS) for traffic management during construction and for future use. The Atlantic Blvd. undercrossing and the Compton Creek Bridge will be widened.	The project began with the I-710 segment from Pacific Coast Hwy. to I-405 and was completed in November 2003. Construction of the I-710 segment from I-405 to Firestone Blvd. (with widening of structures from I-405 to Atlantic Ave.) began construction in summer 2007. Construction of the I-710 segment from Imperial Hwy. to Firestone Blvd. began in October 2008 and will be completed in 2012. Construction of the I-710 segment from Firestone Blvd. to Slauson Ave. began in October 2009 and construction of the I-710 segment from Slauson Ave. to I-10 (with widening of structures from the Los Angeles River bridge to I-10) is under construction. The majority of the mainline roadway pavement work has been completed. *(Source: Caltrans Website, www.dot.ca.gov/dist07)*	Noise barriers were originally planned to be included with this project but were withdrawn from the project scope due to the lack of funding.
T-2	SR 710 North Study (previously identified as the SR-710 Project in the 2012 I-710 Corridor Draft EIR/EIS)	Yes	Caltrans/Los Angeles County Metropolitan Transportation Authority (Metro)	▪ The proposed project is intended to close a gap in the freeway system between the northerly terminus of I-710 and I-210. The new project will consider a full range of alternatives and, depending on the results of a thorough environmental analysis of all possible transportation improvements during the NEPA/CEQA process, may include, but not be limited to: surface and subsurface highway/freeway construction, heavy rail and bus/light rail systems, local street upgrades, traffic management systems and a no build alternative.	A Draft EIR/EIS was publicly circulated for 153 days from March to August 2015. If approved, the project is anticipated to be constructed between 2025 and 2030. *(Source: http://www.metro.net/projects_studies/route_710/)*	Land Use Community Impacts Utilities Traffic Visual Hydrology and Floodplains Water Quality and Storm Water Runoff Geology, Soils, Seismic, and Topography Hazardous Waste and Materials Air Quality Noise Energy Natural Communities Soundwalls, relocation assistance, construction impact management and other mitigation measures will be incorporated into the proposed project.
T-3	Firestone Blvd. Bridge Widening over Los Angeles River Project	No	City of South Gate/ Caltrans District 7	▪ The project would widen Firestone Blvd. on the south side, add a traffic lane in the eastbound direction, modify the southbound on-ramp to I-710, and retrofit the bridge for compliance with the latest seismic standards. This project is an Early Action Project of the I-710 Corridor Project.	A Draft EIR for the project was prepared in July 2007. Construction of the project commenced in March 2016 and is expected to be completed in the summer of 2017. *(Sources: City of South Gate CIP list August 2007; Daniel Gruezo Assistant Engineer; and http://www.cityofsouthgate.org/DocumentCenter/View/2130)*	The EIR concluded that the project would not adversely contribute to cumulative effects in conjunction with other projects.
T-4	I-5 Widening and HOV Lane (Orange County Line to I-605)	Yes	Caltrans	▪ The project would widen I-5 with a high-occupancy vehicle (HOV) Lane and Mixed Flow lane in each direction (widen from three to five lanes in each direction). ▪ The Valley View Ave. interchange would be reconstructed to a tight-diamond interchange.	A Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was prepared for this project by Caltrans in June 2007. The project is under construction and will be completed by 2018. *(Source: http://www.dot.ca.gov/dist07/resources/envdocs/docs/I-5_CIP_Final_EIR-EIS_VI.pdf, accessed December 23, 2009)*	Land Use Community Impacts Utilities Visual Noise Biological Short-term transportation, water quality, hazardous waste, and energy

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-5	I-5 Corridor Improvement Project (I-605 to I-710)	Yes	Caltrans	▪ The project would widen I-5 from I-605 to I-710 (a total of eight miles). ▪ An alternative may include modifications to the I-605 and I-710 interchanges.	The Draft EIR/EIS document does not currently have a scheduled circulation date. *(Sources: Caltrans)*	Environmental impacts have not been determined at this time. Information will be added, if the Draft EIR/EIS becomes available during the environmental process for the I-710 Corridor Project. Expected issues of concern are traffic, residential and business relocations, noise, air quality, utility relocations, and historic properties.
T-6	I-5 at Carmenita Rd. Interchange Improvement Project	No	Caltrans	▪ The project would replace the Carmenita Rd. interchange by removing the existing two-lane structure and constructing a new interchange with tight diamond ramps; construct a grade separation for the railroad crossing south of the freeway. ▪ The frontage roads would be realigned. ▪ I-5 would be widened from Alondra Blvd. to Shoemaker Ave.	An Initial Study/Environmental Assessment (IS/EA) and Final Negative Declaration/Finding of No Significant Impact (ND/FONSI) was prepared for this project in March 2002. Construction began on the project in August 2008 and is expected to be completed in 2017. *(Source: Caltrans Website, www.dot.ca.gov/dist07)*	The ND/FONSI determined that the project would not contribute to cumulative effects in the project area.
T-7	I-10/I-605 Direct Connector Project	No	Caltrans	▪ The project would construct a direct connector from southbound I-605 to eastbound I-10.	A Mitigated Negative Declaration/Finding of No Significant Impact (MND/FONSI) was prepared for this project in January 2009. Construction began in October 2012 and was completed in November 2015. *(Source: Caltrans Website, www.dot.ca.gov/dist07)*	The MND/FONSI determined that the project's contribution to cumulative impacts would be less than cumulatively considerable, and no additional mitigation measures were required.
T-8	San Bernardino Freeway (Interstate 10) add one HOV Lane from I-605 to State Routes 57/71 and Interstate 210	No	Caltrans	▪ The project would construct one HOV lane in each direction on I-10 between I-605 and SR-57/SR-71/I-210 interchange.	An IS/EA MND was prepared for this project in October 2002. Construction on the first phase began in November 2009. Construction of Phase 2 began in 2013, and construction of Phase 3 began in April 2016. *(Source: Caltrans Website, www.dot.ca.gov/dist07)*	The IS/EA MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
T-9	I-10 (San Bernardino Freeway/El Monte Busway) High Occupancy Toll Lanes Project (from Alameda St. to I-605) (Union Station)	No	Caltrans	▪ The project would convert the existing HOV lanes to High Occupancy Toll (HOT) lanes and restripe the existing facility to add an additional HOT lane by utilizing the wide buffer areas and median shoulders and mixed flow lanes on the I-10 from Alameda St./Union Station to I-605.	A Final EIR/EA FONSI (April 2010) was prepared for this project. Construction began in 2011 and the Express lanes are currently operational. *(Sources: www.dot.ca.gov/dist07/resources/envdocs/alldocs.php; and SCAG RTIP List, Caltrans District 7)*	If the I-10 Restoration project construction activities overlap with construction of the I-10 HOT lanes project, there may be temporary cumulative construction-related impacts, including noise, dust and impacts to access routes in the project area.
T-10	I-10 (I-605 to Puente Ave.)	No	Caltrans	▪ Widen by one HOV lane in each direction.	Construction was completed in 2013. *(Source: San Bernardino Freeway (I-10) High Occupancy Vehicle Lane Project, http://www.dot.ca.gov/d7/projects/docs/10/10HOV%20Info%20FAQ.pdf – accessed December 27, 2016)*	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
T-11	I-10 (Puente Ave. to Citrus)	No	Caltrans	▪ Widen by one HOV lane in each direction.	Construction began in Summer 2014 and is anticipated to be complete in 2019. *(Sources: San Bernardino Freeway (I-10) High Occupancy Vehicle Lane Project, http://www.dot.ca.gov/d7/projects/docs/10/10HOV%20Info%20FAQ.pdf – accessed December 27, 2016; and Final Environmental Impact Report for Add One High Occupancy Vehicle Lane in Each Direction on the San Bernardino Freeway (Interstate 10) from Puente Avenue to State Routes 57/71 in Los Angeles County, June 2012, http://www.dot.ca.gov/d7/env-docs/docs/I-10_HOV_FEIR_062512.pdf - accessed December 27, 2016)*	Simultaneous construction activities of other projects near I-10 have the potential to result in temporary cumulative traffic impacts during construction. Cumulatively beneficial traffic and air quality impacts during operation.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-12	I-10 (Citrus to Route 57/71)	No	Caltrans	▪ Widen by one HOV lane in each direction.	Construction began in April 2016 is anticipated to be complete in Summer of 2021. *(Sources: San Bernardino Freeway (I-10) High Occupancy Vehicle Lane Project, http://www.dot.ca.gov/d7/projects/docs/10/10HOV%20Info%20FAQ.pdf – accessed December 27, 2016; and Final Environmental Impact Report for Add One High Occupancy Vehicle Lane in Each Direction on the San Bernardino Freeway (Interstate 10) from Puente Avenue to State Routes 57/71 in Los Angeles County, June 2012, http://www.dot.ca.gov/d7/env-docs/docs/I-10_HOV_FEIR_062512.pdf - accessed December 27, 2016)*	Simultaneous construction activities of other projects near I-10 have the potential to result in temporary cumulative traffic impacts during construction. Cumulatively beneficial traffic and air quality impacts during operation.
T-13	The I-110 (Harbor Freeway)/Transitway High-Occupancy Toll Lanes Project (182nd St. to Adams Blvd.) and on I-105 from Crenshaw Blvd. to Compton Ave.	No	Caltrans	▪ The project would build a flyover structure from the northbound I-110 HOV off-ramp directly to Figueroa St. and on I-110 from 182nd St./Artesia Transit Center to Adams Blvd.	A Final EIR/EA FONSI (April 2010) was prepared for this project. Construction began in 2010 and was completed in November 2012. *(Sources: www.dot.ca.gov/dist07/resources/envdocs/doc, and SCAG RTIP List, Caltrans District 7)*	The Final EIR/EA FONSI concluded that there are no cumulative impacts anticipated for this project.
T-14	I-110 Freeway Access Ramp SR-47 and I-110 Northbound Connector Widening (John S. Gibson Blvd. Interchange)	No	Port of Los Angeles (POLA)	▪ The project would extend the existing off-ramp at John S. Gibson Blvd. ▪ Modify to a two-lane exit and restripe to accommodate one shared through and left-turn lane and one exclusive right lane. ▪ Create an additional left-turn lane on southbound John S. Gibson Blvd. for traffic destined to Port terminals. ▪ Enhance the operation and safety of the I-110/SR-47/Harbor Blvd. interchange connector.	A Draft MND/FONSI was publicly circulated in August 2011. Construction began September 2011 and was completed June 2016. *(Source: http://www.portoflosangeles.org/"MND/Gibson/IS-EA_Text+Appendices_June%202011.pdf)*	Traffic Noise
T-15	I-405 (Wilmington Ave./223rd St.)	No	Caltrans and City of Carson	▪ The project would widen the existing southbound on- and off-ramps of the I-405/Wilmington Ave. interchange (widen from two to three lanes). ▪ Add a new two-lane northbound on-ramp from southbound Wilmington Ave. ▪ Widen Wilmington Ave. in the northbound direction from 223rd St. to I-405 northbound off-ramp (widen from three to four lanes).	An IS/EA with MND/FONSI was prepared for this project in November 2008. Construction of the project began in November 2013 and will be completed in early 2017. *(Sources: Caltrans Website, www.dot.ca.gov/dist07 and http://i405wilmington.com/wp/wp-content/uploads/2013/10/I-405-Wilmington-Ave.-FAQs-2-2-16.pdf)*	Simultaneous construction activities of other projects near the I-405 have the potential to result in temporary cumulative impacts during construction.
T-16	I-405 Interchange Improvements at Avalon Blvd.	No	Caltrans and City of Carson	▪ The project would add one lane in the northbound direction on Avalon Blvd. under I-405 (widen from three to four lanes). ▪ Construct a new two-lane on-ramp to southbound I-405. ▪ Add two lanes to northbound off-ramp (widen from one to three lanes), two lanes to southbound off-ramp (widen from one to three lanes). ▪ Construct five-lane connector road from southbound off-ramp to Avalon Blvd. (widening from two to three lanes within existing Caltrans right-of-way).	An IS/EA with ND/FONSI was prepared for this project in March 2009. Construction of the project was completed in 2012. *(Sources: 710 Alts Doc and IS/MND for project; and http://ci.carson.ca.us/content/files/pdfs/latestnews/trafficAlert_fall2011.pdf)*	The IS/EA with ND/FONSI concluded that there are no cumulative impacts anticipated for this project.
T-17	I-405 (Euclid Ave. to I-605)	No	Caltrans	▪ Add one general purpose lane in each direction.	A Final EIR was completed for this project in March 2015. The project was approved by Caltrans in March 2015 and the Orange County Transportation Authority in September 2015. *(Source: Caltrans District 12 Website, http://www.dot.ca.gov/dist12/DEA/405/index.php#DEIS)*	None

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-18	SR-60 Freeway Improvement Project	No	Caltrans	▪ The project would construct HOV lanes in both directions on SR-60 between SR-57 and I-605. A total of 11.5 miles of new carpool lanes are being constructed in each direction. ▪ The project includes bridge and lane widening, reconstruction of the median barrier, and the realignment of four on-ramps.	An IS/ND was prepared for this project. Construction began in April 2007 and was completed in 2011. *(Source: Caltrans Website, www.dot.ca.gov/dist07)*	The ND concluded that the project would not have a significant effect on the environment and would not have cumulative effects.
T-19	SR-22 West County Connectors Project	No	Orange County Transportation Authority (OCTA), Caltrans and FHWA	▪ The project would include additional carpool lanes on the I-405 between SR-22 and I-605 in both directions. ▪ HOV direct connectors between SR-22/I-405/I-605 freeways. ▪ Reconstruction of Valley View St. and Seal Beach Blvd. bridges.	A Final EIR/EIS was prepared for this project and approved in March 2003. Construction of the project began in 2010 and was completed in February 2015. *(Sources: OCTA Website, Caltrans District 12 website, http://www.dot.ca.gov/dist12/files/sr22EIR/, and http://www.dot.ca.gov/hq/paffairs/news/pressrel/2015/15pr014.htm)*	Potential construction noise issues if combined with other simultaneous construction projects near the project area. Visual impacts (loss of trees).
T-20	SR-22 (SR-55 to I-405)	No	Orange County Transportation Authority (OCTA)	▪ Add one HOV lane in each direction.	This project has been completed.	None
T-21	SR-47 Expressway Project (Schuyler Heim Bridge Replacement and construct Expressway and Flyover)	Yes	Caltrans and Alameda Corridor Transportation Authority (ACTA)	▪ The project would replace the Schuyler Heim Bridge over Cerritos Channel with a fixed span bridge connecting to a new limited-access four-lane elevated highway that parallels Henry Ford Ave. and that merges with Alameda St. ▪ Construct new two-lane flyover to divert eastbound Ocean Blvd. traffic directly to northbound SR-47 and across the new bridge.	A Final EIS/EIR was prepared for this project, dated May 2009. The project is currently in final design, but no construction schedule has been established. The Schuyler Heim Bridge Replacement is under construction and expected to be complete in 2017; expressway construction is postponed indefinitely. A Record of Decision was prepared for the project in August 2009. *(Source: Caltrans Website, http://www.dot.ca.gov/dist07/resources/envdocs/docs/SR-47_FEIS-FEIR_full_5-09.pdf - accessed July 21, 2009)*	Community impacts Parking Visual Cultural Geology Air quality Noise Biological Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.
T-22	ACTA Track Realignment, West Basin Rail Yard–Rail Enhancement Project	No	Various Agencies	▪ The project would install a Track Realignment south of the Thenard Junction (ACTA). ▪ West Basin Rail Yard (part of Ports Rail Enhancement).	Phase I of the Thenard Junction track connection was completed in July 2008. Construction of Phases II and III began in 2013 and were completed in 2014. An EIS/SEIR document is to be prepared for the West Basin Phase II and III projects. *(Source: POLA website www.portoflosangeles.org/)*	Environmental impacts have not been determined at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-23	Terminal Island Wye Track Realignment–Rail Enhancement Project	No	Port of Long Beach (POLB)	▪ The project would install the Terminal Island Wye Track Realignment.	An EIR was prepared for this project. Construction of the project is anticipated to begin in March 2019. *(Source: POLB CIP, Department of Transportation website, www.dot.ca.gov/hq/transprog/ctcbooks/2009/1209/062_4.2.pdf)*	Environmental impacts have not been determined at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-24	Grade Separation at Reeves Crossing and Navy Mole Storage Yard–Rail Enhancement Project	No	POLA/POLB	▪ The project would include the closure of the Reeves At-Grade Crossing. ▪ Construction of the Navy Mole Rd. Storage Rail Yard. ▪ Construction of a Grade Separation at Reeves Crossing.	This project is on hold. *(Source: POLB CIP, Department of Transportation website, www.dot.ca.gov/hq/transprog/ctcbooks/2009/1209/062_4.2.pdf)*	Transportation

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-25	Pier B On-Dock Rail Support Facility	Yes	POLB	▪ Reconfigure, expand and enhance the existing Pier B rail facility to support more efficient cargo movement via "on-dock" rail at the Port's marine terminals. ▪ The proposed project (12th Street Alternative) would expand the Pier B rail facility from its existing 12 tracks to 48 tracks by adding 36 tracks. ▪ Yard support facilities, including a locomotive layover/fueling area and a new in-ground air supply system for train brake testing, would also be constructed. ▪ Eliminate the existing at-grade railroad crossing at the 9th Street and Pico Avenue intersection.	A Draft EIR was circulated for public review from late 2016 until March 13, 2017. *(Source: http://www.polb.com/civica/filebank/blobdload.asp?BlobID=13683, accessed March 1, 2017)*	Emergency services Geology (liquefaction) Hazardous waste Air quality Noise Biological Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.
T-26	Track Realignment at Ocean Blvd./Harbor Scenic Dr.–Rail Enhancement Project	No	POLB	▪ The project would add a third track under Ocean Blvd./Harbor Scenic Dr.	Environmental clearance was completed in March 2009. Construction of the project began in 2010 and was completed in 2015. *(Source: POLB CIP, POLB website- www.polb.com/civica/filebank/blobdload.asp?BlobID=6010)*	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
T-27	New Cerritos Channel Rail Bridge	No	ACTA	▪ The project would add rail capacity to the existing two-track lift bridge over the Cerritos Channel linking Terminal Island to the Alameda Corridor.	Conceptual Project *(Source: http://www.polb.com/civica/filebank/blobdload.asp?BlobID=7538)*	Air quality Noise
T-28	C St. Access Ramps Improvement Project (at I-110 Freeway on/off ramps)	No	POLA	▪ The project would reconfigure the C St./Figueroa St. interchange, which would include an elevated ramp from Harry Bridges Blvd. to the I-710 freeway, over John S. Gibson Blvd., and an additional extension connecting Figueroa St. to the new ramp over Harry Bridges Blvd.	Conceptual planning stage. *(Source: http://www.polb.com/civica/filebank/blobdload.asp?BlobID=7538)*	Transportation Air quality
T-29	Sepulveda Blvd. (Alameda St. to Eastern City limits of Carson)	No	City of Carson	▪ The project would add one lane in each direction on Sepulveda Blvd. (widen from two to four lanes).	An IS/MND was prepared for this project. Construction of this project has not begun. *(Source: 710 Alternatives Doc) and Engineering Division - CIP project status report 01-18-2011*	Transportation Air quality
T-30	Washington Blvd. Improvement Project (from westerly city boundary at Vernon to I-5 Freeway at Telegraph Rd. in Commerce)	Yes	City of Commerce	▪ The project would widen and reconstruct an additional lane in each direction on Washington Blvd. from the Commerce/Vernon city boundary at Vernon to the I-5 Freeway at Telegraph Rd. (widen from two to three lanes). ▪ Increase turn radius and medians. ▪ Upgrade traffic signals.	A Draft EIR was prepared for the project in October 2009. Construction started in January 2015. *(Source: ftp://ftp.huitt-zollars.com/pub/Washington_Blvd/Attachment%205B%20-%20Final%20Environmental%20Impact%20Report%20_March%2030,.pdf, accessed December 7, 2009)*	Parking Noise Biological (removal of trees) Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.
T-31	26th St. Bridge Widening	No	City of Vernon	▪ The project would widen 26th St. over the Los Angeles River in the City of Vernon.	Construction of this project has not begun. *(Sources: City of Vernon Community Services & Water Department – Five-Year Capital Improvement Plan 2010-2015, and Google Maps)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project. Likely issues of concern would be transportation and impacts to the Los Angeles River.
T-32	Atlantic Blvd. Bridge Widening	No	City of Vernon	▪ Design and construction to widen the Atlantic Blvd. bridge over the Los Angeles River.	Construction of this project has not begun. *(Sources: City of Vernon Community Services & Water Department – Five-Year Capital Improvement Plan 2010-2015; http://www.waterboards.ca.gov/losangeles/water_issues/programs/401_water_quality_certification/final_letters/Documents/2011/10-160WQC%20Final.pdf; and Google Maps)*	Issues of concern would be transportation and impacts to the Los Angeles River.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-33	Wilmington Parkway	No	City of Los Angeles Harbor Department (POLA)	▪ The project would realign Harry S. Bridges Blvd. adjacent to the C St. interchange.	An EIS/SEIR was completed for the project. *(Sources: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/d7/env-docs/.)*	Air Quality Marine Vessel Transportation (During construction) Water Quality (Surface Waters during Construction) Geology and Soils (Seismicity)
T-34	Harry S. Bridges Blvd. (Figueroa St. to Alameda St.)	No	POLA	▪ The project would relocate and consolidate Harry S. Bridges Blvd., which would include street intersections, traffic channelization, and signalization. ▪ After widening, will remain a two-lane highway with the capacity to increase to three lanes in each direction to accommodate future traffic demand.	An MND/FONSI was completed in May 2012. *(Source: http://www.dot.ca.gov/d7/env-docs/docs/i110_Cst_FINAL_ISEA.pdf)*	Traffic and circulation
T-35	Central Ave. Transportation Enhancement	No	City of Compton	▪ The project would provide new streetscape medians, landscaping enhancements, and improve traffic safety on Central Ave.	In design. *(Source: City of Compton Public Works Website)*	Aesthetics
T-36	Alondra Blvd. Transportation Enhancement	No	City of Compton	▪ The project would add new landscape and streetscape improvements on Alondra Blvd. between I-710 and Alameda St.	No information available.	Aesthetics
T-37	Blue Line Transportation Enhancement Project	No	City of Compton	▪ The project would construct Blue Line Light Rail Transit Improvements at the intersection of Artesia Blvd. and Acacia Blvd.	No information available.	Aesthetics
T-38	Imperial Hwy./Garfield Ave. Intersection Improvement Project	No	City of South Gate	▪ The project would widen the intersection of Imperial Hwy./Garfield Ave. and improve truck-turning movements.	The project is complete. *(Sources: City of South Gate CIP list August 2007; and Daniel Gruezo Assistant Engineer)*	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
T-39	Firestone Blvd. Bridge Widening over Rio Hondo Channel Project	No	City of South Gate	▪ The project would add one traffic lane in each direction, retrofit the bridge in compliance with the latest seismic standards, and install a raised landscape median on Firestone Blvd.	Completion of design, construction bidding and construction of the project are anticipated in 2012. *(Sources: City of South Gate CIP list August 2007; and Daniel Gruezo Assistant Engineer)*	Transportation Water quality
T-40	Regional Connector		Metro (Los Angeles County Metropolitan Transit Authority)	▪ The Metro Regional Connector Project extends from the Metro Gold Line Little Tokyo/Arts District Station to the 7th St./Metro Center Station in downtown Los Angeles, allowing passengers to transfer to Blue, Expo, Red, and Purple Lines, bypassing Union Station. The 1.9-mile alignment will serve Little Tokyo, the Arts District, the Civic Center, the Historic Core, Broadway, Grand Ave, Bunker Hill, Flower St. and the Financial District.	The Final EIR was completed in January 2012. Construction of the project began in in late 2016. The project is expected to be completed by 2021. *(Sources: https://www.metro.net/projects/connector/; and https://www.metro.net/projects/connector/connector-final-eiseir/)*	Transportation Air Quality (During construction) Cultural Resources (Paleontological Resources) Cumulatively beneficial traffic and air quality impacts during operation.
T-41	Cesar E. Chavez Park, Phase II, north side of Southern Ave. from Santa Fe Ave. to State St.	No	City of South Gate	▪ The project would construct meandering pathways, pedestrian light poles, landscaping, irrigation system, drinking fountains, parking areas, picnic tables and benches, and tot lot with a rubberized surface to the park. The improvements are on the Department of Water and Power property.	The project was completed in September 2010. *(Sources: City of South Gate CIP list August 2007; and Daniel Gruezo Assistant Engineer)*	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
T-42	Firestone Blvd./Garfield Ave. Intersection Improvement Project	No	City of South Gate	▪ The project would widen the Firestone Blvd./Garfield Ave. intersection; install concrete approaches and other peripheral improvements.	The project was completed in September 2009. *(Sources: City of South Gate CIP list August 2007; and Daniel Gruezo Assistant Engineer)*	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-43	Anaheim St. from Farragut Ave. to Dominguez Channel	No	City of Los Angeles	▪ Widen existing roadway from four to six- lane overcrossing.	The project is in the pre-design phase. Construction duration expected from June 3, 2018 to May 31, 2019. *(Source: Project Information Report. Bureau of Engineering, Department of Public Works, City of Los Angeles. http://boe.lacity.org/uprs/report/ ProjectInfoReport.cfm?k=6071&dmy=20641*. Website accessed March 1, 2017*).*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-44	Del Amo Blvd. Overcrossing at I-405 Freeway	No	City of Carson	▪ Construct new six-lane overcrossing.	This project has been completed.	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
T-45	Lakewood Blvd. from Florence to Telegraph Rd.	No	City of Downey	▪ Widen to provide three travel lanes in each direction.	This project has been completed.	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
T-46	Del Amo Blvd. from Normandie Ave. to New Hampshire Ave.	No	City of Los Angeles	▪ Widen to provide two travel lanes in each direction.	The current status of this project is unknown. Information regarding the current status of the project will be added, if it becomes available during the environmental process for the I-710 Corridor Project.	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-47	Beverly Boulevard Phase III Widening and Replacement of Beverly Boulevard Bridge Over Rio Hondo Channel	No	County of Los Angeles Department of Public Works	▪ Widen roadway to provide two travel lanes, a ten-foot two-way left turn, and an 11-foot shoulder in each direction (which would serve as travel lanes during peak hours) from Montebello Blvd. to Rea Dr. ▪ Replacement of the Beverly Blvd. Bridge over Rio Hondo Channel east of Rea Dr. with a wider structure that would provide three travel lanes in each direction.	An Initial Study/Environmental Assessment, Negative Declaration/Finding of No Significant Impact was prepared by the County of Los Angeles Department of Public Works in May of 2004 and approved by the County of Los Angeles Board of Supervisors on August 25, 2005.	Air Quality Noise Hazardous Waste
T-48	SR-91/I-605/I-405 Study Area	No	Various	▪ Total of 28 arterial highway intersection improvements ▪ As identified in Table A-2, arterial highway improvement hot spots initial projects; SR-91/I-605/I-405; early action analysis	The current status of this project is unknown. Information regarding the current status of the project will be added, if it becomes available during the environmental process for the I-710 Corridor Project.	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-49	High Speed Rail	Yes	California High Speed Rail Authority and Federal Railroad Administration	▪ The project would develop an 800-mile statewide system of high-speed trains from southern to northern California; potential crossing of I-710 corridor between Washington Blvd. and Bandini Blvd. and just north of Washington Blvd.	A Final Program EIR/EIS was prepared for the Bay Area to Central Valley in May 2008. On March 3, 2011, the Authority Board approved the development and study of a phased implementation plan for the Los Angeles to Anaheim section. The phased approach would bring early benefits to existing rail and commuter services and would improve mobility and rail safety for the local region. A Supplemental Alternatives Analysis Report for the Los Angeles to Anaheim section was completed in 2016. The alternatives to be carried forward for the subsection of the segment at the I-710 crossing was the Dedicated HST Alternative and Consolidated Shared-Track Alternative, which would have less constructability and displacement impacts than the at-grade option. Both have aerial and at-grade features. The anticipated construction schedule is unknown, but the project is proposed to be operational by 2029. *(Source: High Speed Rail Website, www.hsr.ca.gov/)*	Land use Residential/commercial property displacements Visual Cultural (indirect) Geology Paleontology Hazardous waste Air quality (benefit) Noise/vibration Biological Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-50	Exposition Line Light Rail Transit – Phase I	No	Expedition Construction Authority (Expo) and Metro	▪ The project is a light-rail transit project, Expo Corridor Phase I, which will operate from 7th St./Metro Station to Washington/National Station. The Line will connect Downtown Los Angeles to the Westside area at Culver City.	A Final EIS/EIR document was prepared for the Phase I portion of the project in October 2005. Construction began in fall 2006. Initial operations began in April 2012. *(Source: Metro website: www.buildexpo.org)*	Multimodal transportation system
T-51	Exposition Line Light Rail Transit – Phase II	No	Expo and Metro	▪ The project is a light-rail transit project Phase II: from Venice/ Robertson Station to Santa Monica (Metro).	A Final EIS/EIR document was prepared for the Phase II portion of the project in December 2009. The Final EIR was certified in February 2010. Construction began in 2012 and was completed in 2015. *(Sources: libraryarchives.metro.net/DPGTL/eirs/Expo/ ExpostitionPhaseIIFinalEIR.htm; Baseline Alternatives Analysis, Metro website: www.buildexpo.org; and https://www.metro.net/projects/expo-santa-monica/)*	Air quality (NO_X) during construction activities
T-52	Eastside Line Light Rail Transit	No	Metro	▪ The project is a light-rail project, from Union Station to Atlantic Blvd. via 1st St. to Lorena St., then 3rd St./Beverly Blvd. to Atlantic Blvd.	A Final Supplement to an EIS and Subsequent EIR document was prepared for the Metro Gold Line Extension, Light Rail in January 2002. An Alternatives Analysis for the Gold Line East Side Extension Phase 2 was prepared October 2009. *(Sources: Chapter 4.0: Affected Environment and Environmental Consequences, Summary of Impacts. Los Angeles Eastside Corridor Final SEIS/SEIR.* January 2002. *http://media.metro.net/projects_studies/eastside/images/ Chapter%204%20- %20Aff%20Environ%20and%20Environ%20Conseq.pdf.* Website accessed March 1, 2017. *Baseline Alternatives Analysis. included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	Parklands (during construction) Noise Cumulatively beneficial growth-inducing impacts during operation.
T-53	Blue Line Parking Improvements	No	Metro	▪ The project is a light-rail project that would build a parking structure on First St. near southerly terminus of the Long Beach Blue Line in downtown Long Beach. ▪ Construct a park-and-ride facility in Long Beach at 3rd St. and Pacific Ave. south of the Metro Blue Line Pacific Station; include 300 to 500 parking spaces and residential/commercial development. ▪ Torrance Transit Line No. 6–Blue Line feeder service.	*(Source: Baseline Alternatives Analysis. included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-54	HOT Lane Bus Service	No	Metro and Caltrans	▪ The project would implement new bus services to expand transit for I-10 and I-110 HOT lanes.	This project would be a feature of the I-10 and I-110 HOT Lane project (see T-7, T-8, and T-9).	See T-7, T-8, and T-9 for cumulative factors.
T-55	Gold Line Foothill Extension	No	Metro	▪ Sierra Madre Villa Station to Azusa Citrus Station ▪ Construct light rail transit project	The Final EIR/EIS was certified in March 2013, and Addendum No. 3 was approved in March 2016. The project was completed in September 2015 and opened on March 5, 2016. *(Source: https://www.metro.net/projects/foothill-extension/)*	Noise/Vibration Visual impacts Transportation (traffic) Safety and Security

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-56	Crenshaw – LAX Transit Corridor	No	Metro	▪ Crenshaw and Exposition Station to LAX/Aviation Station	A Final EIS/EIR was completed in August 2011. *(Source:* https://www.metro.net/projects/crenshaw_corridor/crenshaw-feis-feir/*)*	Displacements and relocations/ Environmental Justice Visual Impacts Noise and Vibration Biological Resources Geotechnical Historical, archaeological, paleontological Parklands and community facilities Safety and security Air Quality
T-57	Positive Train Control	No	Metrolink System (SCRRA)	▪ Implement Positive Train Control on 216 miles of Metrolink right-of-way (note: largely safety, operational improvement)	Any interoperable system must be implemented by December 31, 2015 per federal mandate. PTC was first implemented along the San Bernardino Line in Spring 2015 and system-wide by late 2015. *(Source: Positive Train Control (PTC), Metro, https://www.metro.net/projects/regionalrail/projects-programs/.* Website Accessed March 1, 2017).	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
T-58	Westside Purple Line Subway Extension	No	Metro	▪ Wilshire & Western Station to La Cienega ▪ Construct Segment 1 of Westside Purple Line Subway Extension	A Final EIS/EIR was prepared for the Westside Purple Extension in March 2012. *(Source: https://www.metro.net/projects/westside/final-eis-eir/)*	Transportation (Parking) Cumulatively beneficial air quality and greenhouse gas emission impacts during operation.
T-59	I-710 Communication System and Closed-Circuit TV System (CCTV)	No	City of Long Beach	▪ The project would install a communication system along I-710 from Pacific Coast Hwy. to I-405. The facilities are for traffic monitoring and include a closed circuit TV system.	Construction of the project began in winter 2006 and was completed in spring 2008. *(Source: Baseline Alternatives Analysis, Port of Los Angeles website www.portoflosangeles.org/DOC/I-710_Newsletter_Summer2007.pdf)*	The project is complete; no cumulative factors would affect the I-710 Corridor Project.
T-60	Atlantic Ave.–Signal Synchronization and Enhancement Project	No	City of Long Beach	▪ The project would be a major reconstruction and minor upgrades of traffic signals along Atlantic Ave. between Ocean Blvd. and Wardlow Rd. and would improve traffic flow.	*(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-61	Ocean Blvd.–Signal Synchronization and Enhancement Project	No	City of Long Beach	▪ The project would reconstruct, upgrade and synchronize traffic signals along the corridor to reduce traffic congestion along Ocean Blvd. between Alamitos Ave. and Livingston Dr./2nd St. ▪ Pedestrian safety enhancements and Americans with Disabilities Act (ADA) access ramps would be installed.	*(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-62	7th St., Long Beach Blvd. to Junipero	No	City of Long Beach	Project information is not available.	In design Start Date: 1/30/2012 End Date: 4/30/2012 *(Source: http://lbcip.com/)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-63	Long Beach Blvd. between N/O 56th St. & Del Amo Blvd.	No	City of Long Beach	▪ A complete street improvement consisting of new landscaping, new lighting and street furniture, street repaving, sidewalk and gutter replacement, and addition of landscaped medians.	Construction complete Start Date: 11/22/2010 End Date: 9/12/2011 *(Source: http://lbcip.com/)*	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
T-64	Gateway Cities Forum–Carson St. Signal Synchronization	No	Los Angeles County	▪ The project would provide time-based traffic signal synchronization and upgrades to improve the overall progression of traffic along Carson St. between Long Beach Blvd. and Bloomfield Ave.	*(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-65	Florence Ave.–Traffic Signal Communications System	No	City of Downey	▪ The project would install an Ethernet-based Signal Communication System on Florence Ave. between Old River School Rd. and Fairford Ave.	Construction complete *(Source: Baseline Alternatives Analysis; http://www.downeyca.org/_blobcache/0000/0004/4101.pdf)*	The project is completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
T-66	Southeast Los Angeles County (SELAC) –Traffic Signal Synchronization	No	Los Angeles County Department of Public Works	▪ The project would implement a real-time traffic signal synchronization system to effectively manage high traffic volumes and reduce traffic congestion. These traffic corridors are as follows: I-710/Atlantic Blvd. Corridor; I-5 Telegraph Rd. Corridor; Lakewood/Rosemead Blvd. and Paramount Blvd. Corridor; I-105/Firestone Blvd., Imperial Hwy., and Rosecrans Ave. Corridor. ▪ Provide additional lane capacity through minor roadway widening and peak-hour parking restrictions.	*(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-67	Wilmington Automated Traffic Surveillance and Control System/Adaptive Control System (ATSAC/ATCS) Project	No	City of Los Angeles	▪ The project would implement a real-time traffic signal synchronization system to effectively manage high traffic volumes and reduce traffic congestion at 70 signalized intersections. These intersections are as follows: Southern portion of the City of Los Angeles, bounded by Sepulveda Blvd. on the north, the City of Long Beach on the east, and Seaside Ave./Ocean Blvd. on the south; Western Ave. on the west.	*(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-68	Harbor-Gateway ATSAC/ATCS Project	No	City of Los Angeles	▪ The project would implement a real-time traffic signal synchronization system to effectively manage high traffic volumes and reduce traffic congestion at 109 signalized intersections. These intersections are as follows: the southern portion of the City of Los Angeles, bounded by Manchester Ave. on the north, Alameda St. on the east, Imperial Hwy. on the south, and Vermont Ave. on the west.	*(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-69	Gateway Cities Forum Traffic Signal Corridor Project-Phase II	No	Los Angeles County	▪ The project would provide time-based traffic signal synchronization and upgrades to improve the overall progression of traffic along and crossing the following routes: Pacific Blvd./Long Beach Blvd. between Florence Ave. and Willow St.	*http://www.metro.net/board/Items/2011/05_May/20110518 P&PItem5.pdf* *(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-70	Gateway Cities Forum Traffic Signal Corridor Project–Phase III	No	Los Angeles County	▪ The project would provide time-based traffic signal synchronization and upgrades to improve the overall progression of traffic along and crossing the following routes: Artesia Blvd. between Alameda Blvd. and Valley View Ave.; on Central Ave. between El Segundo Blvd. to Victoria St.; on Gage Ave. between Central Ave. to Slauson Ave.; on Whittier Blvd. between Paramount Blvd. to Valley Home Ave.; on Wilmington Ave. between Imperial Hwy. to Sepulveda Blvd. ▪ Implement a traffic signal management and control system that allows jurisdictions to respond more efficiently to traffic congestion.	*Signal Synchronization projects completed.* *http://www.metro.net/board/Items/2011/05_May/20110518 P&PItem5.pdf* *(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-71	Gateway Cities Forum Traffic Signal Corridor Project–Phase IV	No	Los Angeles County	▪ The project would provide time-based traffic signal synchronization and ITS improvements to enhance intersection operations, increase traffic mobility, and relieve existing traffic congestion on surface arterials. Project would synchronize the following streets: 38th St./37th St./Bandini Blvd. between Alameda St. and Garfield Ave.; on Garfield Ave. between Olympic Blvd. and Eastern Ave.; on Studebaker Rd. between Florence Ave. to Del Amo Blvd.	*http://www.metro.net/board/Items/2011/05_May/20110518 P&PItem5.pdf* *(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-72	Gateway Cities Forum Traffic Signal Corridor Project–Phase V	No	Los Angeles County	▪ The project would provide time-based traffic signal synchronization and ITS improvements to enhance intersection operations, increase traffic mobility, and relieve existing traffic congestion on surface arterials. Project would synchronize the following streets: Alameda St. between Nadeau St. to Auto Dr. South; on Florence Ave./Mills Ave. from Central Ave. to Scout Ave.; on South St. between Atlantic Ave. to Carmenita Rd.; on Washington Blvd. between Atlantic Blvd. and Whittier Blvd.	*http://www.metro.net/board/Items/2011/05_May/20110518P&PItem5.pdf* *(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum [URS, February 2009])*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-73	Station Improvements: Los Angeles Union Station Renovation/ Expansion Phase 1	No	Metro	▪ The planned renovation would provide more track space at Union Station.	A Program Environmental Impact Report for the Los Angeles Union Station Master Plan is under development. *(Sources: Southern California Regional Rail Authority (SCRRA) Strategic Assessment, January 2007; and Metro website: https://media.metro.net/projects_studies/union_station/images/LAUSMP_report_nop_2016-03.pdf) Website accessed March 10, 2017.*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-74	Station Improvements: Los Angeles Union Station Renovation/ Expansion Phase 2	No	Metro	▪ The planned expansion would provide for increased passenger circulation needs at Union Station.	A Program Environmental Impact Report for the Los Angeles Union Station Master Plan is under development. *(Sources: Southern California Regional Rail Authority (SCRRA) Strategic Assessment, January 2007; and Metro website: https://media.metro.net/projects_studies/union_station/images/LAUSMP_report_nop_2016-03.pdf) Website accessed March 10, 2017.*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-75	Bridge across Los Angeles River– Metro Orange Line Extension	No	Metro and Los Angeles Department of Transportation (LADOT)	▪ The project would be a four-mile northern extension of the Metro Orange Line from the Canoga Station to Chatsworth Metrolink Station. ▪ The bridge would be constructed to cross the Los Angeles River, crossing at Santa Susana Wash.	A Final EIR Addendum document was prepared for the Metro Orange Line Extension project in 2009. Construction on the project and was completed in June 2012. *(Sources: Southern California Regional Rail Authority (SCRRA) Strategic Assessment, January 2007; and Metro website: www.metro.net/projects/orangeline/deir/)*	The project is complete; No cumulative impacts were identified for this project in the Final EIR Addendum.
T-76	Eastside Transit Corridor Phase 2 (Atlantic Blvd. Station to Lambert Rd. Station)	No	Metro (Los Angeles County Metropolitan Transit Authority)	▪ Construct Light Rail Transit Extension (Note that two build alternatives are currently under study; would suggest Washington Blvd. Alignment [Alternative 2]).	A Draft Environmental Impact Study/Environmental Impact Report for this project, which studied two build alternatives, was started in Spring 2010. (*Source: https://www.metro.net/projects/eastside_phase2/. Website accessed March 1, 2017)*	Transportation (Washington Boulevard LRT Alternative) Aesthetics (Washington Boulevard LRT Alternative) Cumulatively beneficial impacts on community, neighborhood, economic, noise, and transportation resources during operation.
T-77	West Santa Ana Branch right-of-way Corridor (Orange County Line to Union Station)	No	Metro (Los Angeles County Metropolitan Transit Authority)	▪ Construct grade-separated, Eco-Rapid Transit Corridor (rapid light rail or transit) along PE Right-of-Way from Orange County Line to Union Station [RTP ID #: 1TR1011, Strategic "Plan"].	Pacific Electric Right-Of-Way/West Santa Ana Branch (PEROW/WSAB) Alternative Analysis study completed in March of 2013 by SCAG. A Technical Refinement Study was completed in July 2015 by Metro. SCAG RTP/SCS 2016-2040 projects listing indicated that the project will be completed by 2028. *(Source: https://www.metro.net/projects/west-santa-ana/.Website accessed March 1, 2017)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
T-78	Slauson Light Rail (Crenshaw Corridor to Metro Blue Line Slauson Station)	No	Metro (Los Angeles County Metropolitan Transit Authority)	▪ Construct Light Rail Extension.	SCAG RTP/SCS 2016-2040 projects listing indicated that the project will be completed by 2040. No additional information is available at this time. *(Source: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Website accessed March 1, 2017)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-79	Metro Blue Line Track Improvement Project	No	Los Angeles County; City of Compton, Long Beach	▪ The project would install four new sets of track crossovers at four locations along the Metro Blue Line, an equipment bungalow, and pedestrian and emergency swing gates at 27 intersections, and replace the existing train control system. The project includes various locations, including improvements at E. 50th/E. 52nd Sts; E. 88th/E. 97th Sts; Compton Blvd./E. Myrrh St; and S. Alameda St/E. Del Amo Blvd.	An IS/MND was circulated for this project in May 2015. The project was approved by the California Transportation Commission in May 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed December 9, 2016)*	The MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
T-80	Shoemaker Bridge Replacement Project	No	City of Long Beach	▪ Proposing to replace the Shoemaker Bridge. The Shoemaker Bridge Replacement is an Early Action Project of the Interstate 710 Corridor Improvement Project. The project is located at W. Shoreline Dr. and I-710.	A Notice of Preparation was circulated for this project in April 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
T-81	East-West Freight Corridor Project	No	Southern California Association of Governments (SCAG)	▪ The project would establish truck-only lanes along the SR-60 corridor between I-710 in Los Angeles County and I-15 in San Bernardino County. Such a system would address the growing truck traffic and safety issues on core highways through the region and serve key goods movement industries. Truck-only lanes add capacity in congested corridors, improve truck operations and safety by separating trucks and autos and provide a platform for the introduction and adoption of zero- and near zero-emission technologies.	Corridor concept planning is ongoing. No environmental analysis has been completed. *(Source: SCAG 2016 RTP/SCS, Goods Movement Transportation System Appendix – accessed December 27, 2016)*	No environmental analysis has been completed, but the project is expected to reduce emissions and traffic congestion.
T-82	Regional Connector Transit Corridor Project		Metro (Los Angeles County Metropolitan Transit Authority)	▪ The project would construct a 1.9-mile underground light-rail extension from the Metro Gold Line Little Tokyo/Arts District Station to the 7th Street/Metro Center Station in downtown Los Angeles. Three new Metro Gold Line stations (1st Street/Central Avenue, 2nd Street/Broadway, and 2nd Place/Hope Street) are included in the proposed scope.	Forecasted opening in 2021. *https://www.metro.net/projects/connector/, website accessed March 10, 2017* *http://media.metro.net/projects_studies/connector/images/Final_EIR/chapter_4.19_cumulative_impacts.pdf. Website accessed March 10, 2017.*	Transportation Impacts (No Build Alternative, TSM Alternative, Locally Preferred Alternative) Paleontological Resources (Locally Preferred Alternative)
Ports of Long Beach and Los Angeles Projects						
P-1	Southern California International Gateway (SCIG) Project	Yes	City of Los Angeles Harbor Department (POLA)	▪ The project would construct and initiate the operation of a BNSF 157-acre intermodal container transfer facility in the POLA and various associated features that include the Increased use of rail and increased near-dock rail facilities for movement of both existing and future containerized cargo to help address the need for the increase of near-dock facilities and to provide an efficient connection to the Alameda Corridor.	The Final EIR for this project was certified and approved by the Los Angeles Board of Harbor Commissioners in March 2013. The anticipated construction schedule is unknown as the approval of this project is currently under legal challenge. *(Source: Office of Planning and Research, CEQAnet Database – accessed January 9, 2017; BNSF Railway website,* http://www.bnsfconnects.com/latest-news, *accessed December 22, 2016)*	Land use (indirect) Community/environmental justice Utilities Transportation Visual Cultural Hazardous waste Air quality Noise Biological Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
P-2	San Pedro Waterfront Project	No	City of Los Angeles Harbor Department (POLA)	▪ The project would develop three new harbors, including the North Harbor, Downtown Harbor, and 7th St. Harbor. ▪ Improvements to a variety of land uses within the project area, including public waterfront and open space areas, commercial development, transportation and parking facilities, and expansion of cruise ship facilities and operations. ▪ Expand Sampson Way to two lanes in each direction and curve near the wholesale fish market to meet with 22nd St. in its westward alignment east of Miner St.	An EIS/EIR document was prepared for the project and certified in September 2009. Construction was expected to begin in 2009 and be completed in 2014. *(Source: Port of Los Angeles website, www.portoflosangeles.org/)*	Transportation impacts Air quality impacts
P-3	Wilmington Waterfront Project	No	City of Los Angeles Harbor Department (POLA)	▪ The project would develop the waterfront area with pedestrian-oriented features, including parks, plazas, sidewalk enhancements, and a pedestrian bridge. ▪ Development of a waterfront promenade and piers, with commercial retail/restaurant components. ▪ Development of a ten-acre raised park space on an expansive land bridge over active railroad lines to connect A St. with the Wilmington waterfront. ▪ Enhancement of the Avalon Blvd. Corridor to support commercial, industrial, and retail development. ▪ Development of the Railroad Green, a passive open space within an existing abandoned railroad right-of-way. ▪ Improvement of traffic circulation on Avalon Blvd., Broad Ave., A St., and Water St. ▪ Removal and remediation of existing Los Angeles Department of Water and Power (DWP) oil tanks. ▪ Extension of the Red Car Line and California Coastal Trail along John S. Gibson Blvd. and Harry Bridges Blvd. from Swinford St. and Harbor Blvd. to Avalon Blvd. and Harry Bridges Blvd. ▪ The project would develop the Red Car museum in the Bekins Building.	The Final EIR/EIS was adopted by the Board of Harbor Commissioners in June 2009. The project is proposed for two construction Phases. Phase I would be constructed from 2009 to 2015. Phase II would be constructed from 2015 to 2020. *(Source: Port of Los Angeles website, /www.portoflosangeles.org /EIR/WilmWaterfront/DEIR/4.0_Cumulative_Effects.pdf)*	Noise impacts (increase in ambient noise levels during construction) Air quality impacts (increase of criteria pollutants, and exposure to significant levels of toxic air contaminants) Greenhouse gas (GHG) impacts Biological resources (sensitive species)
P-4	Port of Los Angeles Channeling Deepening Project	No	Los Angeles Harbor Department (POLA)	▪ The project would deepen the Port of Los Angeles to a maximum depth of -53 feet MLLW by removing between 3.9 to 8.5 million cubic yards of soils. ▪ A Supplemental EIS/EIR was prepared to analyze the additional disposal of 4.0 million cubic yards of capacity for the dredge material to complete the Channel Deepening Project and to beneficially reuse the dredge material in the Port of Los Angeles and optimize disposal of the dredge material.	The project was approved. Construction is underway. A recirculated EIR/EIS (September 2008) was prepared for the additional disposal capacity of soils. A Final Findings of Fact and Statement of Overriding Considerations was prepared for the project in April 2009. *(Source: POLA website, www.portoflosangeles.org/; www.portoflosangeles.org/EIR/ChanDeep/FEIR/CDP%20Findings%20of%20Fact%20FINAL.pdf)*	Air quality (ambient NO_2 levels, odor emissions) impacts
P-5	Berths 97–109 (China Shipping) Container Terminal Project (West Basin development)	No	Los Angeles Harbor Department (POLA)	▪ The project would develop and initiate the operation of a new container terminal for the China Shipping Lines at Berths 97–109 in the Port of Los Angeles.	A recirculated EIS/EIR was released in April 2008, and the project was approved in 2008. Three phases have been planned for this project. Phase I was expected to be completed in 2003. Phase IIA is expected to be constructed in 2010, Phase IIB to be completed in 2011, and construction of Phase III is expected to be completed in 2012. *(Source: POLA website, www.portoflosangeles.org/ EIR/ChinaShipping/DEIR/_Readers_Summary.pdf)*	Transportation impacts Air quality impacts

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
P-6	Berths 136- 147 [TraPac] Container Terminal Project (West Basin development)	No	Los Angeles Harbor Department (POLA) and U. S. Army Corps of Engineers	▪ The project would expand the container terminal at Berths 136-147 in the Port of Los Angeles (West Basin area). Improvements include deeper berths, longer and improved wharfs, replacement of existing cranes, new terminal buildings and facilities, a new on-dock intermodal rail yard, a relocated Pier A rail yard, an improved Harry Bridges Blvd. with a 30-acre buffer area adjacent to Harry Bridges Blvd. ▪ The project would be developed in two Phases. Phase I would expand the terminal from 176 acres to 233 acres (construction activities from 2008 to 2015). Phase II would add ten acres by 2025.	An EIS Addendum was prepared for the project in June 2012. Both phases of this project have been completed. *(Sources: www.portoflosangeles.org/EIR/TraPac/FEIR/Final_Addendum_with_Attachments_6-2012.pdf, accessed June 2012; https://www.portoflosangeles.org/facilities/rail_intermodal_yards.asp, accessed December 27, 2016)*	Air quality impacts during construction activities and operation of the facility Biological resources (invasive species) Cultural resources Noise (construction activities) Transportation impacts(during construction) Transportation impacts (operational with railroad crossings) Public services (solid waste, water and/or wastewater) Water quality (create pollution, cause nuisances, or violate applicable standards) *(Source: Findings of Fact and Statement of Overriding Considerations, December 2007; http://www.portoflosangeles.org/EIR/TraPac/FEIR/Final_Addendum_with_Attachments_6-2012.pdf))*
P-7	Berths 206–209 Interim Container Terminal Reuse Project EIR	No	Los Angeles Harbor Department (POLA)	▪ The project would allow an interim reuse of the former Matson Terminal. Change in tenant; no substantial change in operations.	A Final EIR was certified for the project. Construction of the project is on hold. *(Source: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/)*	Hydrology and water quality impacts
P-8	Berths 171–181, Pasha Marine Terminal Improvements EIR	No	Los Angeles Harbor Department (POLA)	▪ The project would redevelop the existing facilities at Berths 171–181 as an omni (multiuse) facility.	Preparation of the EIR for the project is on hold. . *(Sources: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/; POLB website, www.polb.com/civica/filebank/blobdload.asp?BlobID=7107)*	Factors have not been determined. Information to be added, if available.
P-9	Crescent Warehouse Company Relocation	No	Los Angeles Harbor Department (POLA) and U.S. Army Corps of Engineers	▪ The project would relocate the Crescent Warehouse Company from Port Warehouses 1, 6, 9, and 10 to an area of southeast Wilmington along Henry Ford and East I St. (tentative).	A Draft EIS/EIR was recirculated for this project in April 2008. This project is on hold. *(Sources: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/; and TTI Grain Export Terminal Installation Project, http://www.polb.com/civica/filebank/blobdload.asp?BlobID=11412)*	Factors have not been determined. Information to be added, if available.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
P-10	Pacific Los Angeles Marine Terminal, Pier 400, (formerly Pacific Energy Systems	No	Los Angeles Harbor Department (POLA) and U.S. Army Corps of Engineers	▪ The project would construct a Crude Oil Receiving Facility on Pier 400 with tanks on Terminal Island, with pipelines between berths, tanks, and pipeline systems.	A Final Supplemental EIS/EIR was prepared for the Pacific L.A. Marine Terminal project in November 2008. The SEIR/SEIS was approved by the Harbor Commissioners in 2008 and was approved by the Los Angeles City Council in the second quarter 2009. *(Sources: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/; City of Los Angeles Harbor Department website, www.pacificenergypier400.info/index2.php?id=4)*	Air quality (construction emissions and operational impacts from project) Water quality (groundwater, discharges and spills)
P-11	Evergreen Expansion, Terminal Island– Berths 226–236 Container Terminal Improvements and Canners Steam Demolition	No	City of Los Angeles Harbor Department (POLA)	▪ The project would expand the Evergreen Marine Terminal, with lease boundary changes, gate improvements, wharf modifications, cranes, and new buildings.	An EIS/EIR is to be prepared for the project. *(Source: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-12	Ultramar, Valero Lease Renewal	No	City of Los Angeles Harbor Department (POLA)	▪ The project would allow a lease renewal for a liquid bulk (petroleum) terminal.	A Draft EIR was circulated for public review in 2006 for this project. *(Source: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/)*	Air quality impacts
P-13	Conoco-Phillips Marine Oil Terminal	No	City of Los Angeles Harbor Department (POLA)	▪ The project would allow a lease renewal for a marine oil terminal.	*(Source: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-14	SSA Outer Harbor Fruit Facility Relocation	No	City of Los Angeles Harbor Department (POLA)	▪ The project would relocate the existing fruit import facility at 22nd and Miner to Berth 153.	An EIR was to be prepared for this project. The project is on hold. *(Source: SR-47 Cumulative List, POLB website, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/; www.polb.com/civica/filebank/blobdload.asp?BlobID=7107)*	Transportation impacts Air quality impacts
P-15	ILWU Local 13 Dispatch Hall Project	No	Los Angeles Harbor Department	▪ The project site is located at 1500 E. Anaheim St., in Los Angeles. The project would construct a two-story, 32,565 square-foot Dispatch Hall that would provide a meeting space and administrative offices for dispatching longshore workers within the Ports of Los Angeles and Long Beach. ▪ The project includes an 812-space dedicated on-site parking lot.	A Draft IS/MND (April 15, 2011) was prepared for this project. The Public Review period for the Draft IS/MND ended on May 9, 2011. *(Source: www.portoflosangeles.org/MND/ILWU/mnd_ilwu.asp)*	With the proposed mitigation for the project, the Draft IS/MND concluded that the project would not have any individually limited or cumulatively considerable impacts.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
P-16	City Dock No. 1 Marine Research Center Project	No	Los Angeles Harbor Department	▪ The project is located within the San Pedro Waterfront Plan area, which is approximately 400 acres, along the west side of the Los Angeles Harbor's Main Channel. ▪ The Port of Los Angeles and the Southern California Marine Institute (SCMI) have been working together to create marine research center. ▪ The project would develop a research center in the Port of Los Angeles, at Berths 56-60 and 70-71. ▪ The center would provide world-class facilities including laboratories, offices, classrooms, a lecture hall/auditorium and storage space to conduct marine research. The berths would provide a docking area for research vessels, from small vessels to large 250-to-300-foot vessels. ▪ The facility would include the world's largest wave tank using seawater for research activities.	An NOP for an EIR, and an environmental checklist was prepared for the project in December 2010. The checklist analysis determined that an EIR would need to be prepared for the project. *(Source: www.portoflosangeles.org/NOP/CityDock1/nop_citydock.asp)*	The checklist analysis concluded that the project would potentially result in significant impacts to biological resources, historic and archaeological resources, and would result in a cumulatively considerable contribution to greenhouse gas emissions, and poor air quality during construction. Information regarding the conclusions of the Final EIR will be added if it becomes available during the environmental process for the I-710 Corridor Project.
P-17	Al Larson Boat Shop Improvement Project	No	Los Angeles Harbor Department	▪ The project is located at 1046 Seaside Ave., Terminal Island. ▪ The project would redevelop the existing boat shop to modernize the facility, comply with National Pollution Discharge Elimination System permit and Water Discharge Requirement and to improve the shop's ability to build and repair ships and vessels. ▪ Improvements would include maintenance dredging to ensure access of vessels to the site, reuse of dredging material to construct two confined disposable facilities that would add approximately one acre of new land to the facility. ▪ The project will be constructed in three phases to minimize operational impacts to the facility.	An NOP for a Draft EIR was prepared in September 2010 for the project. Operation of the project would occur under a new 30-year lease. *(Source: www.portoflosangeles.org/NOP/Al_Larson/NOP_Final.pdf)*	Information regarding the conclusions of the Final EIR will be added if it becomes available during the environmental process for the I-710 Corridor Project.
P-18	Berths 302-306 [APL] Container Terminal Project	No	Los Angeles Harbor Department and U.S. Army Corps of Engineers	▪ The project is located on Terminal Island and would redevelop and expand a container terminal at Berths 302-306 in the Port of Los Angeles. ▪ The project includes extending the existing concrete wharf by 1,250 linear feet to add Berth 306, add new cranes to Berths 302-306 and expand the existing terminal with an additional 56 acres.	Draft EIS was completed in February 2012. *(Source: www.portoflosangeles.org/EIR/APL/DEIR/APL_Final_EIS_EIR_May%202012.pdf, accessed June 2012)*	The Draft EIS concluded that there would be unavoidable significant impacts to air quality, GHG, and biological resources. There would be less than significant impacts with mitigation to traffic and noise.
P-19	Middle Harbor Redevelopment Project	Yes	City of Long Beach Board of Harbor Commissioners (POLB)	▪ The project would redevelop, expand, and modernize the existing waterfront property that is part of the Middle Harbor area of the POLB and Port lands to accommodate a portion of the forecasted increases in containerized cargo throughput volumes.	The Final EIR/EIS was prepared in April 2009. Construction started in May 2011 and is expected to last nine years (2020). *(Source: http://www.polb.com/civica/filebank/blobdload.asp?BlobID=6227 – accessed May 2012)*	Community impacts Emergency response times Utilities Transportation (impacts to I-710 highway segment between Willow St. and Pacific Coast Hwy.) Cultural Air quality Biological Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
P-20	Gerald Desmond Bridge Replacement	Yes	POLB, Caltrans, Federal Highway Administration (FHWA)	▪ The project would replace the existing four-lane Gerald Desmond Bridge with new six-lane bridge (three lanes in each direction) ▪ Construct the Terminal Island East Interchange and I-710 connector ramps.	A revised Final EIR/EA FONSI was prepared for this project in July 2010. Construction started in 2013 and is anticipated to be completed in 2018. *(Source: http://www.polb.com/civica/filebank/blobdload.asp?BlobID=7520 – accessed March 2, 2010)*	Growth Utilities Transportation Visual (benefit) Geology Air quality Biological Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.
P-21	Piers G and J Terminal Redevelopment Project	No	City of Long Beach Board of Harbor Commissioners (POLB)	▪ The project would redevelop two existing marine container terminals into one terminal. The Piers G and J Redevelopment Project is in the Southeast Harbor Planning District area of the POLB. The project will develop a marine terminal up to 315 acres by consolidating two existing terminals on Piers G and J and several surrounding parcels. Construction will occur in four phases; it will include approximately 53 acres of landfills, dredging, concrete wharves, rock dikes, and road and railway improvements.	An EIR was prepared for the project, and the project has been approved. Pier G redevelopment includes up to 16 separate construction phases. Most of the project elements under this program were completed by 2014. Some of the program elements are on hold (e.g., South Rail yard, South Slip fill, and Berth G236 extension). *(Source: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/)*	Groundwater and soil impacts Air quality impacts
P-22	Pier A East and West Expansion Project	Yes	City of Long Beach Board of Harbor Commissioners (POLB)	▪ The Pier A expansion project would be located north of Cerritos Channel on both sides of Terminal Island Freeway. The project consists of the development of approximately 90 acres of oil production land. Additionally, an underpass linking the existing Pier A site to the expansion site would need to be constructed under the Terminal Island Freeway just north of the Schuyler Heim Bridge. ▪ Pier A East would redevelop 32 acres of the existing auto storage area into container terminal backlands. ▪ Pier A West would remove and dispose the contaminated soil from 19 sumps off site including oil wells, filling and paving.	An EIR document was prepared for the Pier A West Project and was completed in 2009. This project is on hold. *(Source: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/)*	Utilities Hazardous waste Air quality Noise Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.
P-23	Pier S Marine Terminal	Yes	City of Long Beach Board of Harbor Commissioners (POLB)	▪ The project would develop a 150-acre container terminal on Terminal Island. The Pier S site encompasses approximately 17 acres of former oil production land, which is currently undergoing remedial action. Following remediation and stabilization, the site will be brought up to grade and paved. The project calls for an existing riprap dike along Cerritos Channel to be realigned and a concrete, pile-supported wharf to be built. Additionally, terminal buildings, utilities, and a rail yard will be constructed.	A Draft EIR/EIS was prepared for the project in September 2011. This project is on hold. *(Source: http://www.polb.com/environment/docs.asp – accessed May 2012)*	Emergency services Utilities Transportation Hydrology Water quality Geology Hazardous waste Air quality Noise Biological Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
P-24	Intermodal Container Transfer Facility (ICTF)	Yes	ICTF Joint Powers Authority (JPA)	▪ The project would reconfigure the existing rail yard facility and add new train tracks within the ICTF. This facility transfers containers to and from trains. ▪ Replace the existing diesel-fueled rubber-tired gantry cranes with electric-powered wide-span gantry cranes. ▪ Improve the existing gate facilities and add parking. ▪ Increase the number of containers handled at the ICTF from the current annual average of 725,000 to an estimated 1.5 million annual average.	An NOP/IS was released in January 2009. The construction start date is unknown, but the project is expected to take three to four years to complete. *(Source: ICTF NOP, ICTF website, www.ictf-jpa.org/)*	Utilities Visual Water quality Hazardous waste Air quality Noise Short-term transportation, water quality, hazardous waste, air quality, and noise impacts during construction activities.
P-25	Advanced Transportation Management Information System (ATMIS)	No	POLA, POLB and ACTA	▪ The project would implement the Advanced Transportation Management and Information System (ATMIS) and Advanced Traveler Information System (ATIS) to improve traffic flow for both POLA and POLB and the adjacent regional transportation system.	The project began in 2006 and was completed in late 2012. The ATMIS has been identified in the Caltrans Statewide Goods Movement Intelligent Transportation Systems Action Plan and is contained in the Caltrans Global Gateways Development Program. *(Source: Baseline Alternatives Analysis, Port of Los Angeles Draft Portwide Rail Synopsis Report, July 2004)*	This is a major component in the overall ITS program for the I-710 Corridor/ Gerald Desmond Bridge Gateway Program. The ITS program will help to avoid and minimize potential cumulative impacts of the I-710 Corridor Project.
P-26	POLB Administration Building	No	POLB	▪ The project would construct a new administration building and maintenance facility along with public open space amenities on approximately 17 acres.	An EIR for this project was completed in 2009. Subsequently, the POLB Administration Building site moved to Downtown Long Beach. However, construction of the POLB Maintenance Building, as initially proposed, was completed in 2013. *(Source: POLB website, www.polb.com)*	Transportation Temporary cumulative air quality impacts during construction activities. Cumulative contribution to short-term construction noise impacts.
P-27	Chemoil Tank Farm Modification Project	No	City of Long Beach, Board of Harbor Commissioners	▪ The project would modify the existing Chemoil facility currently situated on 3.4 acres on Pier F by expanding to the west onto 0.7 acre of the existing Morton Salt lease area for a new total Chemoil site acreage of 4.1 acres and installing two additional petroleum storage tanks.	An NOP has been prepared for this project. Construction of the project was expected to occur over a 26-month period. However, this project is currently on hold. *(Source: POLB website, www.polb.com)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-28	Mitsubishi Cement Corporation Facility Modifications	No	Port of Long Beach	▪ The project would expand the Mitsubishi Cement Corporation facility at Berth F208 into the adjacent property, install an emission control system (Dockside Catalytic Control System [DoCCS]), construct four additional cement storage silos, and upgrade ship unloading equipment. The additional cement storage silos and truck loading equipment would be constructed in the location formerly used as the warehouse for Pacific Banana operations. Upon completion of new silos, a new ship unloader would be added, the larger existing unloader would be upgraded, and the smaller existing unloader would be decommissioned. The existing and new cement storage silos would be connected to the existing and new ship unloaders via new piping. The current 4.21-acre terminal site would be increased to 5.92 acres. Silo construction would occur in two or more phases depending on the sequence in which silos are constructed.	A Draft EIR was prepared in August 2011. Construction date to be determined. *(Source: www.polb.com/civica/filebank/blobdload.asp?BlobID=8645)*	Potentially significant impacts include biological resources, GHG emissions, transportation/traffic, hazardous materials, air quality, hydrology/water quality, and noise.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
P-29	Cemera Long Beach Aggregate Terminal	No	Port of Long Beach	▪ The project consists of the construction and operation of a sand, gravel, and granite aggregate, receiving, storage and distribution terminal, and a ready-mix concrete plant at Pier B. The project would include two enclosed aggregate storage structures, each measuring 460 feet by 217 feet, a ready-mix concrete plant occupying approximately 1.6 acres of structures and pavement, an administrative office building, covered truck load-out stations, and paved internal access roads. The site is currently a designated brownfield through DTSC. The project would include soil and groundwater remediation.	A Notice of Preparation was circulated for this project in June 2009. This project was moved to a different site on Pier D Street (project P-46). Project P-44 was constructed on the site. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 27, 2016)*	None
P-30	Berth 164 [Valero] Marine Oil Terminal Wharf Improvements Project	No	Port of Los Angeles	▪ The project consists of various wharf improvement to Valero's marine oil terminal at Berth 164 on Mormon Island. The project consists of demolishing the existing timber wharf and replacing the structure with new loading platforms, topside equipment, access trestles, mooring dolphins and catwalks; and complete seismic ground improvements along the northwestern boundary of the terminal. The project is located at Falcon St. and San Clemente Ave.	A Notice of Preparation was circulated for this project in July 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-31	Berths 167-169 [Shell] Marine Oil Terminal Wharf Improvement Project	No	Port of Los Angeles	▪ The project consists of various wharf improvements to Shell Oil Company's marine oil terminal at Berths 167-169 on Mormon Island.	A Notice of Preparation was circulated for this project in April 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-32	SA Recycling Crane Replacement and Electrification Draft IS/ND	No	Port of Los Angeles	▪ The project would replace a Tier 2 diesel crane with a Tier 4 diesel/electric hybrid crane, which is cleaner burning and a significant air quality emissions reduction.	A Negative Declaration was circulated for this project in February 2016. The project was approved by the Los Angeles Harbor Department in March 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	The Negative Declaration concluded that there are no substantial cumulative impacts anticipated for this project.
P-33	Avalon Freight Services IS/NEG Dec	No	Port of Los Angeles	▪ The project involves the shifting of freight operations from Berth 184 to Berth 95 and includes the construction of a 20,000-square-foot warehouse/office space and waterside improvements including the installation of 22 pilings for three new floats and repairs to a boat launch ramp.	A Negative Declaration was circulated for this project in October 2014. The project was approved by the Los Angeles Harbor Department in January 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	The Negative Declaration concluded that there are no substantial cumulative impacts anticipated for this project.
P-34	Berths 212-224 [YTI] Container Terminal Improvement Project	No	Port of Los Angeles	▪ The project involves improvements to an existing container terminal (YTI) and includes deepening improvements, including installation of 22 pilings for three new floats and repairs to a boat launch ramp.	A Final EIR was completed for this project in October 2014. The project was approved by the Los Angeles Harbor Department in November 2014 and the California Transportation Commission in January 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-35	U.S. Navy Commissary Building Demolition Project	No	Port of Los Angeles	▪ The project would demolish and remove an existing structure at 390 Navy Way on Terminal Island. The building is 51,000 square feet and will be removed along with perimeter sidewalks and planters for a total of 78,000 square feet.	A Negative Declaration was circulated for this project in June 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	The Negative Declaration concluded that there are no substantial cumulative impacts anticipated for this project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
P-36	Horizon Lines, LLC Container Freight Station (CFS) Warehouse Project	No	Port of Los Angeles	▪ The project would relocate the Rancho Dominguez operations to Berths 206-209 and refurbish a 60,000-square-foot CFS warehouse, which will include office space and is not on the CORTESE list.	A Negative Declaration was circulated for this project in April 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	The Negative Declaration concluded that there are no substantial cumulative impacts anticipated for this project.
P-37	Berths 121-131 Yang Ming Container Terminal Redevelopment Project	No	Port of Los Angeles	▪ The proposed project would be accomplished in two phases. Phase 1 includes performing deepening and improvements at Berths 126-129, disposal of dredge material, expanding the West Basin Container Transfer Facility (WBICTF) by adding two loading tracks, demolishing the existing wharf and constructing a new wharf, and replacing three of the eight existing gauge containers. Phase 2 would demolish the existing wharf at Berths 121-126, cut back 3.7 acres of the land, create 2.1 acres of new land, and construct a new 1,400-foot-long wharf.	A Notice of Preparation was circulated for this project in April 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-38	Avalon and Fries Street Segments Closure Project Draft IS/MND	No	Port of Los Angeles	▪ The project includes the closure of segments of: (1) Fries Ave. between Water St. at the Union Pacific Rail Tracks and the intersection with West A St.; and (2) Avalon Blvd. between the Union Pacific Rail Tracks and the intersection of North Broad Ave. and is not on the CORTESE list.	An IS/MND was circulated for this project in April 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	The MND concluded that there are no substantial cumulative impacts anticipated for this project.
P-39	Master Plan Update	No	Port of Los Angeles	▪ The project serves as a long-range plan to establish policies and guidelines for future development within the coastal zone boundary of the Port of Los Angeles.	A Final EIR was completed for this project in July 2013. The project was approved by the Los Angeles Board of Harbor Commissioners in February 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-40	Port of Long Beach Deep Draft Navigation Study	No	Port of Long Beach	▪ The Draft Navigation Study will evaluate dredging to deepen several channels, basins, and standby areas within the Port to improve waterborne transportation efficiencies and navigational safety for current and future container and liquid bulk vessel operations.	A Notice of Preparation was circulated for this project in November 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-41	Southern California Edison Transmission Line Replacement Project	No	Port of Long Beach	▪ The project would raise a segment of existing 66-kilovolt sub transmission lines, a 12-kilovolt distribution line, and a fiber wrap, and remove a 220-kilovolt line in order to provide additional vertical conductor clearance across the Cerritos Channel.	A Notice of Preparation was circulated for this project in October 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-42	Fireboat Station No. 20 Project	No	Port of Long Beach	▪ The project would demolish existing modular sheds and construct a 9,416-square-foot, two-story Long Beach Fire Department fireboat station on a 2.5-acre site. This would include demolition of an existing 7,060-square-foot relieving platform and construction of a 18,700-square-foot boat bay with an approximate 13,860-square-foot covered roof enclosure.	An IS/MND was circulated for this project in April 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The MND concluded that there are no substantial cumulative impacts anticipated for this project.
P-43	PCMC Chassis Support Facility Project	No	Port of Long Beach	▪ The project would develop a chassis support facility for the distribution, storage, and maintenance of chassis used to move cargo containers on a 13.24-acre site in the Northeast Harbor District.	An IS/MND was circulated for this project in August 2015. The project was approved by the City of Long Beach in October 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The MND concluded that there are no substantial cumulative impacts anticipated for this project.
P-44	Baker Cold Storage Facility Project	No	Port of Long Beach	▪ The project includes construction and operation of a roughly 250,000-square-foot cold storage facility at 1710 Pier B St. in the Port of Long Beach.	An IS/MND was circulated for this project in August 2013. The project was approved by the DTSC in December 2013. This project is currently operational (partially). *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	The MND concluded that there are no substantial cumulative impacts anticipated for this project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
P-45	Total Terminals International Grain Export Terminal Installation Project	No	Port of Long Beach	▪ The project would install a grain transloading facility on Pier T in the Port of Long Beach. The project would enable the transfer of grain and dried distillers grains with soluble high-quality feed for cattle, utilizing existing rail and shipping infrastructure.	This project has been cancelled. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 9, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
P-46	Eagle Rock Aggregate Terminal Project	No	Port of Long Beach	▪ The project includes construction and operation of a sand, gravel, and granite aggregate receiving, storage, and transit facility at 1925 Pier D St. The project would consist of a vessel berthing facility, a truck conveyor and truck loading system, a product storage pad, truck scales, a pre-fabricated office building, and utilities and fencing.	A Final EIS/EIR was completed for this project in April 2013. Construction was completed in mid-2015 and the project began operations in late 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed(December 9, 2016; Eagle Rock Aggregate Terminal Project Final EIS/EIR/Application Summary Report posted at http://www.polb.com/environment/docs.asp)*	Air quality Global climate change
Land Development Projects						
LD-1	Los Angeles River Master Plan	Yes	County of Los Angeles	▪ The Master Plan includes recommendations for aesthetic improvements, economic development, environmental enhancements, flood management and water conservation, jurisdiction and public involvement, and recreation for the Los Angeles River area.	A Final Programmatic EIR/EIS was prepared in April 2007. Construction started in late 2013 and will require many years to fully implement. (*Source: http://www.lariverrmp.org/CommunityOutreach/LARiverFinalPEIRPEIS_VolumeI_043007.pdf.pdf - accessed March 19, 2009)*	Land use Growth Community impacts Air quality The master plan improvements will result in beneficial effects related to flood control, water quality, aesthetics, public recreation and biological resources.
LD-2	Deforest Wetland Restoration Project	No	Los Angeles County Department of Public Works and City of Long Beach	▪ Part of the Lower Los Angeles River Parkway Plan and the Long Beach RiverLink, will implement wetlands along the lower Los Angeles River. ▪ The project will involve re-grading slopes to restore stream flow and trails for 34 acres of historic freshwater wetlands, restoring wildlife habitat, providing passive recreation with ADA accessible trails, and adding interpretive signage along a one-mile reach of the lower Los Angeles River in a floodwater detention basin while retaining flood control properties.	The project was initiated in December 2015 and is currently ongoing. *(Source: http://www.longbeach.gov/district9/news/deforest-wetlands-restoration-project-groundbreaking-ceremony/)*	Beneficial effects related to wetlands, water quality, and recreation.
LD-3	Los Angeles River Revitalization Master Plan	No	County of Los Angeles	▪ The Master Plan includes recommendations for aesthetic improvements, economic development, environmental enhancements, flood management and water conservation, jurisdiction and public involvement, and recreation for the Los Angeles River area.	A Final Programmatic EIR/EIS was prepared in April 2007. Construction started in 2010 and will require many years to fully implement , (*Sources: http://boe.lacity.org/lariverrmp/CommunityOutreach/LARiverFinalPEIRPEIS_VolumeI_043007.pdf.pdf; and http://clkrep.lacity.org/onlinedocs/2011/11-0102_RPT_CAO_01-18-11.pdf*	Land use Growth Community impacts Air quality The master plan improvements will result in beneficial effects related to flood control, water quality, aesthetics, public recreation and biological resources.
LD-4	Golden Shore Master Plan	No	City of Long Beach	▪ The project would develop new residential, office, retail, and potential hotel uses, along with associated parking and open space. Three options are being considered: a residential option and two hotel options. The project is located on Golden Shore Dr., bounded by Ocean Blvd., Shoreline Dr., and the Arco Center parking lots.	A Draft EIR was prepared for the project in October 2009. Construction of the project would be completed in phases. Phase One, construction of the office tower, west of Golden Shore at Ocean Blvd., began in mid-2011. Phase Two would complete the balance of the site east of Golden Shore, and Phase Three would develop the balance of the site east of Golden Shore. It is expected that construction will not be completed prior to 2018. *(Source: City of Long Beach website- www.lbds.info/planning/environmental_planning/golden_shore_master_plan.asp)*	Air quality impacts (construction and operational emission impacts) Noise impacts (potential construction impacts with other projects in the area)

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Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-5	1235 Long Beach Blvd. Mixed-Use Project	No	City of Long Beach	▪ The project would demolish the existing on-site uses and construct a mixed-use (transit-oriented) development that includes the construction of three tower buildings consisting of 170 residential condominium units, 186 senior apartment units, and 30,000 square feet of commercial floor area.	An EIR was prepared for the project in 2000. An EIR Addendum was prepared for the project in January 2008. The project would be constructed in two Phases. Phase I would construct the Senior rental housing component, Phase II would construct the condominium and commercial area components. *(Source: City of Long Beach website, www.lbds.info/planning/environmental_planning and www.lbds.info/civica/filebank/blobdload.asp?BlobID=3310)*	The EIR Addendum for the 1235 Long Beach Blvd. Project concluded that there would be no new cumulative impacts or increases to any previously identified cumulative impacts for the project.
LD-6	Hotel Esterel (formerly D'Orsay Hotel) Project	No	City of Long Beach	▪ The project would develop a 165-room boutique-style hotel on the northwest corner of Broadway and the Promenade. The six-story hotel will have 8,875 square feet of retail and restaurant space and a 3,000-square-foot meeting space.	The project was not developed.	The project was not completed; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment. .
LD-7	The Pike at Rainbow Harbor/Hotel Sierra	No	City of Long Beach	▪ The project would develop residential units and an office building or hotel. Project site is south of Ocean Blvd. on the site of the former Pike Amusement Park between Pine and Magnolia Ave. Project will include 770 residential units, a 500-room hotel, and 25,000 square feet of commercial space. ▪ The Hotel Sierra project would develop a five-story, 125-room hotel with accessory ground floor retail uses. The location of the hotel would be at 290 Bay St. in the northwestern corner of the Pike development complex.	An EIR document was prepared for the original Queensway Bay Master Plan in 1994. An MND for the reduced Queensway Bay Project was prepared in 1998. The Supplemental EIR for the Avia Hotel as part of The Pike at Rainbow Harbor Project was prepared in December 2004. An EIR Addendum to the Supplemental EIR for the Hotel Sierra Project was prepared in June 2009. The Pike Project Hotel (the Avia Hotel) is in operation. The Hotel Sierra Project was approved by the Long Beach Council and is in the process of entitlements. *(Sources: SR-47 Cumulative List, included in the Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final EIS/Final EIR and Section 4(f) Evaluation posted at http://www.dot.ca.gov/dist07/resources/envdocs/; City of Long Beach website- www.lbds.info/planning/environmental_planning/environmental_reports.asp)*	The EIR for the Queensway Bay Project identified the following cumulative impacts: Net cumulative increase in the use of Energy Resources Short-term and long-term air quality impacts The EIR Addendum for the Hotel Sierra Project determined that there would be no new cumulative impacts or increases to any previously identified cumulative impacts for the project.
LD-8	North Village Center Redevelopment Project	No	City of Long Beach	▪ The project would construct up to 180 units of multifamily housing and 50,000 square feet of neighborhood serving. commercial/retail space, a public library and community center totaling 30,000 square feet, and approximately 600 off-street parking spaces in private garages, surface parking lots, and an aboveground parking structure. The project is located on Linden Ave. and Atlantic Ave. bounded by South and East 59th St.	A Final EIR was prepared for the project in November 2009. http://www.northvillagecenter.com/North_Village_Center/Welcome.html *(Source: City of Long Beach website- www.lbds.info/planning/environmental_planning/environmental_reports.asp)*	Impacts to cultural resources would not be expected to be cumulatively considerable when considered along with those of the I-710 Corridor Project.
LD-9	Press-Telegram Mixed Use Development	No	City of Long Beach	▪ The project would develop 542 residential loft-style units in two 22-story high-rise towers, also including 32,050 square feet of commercial space, 10,650 square feet of space on the ground floor, and 1,186 on-site parking spaces.	A Final EIR was prepared for this project in October 2006. Site preparation and construction duration is expected to be between 22 to 26 months. *(Source: City of Long Beach website)*	Transportation (intersection of Magnolia Ave. and 6th St.) Cultural resources (Meeker Building)
LD-10	Admiral Kidd Park Expansion	No	City of Long Beach	▪ The project would expand the three-acre existing public park located at 2125 Santa Fe Ave. ▪ A portion of the existing park would be converted into a soccer field. ▪ Proposed improvements include new walking paths, three plaza areas, landscaping, additional parking, and exercise equipment. ▪ Removal of an existing public road, currently separating Admiral Kidd Park from the park expansion area.	An IS/MND was prepared for this project in 2008. Construction began in February 2010 and the project was opened to the public in March 2011. *http://www.gazettes.com/news/environment/admiral-kidd-park-expansion-grand-opening/article_bc73e99c-557b-11e0-8115-001cc4c03286.html* *(Source: City of Long Beach website)*	The Final IS/MND concluded that there are no cumulative impacts anticipated for this project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-11	Fire Station 12 – New north Long Beach Fire Station at 1199 East Artesia Blvd.	No	Long Beach Redevelopment Agency	▪ The project would construct a new fire station (Leadership in Environmental Design [LEED], gold status construction, 11,080 square feet), support building (4,632 square feet), and a 100-foot-tall radio antenna in North Long Beach.	http://www.longbeachrda.org/civica/filebank/blobdload.asp?BlobID=2515 *(Source: City of Long Beach website, Redevelopment Report 2008, www.longbeachrda.org/civica/filebank/blobdload.asp?BlobID=2515)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-12	Senior Community Housing (3635 Elm Ave.)	No	City of Long Beach	▪ The project would construct a five-story, 66-unit assisted living facility located at 3635 Elm Ave. in Long Beach.	A Mitigated Negative Declaration (MND) was prepared for the project. Construction began in October 2007 and was completed in 2009. *(Source: City of Long Beach website)*	The MND concluded that the project would not have considerable cumulative effects on the environment.
LD-13	Atlantic Workforce Housing Development	No	City of Long Beach	▪ The project would develop six multifamily residential buildings along Atlantic Ave. Each building would consist of eight ownership units (total of 48 units). The three-story buildings would provide a total of 96 parking spaces in enclosed grade-level garages and 11 parking spaces reserved for guests.	An IS/MND was prepared for this project in October 2008. *(Source: City of Long Beach website)*	The IS/MND concluded that the project would not have considerable cumulative effects on the environment.
LD-14	Pacific Baptist Church (3332 Magnolia Ave.)	No	City of Long Beach	▪ The project would remove two single-family homes utilized for church purposes. ▪ Construction of a two-story, 45,101-square-foot structure to house the church, classrooms, and other facilities for day school.	An IS/MND was prepared for this project in October 2008. *(Source: City of Long Beach website)*	The IS/MND concluded that the project would not have a cumulatively considerable effect on the environment.
LD-15	Colorado Lagoon Restoration Project	No	City of Long Beach	▪ The project would create a native habitat at Colorado Lagoon, implement water quality control measures, and enhance the Lagoon's value as a recreational resource.	An EIR was prepared for the project and certified by the City in October 2008. Phase 1 was completed in August 2012. Phase 2A is ready to proceed with the first stages of engineering. Construction of Phase 2B began in September 2016 and is ongoing. *(Sources: http://www.longbeach.gov/press-releases/press-releases/next-phase-of-colorado-lagoon-restoration-to-begin-in-september/; and http://www.longbeach.gov/CityManager/Tidelands/Colorado-Lagoon-Restoration/)*	The Final EIR concluded that there would be the following impacts: Potential construction noise issues if combined with other simultaneous construction projects near the project area. Cumulative short-term air quality impacts during construction activities.
LD-16	New Two Story Medical Office Building (1740 Pacific Ave.)	No	City of Long Beach	▪ The project would construct a new two-story, 13,400-square-foot medical office building.	An IS/MND was prepared for this project in July 2008. The project has not been developed. Pacific Hospital of Long Beach CA - Partial hospital. Project complete. *(Source: City of Long Beach website)*	The IS/MND concluded that the project would not have considerable cumulative effects on the environment.
LD-17	Kroc Community Center (1900 Walnut Ave.)	No	City of Long Beach	▪ The project would reform up to 19 acres of land designated by the Salvation Army for the location of a new recreation and community center to foster and serve the recreational needs of the local community. The project is located at the Hamilton Bowl/Chittick Field at 1900 Walnut Ave. and Pacific Coast Hwy.	A Final EIR was prepared for the project in June 2009. *(Source: City of Long Beach website-www.lbds.info/planning/environmental_planning/environmental_reports.asp)*	Impacts to cultural resources are not expected to be cumulatively considerable when considered in conjunction with the I-710 Corridor Project.
LD-18	Alamitos Bay Marina Rehabilitation Project	No	City of Long Beach	▪ The project would renovate the existing Alamitos Bay Marina facilities and enhance the existing recreational boating facilities within the harbor.	A Final EIR was prepared for the project in December 2009. Construction began in 2011 and is expected to be completed in 2017. *http://www.lbpost.com/news/staffreports/12383* *(Source: City of Long Beach website- www.lbds.info/planning/environmental_planning/environmental_reports.asp)*	The cumulative air quality construction emission impacts for this project are not expected to be cumulatively considerable because of the distance from the I-710 Corridor Project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-19	Seaside Park	No	City of Long Beach	▪ The project would demolish three multifamily structures and develop a new 1.92-acre public park. The park would include a soccer field, a tot lot, a playground, multipurpose hard court, picnic area, and open turf play area and restrooms.	The project was opened in February 2011. http://www.longbeach.gov/news/displaynews.asp *(Source: City of Long Beach website)*	The project is complete; no cumulative factors are anticipated.
LD-20	RiverLink Plan	Yes	City of Long Beach	▪ The project would connect the neighborhoods of the west side of Long Beach to the Los Angeles River. ▪ The plan is a conceptual plan and discusses four main components or ideas. These components are: Destinations, Gateways, Pathways, and Connections.	The Riverlink Report was prepared in February 2007. The anticipated construction schedule is unknown. *(Source: http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=15552 – accessed May 2012)*	This plan is a conceptual plan and would not contribute to cumulative adverse impacts.
LD-21	Meta Housing Corporation; Compton Senior Housing Development Phase II	No	City of Compton	▪ The project would redevelop a vacant 35,323-square-foot lot with an affordable housing project consisting of a three story building with 36 units for senior citizens and surface parking. The project is located at the southeast corner of North Alameda St. and E. Arbutus St.	An IS/MND was circulated for this project in April 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-22	Republic Materials Recycling Facility	No	City of Compton	▪ The project would involve the operation of a dry Materials Recycling Facility in an existing 88,000-square-foot industrial manufacturing/warehouse building on an 11-acre site. Involves construction of a 10,000-square-foot expansion to the industrial building for material storage, raising a portion of the existing roof, a 6,000-square-foot office/employee center, 80-square-foot guard shack, and rebuilt rear truck dock. The project is located at Artesia Blvd. and Wilmington Ave.	An IS/MND was circulated for this project in May 2013. The project was approved by the Compton Planning Commission in June 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-23	Gateway Towne Center (1802 South Alameda St.)	No	City of Compton	▪ The project would develop a 51-acre site with mixed-use commercial/residential uses and include 500,000 square feet of commercial uses and up to 220 residential units.	An EIR was completed for the project. Construction of the project was completed in 2014. *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office).*	The project is complete. No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-24	Townhomes at 501 South Alameda St.	No	City of Compton	▪ The project would construct a 28-unit townhome development.	The development was completed in 2009. *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office)*	The project is complete. No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-25	Commercial Center at 2215 West Rosecrans Ave.	No	City of Compton	▪ The project would construct a new 25,000-square-foot commercial center on West Rosecrans.	This project is complete. *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office).*	The project is complete. No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-26	A Multi-tenant Building at 1300 East Alondra Blvd.	No	City of Compton	▪ The project would construct a multitenant, freestanding building on East Alondra Blvd.	*This project is complete.* *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office).*	The project is complete. No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-27	Condo units and commercial building at 509 North Tamarind Ave.	No	City of Compton	▪ The project would construct 136 condo units in a mixed-use gated community. ▪ The units would be approximately 1,700 square feet, and the project includes a 4,000-square-foot commercial building.	Under construction. Residential portion complete. *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-28	A Multi-tenant Building at 909 South Central Ave.	No	City of Compton	▪ The project would construct a multitenant, freestanding building on South Central Ave.	*This project is complete.* *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office)*	The project is complete. No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-29	Townhomes and Church at 950 West Alondra Blvd.	No	City of Compton	▪ The project would construct a new 28-unit townhome development and a new 3,000-square-foot church/sanctuary.	The City purchased this development and plans to complete it. *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-30	Trucking and Warehouse Storage Yard at 1400 West Greenleaf Blvd.	No	City of Compton	▪ The project would construct a trucking/warehousing storage yard.	*Approved.* *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-31	15787 Atlantic Ave.	No	City of Compton	▪ The project would construct 70 units in a mixed-use development on Atlantic Ave. A total of 80 percent of this site is located in an unincorporated portion of Los Angeles County.	This project is complete. *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office)*	The project is complete. No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-32	15810 Frailey Ave.	No	City of Compton	▪ The project would construct an 84-unit multifamily senior citizen housing building.	This project was near completion as of 7-19-2011. *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works office)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-33	Tesoro Los Angeles Refinery Integration Project	No	South Coast Air Quality Management District; in the City of Carson	▪ The project includes improvements to the refinery, including: (1) the Wilmington Operations located at 2101 East Pacific Coast Hwy. in the Wilmington District of the City of Los Angeles; and (2) the Carson Operations, which is the former BP Carson Refinery located at 2350 East 223rd St. in the City of Carson. The project is located at 223rd St. and Alameda St.	A Draft EIR was circulated for this project in March 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)* and *http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects, Website accessed March 10, 2017.*	The Draft EIR concluded the project would make a cumulatively considerable contribution to cumulative hazard and air quality (during construction) impacts.
LD-34	Shell Oil Products U.S. Carson Revitalization Project (CRP) Specific Plan (CRPSP)	No	City of Carson	▪ The project includes adoption and implementation of a Specific Plan. CRP proposes up to an additional 1,663,000 square feet of buildings for a total of (existing and proposed) 1,823,000 square feet of mixed industrial and business park uses. Plan includes stormwater basins and water quality areas, buffer areas, a railroad yard, public access road easements, and open storage for equipment and materials. The project is located at 20945 S. Wilmington Ave.	A Draft EIR was circulated for this project in February 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-35	Phillips 66 Los Angeles Refinery Carson Plant – Crude Oil Storage Capacity Project	No	South Coast Air Quality Management District; in the City of Carson	▪ The project would increase storage capacity at its Los Angeles Refinery Carson Plant by installing one new 615,000 barrel crude oil storage tank with a geodesic dome, increasing the annual permit throughput limit of two existing 320,000 barrel crude oil storage tanks. Two new feed/transfer pumps and one 14,000 barrel water draw surge tank with associated pumps and pipelines would also be installed. Tie-ins to the Pier "T" crude oil delivery pipeline from Berth 121 would be installed and one new electrical power substation would be constructed. The project is located at Sepulveda Blvd. and Alameda St.	A Negative Declaration was circulated for this project in September 2013. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Negative Declaration determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-36	Rainbow Transport Tank Cleaners – Old Wash Rack Groundwater Interim Measure	No	Department of Toxic Substances Control	▪ The project involves approval of a groundwater interim measure work plan to begin cleanup of contaminated groundwater resulting from historical operations at the site. The project is located at Wilmington Ave. and Water St.	A Negative Declaration was circulated for this project in August 2013. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Negative Declaration determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-37	Southern California International Gateway (SCIG)	No	City of Los Angeles; Partial in the City of Carson	▪ The project involves construction and operation of a new near-dock intermodal rail facility by Burlington Northern Santa Fe Railway that would handle containerized cargo transported through the Ports of Los Angeles and Long Beach. The project would provide BNSF with the capacity to handle an estimated 1.5 million containers or 2.8 million TEUs at full capacity.	A Draft EIR was circulated for this project in September 2011. The Draft EIR was subsequently revised and recirculated in September 2012. The project was approved by the Los Angeles Board of Harbor Commissioners in March 2013 and the Los Angeles City Council in September 2013. The anticipated construction schedule is unknown, as the approval of this project is currently under legal challenge. *(Source: Office of Planning and Research, CEQAnet Database – accessed January 9, 2017; BNSF Railway website, http://www.bnsfconnects.com/latest-news, accessed December 22, 2016.)*	The cumulative environmental factors associated with this project are: aesthetics, air quality, cultural resources, greenhouse gases, land use, and noise

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-38	Palmer/Tamarind/ Willowbrook	No	City of Compton	▪ Senior Center/MLK Transit Center.	Phase I under construction. *(Sources: City of Compton Website; and Luanna Mitchell in the Public Works Office)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-39	The Boulevards at South Bay at Main St. and Avalon Blvd.	No	City of Carson	▪ The project would construct a 157-acre development providing for a potential mix of approximately 1.2 million square feet of commercial, retail, and entertainment uses in addition to 1,550 residential units.	A Final EIR was prepared for this project in June 2006. Construction began in October 2008 and was completed in late 2010. *(Source: City of Carson Website)*	The project is complete. Construction air quality emissions Construction noise impacts
LD-40	Costco	No	City of Commerce	▪ The project would construct a Costco Store at Washington and Telegraph Blvds. in the City of Commerce.	The project was completed in July 2009. *(Source: City of Commerce)*	The project is complete; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
LD-41	Final Corrective Action Remedy for the Univar USA, Inc. Facility	No	Department of Toxic Substance Control; In the City of Commerce	▪ The project involves selecting the final corrective action remedy to address releases of chemicals to the subsurface at the former Univar USA, Inc. site. The proposed remedy involves on-site soil vapor extraction, on-site groundwater extraction, off-site groundwater extraction, monitored natural attenuation for groundwater once active treatment ends, and on-site land use restrictions. The project is located at Noakes St and S. Bonnie Beach Place.	A Negative Declaration was circulated for this project in October 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Negative Declaration determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-42	Citadel Outlets Expansion and Commerce Casino	No	City of Commerce	▪ The project would develop a three phase project along Telegraph Rd. corridor. The first part involves expansion of existing Citadel Outlets. This part of the project, referred as the phase 5 expansion, would include the construction of 106,738 square feet of retail, a 170-room hotel, and a 96-unit apartment complex. The second part is Phase 6, which includes 210,851 square feet of retail and restaurant uses. The third part would consist of three new fast food restaurants, a sit-down restaurant, a 19,250-square-foot office building, and a 175- to 200- unit apartment building. The project is located at Telegraph Rd. and Washington Blvd.	A Notice of Preparation was circulated for this project in September 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-43	Gage Ave. Dump	No	Regional Water Quality Control Board, Region 4 (Los Angeles); In the City of Commerce	▪ The project, located in the Los Angeles Region, is directing environmental investigation and cleanup activities at the Gage Ave. Disposal Site – eastern parcel. The site is a solid waste landfill. The RAP includes excavation and removal of landfill waste and waste-affected sediment/soil and disposal of those materials at appropriate modern, permitted, and monitored land disposal facilities. The project is located at Slauson Ave. and Gage Ave.	An IS/MND was circulated for this project in May 2016. The project was approved by the Los Angeles Regional Water Quality Control Board in August 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Final IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-44	Commerce Retail Project Center	No	City of Commerce	▪ The project consists of removal of the existing commercial and industrial uses on the project site and the development of a 142,176-square-foot commercial center, featuring a 122,458-square-foot Major Anchor and 50,539 square feet of smaller retail and restaurant uses. The project is located at Washington Blvd. and Atlantic Blvd.	A Draft EIR was circulated for this project in November 2014. The project was approved by the City of Commerce City of Council in July 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	Cumulative Transportation impacts to intersection, roadway, and freeway operations. *http://www.ci.commerce.ca.us/index.aspx?NID=357, accessed March 10, 2017.*
LD-45	ELA Station 55 New Reservoir Project	No	State Water Resources Control Board; In the City of Commerce	▪ The project involves issuing a water supply permit to construct a new 1.5 million gallon capacity reservoir at the existing ELA Station 55. The project is located in the vicinity of Whittier Blvd. and South Atlantic Blvd.	An IS/MND was circulated for this project in May 2015. The project was approved by the State Water Resources Control Board in August 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Final IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-46	Preliminary Investigation Area Cleanup, Former Exide Facility	No	Department of Toxic Substances Control; In City of Bell	▪ The project involves property cleanup within a 1.7-mile radius of the Former Exide Facility.	A Notice of Preparation was circulated for this project in June 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-47	Bell Business Center Project	No	City of Bell	▪ The project involves four new buildings that could result in 840,390 square feet of new industrial and ancillary office space on eight parcels. Rickenbacker Rd. will be improved with public utilities, including water, wastewater, storm drainage and power. The project is located at Rickenbacker Rd. and 3rd St.	A Draft EIR was circulated for this project in May 2013. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-48	Bicycle Casino Hotel	No	City of Bell Gardens	▪ The project involves the construction of a seven-story, 100 room hotel adjacent north of the existing Bicycle Casino. The project is located at Florence Ave. and Eastern Ave.	An IS/MND was circulated for this project in February 2013. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-49	Draft Removal Action Work Plan for United Industries Site	No	Department of Toxic Substance Control; City of Cudahy	▪ The project would remediate soil impacted with volatile organic compounds, semi volatile organic compounds, pesticides, metals, and total petroleum hydrocarbons and soil vapor impacted with VOCs to minimize human exposure. The project is located at Bandini Blvd and Indiana St.	A Negative Declaration was circulated for this project in August 2016. The project was approved by the DTSC in October 2015 *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Negative Declaration determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-50	Praxair Distribution, Inc. Zone Change and General Plan Amendment	No	City of Cudahy	▪ The project would include a zone change and general plan amendment for nine parcels. Encompasses approximately 7.8 acres with the northern portion occupied by Praxair Distribution, Inc. and consist of a 15,940-square-foot single-story combination retail, office, and warehouse facility. The project is located at Atlantic Ave., Cecelia St, Patata St.	A Negative Declaration was circulated for this project in March 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Negative Declaration determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-51	Warren High School Athletic Field Lighting Project	No	Downey Unified School District	▪ The project would construct a modern lighting system on the baseball and softball diamonds. Twelve self-supporting steel monopole structures up to 80 feet tall. The project is located at Paramount Blvd. and Phlox St.	An IS/MND was circulated for this project in January 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-52	Downey Groundwater Well Nos. 27 and 28 project	No	City of Downey	▪ The project involves implementation of two new water wells which would include the following components: a well drilled to approximately 1,500 feet below ground surface; a 660-square-foot building consisting of a well room, chemical area, and electric room; a 400-horsepower electric pump; emergency generator backup equipment, flow meters, and pipelines. The project is located at Springer St.	An IS/MND was circulated for this project in December 2014. The project was approved by the City of Downey in January 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Final IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-53	Rancho Los Amigos Medical Center Master Plan	No	Los Angeles County; In the City of Downey	▪ The project would relocate the previously approved warehouse structure on the North Campus of the Rancho Los Amigos Medical Center, allocate space for a new Accessible Gymnasium, Wellness and Aquatic Therapy Center on the campus, and document the location of up to 55,000 square feet of temporary modular building.	EIR Addendum No. 1 and Addendum No. 2 to the 1992 Rancho Los Amigos Medical Center EIR were prepared for the Master Plan in April 2013 and July 2014, respectively. The project was approved by the Los Angeles County Board of Supervisors in July 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Addendums concluded the project does not increase the severity of any of the originally disclosed impacts or create new impacts that were not analyzed in the 1992 EIR. Information regarding environmental impacts identified in the 1992 EIR has not been identified at this time. Information will be added if it becomes available during the environmental process for the I-710 Corridor Project.
LD-54	Downey Civic Center and Transportation Plan	No	City of Downey	▪ The project includes two public open spaces providing 1.16 acres of new park area. The project is located at Brookshire Ave. and Firestone Blvd.	A Negative Declaration was circulated for this project in March 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Negative Declaration determined that the project would not contribute to a substantial cumulative adverse impact on the environment.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-55	Allvision Digital Billboard @ Metro Site (PLN-12-00164	No	City of Downey	▪ The project includes a request to construct and operate a 55-foot-tall electronic billboard with two display area, each of which is 672 square feet. Maximum height of 35 feet and a maximum allowable display area of 300 square feet. The project is located at Telegraph Rd. and Tweedy Lane.	An IS/MND was circulated for this project in May 2013. The project was approved by the City of Downey in June 2013. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-56	Public Storage and Warehouse	No	City of Huntington Park	▪ The project consists of two new concrete tilt-up buildings within a 4.43-acre site. Two buildings include a single story 51,000-square-foot warehouse with office and mezzanine and a three-story 194,715-square-foot public storage building with a total of 55 parking spaces. The project is located on the west side of Alameda St.	An IS/MND was circulated for this project in February 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-57	Sun-Lite metal Recycling – Planning Commission Case No. 2015-09 CUP	No	City of Huntington Park	▪ The project proposes reuse a vacant site located at 6301 Maywood Ave. exclusively for metal recycling, including collection, sorting, bailing, and storage of nonferrous metals. Modifications include demolition 303 square feet of existing office area and installation of four new entry doors and windows. The project is located at Maywood Ave. and Gage Ave.	An IS/MND was circulated for this project in October 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-58	Commercial/Medical Office Project	No	City of Huntington Park	▪ The project proposes to demolish a vacant hospital to construct a mixed-use project that totals 25,550 square feet. To the north is a proposed two story building which includes 9,782 square feet of retail space on the ground floor and 9,867 square feet of medical office space on the second floor. The project is located at E. Florence Ave. and Mission Pl.	An IS/MND was circulated for this project in November 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-59	Private K-5 School and 36 Affordable Apartments	No	City of Huntington Park	▪ The project would demolish five vacant buildings on 1.86 acres to build a private two-story K-5 school with 34,280 square feet. The project includes two-level parking with 100 spaces and 36 affordable apartments. The project is located at E. 61st St. and Carmelita Ave.	An IS/MND was circulated for this project in May 2014. The project was approved by the City of Huntington Park in July 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Final IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-60	Lakewood Stormwater and Runoff Capture Project at Bolivar Park	No	City of Lakewood	▪ The project would result in the design and construction of a facility to divert water from one of two major flood control channels to fulfill its dual purpose of promoting water filtration and irrigation. The project is located at Del Amo Blvd. and Downey Ave.	An IS/MND was circulated for this project in June 2016. The project was approved by the City of Lakewood in July 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Final IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-61	Staybridge Suites Hotel Project	No	City of Long Beach	▪ The project involves demolition of an existing two-story hotel and construction of a new six-story, 125-room hotel and two-level parking structure. The project also includes an additional 2,496 square feet of conference room space. The project is located at E. Willow St. and N. Lakewood Blvd.	An IS/MND was circulated for this project in November 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-62	Midtown Specific Plan	No	City of Long Beach	▪ The project involves a two-family Residential, standard lot (R-2-N); Moderate-Density Multifamily Residential (R-4-R); Community Commercial Automobile-Oriented (CCA)/Regional Highway Commercial (CHW)/Highway Commercial (CH)/Neighborhood Commercial Automobile-Oriented (CAN)/Neighborhood Pedestrian-Oriented Commercial (CNP)/Community R 4 N Commercial (CCN); Planned Development District (PD) 22, PD 25 and PD-29; Institutional (I): Park (P); and Public Right-of-Way (PR). The project is generally located along Long Beach Blvd. from Anaheim St. to Wardlow Ave.	A Final EIR was completed for this project in May 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-63	Educare	No	Long Beach Unified School District	▪ The project would construct and operate a new Educare facility within approximately 206 acres in the west portion of the existing Barton ES campus. The project includes construction of an approximately 32,000-square-foot facility with one two-story Admin building, and three single-story buildings surrounding a central open space, demolition of nine of 17 existing portable classrooms located within the project site, and replacement of an existing 25-space parking lot with a 68-space parking lot. The project site is located at Del Amo Blvd. and Lemon Ave.	An IS/MND was circulated for this project in April 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-64	Civic Center Project	No	City of Long Beach	▪ The project includes a new City Hall, a new Port Building for Harbor Department administration, a new and relocated Main Library, a redeveloped Lincoln Park, a residential development and a commercial mixed use development. It also includes the demolition of an existing Courthouse building. In all, the project includes 6 new buildings, three new parking garages, related infrastructure and landscaping, and two new street extensions. The project is located in the area bordered by Ocean Blvd., Pacific Ave., Broadway, and Magnolia Ave.	A Supplemental EIR was circulated for this project in August 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-65	Mitsubishi Cement Facility Modification Project	No	City of Long Beach	▪ The project consists of modifications to an existing cement import facility, including: installing an emission control system to capture and reduce NOx emissions from ship auxiliary generators at berth; constructing four 10,000 metric ton storage and truck loading silos; upgrading existing facilities and ship unloading equipment. The current 4.21-acre site would be enlarged to 5.92 acres. The project is located at Pier F Ave. and Harbor Plaza.	A Final EIR was completed for this project in April 2015. The project was approved by the City of Long Beach in May 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-66	Weber Metals Large Press Expansion Project	No	City of Long Beach	▪ The project includes an expansion of the capacity and capabilities of the existing facility through the installation of a new 60,000 ton forging press in a new building on the property. Forge press would be housed in a new 115,000-square-foot building which would require an 85-foot deep excavation pit and a 65-foot high main roof.	An IS/MND was circulated for this project in May 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-67	Lynwood Transit Area Specific Plan	No	City of Lynwood	▪ The project includes policies and development standards to guide the development of future transit-oriented communities within the 315-acre project area. The project area is located in the area generally bounded by Imperial Hwy., Long Beach Blvd., Alameda St., State St., and California Ave.	A Draft EIR was circulated for this project in July 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	According to the EIR, the relevant cumulative environmental factors are transportation and circulation. http://lynwood.ca.us/wp-content/uploads/2016/07/LTASP-EIR-Combined-06_29_2016.pdf
LD-68	Interim Measures Work Plan – Northern and Southern Assessment Areas	No	Department of Toxic Substances Control; in the City of Maywood	▪ The project involves mitigating potential health risks from lead impacted soils in off-site residential properties located in the northern assessment area and the southern assessment areas with a total of 213 homes within the assessment. The project is area is generally located in the area of Northern Olympic Blvd. and Indiana St.	A Negative Declaration was circulated for this project in September 2014. The project was approved by the DTSC in November 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Negative Declaration determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-69	South Region High School No. 8	No	Los Angeles Unified School District; In the City of Maywood	▪ The project would clean up the proposed South Region High School No. 8, Maywood Site, pursuant to Chapter 6.8 of the Health and Safety Code	A Final EIR was completed for this project in April 2014. The project was approved by the DTSC in April 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-70	Royal Recycling and Transfer Facility	No	City of Paramount	▪ The project includes a solid waste recycling and transfer facility for up to 2,450 tons per day. The project is located at Peterson Lane and Garfield Ave. (14001 Garfield Ave.).	A Draft EIR was circulated for this project in October 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-71	Signal Hill West Unit Facility – Gas Plant Modification Project	No	South Coast Air Quality Management District; In the City of Signal Hill	▪ The project involves proposing to upgrade an existing natural gas processing plant located at its West Unit Production Facility. Upgrades will add two additional two-stage compression trains; replace the current propane refrigeration unit with "state of the art" equipment; and add a CO_2 filtration system. Cross Sts.: Orange Ave. and Spring St.	An IS/MND was circulated for this project in November 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-72	EDCO Recycling and Transfer Facility	No	City of Signal Hill	▪ The project would develop a +/- 68,000-square-foot recycling and transfer facility on a 3.75-acre site.	A Final EIR was completed for this project in February 2009. The project was approved by CalRecycle in June 2011 and the City of Signal Hill and Los Angeles County in February 2013. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-73	Recycling City Solid Waste Facility Permit Revision	No	Los Angeles County	▪ The project includes revisions to an existing solid waste facility permit to add municipal solid waste processing. Existing permit allows processing of up to 3,000 tpd of construction, demolition and inert material. The proposed revisions still caps the processing at 3,000 tpd, however MSW would be accepted at the facility in addition to CDI and green waste. The project is located at Rayo Ave. and Firestone Blvd.	An IS/MND was circulated for this project in October 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-74	International Studies Learning Center (ISLC) Addition Project	No	Los Angeles Unified School District; In the City of South Gate	▪ The project includes an addition to the existing Legacy High School Complex campus for ISLC and removal of 17 classrooms in portable buildings. Also include 16 permanent classrooms, an administration building, a lunch shelter, staff and student restrooms, outdoor basketball/volleyball courts, a surface parking lot with 40 parking spaces, multi-purpose room and gym. Buildings have a maximum of two stories tall and up to 27 feet in height. The project is located at Tweedy Blvd. and Adella Ave.	A Notice of Preparation was circulated for this project in July 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-75	2015 South Gate Educational Center (SGEC) Master Plan	No	Los Angeles Community College District (LACCD); In the City of South Gate	▪ The project consists of the construction and operation of a new LACCD satellite campus to replace the existing SGEC, provide expanded and improved educational facilities, and accommodate existing and projected student enrollment. The project is located at Santa Fe Ave. and Firestone Blvd.	A Supplemental EIR was circulated for this project in May 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016; 2015 South Gate Educational Center master Plan Supplemental Draft Environmental Impact Report; https://www.elac.edu/adminservices/construction/eir/pdf/sg/2015_SGECMasterPlanSupplementalDEIR.pdf)*	Cultural (historic) resources impacts Transportation and traffic impacts Noise impacts (during construction only) Air quality (during construction only)
LD-76	Legacy High School Draft Remedial Action Plan for Operable Unit 3	No	Los Angeles Unified School District; In the City of South Gate	▪ The project consists of the DTSC's approval of a remedial action plan for the Legacy High School, Operable Unit 3. Includes excavation, placement of in-situ chemical reduction agents, in-situ chemical exudation, soil vapor extraction, and long-term monitoring. The project is located at Adella Ave. and Tweedy Blvd.	A Negative Declaration was circulated for this project in November 2015. The project was approved by the Los Angeles Unified School District and the DTSC in February 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The Negative Declaration determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-77	Closure Plan Approval for the Exide Technologies Recycling Facility, Vernon, CA	No	Department of Toxic Substance Control; In the City of Vernon	▪ The project involves a facility that is an existing secondary lead smelting facility. Under the proposed project, Exide would permanently close the facility and implement a DTSC-approved Closure Plan that would include dismantling operations and a comprehensive cleanup of the facility. The Closure Plan would outline a multi-year approach for full remediation in three phases. The project is located at S. Indiana St. and Bandini Blvd.	A Draft EIR was circulated for this project in December 2015. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	According to the EIR, the cumulative environmental factors are: Air Quality, GHG, and Geology and Soils https://www.dtsc.ca.gov/HazardousWaste/Projects/upload/Exide_dEIR_Exec-Sum.pdf

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-78	Toxic Air Contaminant Reduction for Compliance with SCAQMD Rules 1420.1 and 1402 Exide Project	No	South Coast Air Quality Management District; In the City of Vernon	▪ The project intends to reduce toxic emissions of arsenic, benzene, and 1,3-butadiene to comply with the recent amendments made. The proposed project would also control gas streams containing gaseous organic air contaminants, carbon monoxide, and oxides of sulfur. The project is located at S. Downey Rd. and Bandini Blvd.	An IS/MND was circulated for this project in October 2014. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	The IS/MND determined that the project would not contribute to a substantial cumulative adverse impact on the environment.
LD-79	Gateway Project/El Portal	No	City of South Gate	▪ The project would construct a 600,000-square-foot regional shopping center on the northwest corner of Atlantic and Firestone Blvds.	A Final EIR was completed for this project in February 2008. The project was approved by the City of South Gate in December 2011. *(Source: City of South Gate; Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-80	Atlantic Park Plaza	No	City of South Gate	▪ The project would construct a 50,000-square-foot shopping center located on the southwest corner of Atlantic and Tweedy Blvds. (9923 Atlantic Ave.).	*(Source: City of South Gate)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-81	South Region High School No. 9 at 5225 Tweedy Blvd.	No	City of South Gate	▪ The project is within the Los Angeles Unified School District which proposes to construct a 53-classroom (1,431 students) high school. The 26.3-acre site is located on the northeast corner of Atlantic and Tweedy Blvds.	A Final EIR was prepared for the project in February 2009. A recirculated EIR was prepared for this project in August 2009. Construction is expected to be completed by 2012. *(Sources: City of South Gate; and Los Angeles Unified School District – New Construction Report)*	Noise impacts Traffic impacts
LD-82	Los Angeles Community College District–South Gate Educational Center	No	Los Angeles Community College District	▪ The project would develop an educational center for 12,000 students (by 2016). Features include adaptive reuse of Buildings 1 and 3 and construction of a parking structure and playing fields. The project is located on the northwest corner of Santa Fe Ave. and Firestone Blvd.	A Draft EIR was prepared for the project dated October 2009. The initial construction phase is expected to begin in the third quarter of 2012 and be completed in 2015. *(Sources: City of South Gate; and East Los Angeles Community College website, www.elac.edu/collegeservices/eir/sg/pdf/Volume1/ other_discussions_required_under_ceqa.pdf)*	Short-term cumulative air quality impact during construction from volatile organic compounds (VOC) emissions. Cumulative operational air quality impact for VOC and nitrous oxide (NO_X) emissions. Cumulative cultural resource impact due to demolition of Building 4. Cumulative traffic impacts due to significant impacts to three street intersections.
LD-83	South Gate Civic Center/Southeast Justice Center	No	City of South Gate	▪ The project would develop an approximate seven-acre site with a state courthouse, public plaza, City Hall, site parking, and mixed-use/open space.	(*Source: City of South Gate)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-84	Grocery Warehouse	No	City of Paramount	▪ The project would construct a 500,000-square-foot grocery warehouse.	*(Source: City of Paramount)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.
LD-85	Drake/Chavez Greenbelt Project	No	City of Long Beach	▪ The project involves the creation of a 50-acre park along the lower Los Angeles River in the City of Long Beach to link Cesar E. Chavez Park (23 acres) to Drake Park (6 acres) through the acquisition and development of 31 acres of former industrial and abandoned railroad property with wetlands, habitat, interpretative signage, and active and passive recreation.	The Park conceptual design was completed in 2009. The City of Long Beach is currently seeking funding for an EIR. *(Source: http://www.longbeach.gov/park/about/ development_projects/drakechavez.asp - accessed May 2012)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project
LD-86	Carson St. Master Plan (between I-405 and I-110) on Carson St.	No	City of Carson	▪ The project would create a distinct district along the Carson St. Corridor with a “main street” character, featuring a unique pedestrian mixed-use environment.	Design completion April 2011, Start of construction June 2011, completion scheduled for May 2012. *(Sources: City of Carson Website; and Engineering Division – CIP project status report 01-18-2011)*	No information regarding environmental impacts has been found at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
LD-87	SR-710 Surplus Property Sales	No	Caltrans District 7	▪ Sale of excess property associated with the 710 freeway project in the Cities of South Pasadena, Pasadena, and Los Angeles.	A Final EIR was completed for this project in July 2016. The project was approved by the California Transportation Commission in October 2016. Notice of Conditional Offers were distributed to eligible potential buyers in December 2016. *(Source: Office of Planning and Research, CEQAnet Database – accessed (December 12, 2016)*	Community Factors Relocations Cultural Resources Hazardous Waste
LD-88	Long Beach Main Pumping Plant (LBMPP) Upgrades	No	City of Long Beach	▪ Due to the age of the facility, it is necessary to upgrade and expand the LBMPP. The configuration and size of both the inlet gravity sewers and force mains requires that the LBMPP Replacement Project be sited on the property located adjacent to and west of the existing pumping plant.	Construction contract went out to bid in 2013.	The City of Long Beach General Plan EIR identified no cumulatively considerable effects to the environment as it relates to utilities or land use through full build out. The City of Long Beach General Plan Land Use Element establishes PlaceTypes, each subject to unique design guidelines in accordance with the City's Urban Design Element. As such, the LBMPP Upgrades Project was subject to its own General Plan consistency analysis and was reviewed for consistency with adopted land use plans and policies. No cumulatively considerable effects on the environment were identified.
LD-89	Long Beach Municipal Urban Stormwater Treatment (LB MUST) Facility	No	City of Long Beach	▪ The project would be designed to treat diverted runoff water that would otherwise discharge into the Los Angeles River. Stormwater that enters the Los Angeles River has historically carried pollutants containing trash, bacteria, metals and hydrocarbons that have contaminated our beaches and waterways. By diverting this stormwater before it enters recreational waters, LB MUST has the potential to improve Long Beach's recreational water quality.	The project is in preliminary design and engineering stages. Pre-bidding was held on 1/17/17 and bids were received in February 2017. Construction is scheduled to be completed by the end of 2018 *(Sources: http://www.longbeach.gov/Finance/Media-Library/Documents/City-Budget-and-Finances/Budget/Budget-Documents/CIP, and http://www.californiabids.com/bid_opportunities/2016/12/27/7466725-long-beach-municipal-urban-stormwater-treatment-lb-must-facility.html)/)*	The LB MUST project will improve water quality providing a cumulatively beneficial effect.
LD-90	South Gate Urban Orchard	No	City of South Gate	▪ The project would transform 18.7 acres of land to green space in a disadvantaged community in South Gate. The project would include an urban orchard and community garden that would be irrigated with storm water captured from an adjacent storm water drain. A walking/biking path and parking area would be installed using permeable surfaces. This LID project would include BMPs, and would provide multiple benefits including: 1) improved water quality by infiltrating storm water, 2) increased water supply reliability; and 3) new public open space. The project is located adjacent to the Thunderbird Villa Mobile Home Park and is generally bound by the Los Angeles River, I-710, and Firestone Boulevard.	A feasibility study exploring the possibility of daylighting the section of the Bandini Channel that runs through the site is being prepared. A conceptual design has been prepared for the project; however, some refinements may be necessary. The project has been awarded a Proposition 1 Storm Water Implementation Grant by the State Water Resources Control Board. *(Source: State Water Resources Control Board Media Release – accessed May 26, 2017; http://www.waterboards.ca.gov/press_room/press_releases/2016/pr120516_prop1_stormwater.pdf)*	No information regarding environmental impacts has been identified at this time. Information will be added, if it becomes available during the environmental process for the I-710 Corridor Project.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
Goods Movement (These programs are not shown on Figure 3.25-1. They are regional to the Ports of Los Angeles and Long Beach.)						
GM-1	Clean Trucks Program	No	City of Long Beach Board of Harbor Commissioners (POLB) & City of Los Angeles Harbor Department (POLA)	▪ The Program began on October 1, 2008; the Ports of Los Angeles and Long Beach would ban all pre-1989 trucks from the port terminals. ▪ As of January 1, 2010, all trucks from 1989 to 1993 are banned, along with all un-retrofitted trucks from 1994 to 2003. ▪ By January 1, 2012, all trucks that do not meet the 2007 Federal clean truck emission standards would be banned.	The Clean Trucks Program is outlined in the San Pedro Bay Ports Clean Air Action Plan. Both POLA and POLB participate in this program, and the trucks that do not meet the 2007 Federal Clean Truck Emission Standard are banned from port terminals. *(Sources: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum (URS, February 2009; and http://www.polb.com/civica/filebank/blobdload.asp?BlobID=3759)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-2	Truck Impacted Intersections Project	No	Gateway Cities Council of Governments (Gateway Cities COG), Los Angeles County Department of Public Works and MTA	▪ The program would improve intersections at the Port of Los Angeles. Phase I: Improve 14 intersections by installing new video detection cameras, restriping, and improving traffic signals.	Los Angeles County to conduct the preliminary engineering and administer the construction of the project with Los Angeles County Metropolitan Transportation Authority (MTA) *(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum (URS, February 2009)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-3	Truck Impacted Intersections, Phase II	No	Los Angeles County Department of Public Works	▪ Phase II of the program: Improve 20 additional intersections by installing new video detection cameras, restriping, and improving traffic signals.	See information provided in program GM-2. *(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum (URS, February 2009)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-4	Expanded PierPASS – The PierPASS Off-Peak Program	No	POLA and POLB	▪ Adjust Pier Pass program to produce truck trip terminal gate temporal distribution of 60 percent day shift, 20 percent night shift, and 20 percent hoot owl shift.	PierPASS is a not-for-profit organization created by 13 marine terminal operators in 2005. The program is to reduce congestion and improve air quality in and around POLA and POLB. The program provides an incentive for cargo owners to move cargo at night and on weekends to reduce truck traffic, pollution, and port congestion. *(Source: Baseline Alternatives Analysis, included in the Final Alternatives Screening Analysis Technical Memorandum (URS, February 2009; Website source: www.adventinc.com/Case_Studies/PierPass_Case_Study.pdf)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-5	Rail Yard Emission Reduction Program	No	California Air Resources Board, Union Pacific Railroad, and BNSF Railway	▪ Reduce locomotive emissions near rail yards, and develop new regulations to address on- and off-road vehicles at rail yards.	Air Resources Board, Union Pacific Railroad, and BNSF Railway entered into a pollution reduction agreement in June 2005. The agreement is expected to achieve a 20 percent reduction in locomotive diesel particulate matter emissions near rail yards. *(Sources: Gateway Cities COG, ARB website: www.arb.ca.gov/railyard/railyard.htm)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment
GM-6	Gateway Cities Council of Governments (Gateway Cities COG) Truck Replacement Program	No	Gateway Cities COG	▪ Reduce emissions from in-use heavy-duty vehicles in the Gateway Cities subregion and around the POLA and POLB. ▪ Two components: (1) Fleet Modernization Program (FMP) and (2) the POLB Diesel Emissions Reduction Program (DERP).	The Fleet Modernization Program began in September 2002. The program replaces older (pre-1987) trucks with newer truck engines (minimum year 1994) or alternative fuel engines. New trucks engines emit approximately 35 percent less NO_X and 80 percent less particulate matter (PM) emissions. *(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
GM-7	Cascade Sierra Solutions Program	No	Cascade Sierra Solutions	▪ Improve air quality by improving fuel efficiency of diesel trucks.	SmartWay fuel-saving equipment for trucks is available to purchase through a number of financing programs such as the California Goods Movement Grant Program (Proposition 1B Truck Replacement). *(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment. However, a betterment of air quality would occur.
GM-8	Truck Enforcement/Inspection Facilities Study	No	Gateway Cities COG and Metro	▪ Feasibility study initiated and constructed to being within five years (funding included within Homeland Security Bill).	Gateway Cities COG, with funding provided by Metro, has initiated a study to determine whether modern state-of-the-art truck enforcement and inspection facilities can be located within the I-710 Corridor. *(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-9	San Pedro Bay Ports Clean Air Action Plan	No	POLA, POLB, and U.S. EPA	▪ The report studied options to curb Port-related air pollution from trucks, ships, locomotives, and other equipment by at least 45 percent in five years. ▪ The Ports established three key uniform air quality standard levels: the San Pedro Bay level, the Port-Specific level, and the Source Specific Performance level. ▪ The measures that will be implemented under the plan are expected to eliminate more than 47 percent of diesel PM emissions from Port-related sources within the next five years.	Technical Report was completed in November 2006. *(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	All new significant development projects or modifications to existing facilities will require California Environmental Quality Act (CEQA) and/or National Environmental Policy Act (NEPA) review prior to approval. All CEQA Air Quality Analyses would include a full analysis of construction emissions, and mitigation measures identified through the CEQA process would provide a mechanism to require construction equipment controls to ensure emissions are generated at or below the applicable standards.
GM-10	Gateway Cities COG Air Quality Action Plan	No	Gateway Cities COG	▪ The plan includes the development of a list of near-term air quality measures.	A Preliminary Report was prepared in June 2007. *(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-11	Alternative Fuel Use-Low-Sulfur Marine Vessel Main Engine Fuel Incentive Program	No	POLA and POLB	▪ Low-sulfur fuel being implemented, no comprehensive study. ▪ The incentive program is to encourage vessel operators to use 0.2 percent low-sulfur distillate and would pay the eligible shipping line the difference between the cost of bunker fuel and the low-sulfur distillate.	The program was launched on July 1, 2008. *(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-12	Cold Ironing–Alternative Marine Power (AMP)	No	POLA and POLB	▪ Provide shoreline power so that ships can shut down auxiliary engines while in port and connect to electrical power supplied at the dock. This practice would reduce ship emissions while in port. ▪ AMP is a key part of the San Pedro Bay Ports Clean Air Action Plan.	The Port of Los Angeles implemented the availability of shoreline power in June 2004. The POLB will be adding the availability of shoreline power over the next eight years. *(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-13	Marine Vessel (ocean going)	No	POLA and POLB	▪ Vessel speed reduction – initiated, 2006–2011. ▪ Low-sulfur fuel (within five years). ▪ Pollution control equipment addition (within five years).	*(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-14	Cargo Handling Equipment	No	POLA and POLB	▪ Initiated, 2006–2011. Automated cargo-handling equipment – a decrease in emissions.	*(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-15	Harbor Craft	No	POLA and POLB	▪ Initiated, 2006–2011	*(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-16	Railroad Locomotives	No	POLA and POLB	▪ Existing switch engines (Tier 2) – initiated, 2006–2008. ▪ All new switch engines (Tier 3) – initiated, 2006–2011. ▪ Locomotives entering ports (Tier 2) – initiated, 2006–2011.	*(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.

Table 3.25-1: Past, Present and Foreseeable Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Major Project	Lead Agency	Project Description	Project Status	Relevant Cumulative Environmental Factors
GM-17	Replace locomotives that provide service in Southern California with new locomotives	No	POLA and POLB	▪ Initiated, 2006–2010.	*(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would contribute to a substantial cumulative adverse impact on the environment.
GM-18	Virtual Container Yard	No	City of Long Beach Board of Harbor Commissioners (POLB); City of Los Angeles Harbor Department (POLA); and ACTA	▪ This program is to improve the handling of empty container and equipment management through policies and incentives (including virtual container yard). To eliminate the storage of containers at terminals/depots and alleviate additional truck trips and vehicle miles traveled, the system is to connect the transfer of empty containers directly between two parties.	This program was initiated in 2006/2007 and is ongoing. *(Source: Gateway Cities COG Quarterly Update for Existing and Proposed Near-term Air Quality Strategies)*	This is a regional Ports program; no cumulative factors would affect the I-710 Project. Both Ports participate in the program.

BNSF = BNSF Railway
CDI = Construction, Demolition and Inert
DoCCS = Dockside Catalytic Control System
DTSC = Department of Toxic Substances Control
EIR = Environmental Impact Report
EIS = Environmental Impact Statement
FEIR = Final Environmental Impact Report
FONSI = Finding of No Significant Impact
GHG = greenhouse gases
HOT = high-occupancy toll
HOV = high-occupancy vehicle
HST = high-speed train
I-5 = Interstate 5
I-10 = Interstate 10
I-105 = Interstate 105
I-110 = Interstate 110
I-710 = Interstate 710
I-210 = Interstate 210
IS = Initial Study
ITS = Intelligent Transportation Systems
MND = Mitigated Negative Declaration
MSW = Municipal Solid Waste
ND = Negative Declaration
NOP = Notice of Preparation
NO_X = nitrogen oxides
SR-22 = State Route 22
SR-47 = State Route 47
SR-57 = State Route-57
SR-60 = State Route 60
SR-71 = State Route 71
TEU = 20-foot equivalent unit
tpd = tons per day

Table 3.25-2: Anticipated Construction Schedules for Major Future Projects in the I-710 Corridor Study Area

Project ID No.	Project Title	Anticipated Construction Schedule
	I-710 Corridor Project	2020–2027
T-2	SR 710 North Study	2025–2030
T-4	I-5 Corridor Improvement Project (OC line to I-605)	2012–2018
T-5	I-5 Widening and HOV Project (I-605 to I-710)	Winter 2025
T-21	SR-47 Expressway Project	Schuyler Heim Bridge Replacement under construction from late 2011 to 2017, expressway construction postponed indefinitely
T-25	Pier B On-Dock Rail Support Facility	Unknown; the Draft EIR was circulated for public review from late 2016 to March 2017.
T-30	Washington Blvd Improvement Project	Started in January 2015
T-49	High Speed Rail	Operation by 2029
P-1	SCIG Project	Unknown; court ruling to set aside Final EIR is currently being appealed
P-19	Middle Harbor Redevelopment Project	Construction started in May 2011 – expected to last nine years
P-20	Gerald Desmond Bridge Project	2013–2018
P-22	Pier A East and West Expansion Project	Unknown (project on hold)
P-23	Pier S Marine Terminal	Unknown (project on hold)
P-24	ICTF	Unknown construction start date – expected to last three to four years
LD-1	Los Angeles River Master Plan	Late 2013 – anticipated to require many years to fully implement
LD-20	River Link Plan	Unknown start of construction date

EIR = Environmental Impact Report
HOV = high-occupancy vehicle
I-5 = Interstate 5
I-605 = Interstate 605
I-710 = Interstate 710
ICTF = Intermodal Container Transfer Facility
OC = Orange County
SCIG = Southern California International Gateway
SR 710 = State Route 710
SR-47 = State Route 47

3.25.4 RESOURCES EVALUATED FOR CUMULATIVE IMPACTS

Given the level of effect identified in the technical studies and the analysis throughout this RDEIR/SDEIS, potential cumulative effects related to the following resources and environmental topics may result from implementation of the build alternatives. Each of these topics is discussed below. Reasonably foreseeable actions within the Study Area are listed in Table 3.25-1; however, a subset of major projects (large projects related to transportation and goods movement that would be located in the vicinity to the I-710 Corridor Project) with a potential for adverse environmental effects, listed in Table 3.25-2, are discussed in the analysis below. For each environmental topic, relevant projects are listed along with the project

identification number shown on Figure 3.25-1. The source documents for the environmental impact information for these major projects are provided in Table 3.25-1. For each environmental topic listed below, the RSA is described.

3.25.4.1 LAND USE

The information in this section is based on Sections 3.1 and 3.24.3.1 of this RDEIR/SDEIS and the *Community Impact Assessment* (2017) prepared for the project.

RESOURCE STUDY AREA. The Study Area includes the portion of I-710 from Ocean Blvd. in Long Beach to SR-60, a distance of approximately 18 miles. At the freeway-to-freeway interchanges, the Study Area extends one mile east and west of I-710 for the I-405, SR-91, I-105, and Interstate 5 (I-5) interchanges. The I-710 Corridor Project also includes the major north-south arterials from Wilmington Ave. to the west to Lakewood Blvd. to the east. For the purpose of this analysis, the RSA for land use is the Study Area, which includes parts of the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, as well as parts of unincorporated Los Angeles County.

HEALTH AND HISTORICAL CONTEXT. The Study Area is located in a largely urbanized area. Within the Study Area, the I-710 mainline serves as the principal transportation connection for goods movement between POLA and POLB, located at the southern terminus of the freeway, and the Burlington Northern Santa Fe (BNSF)/Union Pacific Railroad (UP Railroad) rail yards in the Cities of Commerce and Vernon. A variety of land uses exist within and adjacent to the RSA, including transportation, residential, commercial, industrial, infrastructure, education, recreation, undeveloped, and water-related land uses. There are hundreds of parks and recreation facilities within the Study Area that are both publicly and privately owned.

PROJECT IMPACTS.

FUTURE AND EXISTING LAND USES. Table 3.25-3 provides the impacts to particular land use designations by each build alternative within the Study Area. Alternative 7 would directly impact more area than Alternative 5C. Because I-710 has been considered in local General Plans since its construction as a freeway in the 1950s, the build alternatives are generally compatible with adjacent land uses.

CONSISTENCY WITH STATE, REGIONAL, AND LOCAL PLANS. With regard to overall General Plan consistency, adoption of a build alternative would require several cities to amend their General Plan Land Use and Circulation Elements to reflect modifications to arterials, interchange modifications, and elimination of any land uses that may need to be acquired for the I-710 Corridor Project. However, the I-710 Corridor Project is generally consistent with the adopted goals and polices in the General Plans since it addresses the main components

found in many of the General Plan policies: community participation, improved air quality, and reduced traffic congestion. The proposed project is not located within the POLA Master Plan area and would, therefore, not have a direct impact. Nonetheless, the project is consistent with the POLA Master Plan, as it would improve existing facilities. The build alternatives are consistent with the POLB Master Plan because the project would improve an existing facility and would not introduce new non-port-related uses to the POLB Master Plan District 1.

PARKS AND RECREATION. The build alternatives include modifications to Cesar E. Chavez Park in the City of Long Beach as part of the project. Both build alternatives would result in direct impacts to the planned Parque Dos Rios Park in the City of South Gate. Alternative 5C would result in the permanent use of 1.68 acres of land on the west side of this park. Alternative 7 would result in the permanent use of the entire park. Additionally, both build alternatives would require the relocation of the Compton Hunting and Fishing Club. Alternative 7 would require the relocation of the Compton Homing/Racing Pigeon Club. In addition, indirect impacts may occur to several parks and recreation facilities, including temporary access impacts that may occur during construction and/or visual impacts that may occur with widening and/or construction of the freight corridor component of Alternative 7.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which are located throughout the Study Area. Reasonably foreseeable actions that may contribute to a cumulative land use impact include:

- I-5 Widening and High-Occupancy Lane (HOV) Lane Project
- I-5 Corridor Improvement Project

Table 3.25-3: Existing Land Use Impacts by Build Alternative (acres)

	Facilities	General Office	Education	Commercial and Services	Industrial	Open Space and Recreation	Residential	Transportation and Utilities	Military Installations	Vacant	Total
Alternative 5C	12.39	3.40	0.09	15.57	95.79	1.6	13.74	131.69	11.63	241.11	504.07
Alternative 5C, Option 1A	1.79	0.08	–	2.87	54.43	0.21	4.06	36.89	11.63	3.03	502.62
Alternative 5C, Option 2A	0.95	1.83	0.01	6.93	24.74	1.39	5.04	50.95	–	200.17	525.82
Alternative 5C, Option 3A	0.17	0.16	–	–	1.35	–	1.76	–	–	–	507.38
Alternative 7	15.4	3.25	0.07	24.88	148.5	1.63	15.79	233.36	11.88	240.74	700.07
Alternative 7, Option 1B	1.79	0.25	–	2.91	93.42	0.24	6.08	42.13	11.88	4.52	703.85
Alternative 7, Option 3B	0.17	0.16	–	–	1.35	–	1.76	–	–	–	703.38

Source: LSA Associates, Inc. *Community Impact Assessment* (July 2017).

- SR 710 North Study
- California High Speed Rail Project

CUMULATIVE IMPACTS.

FUTURE AND EXISTING LAND USES. The build alternatives are generally consistent with existing land uses and the applicable goals and policies in the affected cities' General Plans. As stated in the environmental document for the I-5 Corridor Improvement Project, the Preferred Alternative (Alternative 4B) would be consistent with future and existing land uses. According to the Draft EIR/EIS prepared for the SR 710 North Study (formerly referred to as SR-710 Project in the 2012 I-710 Corridor Project Draft EIR/EIS), all four of the SR 710 North Study Build Alternatives, including the Freeway Tunnel Alternative, would have direct, construction-related impacts on existing land uses and would require the acquisition and conversion of land currently planned for nontransportation uses into transportation uses. None of the land use impacts associated with the SR 710 North Study Build Alternatives would affect the same cities as the I-710 Corridor Project. Although environmental documents are not available for the other listed projects, in the case that these projects would have an impact on future and existing land uses, implementation of avoidance, minimization, and/or mitigation measures would be required to comply with CEQA and/or NEPA. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to land use.

CONSISTENCY WITH STATE, REGIONAL, AND LOCAL PLANS. With regard to overall General Plan consistency, adoption of a build alternative would require several cities to amend their General Plan Land Use and Circulation Elements to reflect modifications to arterials, interchange modifications, and elimination of any land uses that may need to be acquired for the I-710 Corridor Project. Other projects within the RSA for cumulative land use impacts may also require modification of some cities' General Plan Land Use and Circulation Elements. Each city would individually evaluate any General Plan amendment request for a reasonably foreseeable action within its jurisdiction. As stated in Section 3.1, Land Use, with regard to overall General Plan consistency, adoption of a build alternative would require several cities to amend their General Plan Land Use and Circulation Elements to reflect modifications to arterials, interchange modifications, and elimination of any land uses that may need to be acquired for the I-710 Corridor Project. However, the I-710 Corridor Project is generally consistent with the adopted goals and polices in the General Plans since it addresses the main components found in many of the General Plan policies: community participation, improved air quality, and reduced traffic congestion. As stated in the environmental document for the I-5 Corridor Improvement Project, the Preferred Alternative (Alternative 4B) would be consistent with State, regional, and local plans. While each of the four build alternatives analyzed in the Draft EIR/EIS prepared for the SR 710 North Study would be inconsistent with the 2012 Regional Transportation Plan/Sustainable Communities

Strategy (RTP/SCS) and/or individual policies, objectives, and program goals in local plans, those inconsistencies would be addressed through implementation of avoidance, minimization, and/or mitigation measures. Further, none of those inconsistencies specifically involve the I-710 Corridor Project. Although environmental documents are not available for the other listed projects, in the case that these projects would have an impact on State, regional, and/or local plans, implementation of avoidance, minimization, and/or mitigation measures would be required to comply with CEQA and/or NEPA. Therefore, the I-710 Corridor Project would not substantially contribute to a cumulative effect related to consistency with State, regional, and local plans because the project is generally consistent with area General Plan goals and policies, and because each General Plan amendment associated with any of the cumulative impacts would be evaluated by the city with jurisdiction over the proposed change.

PARKS AND RECREATION. None of the cumulative projects identified within the RSA would impact the facilities that could be affected by the I-710 Corridor build alternatives. Future parks are planned as part of some of the affected cities' General Plans (e.g., City of Long Beach); therefore, build out of the future land uses in the RSA would not result in adverse impacts to parks and recreation facilities. As stated in the environmental document for the I-5 Corridor Improvement Project, the Preferred Alternative (Alternative 4B) would not impact any park or recreation facilities. According to the Draft EIR/EIS prepared for the SR 710 North Study, all four of the SR 710 North Study Build Alternatives, including the Freeway Tunnel Alternative, would result in noise effects on parks and recreation resources, and the Bus Rapid Transit (BRT) Alternative would require the acquisition of a small portion of Cascades Park in Monterey Park. Avoidance, minimization, and/or mitigation measures described in the EIR/EIS would avoid, reduce, or minimize those effects. In addition, none of the parks and recreation resources affected by the SR 710 North Study would be affected by the I-710 Corridor Project. Although environmental documents are not available for the other listed projects, in the case that these projects would have an impact on park and recreation facilities, implementation of avoidance, minimization, and/or mitigation measures would be required to comply with CEQA and/or NEPA. Further, most of the cumulative transportation projects consist of improvements to existing roadways and freeways, which would limit potential impacts to only those parks and recreation facilities that are immediately adjacent to the existing roadways and freeways. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to parks and recreation.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. As discussed above, the I-710 Corridor Project build alternatives would result in the modification of Cesar E. Chavez Park and the relocation of the Compton Hunting and Fishing Club. Alternative 5C would result in the permanent use of part of the planned Parque Dos Rios Park, while Alternative 7 would result in the permanent use of the entire park. Alternative 7 would require the relocation of the Compton

Homing/Racing Pigeon Club. See Sections 3.25.4.2 and 3.25.4.6 for measures to reduce these direct effects. The I-710 Corridor Project build alternatives would also include the following design enhancements within the Study Area:

- **Cesar E. Chavez Park:** Within the City of Long Beach, Shoreline Dr. consists of separated northbound/southbound lanes (one in each direction) routed through Cesar E. Chavez Park. Under all I-710 Corridor Project build alternatives, Shoreline Dr. would be combined and reconstructed to two through lanes in each direction along the western edge of the Park between Ocean Blvd. and Shoemaker Bridge. The existing lanes would be removed and the available land restored and landscaped to become part of Cesar E. Chavez Park. This change would improve access to the park, as well as provide for a larger contiguous recreation area.

3.25.4.2 GROWTH

The analysis in this section is based on Sections 3.2, Growth, and 3.24.3.2 of this RDEIR/SDEIS and on the *Community Impact Assessment* (2017), the *I-710 Railroad Goods Movement Study* (Metro, 2009), and the *I-710 EIR/EIS Initial Feasibility Analysis* (Metro, 2009).

RESOURCE STUDY AREA. The Study Area includes the portion of I-710 from Ocean Blvd. in Long Beach to SR-60, a distance of approximately 18 miles. At the freeway-to-freeway interchanges, the Study Area extends one mile east and west of I-710 for the I-405, SR-91, I-105, and I-5 interchanges. The I-710 Corridor Project also includes the major north-south arterials from Wilmington Ave. to the west, to Lakewood Blvd. to the east. For the purpose of this analysis, the RSA for land use is the Study Area, which includes parts of the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, as well as parts of unincorporated Los Angeles County.

HEALTH AND HISTORICAL CONTEXT. At the regional level, much of Los Angeles County is built out and urbanized, especially within the Study Area. However, SCAG anticipates population, housing, and employment growth to occur through 2035 within the Gateway Cities Subregion and Los Angeles County overall.[1] At the local level, SCAG anticipates low population, housing, and employment growth for the affected cities generally located in the northern portion of the Study Area (e.g., the Cities of Bell, Commerce, and Maywood), with the exceptions of the cites of Cudahy and South Gate. In addition, SCAG anticipates moderate population and housing growth for the affected cities generally located in the southern portion of the Study Area (e.g., the Cities of Carson, Long Beach, and Signal Hill).

[1] *2012 RTP/SCS Growth Forecast Appendix,* April 2012.

Within the Study Area, there are several physical constraints to growth in population and housing. Most of the cities are currently built out and have very limited vacant land for new development. Planning efforts by the cities are concentrated on redevelopment and the recycling of existing uses to better utilize available land. In the northern part of the Study Area, the railroad yards and tracks also act as a constraint to growth, providing physical boundaries to new developments and expansion of existing land uses. The Southern California Edison (SCE) and Los Angeles Department of Water and Power (DWP) utility corridors within the Study Area also create a physical boundary to growth. These two major utility corridors are located parallel to the Los Angeles River, in addition to other electric transmission corridors within the City of Long Beach and other affected cities within the Study Area. Other existing public infrastructure, such as the I-405, SR-91, I-110, and I-5, freeways also create physical boundaries that constrain land development or redevelopment within the Study Area.

The Study Area is located within the Gateway Cities Subregion of Los Angeles County. The Gateway Cities Subregion as a whole has experienced population, housing, and employment growth since the early 1900s and is anticipated to continue this growth pattern through 2035 (see Table 3.2-2). In the 20th century, the regional economy transitioned from an agricultural base to a manufacturing/industrial base, with a heavy emphasis on the aerospace and defense industries in the 1950s through the 1970s. As these industries declined in the 1980s, an expansion in global trade, as well as containerization of global freight, resulted in goods movement becoming an important element of the Gateway Cities Subregion's economy. Today, the POLB and POLA, the railroads, and the trucking industry provide goods movement not just within the Study Area, but also for the Gateway Cities Subregion, the SCAG region, and the nation as a whole.[2]

Los Angeles County's goods movement system serves as a gateway for both international and domestic commerce, especially within the Study Area, where the POLB and POLA, the Burlington Northern Santa Fe (BNSF) Hobart rail yard, and the UP Railroad East Los Angeles rail yard, the Intermodal Container Transfer Facility (ICTF), and the Alameda Corridor are located. The Ports, railroads, and interstate and State highways all play a critical role related to goods movement within the Study Area.

PROJECT IMPACTS. The I-710 Corridor Project build alternatives would affect accessibility by improving the vehicle, person, and goods movement travel times within the I-710 Corridor to more effectively serve existing and future travel demand. The I-710 Corridor Project build alternatives would also improve intersecting local roads (interchange improvements and ramp modifications) along I-710 to more effectively serve existing and projected intra-regional travel demand and to reduce the diversion of regional traffic from the I-710 freeway into the

[2] *2016 RTP/SCS Goods Movement Appendix,* April 2016.

surrounding communities. Due to the lack of vacant or less developed land within the I-710 Corridor, the build alternatives would not facilitate new development by opening up access to previously undeveloped or less developed areas.

Los Angeles County, the Gateway Cities Subregion, and the communities within the Gateway Cities Subregion are projected to continue to experience some growth in population and jobs even in the jurisdictions that are relatively constrained by limited land available for development. Growth in the Southern California Association of Governments (SCAG) region is expected to occur with or without the projects included in the RTP, including the I-710 Corridor Project. Improved travel times expected as a result of the I-710 Corridor Project build alternatives would not be expected to be sufficient to result in the need to modify adopted General Plans to allow for greater levels of development (residential and nonresidential). The I-710 Corridor Project build alternatives are expected to accommodate existing, approved, and planned growth in the area, but are not expected to influence the amount, timing, or location of growth in the area.

A key element of the project purpose of the I-710 Corridor Project is to address projected growth in population, employment, and economic activities related to goods movement. The increase in capacity on I-710 under the I-710 Corridor Project build alternatives is not expected to influence demand for growth at the Ports nor would growth of port cargo handling capacity at the Ports substantially increase travel demand on I-710. However, by adding highway system capacity to the goods movement infrastructure in Southern California, both of the I-710 Corridor Project build alternatives would have a beneficial effect in accommodating the forecasted growth in the movement of cargo containers via truck within the I-710 Corridor. Alternative 7 would have a greater beneficial effect than Alternative 5C by providing dedicated lanes for freight movement within the I-710 Corridor.

REASONABLY FORESEEABLE ACTIONS. Reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which include areas adjacent to the I-710 Corridor Project. Projects with the potential to contribute to cumulative growth-related effects in the RSA include:

- Pier A East and West Expansion Project
- Pier B On-Dock Rail Support Facility
- Gerald Desmond Bridge Project
- Los Angeles River Master Plan
- SR 710 North Study
- California High Speed Rail Project

CUMULATIVE IMPACTS. In addition to the I-710 Corridor Project, the Gerald Desmond Bridge Project would provide landside highway infrastructure that would help accommodate the existing

and future demand for goods movement in southern California. The SR 710 North Study Build Alternatives and the California High Speed Rail Project would also enhance mobility and circulation in the region to accommodate existing and future population growth. The Pier A East and West Expansion Project and the Pier B On-Dock Rail Support Facility would provide marine terminal facilities within POLA and POLB, respectively, to accommodate existing and future demand for goods movement. Although the Los Angeles River Master Plan's programmatic environmental document states that the project has the potential to induce growth by providing a more attractive area to live and work, this impact is anticipated to be low and to be a positive contribution to the area. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to growth.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. There are no adverse growth-related effects of the I-710 Corridor Project build alternatives; therefore, no avoidance, minimization, and/or mitigation measures are required.

3.25.4.3 COMMUNITY IMPACTS

The information in this section is based on Sections 3.3 and 3.24.3.3 of this RDEIR/SDEIS EIR/EIS, the *Community Impact Assessment* (2017), and the *Relocation Impact Report* (RIR) (March 2017) prepared for the project.

RESOURCE STUDY AREA. For the purpose of this analysis, the RSA for community impacts is the Study Area, which includes parts of the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, as well as parts of unincorporated Los Angeles County.

HEALTH AND HISTORICAL CONTEXT. The cumulative impacts Study Area is located in a largely urbanized area. The health of this resource changes as land or infrastructure development results in property acquisitions and relocations. Relocations occur when development, redevelopment, or infrastructure projects are located in areas where residential, commercial, or community facilities currently exist. There are numerous community facilities located within each of the affected cities in the Study Area. Community facilities include schools, libraries, fire stations, police stations, and places of worship, and provide community gathering areas for the public. Relocations may also affect community character and cohesion. Community cohesion is the degree to which residents have a sense of belonging to their neighborhood, a high level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. According to several indicators of community cohesion, the Study Area consists of many cohesive and intact communities within the affected cities.

Many of the cities in the Study Area originally developed as “streetcar suburbs” of Los Angeles in the 1920s along the Pacific Electric inter-city commuter railroad line that connected downtown Los Angeles with downtown Long Beach. Due to their good rail access, the Cities of Commerce and Vernon were developed primarily with industrial uses. Following World War II, most of the remaining undeveloped areas in the Study Area, with the exception of some parts of Rancho Dominguez, which were developed later, were developed to accommodate a large influx of new residents in the region. Regional transportation in the Study Area changed considerably in the 1950s and 1960s as Southern California’s regional freeway network was built and the Pacific Electric system was closed and replaced with bus service. In the early 1990s, passenger rail service returned to the Study Area as Metro’s Blue Line light rail project was opened along the same right-of-way that was used by the Pacific Electric and the Green Line was opened in the median of I-105. Although I-710 was built along the Los Angeles River and SR-91 was built in a largely undeveloped area on the south side of Compton, the construction of I-105 resulted in the displacement of several hundred housing units in Lynwood, Paramount, South Gate, and Downey. The construction of I-105 physically divided the communities along its alignment and resulted in the displacement of thousands of residents. As discussed above, most of the cities in the Study Area were built along existing railroad corridors and many of the Study Area freeways, with the exception of I-105, were built along existing natural community boundaries. Therefore, for the most part, the Study Area communities have grown up with the regional transportation network.

Historically, many of the cities in the Study Area consisted of working-class families that first settled in the area in the 1920s. Racial segregation was prominent in the Study Area cities. Some cities had substantial African-American populations, while others were almost exclusively White. Demographics in the Study Area changed substantially in the 1980s and 1990s as immigrants from Asia and Latin America replaced the White populations that moved to newer suburbs elsewhere in the region. As described in Section 3.3, Community Impacts, the Study Area is home to a large proportion of minority and low-income populations. As of the 2010 Census, the Study Area was 85.6 percent non-White (i.e., composed of individuals other than non-Hispanic Whites). By contrast, Los Angeles County was 72.2 percent non-White in 2010. According to the 2010-2014 American Community Survey, 22.8 percent of persons in the Study Area live in households that fall below the Federal poverty threshold. Within Los Angeles County, that share is 18.7 percent.

Residents in the Study Area are affected by operation of I-710 and other transportation facilities in the area. I-710 carries thousands of heavy trucks daily to and from the Ports of Los Angeles (POLA) and Long Beach (POLB), along with other truck and passenger vehicle traffic. I-105, I-405, and SR-91 also carry thousands of trucks and vehicles per day. The existing traffic congestion, air pollution, and traffic incidents on I-710 and the other freeways in the area directly affect all residents of the area, including the minority and low-income populations that are prevalent in the corridor.

PROJECT IMPACTS.

COMMUNITY CHARACTER AND COHESION. With the exception of residential relocations in the City of Commerce, which are discussed below, the I-710 Corridor Project build alternatives would not result in adverse impacts to community character and cohesion. The I-710 Corridor Project build alternatives have been developed through an extensive community outreach process that involves input from multiple public agencies and stakeholders in order to avoid impacts to the human, physical, and natural environments, including existing and future communities. Due to extensive community outreach, which included advisory committee input on the design plans, the extent of adverse impacts throughout the Study Area have been minimized. This was accomplished through refining the I-710 Corridor Project build alternatives as much as possible to address community concerns and maintain community character and cohesion. Within the City of Commerce, Alternative 7 would result in unavoidable adverse impacts to community character and cohesion as a result of residential relocations. Therefore, Alternative 7 would contribute to cumulative adverse impacts related to community character and cohesion within Commerce.

ENVIRONMENTAL JUSTICE. Overall, the I-710 Corridor Project would have many beneficial effects on the surrounding communities and I-710 corridor users when compared with current conditions, including reductions in emissions levels and associated health risk; abatement of freeway noise in most locations; and improved level of service at most intersections. In addition, programmatic elements of the project, such as the Community Health Benefit Program, would be of particular benefit to environmental justice communities although the effects cannot be quantified at this time due to the nature of the program (to provide funding for future improvements and/or health-related projects on a case-by-case basis). However, even with the application of these benefits, the environmental justice analysis for the I-710 Corridor Project has identified potential disproportionately high and adverse impacts on minority and low-income populations in the Study Area, after consideration of mitigation. These disproportionately high and adverse impacts have been identified for air quality (construction and operation), noise, traffic, community cohesion/relocations, visual resources, and land use.

Due to the potential for disproportionately high and adverse impacts, further mitigation is proposed to help alleviate project-related impacts to environmental justice communities. Please see Measures C-6 through C-8 in Section 3.3, Community Impacts.

RELOCATION. Within the Study Area, Alternative 5C and the design options would result in a total of between 109 and 128 residential relocations and between 157 and 165 nonresidential relocations. Alternative 7 and the design options would result in a total of between 121 and 140 residential and between 206 and 213 nonresidential relocations. These acquisitions would result in the relocation of existing residents, businesses, and

employees. Most residential displacements in the Study Area, given present market conditions, do not indicate a need for the construction of replacement housing.

Within the City of Commerce, current market conditions indicate the lack of comparable replacement housing. While adequate comparable replacement housing appears to exist presently in neighboring cities, new replacement dwellings under Last Resort Housing may be considered for this city as a method of providing comparable replacement housing to displaced persons who reside in areas where replacement housing is low. However, there are sufficient relocation properties available within the Study Area to relocate the majority of affected residents and businesses (*Relocation Impact Report,* March 2017), with the exception of those noted above. As stated in the discussion of Public Health Considerations, there are residential property impacts for some design options of Alternative 7 in the cities of Commerce and Vernon, where Housing of Last Resort[3] may have to be considered for relocating the affected residential properties.

Within the City of Compton, five mobile homes at the El Rancho Mobile Home Park would be proposed to be relocated under both build alternatives. Adequate relocation resources for mobile homes do not currently exist within the Study Area, and this lack of resource would represent an adverse impact to displaced mobile home residents (assuming they preferred to remain in a mobile home). For the majority of residential property impacts, adequate resources appear to exist to relocate existing residential occupants to comparable replacement housing, with the exception of mobile home housing as stated above. Specific locations for relocations will be determined during the right-of-way acquisition phase as Caltrans' right-of-way agents negotiate with each displacee (refer to Appendix D for additional detail on the relocation benefits).

COMMUNITY FACILITIES. The I-710 Corridor Project build alternatives would result in direct impacts to community facilities in the Study Area, including the Long Beach Bible Institute, in the City of Long Beach, and Fire Station No. 4 in the City of Vernon. In addition, Alternative 7 would result in direct impacts to the Salvation Army's Bell Shelter in the City of Bell, the Mark Taper Foundation Shelter Resource Bank in the City of Bell, and the Multi-Service Center in the City of Long Beach. Relocation is required for these community facilities prior

[3] The Uniform Relocation Act (URA) requires that comparable decent, safe, and sanitary replacement housing within a person's financial means be made available before that person may be displaced. When such housing cannot be provided by using replacement housing payments, the URA provides for "housing of last resort." Housing of last resort may involve the use of replacement housing payments that exceed the URA maximum amounts. Housing of last resort may also involve the use of other methods of providing comparable decent, safe, and sanitary housing within a person's financial means. Refer to §49 CFR 24.404 and Chapter 3 of the U.S. Housing and Urban Development (HUD) Handbook 1378 for more information. Website: https://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing/training/web/relocation/ lastresort (accessed 2/20/17).

to construction of the I-710 Corridor Project. In addition, indirect impacts may occur to several other community facilities, some of which would be temporary access impacts that may occur during construction and/or visual impacts that may occur with widening and/or construction of the freight corridor in an existing viewshed.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which are located throughout the Study Area. Projects with particular relevance to community impacts include all projects that would divide an existing neighborhood or change the character and cohesion of the neighborhood and are as follows:

- State Route 47 (SR-47) Expressway Project
- Middle Harbor Redevelopment Project
- Gerald Desmond Bridge Project
- Southern California International Gateway (SCIG) Project
- Los Angeles River Master Plan
- RiverLink Plan
- I-5 Widening and HOV Lane Project
- I-5 Corridor Improvement Project
- SR 710 North Study
- California High Speed Rail Project

CUMULATIVE IMPACTS.

COMMUNITY CHARACTER AND COHESION. As stated above, Alternative 7 would contribute to cumulative adverse impacts related to community character and cohesion in Commerce. Additionally, as stated in the environmental document for the I-5 Corridor Improvement Project, the project would disrupt neighborhoods, further separate resident children from schools, and fragment edges of cohesive groups of people, thereby adversely affecting how a community or neighborhood functions. As this project's northern terminus is at the I-5/I-605 interchange and is not located near the Cities of Commerce, Compton, or Bell Gardens, this impact to community character and cohesion is not considered a cumulative impact.

As stated in the SR 710 North Study Draft EIR/EIS, all four of the SR 710 North Study Build Alternatives, including the Freeway Tunnel Alternative, would have varying impacts to community character and cohesion, including temporary lane restrictions, delays, and detours during construction, as well as temporary and permanent air quality, noise, traffic/access, and/or parking effects on community facilities. Although most of the impacts to

community character and cohesion caused by the SR 710 North Study Build Alternatives would not occur in the same cities that would be affected by the I-710 Corridor Project, the Light Rail Transit (LRT) Alternative described in the SR 710 North Study Draft EIR/EIS would result in significant and unavoidable impacts to community cohesion in East Los Angeles related to the displacement of 15 neighborhood-oriented businesses. This would contribute to a cumulative impact to the northern portion of the RSA.

The environmental documents available for the State Route 47 (SR-47) Expressway Project, the Middle Harbor Redevelopment Project, the Gerald Desmond Bridge Project, and the SCIG Project conclude that these projects would not have impacts on community character and cohesion. Of those projects in which no environmental documents are available (the I-5 Widening and HOV Lane Project and the California High Speed Rail Project), impacts to community character and cohesion could occur that would contribute to a cumulative impact to the northern portion of the RSA. Therefore, Alternative 7 could contribute to cumulative adverse impacts related to community character and cohesion in Commerce.

ENVIRONMENTAL JUSTICE. As a result of the I-710 Corridor Project build alternatives, there would be some disproportionate adverse impacts related to air quality, noise, traffic, and relocations, while in other areas, there would be no disproportionate adverse effects. These adverse effects identified have the potential to be mitigated. The I-5 Corridor Improvement Project would result in residential acquisitions that may affect a disproportionately high number of Hispanic and low-income populations in the Cities of Norwalk and Downey and may affect a disproportionately high number of persons living in poverty. As this project's northern terminus is at the I-5/I-605 interchange and is not located near the areas in which environmental justice impacts would occur as a result of the I-710 Corridor Project, this impact to environmental justice communities is not considered a cumulative impact. The environmental documents available for the SR-47 Expressway Project, the Middle Harbor Redevelopment Project, the SR 710 North Study, and the Gerald Desmond Bridge Project conclude that these projects would not have impacts on environmental justice communities.

The SCIG Project would result in disproportionate effects on minority and low-income populations as a result of significant unavoidable impacts related to aesthetics, cultural resources, and noise. Impacts related to air quality, biology, greenhouse gases, land use, public services, and water resources would be reduced through avoidance, minimization, and/or mitigation measures. This project may result in cumulative impacts in the RSA. Of those projects in which no environmental documents are available (the I-5 Widening and HOV Lane Project and the California High Speed Rail Project), impacts to environmental justice communities could occur that would contribute to a cumulative impact.

As shown in Table 3.25-2, construction activities of some phases of the I-710 Corridor Project, the SR-47 Expressway Project, the Los Angeles River Master Plan, the Middle

Harbor Redevelopment Project, the I-5 Widening and HOV Lane Project, and the California High Speed Rail Project are anticipated to overlap and would temporarily affect environmental justice populations. Temporary construction impacts would include disruption of local traffic patterns and access to residences and businesses, increased traffic congestions, and increased noise, vibration and dust. However, construction activities and operation of the projects would provide direct and indirect jobs, which would benefit local economies that include minority and low-income populations.

Measures C-6 through C-8 stipulated in Section 3.3.3, Community Impacts, and avoidance, minimization, and/or mitigation measures in other sections of this RDEIR/SDEIS would reduce impacts to affected populations, including environmental justice populations, with the exception of those who are located very near I-710 and experience noise, air quality, traffic, and relocation impacts that cannot be fully mitigated and/or abated. Therefore, the I-710 Corridor Project build alternatives could contribute to cumulative adverse impacts on environmental justice populations.

RELOCATION. Other planned projects such as the SR-47 Expressway Project, the Gerald Desmond Bridge Project, the SCIG Project, the SR 710 North Study, and the I-5 Corridor Improvement Project may require property acquisitions and subsequent relocation of both residents and businesses.

- SR-47 Expressway Project – six business acquisitions in the County of Los Angeles near POLA
- Gerald Desmond Bridge Project – 19 business acquisitions mostly owned and administered by POLB
- SCIG Project – POLA tenant relocations
- SR 710 North Study – the number of relocations varies, depending upon which alternative is selected for implementation; however, none of the build alternatives would require residential relocations (the Transportation Systems Management/Transportation Demand Management [TSM/TDM] and BRT Alternatives would not displace any businesses; the LRT Alternative would displace 73 businesses in Alhambra, East Los Angeles, Los Angeles, Monterey Park, Pasadena, and South Pasadena; and the Freeway Tunnel Alternative would displace two businesses in Los Angeles)
- I-5 Corridor Improvement Project – 108 residential acquisitions (approximately 400 people) and 42 commercial acquisitions located in the Cities of Cerritos, Downey, La Mirada, Norwalk, and Santa Fe Springs

Projects in which environmental documents are not available (the I-5 Widening and HOV Lane Project and the California High Speed Rail Project) could require acquisition and relocation of residential and nonresidential properties. According to the SR 710 North Study

Draft EIR/EIS, the LRT Alternative would require the relocation of 15 businesses in East Los Angeles. None of the other relocations associated with the SR 710 North Study Build Alternatives would occur in the same cities affected by the I-710 Corridor Project. Residential and nonresidential acquisitions are anticipated to occur in the City of Commerce and in the community of East Los Angeles as a result of the California High Speed Rail Project and the I-5 Widening and HOV Lane Project. In combination with the I-710 Corridor Project, this would have a cumulative impact in these areas. However, any property acquisitions and subsequent relocations would require compliance with the provisions of the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) and its 1987 Amendments, as implemented by the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs, adopted by the United States Department of Transportation on March 2, 1989. Consistency with the Uniform Act and its 1987 Amendments would substantially reduce any cumulative adverse effects related to relocation.

Last Resort Housing may be required for relocation of residents in the Cities of Commerce and Vernon for the I-710 Corridor Project. Therefore, the I-710 Corridor Project build alternatives may contribute to adverse cumulative impacts related to the relocation of displaced residents within the RSA.

COMMUNITY FACILITIES. Both build alternatives would result in direct impacts to community facilities in the Study Area, including Fire Station No. 4 in the City of Vernon. In addition, Alternative 7 would result in direct impacts to the Salvation Army's Bell Shelter in the City of Bell, the Mark Taper Foundation Shelter Resource Bank in the City of Bell, the Multi-Service Center in the City of Long Beach, and the Long Beach Bible Institute. Relocation is required prior to construction; however, as discussed in the RIR for the I-710 Corridor Project, sufficient relocation properties are currently available within the Study Area. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to community facilities. Relocation of community facilities would also occur as a result of the I-5 Corridor Improvement Project. As with the I-710 Corridor Project, sufficient relocation properties are available within the Study Area for this project. Therefore, the I-5 Corridor Improvement Project would not contribute to cumulative adverse impacts related to community facilities. As stated in the SR 710 North Study EIR/EIS, none of the SR 710 North Study Build Alternatives would require relocation of any community facilities. Although environmental documents are not available for the I-5 Widening and HOV Lane Project and the California High Speed Rail Project, acquisition and relocation of community facilities could occur. The relocations would be mitigated according to the Uniform Act and would, therefore, not result in an adverse impact.

The SR-47 Expressway Project, the Middle Harbor Redevelopment Project, the Gerald Desmond Bridge Project, the SCIG Project, the Los Angeles River Master Plan, and the RiverLink Plan would not require relocation of any community facilities.

Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to community facilities.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. The I-710 Corridor Project build alternatives would require acquisition of residential and nonresidential parcels, and relocation would be required prior to construction. Measures are provided in Section 3.3 of this RDEIR/SDEIS to mitigate and/or minimize these effects. In addition, the build alternatives require acquisition of several community facilities in the Study Area. Relocation is also required for both of these community facilities prior to construction. Cumulative projects with similar relocation impacts would also be required to comply with the Uniform Act (Public Law 91-646, 84 Stat. 1894).

3.25.4.4 UTILITY/EMERGENCY SERVICES

The information in this section is based on Sections 3.4 and 3.24.3.4 of this RDEIR/SDEIS, the *North Utility Study Final Draft Preliminary Strategies Report* (September 2016), the Utility Relocation Strategies Report, Central Segment (June 2016), the South End Utility Study (November 2016), and the *Community Impact Assessment* (July 2017).

RESOURCE STUDY AREA. The direct physical impacts of the I-710 Corridor Project build alternatives related to emergency services and utilities would be largely limited to the proposed right-of-way and the areas adjacent to the proposed improvements. The specific locations of public services and utilities were identified based on information provided by the respective providers. As a result, the discussion of the affected environment focuses on utilities within the right-of-way or close enough to the right-of-way to be impacted by the build alternatives. Services such as fire and police protection are, however, generally provided to fairly large geographic areas (a city or service area, for example), and for this reason the cumulative RSA for emergency services would correspond to the geographic area serviced by the given service provider. Emergency service providers in the Study Area include the Los Angeles County Fire Department, the City of Compton Fire Department, the City of Downey Fire Department, the City of Los Angeles Fire Department, the City of Vernon Fire Department, the Los Angeles County Sheriff's Department, the City of Bell Gardens Police Department, the City of Bell Police Department, the City of Los Angeles Police Department, the City of Maywood-Cudahy Police Department, the City of Downey Police Department, the City of Huntington Park Police Department, the City of Long Beach Police Department, the City of Signal Hill Police Department, the City of South Gate Police Department, and the City of Vernon Police Department. In addition, 68 different utility owners were identified that operate facilities within

the Study Area. Two high-voltage electrical transmission corridors owned by DWP and SCE would be affected by Alternative 7.

HEALTH AND HISTORICAL CONTEXT. The Study Area is located in the largest population concentration on the Pacific Coast. Large-scale urban growth has and will continue to put pressure on emergency services and require prudent land use, hazard abatement, and risk management programs. Intensification of land uses throughout an urban area also requires a coordinated emergency response network like the one that exists throughout Los Angeles County.

Regional utility facilities critical to national and regional interests are located throughout the Study Area. These regional facilities are proprietary in nature and are regulated under State and Federal jurisdictions. Those identified within the Study Area include power transmission systems, petroleum transmission pipelines, gas transmission pipelines, water aqueducts, sewer interceptor trunk lines, and telecommunication systems. Historically, utility corridors have been engineered for the purpose of accommodating sewer, water, and other utility lines and providing access for their maintenance.

PROJECT IMPACTS.

EMERGENCY SERVICES. The I-710 Corridor Project build alternatives would have both beneficial and adverse effects on the agencies that provide fire protection and law enforcement within the Study Area. Beneficial effects would include improved emergency response times, as the ability to move fire protection, law enforcement, and emergency service resources from one area to another would be enhanced by the improved transportation network. However, the build alternatives also have the potential to result in a direct adverse impact to Vernon Fire Station No. 4, located along Bandini Blvd., where additional right-of-way requirements would require acquisition of the fire station. In addition, closure of the I-710/Wardlow Rd. partial interchange, closure of the I-710/Pacific Pl. partial interchange connecting Pacific Pl. to both I-405 and I-710, the removal of access from 9th St. and 10th St. to I-710 in the City of Long Beach, and, within the City of Commerce and Community of East Los Angeles, the replacement of Southbound exit ramps terminating at Whittier Blvd. and removal of the intersection of Whittier Ave. and Sydney Dr. (Alternative 5C, Option 3A, and Alternative 7, Option 3B only) would reduce access options and would nominally increase response times on emergency calls (to residents and workers within these service areas) that would otherwise have used these access routes as part of their response route. Overall, the same impacts to emergency services that would occur under Alternative 5C would occur under Alternative 7. Under Option 3A for Alternative 5C and Option 3B for Alternative 7, the proposed reconfiguring of the interchange and access configurations within the City of Commerce and the Community of East Los Angeles would

have additional impacts to emergency services associated with changes in access that reduce access options and potentially increase response times on emergency calls.

UTILITIES. There would be long-term adverse impacts with the construction of both build alternatives for the I-710 Corridor Project. Impacts to major regional facilities as a result of the build alternatives are discussed below:

AT&T. The I-710 Corridor Project build alternatives would result in impacts to several 12-duct sets of underground AT&T lines, two four-inch polyvinyl chloride (PVC) fiber ducts, and 18 four-inch duct trunk lines, which would require utility relocations. Both alternatives would result in the same impacts to AT&T facilities.

LACSD. Two major 45-inch lines within the City of South Gate would be impacted. In addition, a 63-inch reinforced concrete pipe (RCP) would be impacted in two primary locations. LACSD facilities associated with a pumping plant/pump station on Gaylord Street that would be impacted include a 36-inch overflow pipe to the Los Angeles River and an existing manhole serving the outflow. Under Alternative 5C, Design Option 2A, and Alternative 7, Design Option 2B, the existing surge tank, manifold structure, and in-flow junction structures would need to be relocated and reconnected to new and existing facilities, and the existing pump station would be kept operational as a standby facility. Although both alternatives would result in largely the same impacts to Sanitation Districts of Los Angeles County (LACSD) facilities, Alternative 7 would impact an additional facility (45-inch line).

SCE TRANSMISSION. The I-710 Corridor Project build alternatives would result in impacts to SCE Transmission facilities such as 66-kilovolt overhead lines, circuit-kilovolt overhead lines, 66-kilovolt aerial transmission systems, an aerial service drop feeding the LACSD pump station, 12-kilovolt aerial systems, a four-kilovolt and 12-kilovolt aerial system, and a four-kilovolt and 12-kilovolt underground system. While Alternatives 5C and 7 would have the same impact on a number of the same SCE Transmission facilities, the nature of the impact, type of the impact, and/or specific facilities impacted for any additional impacted facilities vary between the two alternatives.

LONG BEACH GAS & OIL. The I-710 Corridor Project build alternatives would result in impacts to an eight-inch and 12-inch high pressure gas line crossing I-710 and running across Long Beach Blvd. Both alternatives would result in the same impacts to Long Beach Gas & Oil facilities.

VERIZON. The I-710 Corridor Project build alternatives would result in impacts to three copper and fiber underground communications systems, two small aerial copper lines, a large underground communication system, an aerial service line, and a four 4000-strand fiber-optic cable. Both alternatives would result in the same impacts to Verizon facilities.

CHARTER COMMUNICATIONS. The I-710 Corridor Project build alternatives would result in impacts to a copper CATV aerial system, an aerial fiber line, and a fiber system. In addition to the above impacts, Alternative 7 would impact an active aerial copper line.

CROWN CASTLE (FORMERLY NEXT G). Alternative 7 would result in impacts to a fiber system on joint poles with SCE facilities.

SOUTHERN CALIFORNIA GAS COMPANY. The I-710 Corridor Project build alternatives would result in impacts to Southern California Gas Company facilities such as 26-inch high pressure gas lines, 30-inch high-pressure gas lines, and a regulator station for gas facilities. While Alternatives 5C and 7 would have the same impact on a number of the same Southern California Gas Company facilities, the nature of the impact, type of the impact, and/or specific facilities impacted for any additional impacted facilities vary between the two alternatives.

LADWP. Alternative 5C would not result in impacts to major LADWP facilities. Alternative 7 would impact a set of two circuit 230-kilovolt overhead lines.

MWD. An MWD 79-inch water line located within the existing electrical transmission corridor crosses I-710 south of Firestone Ave., within the City of South Gate, is located under the proposed Alternative 5C footprint. It is not within direct physical conflict with the proposed improvements, and is to be protected in place. The impacts to this facility are similar for both alternatives; however, the proposed geometry under Alternative 7 would not provide sufficient room to relocate the discharge valve into LACFCD right of way. Therefore, under Alternative 7, the relocation conflict and relocation strategy would differ for both alternatives.

T-MOBILE. The I-710 Corridor Project build alternatives would result in impacts to a cell tower site, which includes electronic switching equipment for numerous carriers and mobile telephone companies. T-Mobile Plans indicate that both Nextel and Sprint have facilities within this site location. This facility is also normally connected to cables for one or more providers. Both alternatives would result in the same impacts to T-Mobile facilities.

XO COMMUNICATION. The I-710 Corridor Project build alternatives would result in impacts to an overhead fiber-optic 48- and 144-strand facility.

KINDER MORGAN. The I-710 Corridor Project build alternatives would result in impacts to one facility - an active 24-inch refined petroleum product pipeline and associated block valve located in a 30-inch underground casing. The impacts to this facility are similar for both alternatives; however, the proposed geometry under Alternative 7 would necessitate the extension of the existing 30-inch casing 24 feet to the east. Therefore, the relocation conflict and relocation strategy would differ for both alternatives.

PLAINS ALL-AMERICAN PIPELINE LP. The I-710 Corridor Project build alternatives would result in impacts to an active 16-inch steel hot oil fuel line and associated vault, a vault box, and a 16-inch crude oil services line, and may have potential impacts to incoming and outgoing pipelines. The impacts to Plains All-American Pipeline LP facilities are similar for both alternatives; however, the relocation conflict and relocation strategy would differ for both alternatives.

CHEVRON. The I-710 Corridor Project build alternatives would result in impacts to a vault on the west side of the river, which contains twelve lines owned by five companies, including Chevron. The build alternatives would impact two active six-inch welded steel lines that run through this vault. In addition, the build alternatives would impact one six-inch and one eight-inch underground pipeline that share a trench near the west side of the Los Angeles River. The impacts to Chevron facilities are similar for both alternatives; however, due to slightly different configurations, the relocation conflict and relocation strategy would differ for both alternatives.

CHEMOIL. The I-710 Corridor Project build alternatives would result in impacts to a vault on the west side of the river, which contains twelve lines owned by five companies, including Chemoil. The build alternatives would impact an idle four-inch line, an idle eight-inch line, a six-inch line, and another eight-inch line that run through this vault. The impacts to Chemoil facilities are similar for both alternatives; however, due to slightly different configurations, the relocation conflict and relocation strategy for an idle four-inch pipeline would differ for both alternatives.

CRIMSON PIPELINE CO. The I-710 Corridor Project build alternatives would result in impacts to a vault on the west side of the river, which contains twelve lines owned by five companies, including Crimson Pipeline Co. The build alternatives would impact an active ten-inch line and two idle six-inch lines that run through this vault. In addition, the build alternatives would impact an active four-inch line, an idle eight-inch line, an idle six-inch line, and an idle ten-inch line. The impacts to Crimson Pipeline Co. facilities are similar for both alternatives; however, due to different configurations for the vault, the relocation conflict and relocation strategy for the vault would differ for both alternatives.

TIDELANDS FACILITY. The I-710 Corridor Project build alternatives would result in impacts to 21 oil wells at the Tidelands Facility as well as several lines associated with the Tidelands Facility that are owned and operated by Lomita. While Alternatives 5C and 7 would have the same impact on a number of the same Southern California Gas Company facilities, the nature of the impact, type of the impact, and/or specific facilities impacted for any additional impacted facilities vary between the two alternatives. Alternative 7 would result in additional impacts to two wells and several lines of various diameters.

OIL OPERATORS. The I-710 Corridor Project build alternatives would result in impacts to an active ten-inch steel water line, along with a vault containing existing valves for this line. In addition, Alternative 5C would impact an active 12-inch high density polyethylene (HDPE) oil line, two active eight-inch water lines, and an active six-inch oil line.

PARAMOUNT PETROLEUM. Alternative 5C would impact an active six-inch steel oil line and an active eight-inch steel oil line. Alternative 7 would impact an idle eight-inch oil line, an active six-inch oil line, and an active eight-inch oil line, as well as an eight-inch underground crude oil line.

SHELL OIL. The I-710 Corridor Project build alternatives would result in impacts to a vault on the west side of the river, which contains twelve lines owned by five companies, Shell Oil. The build alternatives would impact an active 12-inch steel line that runs through this vault. The impacts to Shell Oil facilities are similar for both alternatives; however, due to slightly different configurations, the relocation conflict and relocation strategy for two utility conflicts would differ for both alternatives.

OCCIDENTAL PETROLEUM. The I-710 Corridor Project build alternatives would result in impacts to a standard lease facility within LACFCD's boundary along the west bank of the Los Angeles River. Both alternatives would result in the same impacts.

TESORO. The existing Tesoro Manifold meter is located within the vicinity of Burnett St. in Long Beach and, therefore, most of the impacts to Tesoro conflicts are located in this area. Impacted facilities include an active nine-inch welded steel pipe (WSP), an idle six-in WSP, an idle 13-inch WSP, an idle eight-inch WSP, an idle ten-inch WSP, and an active 12.75-inch steel line that cross the Los Angeles River through the utility trestle located at Burnett St. and utility vaults located on both sides of the river. The build alternatives would also impact an idle eight-inch WSP line, an idle ten-inch WSP line, and two idle 8.63-inch WSP lines.

The impacts to Tesoro facilities are similar for both alternatives; however, due to slightly different configurations, the relocation conflict and relocation strategy would differ under both alternatives for six utility conflicts. Alternative 7 would impact an additional Tesoro facility.

Overall, the relocation of the impacted facilities outlined above may require additional construction (i.e., open trenching and directional boring for underground rerouting), and/or additional right-of-way or easements. The nature of each impact and associated relocation is discussed in more detail in Section 3.4.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in areas where there could be additional impacts to the utilities and emergency services impacted by the build alternatives. Projects with particular relevance to utilities and emergency services include:

- SR-47 Expressway Project – Relocation of approximately 25 electrical lines, six natural gas lines, three sets of phone lines, six water line segments, and seven wastewater line segments
- Pier B On-Dock Rail Support Facility – Temporary rerouting, street closures, and closure or removal of ramps could cause temporary interruptions or delays for emergency service providers (i.e., police, fire, and emergency service responders); removal and relocation of fire hydrants, water supply trunk lines, and distribution mains and construction activities would affect fire protection facilities
- Gerald Desmond Bridge Project – Relocation of SCE high-voltage transmission towers and lines that cross the Cerritos Channel between Piers S and A; construction of new SCE towers adjacent to the existing towers on Piers S and A; relocation of NRG Energy Inc., utilities; relocation of several gas, water, sewer and telephone lines; replacement of storm drain facilities; relocation or protection of approximately 23 oil wells and several oil lines
- Pier S Marine Terminal Project – Relocation of oil facilities and utilities (completed in 2001); provision of water, sewer, storm drain, electrical (above and below ground distribution, as well as substations), telecommunications and security, and natural gas
- Middle Harbor Redevelopment Project – Construction of new underground utility mains and lines; relocation of water distribution system; replacement or extension of sewer lines; removal and replacement of storm drain system; relocation of oil lines; construction of new gas lines; construction of a new 66/12-kilovolt (Pier E substation) on site; possible construction by SCE of up to 6.5 circuit miles of new subtransmission conductor that would carry 66 kilovolts from the SCE Hinson Substation
- ICTF – Modification of existing storm drain system; construction of new drinking water lines, fire suppression utilities (pipes, valves, hydrants, etc.), and sewer lines that would link to existing infrastructure; removal of over 60 mounted light poles and installation of approximately 60 poles
- SCIG Project – Removal and relocation of fire hydrants, water supply trunk and distribution pipelines; modification of existing water supply line network; modification of off-site sewer lines; reconfiguration of existing storm drain system; relocation of above-ground DWP and SCE electric power lines
- I-5 Widening and HOV Lane Project – Relocation of several public and private utilities
- SR 710 North Study – Temporary utility relocation and emergency services delays during construction

- California High Speed Rail Project - High likelihood for relocation of water, gas, and electric utilities

These projects would include measures to avoid, minimize, or mitigate impacts to utilities and emergency services.

CUMULATIVE IMPACTS. Indirect impacts as a result of the utility relocations for the I-710 Corridor Project and the cumulative projects listed above would include traffic disruption during construction, the need for construction staging areas and temporary construction easements, the reconstruction of city streets from trenching, and the presence of construction equipment and dump trucks during construction. Construction activities of the I-710 Corridor Project, would temporarily affect water and power services. Temporary construction impacts would include minimal interruptions in service. For the I-710 Corridor Project, these impacts would be minimized with the implementation of the transportation management plan discussed in Measure CON-TR-1 in Section 3.24.4.5. Similar minimization measures are included in the environmental documents for the SR-47 Expressway Project, the Gerald Desmond Bridge Project, the Pier S Marine Terminal Project, the Middle Harbor Redevelopment Project, the ICTF, the SCIG Project, and the SR 710 North Study. For those projects where environmental documents are not available (the I-5 Widening and HOV Lane Project and the California High Speed Rail Project), similar measures will be implemented to comply with CEQA and/or NEPA. Therefore, the cumulative impacts to utilities would be reduced.

Additional indirect impacts from the I-710 Corridor Project as a result of relocations would be related to undergrounding utilities. By undergrounding utilities, there would be a potential to encounter hazardous waste during excavation, subsurface cultural and paleontological resources, the need for dewatering, additional storm water considerations, and the relocation of existing utilities, such as storm drains, sewers or other underground facilities. These indirect impacts would be minimized with the implementation of avoidance, minimization, and mitigation measures described in Sections 3.24.4.7 and 3.24.4.9, and the measures provided later in Section 3.25.3, Avoidance, Minimization, and Mitigation Measures.

For the cumulative projects listed above, utility relocations would occur prior to highway construction; therefore, no temporary impacts to utilities would occur during construction. For utilities that would be protected in place, standard construction measures, such as contacting Underground Service Alert, would be used to avoid impacting utilities and utility service disruptions. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to utilities and emergency services.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. The build alternatives would result in an adverse impact to Fire Station No. 4 in the City of Vernon, as well as temporary impacts to fire, law enforcement, and emergency service response times as a result of construction. Measures U&ES-1 and CON-U&ES-1 would reduce these impacts to ensure minimal interruption in

emergency services. Utilities impacted as a result of the build alternatives would be relocated in accordance with specific Utility Relocation Plans described in Measure U&ES-2 in Section 3.4.3 and Measure CON-U&ES-1 in Section 3.24.4. In addition, prior to grading activities, the construction contractor would notify Underground Service Alert at least two days prior to excavation by calling 811 to require that all utility owners within the project disturbance limits identify the locations of underground transmission lines and facilities (Measure CON-U&ES-3). Similar minimization and mitigation measures are included in the environmental documents for the SR-47 Expressway Project, the Gerald Desmond Bridge Project, the Pier S Marine Terminal Project, the Middle Harbor Redevelopment Project, the ICTF, and the SCIG Project. No minimization or mitigation measures are required for the SR 710 North Study Build Alternatives. For those projects where environmental documents are not available (the I-5 Widening and HOV Lane Project and the California High Speed Rail Project), similar measures will be implemented to comply with CEQA and/or NEPA.

3.25.4.5 TRAFFIC AND TRANSPORTATION

The analysis in this section is based on Sections 3.5 and 3.24.3.5 of this RDEIR/SDEIS and the *I-710 Corridor Project Traffic Operations Analysis Report* (2017), the *Intersection Traffic Impact Analysis Report* (2017), the I-*710 Corridor Project EIR/EIS Travel Demand Modeling Methodology* (2017), and Appendix D of the *Community Impact Assessment* (2017).

RESOURCE STUDY AREA. The Study Area for the I-710 Corridor Project encompasses 16 cities and unincorporated areas in Los Angeles County, including the community of East Los Angeles, within or adjacent to the freeway corridor. It extends one mile east and west of I-710 and includes freeway-to-freeway interchanges at I-405, SR-91, I-105, and I-5. Additionally, the RSA for transportation concerns includes intersections and roadway segments of key north-south and east-west arterials from Wilmington Ave. in the west to Lakewood Blvd. in the east.

HEALTH AND HISTORICAL CONTEXT. The I-710 Corridor is the principal transportation connection between East Los Angeles and POLA/POLB. It plays a vital role in the regional, statewide, and national transportation system, serving both people and goods movement needs. The POLA/POLB complex is the fifth largest container port in the world, and projections show a substantial increase in the volume of port activity within the Study Area through 2035.[4] As a result of port activity levels, a high volume of heavy-duty truck traffic uses the I-710 mainline, which was built prior to the containerization of ocean-going freight. In conjunction with the large growth in population and employment along the corridor, these heavy-duty truck volumes have strained the facility's capacity, rendering it unable to accommodate current or future traffic demands. The congestion problem is compounded by the freeway's outdated design and the potential for accidents created by the co-mingling of heavy-duty trucks and cars.

[4] *2016 RTP/SCS Goods Movement Appendix,* April 2016.

PROJECT IMPACTS. The I-710 mainline segments and weaving areas currently experience severe congestion throughout the I-710 Corridor in both directions for the AM, midday, and PM peak periods, with many freeway mainline segments, ramps, weaving areas, and nearby intersections operating at level of service (LOS) E or F in the peak periods. Traffic is slightly worse in the northbound direction during the AM peak hour and in the southbound direction during the PM peak hour. The results of the freeway-based analysis show that without the proposed project-related improvements, the I-710 Corridor would experience worsening traffic conditions in the future 2035 No Build scenario. In general the build alternatives would have a beneficial effect by improving mobility on the I-710 mainline and improving the LOS for intersections impacted by the project. However, even with the proposed geometric enhancements, severe congestion still occurs on some freeway sections due to the high concentration of truck traffic and/or insufficient capacity at those particular locations. There are no appreciable differences in the overall LOS results for Alternative 5C and Alternative 7. Both alternatives improve the total number of deficient intersections (LOS E or worse) along I-710 relative to the No Build Alternative at comparable levels. This finding also holds true for each of the evaluated design options.

REASONABLY FORESEEABLE ACTIONS. The analysis of future traffic conditions is based on a cumulative traffic model system. The traffic model system used in the analysis for the proposed project is based on the 2012 SCAG RTP model and includes detailed port cargo forecasts within the Port's subarea. Because the analysis is based on a cumulative traffic model that includes planned land uses and transportation improvement projects, individual projects listed in 3.25-1 are accounted for in the model. Projects of particular interest are:

- I-5 Corridor Improvement Project – Anticipated improvements to local and regional circulation
- I-5 Widening and HOV Lane Project – Anticipated improvements to local and regional circulation
- SR-47 Expressway Project – Diversion of POLA and POLB trucks from State Route 103 (SR-103); operates at a satisfactory LOS
- Middle Harbor Redevelopment Project – Adverse impacts to I-710, I-405, and SR-91 until which time Caltrans makes improvements to these facilities
- California High Speed Rail Project – Anticipated improvements to regional circulation
- SR 710 North Study – Anticipated improvements to local and regional circulation

CUMULATIVE IMPACTS. Implementation of any of the cumulative projects has the potential to result in short-term effects to neighborhood circulation and access as a result of construction activities. These activities include grading and excavation, road detouring, and utility construction/relocation. Specifically, the northern portion of the Study Area (the Cities of

Commerce and Vernon, and the community of East Los Angeles) may experience these short-term impacts due to the potential concurrent construction of the California High Speed Rail Project and the SR 710 North Study. Therefore, the north end of the Study Area around the I-710/Washington Blvd. interchange may experience a temporary cumulative impact related to neighborhood circulation. Permanent neighborhood circulation disruption would not occur as a result of the cumulative projects since the development is generally consistent with the future land use plans of the local jurisdictions. Site-specific effects related to circulation and access has been or will be addressed through the local project review, and appropriate minimization and/or mitigation measures have been or will be identified in order to comply with CEQA and/or NEPA.

The analysis of future traffic conditions in the 2035 design year is a cumulative analysis in that it considers traffic generated by future planned land uses and the effect of future planned transportation improvements. Therefore, the cumulative project effects would be similar to the project effects discussed above as they were already assumed in the traffic model used to predict future Study Area traffic volumes and travel patterns. Because the LOS at the intersections discussed above under Project Impacts would remain at LOS E or F in the post project condition, the I-710 Corridor Project build alternatives would contribute to adverse cumulative impacts related to traffic at these locations within the RSA.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. Implementation of the I-710 Corridor Project is forecast to result in adverse impacts to 32 intersections in the Study Area under Alternative 5C and 30 Study Area intersections under Alternative 7. The LOS and average intersection delay for the remaining impacted study intersections would improve back to the projected Alternative 1 operating conditions or better with implementation of the recommended mitigation measures. To mitigate the impact of the project on these intersections, Mitigation Measure TR-1 would be implemented in partnership with the affected local jurisdiction.

During construction, the I-710 Corridor Project would result in temporary impacts to traffic circulation due to traffic diversions resulting from temporary closures to local roadways, sidewalks and bikeways, and freeway lanes and ramps. A Transportation Management Plan (TMP) (Measure CON-TR-1) would be implemented for the I-710 Corridor Project in order to construct the project in a cost-efficient and timely manner with minimal interference to the traveling public. The TMP would also address changes in pedestrian and bicycle circulation and provide measures to minimize the adverse effects of construction activities on pedestrian and bicycle travel within the Study Area. The TMP would be coordinated with TMPs for other projects in the Study Area to ensure that any detours or road closures for the I-710 Corridor Project do not conflict with detours and road closures for other projects.

3.25.4.6 VISUAL/AESTHETICS

The analysis in this section is based on Sections 3.6 and 3.24.3.6 of this RDEIR/SDEIS, the Interstate 710 (I-710) Corridor Project *Visual Impact Assessment* (VIA) (February 2017) and the California Department of Transportation (Caltrans) *I-710 Corridor Aesthetic Master Plan* (2015), which was developed based upon the *Urban Design and Aesthetics Toolbox Report* (February 2012).

RESOURCE STUDY AREA. The regional landscape establishes the general visual environment of the I-710 Corridor Project. The specific visual environment upon which the *Visual Impact Assessment* was based was determined by defining landscape units and the project viewshed. Landscape units within the Study Area include Residential, Recreation, Education, and Freeway units. The I-710 Corridor Project is located south of the Verdugo Mountains, west of the Los Angeles Basin, east of the San Gabriel Mountains, and southeast of the Santa Ana Mountains. For the purpose of this analysis, the RSA for visual resources and aesthetics is the Study Area, which includes parts of the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, as well as parts of unincorporated Los Angeles County, including the community of East Los Angeles.

HEALTH AND HISTORICAL CONTEXT. As stated above, landscape units within the Study Area include Residential, Recreation, Education, and Freeway units. Based on the analysis completed for the I-710 Corridor Project Visual Impact Assessment, the overall visual quality of the Residential and Freeway landscape units is moderately low. The overall visual quality of the Recreation landscape unit is moderate. The overall visual quality of the Education landscape units is low. There are no State or locally designated scenic roads within the I-710 Corridor Project's viewshed[5]. Local policies relevant to the proposed project are found in the General Plans of cities within the Study Area. For example, the City of Carson has adopted the beautification of views along its roads as one of its objectives and the City of Lynwood has adopted policies requiring that "new construction and renovations of existing structures achieve a high level of architectural and site design quality" and that street median landscape standards be developed to enhance the streetscape. In addition, the City of Long Beach is working with the California Coastal Conservancy and others to rehabilitate wetland acreage in areas along the Los Angeles River, which parallels the I-710 Corridor.

PROJECT IMPACTS. The I-710 Corridor Project build alternatives would result in adverse impacts at some locations to key viewers within the various Landscape Units defined within the I-710 Corridor. Adverse impacts include the introduction of new structures and other project features

[5] California Department of Transportation. Website: http://www.dot.ca.gov/hq/LandArch/scenic_ highways/ index.htm.

that contribute to degradation of existing visual quality at some locations in the Study Area, as well as potential impacts from light, glare, shade, and shadows.

In addition to the structural or physical changes that the I-710 Corridor Project would create, viewers along the Study Area would experience increased night lighting due to the widening of the mainline where traffic light fixtures would be relocated closer to all land uses. Additionally, under Alternative 7, traffic light fixtures installed in the areas of the elevated freight corridor would add increased night lighting to residences in some neighborhoods. During hours when the sun is low on the horizon and during the winter solar declination (September through March), the elevated freight corridor would create some shade and/or shadows within the Study Area. The shade/shadows created by the proposed project would impact the neighborhoods west of the I-710 Corridor Project from Pacific Coast Hwy. to SR-91, as well as the residents in Thunderbird Villas Mobile Home Park in the City of South Gate closest to the west side of the I-710 mainline. The acute angle of the sun relative to the ground plane creates “longer” shadows during these times.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which are located throughout the Los Angeles River Basin. Projects with particular relevance to visual resources and aesthetics include:

- Gerald Desmond Bridge Project (a new cable-stayed bridge with 200 feet of vertical clearance)
- SR-47 improvements and a new viaduct from Ocean Ave. to I-405
- ICTF – light and glare impacts
- Los Angeles River Master Plan – beneficial visual impact
- I-5 Corridor Improvement Project – elevated highway structures
- California High Speed Rail Project – elevated rail structures
- SR 710 North Study – varying visual impacts, depending upon which alternative is selected for implementation

CUMULATIVE IMPACTS. The many physical changes resulting from the I-710 Corridor Project would create adverse visual impacts due to the number of new structures at grade and above grade, including new interchanges, a new bridge, an elevated freight corridor, and several bridge modifications.

There is a concern that the visual impacts of the I-710 Corridor Project, when combined with other major projects, would create an adverse visual change in the I-710 Corridor. For example, the Gerald Desmond Bridge replacement would be the most visible project in proximity to the

I-710 Corridor Project at the south end of the Study Area. It is anticipated to be over 200 feet in height and completed by 2018. However, the EIR/Environmental Assessment (EA) for the project concludes that the visual impact on the area would be beneficial due to the modern design of the new facility. Additional visual impacts may occur in the south end of the Study Area from the SR-47 Project that will include a new bridge, flyover, and/or expressway. Lastly, the expanded ICTF facility in the south end of the Study Area would add potential light and glare impacts and also views of tall cranes and other port cargo-related equipment.

Although aesthetics in the north end of the Study Area are not adversely impacted by the I-710 Corridor Project, the California High Speed Rail Project and the I-5 Corridor Improvement Project would create an adverse visual change in the I-710 Corridor. Both of these projects would add elevated structure elements. In addition, as described in the Draft EIR/EIS prepared for the SR 710 North Study, all four SR 710 North Study Build Alternatives would have varying degrees of temporary and permanent visual impacts; however, most of those impacts would not occur in the same cities that would be affected by the I-710 Corridor Project. The LRT Alternative described in the SR 710 North Study Draft EIR/EIS would result in visual impacts in East Los Angeles; however, the SR 710 North Study Draft EIR/EIS contains avoidance, minimization, and/or mitigation measures to lessen those impacts. Further, none of those impacts would occur in the same area of East Los Angeles that would experience impacts under the I-710 Corridor Project.

Beneficial visual impacts may occur in the Study Area due to the Gerald Desmond Bridge Project (described above), the Los Angeles River Master Plan and the City of Long Beach RiverLink Plan, as they would add landscaping and open space recreational opportunities throughout the Study Area adjacent to the Los Angeles River. These effects, when combined with the avoidance, minimization, mitigation, and/or enhancement measures for other projects in the area would lessen the adverse cumulative impacts in the Study Area.

Construction activities of some phases of the I-710 Corridor Project and the Middle Harbor Redevelopment Project are anticipated to overlap and would temporarily affect the visual quality in the south end of the Study Area. Therefore, the I-710 Corridor Project build alternatives could contribute to cumulative adverse impacts related to visual resources and aesthetics.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. As discussed in Section 3.6 of this RDEIR/SDEIS, the I-710 Corridor Aesthetic Master Plan, which was developed in a context-sensitive design process in consultation with the affected local agencies and includes involvement of local community members as determined by the local agencies. The I-710 Corridor Aesthetic Master Plan defines aesthetic treatment measures to be incorporated into the final design of the I-710 Corridor Project. Additionally, measures such as visually pleasing hardscape such as attractive walls and medians, as well as landscaping, have been committed to in the environmental documents for the projects listed above. Project-specific measures such

as local jurisdiction review, the preparation of a lighting plan, and screen and retaining walls would be implemented as part of the project. Similar measures would be required to minimize or avoid impacts of cumulative projects on visual resources and aesthetics.

3.25.4.7 CULTURAL RESOURCES

The analysis in this section is based on Sections 3.7 and 3.24.3.7 of this RDEIR/SDEIS and the *Supplemental Historic Property Survey Report* (HPSR) (April 2017), *Supplemental Historic Resources Evaluation Report* (April 2017), *Supplemental Archaeological Survey Report* (confidential report) (Supplemental ASR) (April 2017), *Archaeological Sensitivity Study for the Interstate 710 Corridor Project* (Confidential Report) (Archaeological Sensitivity Study) (February 2017), and *Archaeological Survey Report, Interstate I-710 between Ocean Boulevard and SR-60* (April 2012).

RESOURCE STUDY AREA. The original 2011 APE for the I-710 Corridor Project encompassed 2,532 acres, the majority of which is developed with built environment and has been disturbed by the construction of I-710, other roads, railroads, other infrastructure, and residential, commercial, and industrial properties; river channelization; hydrologic events; and agriculture. The areas of the new Supplemental APE encompass an additional 509 acres that were not included in the 2011 APE. Also relative to the 2011 APE, the Supplemental APE has been reduced in areas that are no longer affected by the projects. The Supplemental APE includes the limits of the proposed construction and staging areas for both alternatives and arterial intersections, as well as all resources that may be subject to indirect effects (Supplemental HPSR Attachment A, Map 3). For the purposes of cumulative impacts analysis, the RSA would correspond to the Supplemental APE for the I-710 Corridor Project.

HEALTH AND HISTORICAL CONTEXT. Today, the I-710 Corridor encompasses a large area that passes through urban settings consisting of residential, industrial warehouse, and commercial business uses. In the 16th to 19th centuries, the Study Area was occupied by an Uto-Aztecan-speaking Native American group known as the Gabrielino. Spanish colonization in the late 1800s eventually resulted in the destruction of native culture and society. The I-710 Freeway (also known as the Long Beach Freeway) was constructed in stages between 1951 and 1965, although the idea for a highway heading south from Los Angeles and roughly following the contours of the Los Angeles River and existing railroad routes was considered by the County as early as 1911. The first railroad to be constructed in Los Angeles was the Southern Pacific Railroad, which, after completion in the 1870s, ushered in an era of population increase and development fostered by the nation-wide networks of passenger and freight railroad systems.

No archaeological resources requiring evaluation were identified through archival research, consultation, or the field survey. However, there is always a potential to encounter unanticipated archaeological resources during ground-disturbing activity associated with construction. The *Archaeological Sensitivity Study* (February 2017) identifies areas that are more likely to

encompass previously unrecorded archaeological resources. Additionally, no indirect impacts that would alter the eligibility status of archaeological or built environment resources are anticipated as a result of this alternative. There are five historic properties within the Supplemental APE for the I-710 Corridor Project: two railroad segments of the UP Railroad (Resource Numbers 19-186110/30-176630 and 19-186112); Dale's Donuts, located at 4502 East Alondra Blvd. in Compton; the Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line; and the Drake Park Historic District in Long Beach.

The UP (formerly Southern Pacific) Railroad Segment (Resource No. 19-186110/30-176630) would be impacted by the build alternatives. However, this segment of the rail line has already been altered and does not contribute to the significance of the UP Railroad. Further, this minor realignment would not impact the overall significance of the UP Railroad. Therefore, the I-710 Corridor Project build alternatives would not cause an adverse effect on the historical rail line because the rail line would continue to be eligible for the National Register. Therefore, the build alternatives would result in a preliminary finding of No Adverse Effect per 36 CFR 800.5, pending SHPO concurrence. The other UP Railroad (formerly Southern Pacific) Segment (Resource No. 19-186112) that is eligible for National Register and/or California Register inclusion would not be impacted by the build alternatives, though the segment includes an area in the City of Commerce that crosses the Supplemental APE. Therefore, this alternative would result in a finding of No Adverse Effect per 36 CFR 800.5) on this historical property, pending SHPO concurrence.

Dale's Donuts would only be minimally affected by the arterial intersection improvements under both build alternatives as well as the reconstructed interchange under Alternative 5C at the Atlantic Ave./Alondra Blvd. intersection. The build alternatives would incorporate 0.01 acre of land from the property, permanently removing a small section of parking area and sidewalk only. Therefore, the Programmatic Architectural features that qualify this resource for the National Register would not be affected. Therefore, the I-710 Corridor Project build alternatives would result in a finding of No Adverse Effect per 36 CFR 800.5, pending SHPO concurrence.

The Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line would be impacted by Alternative 7 in that the towers on either side of the I-710 would be heightened by 55 feet to make room for construction of the freight corridor. However, the integrity of the Transmission Line would not be reduced to the degree that it would no longer be eligible for the National Register. Therefore, these alternatives would result in a finding of No Adverse Effect per 36 CFR 800.5, pending SHPO concurrence.

A temporary vehicular detour would be routed through the Drake Park Historic District along Daisy Avenue between 7th and 9th Sts. under both alternatives. In addition, 7th St. between Maine and Daisy Aves. is proposed to be modified from a one-way to a two-way street utilizing the existing right-of-way. This will require restriping of the roadway, and possibly the

replacement of the concrete curb and scored concrete sidewalk on the north side of the street, within the district boundaries. The temporary vehicular detour will affect the district by altering traffic patterns within the district; however, this temporary condition will not diminish the integrity of the district's significant historic features. In addition, the in-kind replacement of a segment of curb and sidewalk and restriping of vehicular lanes will not diminish the district's integrity. Therefore, this alternative would result in a preliminary finding of No Adverse Effect per 36 CFR 800.5 for this resource, pending SHPO concurrence.

REASONABLY FORESEEABLE ACTIONS. Reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which include areas adjacent to the APE for the I-710 Corridor Project. Projects with particular relevance to cultural resources and aesthetics include:

- SR-47 Expressway Project – demolition of historic Schuyler Heim bridge
- Middle Harbor Redevelopment Project – adverse impact to two historic smoke houses/offices
- SCIG Project – demolition of historic Sepulveda Blvd. Railroad Bridge
- Los Angeles River Master Plan – potential impacts to previously undocumented cultural materials or human remains
- California High Speed Rail Project – potential indirect visual, noise, and vibration impacts to historic architectural resources
- SR 710 North Study – potential impacts to previously undocumented cultural materials or human remains

CUMULATIVE IMPACTS. As described above under Project Impacts, Dale's Donuts, UP Railroad Segments (Resource No. 19-186110/30-176630 and P-19-18611), the Drake Park Historic District, and the Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line (Alternative 7 only) would be minimally impacted by the build alternatives, but not adversely affected, resulting in a finding of No Adverse Effect per 36 CFR 800.5, pending SHPO concurrence.

According to the Final EIR/EIS for the SR-47 Expressway Project, that project would result in adverse effects on cultural resources related to the demolition and replacement of the historic Schuyler Heim Bridge. The SR-47 Expressway Project could also result in the destruction of previously undiscovered archaeological resources during construction. The Final EIR/EIS for the Middle Harbor Redevelopment Project indicates that project could result in potentially significant impacts on two historic smoke houses/offices and damage previously undiscovered archaeological resources during construction. According to the Final EIR for the SCIG Project, that project would result in a significant impact to cultural resources related to the demolition of the historic Sepulveda Boulevard Railroad Bridge and could damage previously undiscovered

archaeological resources during construction. In addition, the environmental documents for the Los Angeles River Master Plan and the SR 710 North Study indicate those projects could result in the destruction of previously undiscovered archaeological resources during construction.

Although no environmental documents are available for the California High Speed Rail Project, that project could result in potential indirect visual, noise, and vibration impacts to historic architectural resources that could contribute to a cumulative impact on cultural resources in the northern portion of the RSA.

All future transportation and development projects in the Study Area would be required to comply with CEQA and Federally funded projects would be required to comply with the requirements of the National Historic Preservation Act of 1966, as amended, and the Section 106 Programmatic Agreement (PA) between the Advisory Council, the Federal Highway Administration (FHWA), the State Historic Preservation Officer (SHPO), and Caltrans.

Therefore, based on the above, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to cultural resources.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. Avoidance, minimization, and mitigation measures for cultural resources impacted by the I-710 Corridor Project are presented in Section 3.24.4.7 of this RDEIR/SDEIS. Similar measures, including the halting of construction activities if archaeological material or human remains are found, would be required for any of the reasonably foreseeable actions that would also impact cultural resources. Additional measures such as the removal and relocation of historic architectural resources, placement of informative plaques on places of historic interest, and storage of artifacts in local museums are proposed in the environmental documents for the cumulative projects listed above under Section 3.25.4.7.

3.25.4.8 HYDROLOGY AND FLOODPLAINS

The analysis in this section is based on Sections 3.8 and 3.24.3.8 of this RDEIR/SDEIS and on the *Flood Control Facilities Report* (January 2017), the *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (January 2017), the *Preliminary On-Site Hydrology Report* (December 2016) and the *Water Quality Assessment Report* (March 2017) for the I-710 Corridor Project.

RESOURCE STUDY AREA. The I-710 Corridor contains a complex series of interconnected drainage systems that handle flows from both on-site and off-site drainage areas and flow into the Los Angeles River, Compton Creek, Rio Hondo Channel, and Dominguez Channel. Therefore, the Study Area for this resource is beyond the Study Area of the I-710 Corridor Project and includes the entire Los Angeles River Watershed and the Dominguez Channel/Los Angeles Harbor watershed.

HEALTH AND HISTORICAL CONTEXT. Historically, the Los Angeles River provided an easily accessible supply of irrigation water for early human populations in the area that today is the City of Los Angeles. The river and its tributaries supported native peoples for centuries before the arrival of the first Europeans. Within 100 years after the founding of the Pueblo Los Angeles, the population and its use of water had outgrown the flows in the river. Eventually the river's natural flooding patterns became too much of a threat to the developing land uses and the river was viewed as something that had to be controlled in order for the City of Los Angeles to continue to grow. In the early 1900s development began to encroach into more flood-prone areas. Development resulted in impervious areas, such as parking lots, roads and buildings, which resulted in increased runoff. There were two major floods in the 1930s that resulted in loss of life and a great deal of property damage. In response to the explosive population growth and pressure for more development, flood protection was demanded by the public. In response, the USACE and the County of Los Angeles constructed numerous flood control basins, channels, and other flood control facilities. In the 1950s and 1960s, the Federal government straightened, deepened, and reinforced the river with concrete. The concrete structures prevented loss of life and property damage, but had a negative impact on the aesthetics of the river.

The USACE operates and maintains five major flood control reservoirs with the Los Angeles River system. The Los Angeles County Department of Public Works operates and maintains 15 dams, about 143 sediment entrapment basins and 29 spreading grounds. The County Flood Control, Caltrans, cities, and homeowner associations maintain numerous storm drains and pump stations through the Los Angeles River basin.

In recent years, various community and governmental groups have been working together to revitalize the Los Angeles River through cooperative planning efforts such as the Los Angeles River Master Plan and the Los Angeles River Revitalization Master Plan.

PROJECT IMPACTS. Both build alternatives would result in the same 26 transverse (i.e., perpendicular to the direction of flow) encroachments. 24 of these transverse encroachments would occur at 16 Los Angeles River locations. The Compton Creek and Rio Hondo channel would each be affected by one transverse encroachment. Alternative 5C would result in three additional transverse encroachments of the Los Angeles River channel in one location, and 7 additional transverse encroachments of the Compton Creek channel in two locations. Alternative 7 would result in eight additional transverse encroachments of the Los Angeles River channel in four locations, and three additional transverse encroachments of the Compton Creek channel in one location. All encroachments are considered low risk by location hydraulic studies performed at 133-year flood levels. Neither build alternative would change the capacity of the Los Angeles River, Compton Creek, and the Rio Hondo Channel to carry water or result in a measurable impact to the 100-year floodplain elevation. The proposed encroachments would not result in any adverse impacts on the natural and beneficial floodplain values, would not

result in a substantial change in flood risk or damage, and would not have substantial potential to cause interruption or termination of emergency services or emergency routes. The I-710 Corridor Project build alternatives would result in encroachments to the existing basin and levees. However, the increase in on-site storm water runoff contributing to the Dominguez Basin associated with the proposed improvements is inconsequential in comparison to the amount of storm water runoff from off-site tributary watersheds and transfer flows from the basins located on the east side of the Los Angeles River.

Alternative 7 would require relocation of the Dominguez Gap Basin and the reconfiguration or relocation of a basin near the I-710/I-105 interchange. As discussed in Section 3.9, Water Quality and Stormwater Runoff, several parcels have been identified adjacent to I-710 and the Los Angeles River for relocation of the Dominguez Gap Basin. The affected basin near the I-710/I-105 interchange basin could be relocated in the northwest quadrant of the I-105/I-710 interchange. The replacement basins for both the I-105 and Dominguez Gap Basin would provide equal or greater capacity than the basins impacted by the freight corridor.

REASONABLY FORESEEABLE ACTIONS. Reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which include areas adjacent to the I-710 Corridor Project. Projects with particular relevance to hydrology and floodplains include:

- Gerald Desmond Bridge Project – placement of structures in the base floodplain
- Pier S Marine Terminal Project – dredge and fill activities that would affect water circulation in the Back Channel and Cerritos Channel
- Los Angeles River Master Plan – revitalization and maintenance of the Los Angeles River
- SR 710 North Study – the Freeway Tunnel Alternative could result in erosion from clearing of land and vegetation.

CUMULATIVE IMPACTS. The Gerald Desmond Bridge Project would add new bridge structures within the base floodplain but would not redirect flood flows. The dredge and fill activities associated with the Pier S Marine Terminal Project would not significantly alter harbor-wide water circulation or flushing conditions. According to the Draft EIR/EIS prepared for the SR 710 North Study, the Freeway Tunnel Alternative could result in temporary construction impacts and the potential for erosion from clearing of land and vegetation, but there would be no permanent impacts on floodplain values. None of the other SR 710 North Study Build Alternatives would encroach upon floodplains. As the I-710 Corridor, Pier S Marine Terminal, and the Gerald Desmond Bridge Projects do not have adverse impacts to hydrology and floodplain, cumulative impacts are not anticipated to be adverse. Additionally, through adoption of the Los Angeles River Master Plan, the City of Los Angeles is working with other jurisdictions and agencies to revitalize and maintain the Los Angeles River. As discussed above, neither of the I-710 Corridor

Project build alternatives would affect the capacity of the Los Angeles River, Compton Creek, and the Rio Hondo Channel to carry water or result in a measurable impact to the 100-year floodplain elevation. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to hydrology and floodplains.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. Measures to minimize long-term operational impacts of the I-710 Corridor Project on the natural and beneficial floodplain values related to water quality are discussed in Section 3.24.4.9. Measures to minimize permanent impacts of the I-710 Corridor Project to jurisdictional waters are discussed in Section 3.17, Wetlands and Other Waters of the United States. In addition, Measures FP-1 and FP-2 would minimize and mitigate impacts of the I-710 Corridor Project to the 100-year floodplain and impacts to the retention basin near the I-105/I-710 interchange and the Dominguez Gap Basin.

3.25.4.9 WATER QUALITY AND STORM WATER RUNOFF

This section is based on Sections 3.9 and 3.24.3.9 of this RDEIR/SDEIS and the *Water Quality Assessment Report* (March 2017) prepared for the proposed project.

RESOURCE STUDY AREA.

SURFACE WATER. The I-710 Corridor Project is located within the Los Angeles Basin and discharges to two Los Angeles County watersheds: the Dominguez Channel/Los Angeles Harbor and the Los Angeles River. In addition, a portion of the Study Area is adjacent to the San Gabriel River Watershed. The primary receiving waters for runoff from the Study Area are the Los Angeles River, Compton Creek, the Rio Hondo Channel, and the Dominguez Channel. These watersheds and receiving waters constitute the RSA for assessing cumulative impacts on surface waters.

GROUNDWATER. The I-710 Corridor Project is located within the Coastal Plain of the Los Angeles Groundwater Basin and is specifically underlain by the West Coast and Central Sub-basins. The Coastal Plain of the Los Angeles Groundwater Basin is adjacent to the Santa Monica Mountains and the Puente Hills on the north and east, on the south by the San Joaquin Hills, and on the west by the Pacific Ocean. These groundwater basins constitute the RSA for assessing cumulative impacts on groundwater.

HEALTH AND HISTORICAL CONTEXT. Pollutants in urban runoff from dense clusters of residential, industrial, and other urban activities have impaired surface water quality in the majority of the Los Angeles River Watershed. The Los Angeles River, Compton Creek, the Rio Hondo Channel, and the Dominguez Channel are all listed as impaired on the 2008 Clean Water Act (CWA) Section 303(d) List of Water Quality Limited Segments. The majority of the groundwater in the West Coast and Central Sub-basins is of high quality and requires little to no treatment before being pumped out of wells and used as potable water for the public.

PROJECT IMPACTS. The I-710 Corridor Project build alternatives would add new impervious surfaces, thereby increasing the amount of storm water runoff within the project limits, and introducing additional water pollutant loads into the runoff in the area. Alternative 7 would result in a greater amount of impervious surface area compared to Alternative 5C. The increase in impervious surface area, and therefore the increase in runoff and pollutant loading, under Alternative 7 would be greater than under Alternative 5C. The typical roadway pollutants are washed off impervious surface areas by storm water flows and then discharged to the local receiving water bodies. As described in Section 3.9, Water Quality, the introduction of additional treatment BMPs as part of the build alternatives would represent an improvement when compared to the Alternative 1 No Build condition, as there currently are only 18 Caltrans-maintained BMPs treating freeway runoff on I-710.

Additionally, as discussed previously in 3.25.4.8, Alternative 7 would require the relocation of the Dominguez Gap West Basin. However, several parcels have been identified adjacent to I-710 and the Los Angeles River for relocation of the Dominguez Gap Basin. The exact location for relocating the basin is being coordinated with DWP. In addition, Alternative 7 would require reconfiguration or relocation of one of two existing retention basins near the I-710/I-105 interchange that serve to meter the peak flows of the Los Angeles River channel. As specified in Measure FP-2 in Section 3.8, the relocation and reconstruction of the Westerly Dominguez Gap Basin and the basin near the I-710/I-105 interchange would retain each basin's original recharge capacity at a minimum. Therefore, the relocation of these basins is not anticipated to adversely affect groundwater quantity or quality.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions that could affect water quality and storm water runoff would occur in the areas that are planned for development or redevelopment, which are located throughout the Los Angeles River Basin. The reasonably foreseeable actions are listed in Table 3.25-2.

CUMULATIVE IMPACTS. With the exception of the Los Angeles River Master Plan and the Pier B On-Dock Rail Support Facility, all of the projects listed in Table 3.25-2 would increase impervious surfaces, thereby increasing the amount of storm water runoff and introducing additional water pollutant loads. The I-710 Corridor Project and cumulative projects would have to include BMPs to target constituents of concern, which includes any pollutants causing downstream impairments. These measures are identified in the environmental documents for the projects listed in Table 3.25-2 for which the CEQA and/or NEPA process has been completed or is in progress. In the case that environmental documents are not available for the projects listed in Table 3.25-2, similar measures will be required to comply with CEQA and/or NEPA. The cumulative projects include BMPs to address pollutants of concern from roadways; therefore incremental contribution for impairments resulting from pollutants of concern from roadways would not be cumulatively considerable. For impairments resulting from pollutants

that are not related to roadways, the cumulative projects would not contribute these pollutants to the impaired waters because roadways are not a source for these pollutants.

Construction activities of some phases of the I-710 Corridor Project, the SR-47 Expressway Project, the SR 710 North Study, and the Middle Harbor Redevelopment Project are anticipated to overlap and would temporarily adversely affect water quality. However, the appropriate permits, approvals, and BMPs would be obtained/implemented to reduce any potential temporary impact to water quality. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to water quality and storm water runoff.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. In addition to the relocation of the Dominguez Gap Basin and the basin near the I-710/I-105 interchange (Measure FP-2 in Section 3.8.4), Section 3.24.4.9 of this RDEIR/SDEIS, outlines that the I-710 Corridor Project would be required to comply with National Pollutant Discharge Elimination System (NPDES) requirements and to implement water quality Design Pollution Prevention and Treatment BMPs at the time of development. Cumulative land use and transportation projects would be required to comply with NPDES requirements and to implement water quality Design Pollution Prevention and Treatment BMPs at the time of development as projects subject to NEPA and/or CEQA would require BMPs as part of project construction. As all these projects are required to comply with these measures, any adverse impacts to water quality would not be adverse. Therefore, they would not contribute to a cumulative adverse effect to water quality.

3.25.4.10 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

This section is based on Sections 3.10 and 3.24.3.10 of this RDEIR/SDEIS and the *Geotechnical Final Report* (January 2010) prepared for the project.

RESOURCE STUDY AREA. The Study Area is located at the north end of the Peninsular Ranges physiographic province, in the central and south-central Coastal Plain area of the Los Angeles Basin. The Study Area constitutes the RSA for assessing cumulative impacts related to geology. The Los Angeles Basin is a coastal plain that is bordered on the north by the Santa Monica Mountains and on the east and southeast by the Santa Ana Mountains and the San Joaquin Hills. The relatively flat surface of the Los Angeles Basin is interrupted by a locally trending northwest alignment of low hills and mesas that extends from Newport Beach to Beverly Hills. With the exception of embankments associated with the existing freeways and the embankments and levees of the Los Angeles River, the Study Area is relatively flat, with elevations ranging from about seven feet above mean sea level at the south end to about 16 feet above mean sea level at the north end. The Study Area is a seismically active area, and with the exception of the northernmost 0.8 mile of the Study Area and portions of some proposed on-ramp/off-ramp transitions on the east side of the Los Angeles River between Ocean Blvd. and I-405, the entire area is located in an area identified as having the potential for liquefaction.

HEALTH AND HISTORICAL CONTEXT. Reasonably well-established historical records of earthquakes in California have been compiled for approximately the past 200 years. More accurate instrumental measurements have been available since 1933. As demonstrated by historical seismicity, earthquakes generated by displacement along nearby regional faults are considered capable of generating ground shaking of engineering significance within the Study Area. Ground or seismic shaking is typically considered to have the greatest potential for damage associated with earthquakes. Seismic shaking can also result in secondary effects like liquefaction.

PROJECT IMPACTS. The roadway, structures, and other features of the build alternatives could be impacted by soil disturbance (during construction), ground motion and liquefaction, and possible ground rupture (deformation). Design and construction of the project to current highway and structure design standards, including applicable seismic standards, would minimize the potential impacts of the build alternatives related to geological and seismic hazards.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which are located throughout the Study Area. Projects of particular interest related to geology are:

- SR-47 Expressway Project – potential for permanent ground displacement
- Gerald Desmond Bridge Project – potential for liquefaction
- Pier B On-Dock Rail Support Facility – potential for seismic-related ground failure, including liquefaction
- Pier S Marine Terminal Project – potential for seismic-related ground failure, including liquefaction; potential for future subsidence
- SCIG Project – subject to seismic activity, soil settlement and subsidence, and expansive soils and erosion
- Los Angeles River Master Plan – liquefaction and erosion
- California High Speed Rail Project – aerial foundation issues
- SR 710 North Study – potential for seismic-related ground failure, including liquefaction and landslides

CUMULATIVE IMPACTS. While other projects may impact the geology at their project sites, the geological impacts would be localized and would not impact regional geology. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to geological and seismic hazards.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. Implementation of standard design and construction practices would reduce the I-710 Corridor Project's risk for geologic hazards such

as soil erosion and slope instability. Although the reasonably foreseeable actions would not result in cumulative impacts related to geology, similar measures would be required for the SR-47 Expressway Project, the Gerald Desmond Bridge Project, the Pier B On-Dock Rail Support Facility, the Pier S Marine Terminal Project, the SR 710 North Study, and the SCIG Project that result in the construction of new structures to comply with CEQA and NEPA. For those projects in the RSA in which environmental documents are not yet available, similar measures would be required to comply with CEQA and/or NEPA.

3.25.4.11 PALEONTOLOGICAL RESOURCES

The analysis in this section is based on Sections 3.11 and 3.24.3.11 of this RDEIR/SDEIS and the *Paleontological Resources Identification and Evaluation Report* (June 2017) prepared for the project.

RESOURCE STUDY AREA. The I-710 Corridor Project is located at the northern end of the Peninsular Ranges geomorphic province, a 900-mile-long, northwest-southeast-trending structural block that extends from the tip of Baja California to the Transverse Ranges and includes the Los Angeles Basin. Specifically, the I-710 Corridor Project runs along the course of the Los Angeles River, crossing the Los Angeles Basin from north to south in an area typified by a low-lying topography with slight hills or mesas rising above the basin floor. For the purposes of this cumulative impacts analysis, the RSA is defined as the Los Angeles River Basin from the southern terminus of the I-710 Corridor Project at Ocean Blvd. to its northern terminus at SR-60.

HEALTH AND HISTORICAL CONTEXT. The I-710 Corridor encompasses a large area that passes through urban settings consisting of residential, industrial warehouse, and commercial business uses. Across the Los Angeles Basin, a veneer of Holocene sediments often overlies older, Pleistocene sediments. The locality search and literature review conducted for the I-710 Corridor Project identified numerous Pleistocene fossil localities from the immediate vicinity of the I-710 Corridor Project that were found during excavation into sediments that underlie these surficial Holocene deposits. Therefore, some sediments in the RSA have the potential to contain important paleontological resources.

PROJECT IMPACTS. The area affected by the proposed project contains seven types of sediments at the surface. Five of these, because of their young age (less than 10,000 years), do not have the potential to contain paleontological resources. Two sediments from the Quaternary Period (1.8 million to 10,000 years ago) have the potential to contain paleontological remains. The I-710 Corridor Project involves potential excavation that could extend into deeper Pleistocene deposits, which have high potential and high sensitivity for the presence of nonrenewable paleontological resources. Therefore, paleontological localities may be encountered during the project excavation phase of construction within these sediments.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which are located throughout the Los Angeles River Basin. Those projects with specific relevance to paleontological resources include all projects that require deep excavation into sediments with sensitivity for paleontological resources (Pleistocene alluvium). Relevant projects are:

- I-5 Corridor Improvement Project
- I-5 Widening and HOV Project
- SCIG Project
- California High Speed Rail Project
- Pier B On-Dock Rail Support Facility
- SR 710 North Study

CUMULATIVE IMPACTS. Past projects within the RSA have resulted in discoveries of paleontological resources. These are described in Section 3.11.3.7, Fossil Locality Searches, of this RDEIR/SDEIS. All reasonably foreseeable projects involving deep excavation into Pleistocene alluvium have the potential to result in adverse impacts to paleontological resources. These cumulative projects are or would be required to implement a Paleontological Mitigation Plan (PMP) that includes monitoring and recovery of paleontological resources that may be found during project construction. Because these cumulative projects include this requirement, the cumulative projects' contribution to cumulative paleontological impacts would not be considerable.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. Each cumulative project is subject to the requirements of Federal and/or State environmental laws for protection of paleontological resources. In addition, Caltrans has developed a set of guidelines similar those of the Society of Vertebrate Paleontology to prepare a PMP to reduce impacts to paleontological resources. For the cumulative projects, a PMP would be required for every project with high-sensitivity sediments that is subject to Caltrans oversight.

The SCIG Project Draft EIR revealed no vertebrate fossil localities have been recorded directly within the SCIG Project footprint, but fossil localities exist near the SCIG Project footprint in sedimentary deposits identical or similar to those encountered underlying the [SCIG] Project footprint.[6] The Pier B On-Dock Rail Support Facility Draft EIR revealed paleontological resources could be encountered during project construction, but implementation of mitigation

[6] Section 3.4 - Cultural Resources. *Southern California International Gateway Draft Environmental Impact Report.* Page 3.4-13. September 2011. Website: https://www.portoflosangeles.org/EIR/SCIG/DEIR/03.04. Cultural Reources.pdf (accessed February 28, 2017).

measures consisting of a project-specific paleontological monitoring program and temporary halting of construction work to properly evaluate any fossiliferous materials would ensure no cumulatively considerable contributions to significant cumulative impacts on paleontological resources would occur.[7] The SR 710 North Study did not reveal previously recorded fossil localities within the project area boundaries for any of the alternatives, but fossil localities are known to exist in the vicinity of the SR 710 North Study area.[8] As stated in the environmental documents for the SCIG Project, the Pier B On-Dock Rail Support Facility, and the SR 710 North Study, implementation and adherence to project-specific Paleontological Resources Mitigation Programs would be required to minimize impacts to resources within high-sensitivity sediments. For those projects in the RSA in which environmental documents are not available, similar measures would be required to comply with CEQA and/or NEPA. Through implementation of the project-specific Paleontological Resources Mitigation Programs, impacts and effects to nonrenewable paleontological resources would be reduced to below levels of significance or adversity, respectively, and no cumulatively considerable contributions to significant cumulative impacts on paleontological resources would occur. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to paleontological resources.

3.25.4.12 AIR QUALITY

This section is based on Sections 3.13 and 3.24.3.13 of this RDEIR/SDEIS, *Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

RESOURCE STUDY AREA. The I-710 Corridor Project's effects on air quality were evaluated for three different geographic Study Areas: (1) the South Coast Air Basin (Basin); (2) the I-710 "Area of Interest" (AOI), which is a sub-region of the Basin that includes cities and communities along the I-710 freeway; and (3) the area within and immediately adjacent to the I-710 Corridor itself (I-710 Area). For the purpose of this analysis, the RSA for air quality is the area immediately adjacent to the I-710 Corridor that would be directly affected by construction emissions and vehicle emissions from operation of the completed project. The I-710 AOI includes portions of the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, as well as parts of unincorporated Los Angeles

[7] *Draft Pier B On-Dock Rail Support Facility Project Environmental Impact Report and Application Summary Report.* Pages ES-19 and ES-28. Website: http://www.polb.com/civica/filebank/blobdload.asp?BlobID =13683 (accessed February 28, 2017).

[8] *Paleontological Identification and Evaluation Report for State Route 710 North Study.* Page 6-33. March 14, 2014. Website: http://www.dot.ca.gov/dist07/resources/envdocs/docs/710study/draft_eir-eis/Paleo%20 Identification%20 Evaluation%20Report/SR%20710%20Paleo %20Identification%20Evaluation%20Report.pdf (accessed February 28, 2017).

County, including the community of East Los Angeles, that are located adjacent to the Study Area. The Basin, the I-710 AOI, the I-710 Area and the other past, present, and future projects considered in the analysis in Section 3.13, Air Quality, are located at least partially in Los Angeles County.

A single RSA for each type of air quality impact would not effectively consider the appropriate areas for potential short-term air quality impacts during construction of the proposed project. Short-term air quality impacts can result from equipment operations as well as dust generated during grading or travel on unpaved surfaces. An RSA for short-term air quality impacts would focus on a specific area under construction at the time, the roads and intersections in the vicinity of the construction zone, and other projects under construction at the same time in the same area. As a result, an RSA for short-term air quality impacts focuses on areas in proximity to active construction areas for the proposed I-710 Corridor Project and other nearby cumulative projects under construction at the same time.

HEALTH AND HISTORICAL CONTEXT. The RSA is located in a largely urbanized area. The health of the resource changes with emissions levels in the area surrounding the project. Over time, the air quality in the Basin has been substantially degraded by short- and long-term emissions of pollutants and dust generated by a wide variety of land uses, including agricultural, urban, industrial, and manufacturing uses.

The I-710 Corridor Project is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD maintains ambient air quality monitoring stations throughout the Basin. The closest monitoring stations to the project area are the SCAQMD Long Beach North (decommissioned in 2013), Long Beach Hudson, Compton, and Los Angeles North Main Street Stations. Monitoring data from these stations for 2013, 2014, and 2015 is provided in Section 3.13, Air Quality.

From the ambient air quality data provided in Section 3.13, it can be seen that CO levels are above and annual NO_2 and SO_2 levels are below the relevant State and Federal standards. One-hour O_3 levels exceeded the State standard at the Compton Station in 2014 and the Los Angeles North Main Street Station in 2014 and 2015. Eight-hour O_3 levels exceeded the State standard at the Long Beach Hudson (2014), Compton (2013, 2014, and 2015), and Los Angeles North Main Street (2014 and 2015) stations and exceeded the Federal standards at the Compton (2013 and 2014), and Los Angeles North Main Street (2014) Stations. The PM_{10} levels in the project area exceeded the State standards in each of the past three years at the Long Beach Hudson and Los Angeles North Main Street Stations. The Federal 24-hour $PM_{2.5}$ standard was exceeded in each of the past three years at the Long Beach Hudson, Compton, and Los Angeles North Main Street Stations. The State and Federal annual $PM_{2.5}$ standards were also exceeded at the Compton (2014) and Los Angeles North Main Street (2014 and

2015) Stations. It should be noted that exceedance of a standard is not necessarily a violation, especially for many Federal standards.

As discussed in Section 3.13.2.4, the I-710 Corridor Project is expected to demonstrate conformity with all State and national conformity requirements. However, as the qualitative project-level $PM_{10}/PM_{2.5}$ conformity analysis of the two build alternatives concluded that further analysis was required to confirm that both build alternatives would conform with National Ambient Air Quality Standards (NAAQS) regulations regulating $PM_{2.5.}$ Thus, a quantitative project-level PM_{10}/ $PM_{2.5}$ determination is required for project approval and would be prepared in consultation with the Southern California Transportation Conformity Working Group (TCWG) after identification of the preferred project alternative.

PROJECT IMPACTS. The air quality impacts of the I-710 Corridor Project are different for each of the build alternatives. With the exception of Total PM_{10} emissions, 2035 criteria and air toxic exhaust emissions are generally lower for the build alternatives when compared to Baseline (2012) emissions. Despite a projected reduction of PM from vehicle exhaust due to the use of cleaner heavy-duty trucks, total PM_{10} emissions are projected to increase for all the 2035 alternatives when compared to the 2012 Baseline due to increased vehicle activity and related tire and brake wear emissions. Total PM_{10} emissions from Alternative 5C are projected to increase by 0.1 percent in the Basin, 0.6 percent in the AOI, and 8.2 to 9.2 percent in the I-710 Area (depending on modelled and traffic data, respectively) when compared to Alternative 1. Total PM_{10} emissions from Alternative 7 are projected to increase by 0.2 percent in the Basin, 1.4 percent in the AOI, and 32.7 to 33.3 percent in the I-710 Area (depending on modelled and traffic data, respectively) when compared to Alternative 1.

As stated above, a quantitative project-level $PM_{10}/PM_{2.5}$ determination would be prepared after the preferred alternative has been identified.

Total $PM_{2.5}$ and exhaust emissions and are used as surrogates for PM and Ultrafine Particulates (UFP) exposure, respectively. Both total I-710 $PM_{2.5}$ and exhaust emissions are expected to be lower for each of the alternatives in 2035 as compared to the 2012 Baseline emissions. The same is true for total $PM_{2.5}$ and exhaust emissions in the Basin and AOI. The public's exposure along I-710 to PM-related morbidity and mortality health risks should decrease relative to the 2012 Baseline with the exception of some locations near the roadways (particularly for Alternative 7). To the extent that increases in entrained road dust in the 2035 alternatives may be overestimated, the exposure would be even lower for those very near to the roadways. Implementation of either of the build alternatives would decrease the public's health risk due to UFP relative to the 2012 Baseline and the 2035 Alternative 1 (No Build), even near the I-710 freeway and freight corridor.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas where cumulative projects would be constructed that are located throughout the Study

Area. Projects with particular relevance to air quality impacts are shown in Table 3.25-2 and include construction projects, projects that would result in an increase in vehicle trips and traffic congestion, and projects that would result in additional stationary source emissions.

Due to the scale and duration of the project construction for the build alternatives, it is likely that the construction of other projects would overlap with the construction of the I-710 Corridor Project. These projects include:

- SR-47 Expressway Project
- Middle Harbor Redevelopment Project
- I-5 Widening and HOV Project
- I-5 Corridor Improvement Project
- California High Speed Rail Project
- SR 710 North Study

Construction activities of some phases of the I-710 Corridor Project, the SR-47 Expressway Project, the SR 710 North Study, and the Middle Harbor Redevelopment Project are anticipated to overlap and would result in short-term air quality impacts associated with fugitive dust and construction equipment emissions. The quantity and severity of those impacts would be related to the amount of soil disturbed, the types and numbers of pieces of construction equipment, weather conditions, and other factors specific to each project. However, all construction projects in southern California are required to comply with some or all of the applicable SCAQMD rules as well as local jurisdictions' requirements for dust and emission controls during construction. In addition, all projects on State highways are required to comply with Caltrans Standard Construction Specifications for dust control and asphalt concrete plant emissions. All construction material hauling is required to comply with California Vehicle Code requirements for avoiding material spills on public roads.

Many of the cumulative projects and programs, such as the Port's Clean Air Action Plan, have a beneficial effect on air quality and reducing health risk. The cumulative benefit of these types of projects is reflected in the reduction in criteria pollutant concentrations discussed in Section 3.13.

CUMULATIVE IMPACTS. If the construction of the selected build alternative and some of the other cumulative projects occur concurrently and in proximity to each other, there is potential for cumulative impacts related to short-term fugitive dust and construction equipment emissions in the RSA. The cumulative short-term air quality impacts could be substantial, depending on the number of projects under construction concurrently, their proximity to each other, weather and climatic conditions, and other factors. Therefore, the build alternatives have potential to contribute to cumulative short-term air quality impacts in the RSA during construction, even with

mitigation. The build alternatives and their design variations would result in near-roadway incremental concentration impacts at some receptors within the RSA. Therefore, the I-710 Corridor Project build alternatives would contribute to long-term near corridor cumulative air quality impacts.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. The build alternatives include substantial measures to address short-term dust and equipment emissions. These types of measures are typically required of most major construction projects in the Basin by the SCAQMD and/or the local jurisdictions. As a result, it is anticipated that potential short-term cumulative air quality impacts of the build alternatives and the other cumulative projects would be substantially reduced based on compliance with SCAQMD regulations. However, if a large number of projects, including the ultimately selected build alternative, are under construction at the same time, it is possible that the short-term air quality impacts of those cumulative projects in the RSA could exceed the applicable SCAQMD standards, even with mitigation.

As discussed in Section 3.13, the build alternatives would result in localized adverse long-term air quality impacts to a small number of near-roadway receptors, with Alternative 7 resulting in a slightly higher number of near-roadway emission impacts. Measure AQ-1 is proposed to provide funding for four additional air quality monitoring stations within the I-710 Corridor. Additional measures to further reduce air quality impacts include the provision of air filtration systems for schools within 0.25 mile of I-710 (AQ-2) and the provision of solid barriers (walls) and vegetation to increase dispersion of vehicular emissions and particulate matter (AQ-3). However, construction of the I-710 Corridor Project may result in adverse impacts related to fugitive dust, construction equipment, and vehicle emissions. Therefore, in Section 3.24.4.13, the project includes standard conditions and conditions for implementing the requirements of SCAQMD Rule 403 that would substantially reduce potential adverse short-term air quality impacts during project construction.

3.25.4.13 NOISE

This section is based on Sections 3.14 and 3.24.3.14 of this RDEIR/SDEIS, the *Traffic Noise Study Report* (May 2016), and the *Noise Abatement Decision Report* (June 2017).

RESOURCE STUDY AREA. For the purpose of this analysis, the RSA for noise impacts includes all areas adjacent to the Study Area where there are sensitive land uses that would be affected by construction noise and traffic noise generated by the operation of the completed project. The Study Area focuses on those areas in the vicinity of I-710 with potentially noise-sensitive uses, including residential uses, parks, and open space uses, or areas of frequent human activity. The RSA includes parts of the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, as well as parts of unincorporated Los Angeles

County, including the community of East Los Angeles, that are located adjacent to the Study Area.

HEALTH AND HISTORICAL CONTEXT. The cumulative impacts Study Area is located in a largely urbanized area. Noise in this area is generated by traffic on the freeways and area roads, equipment operations, urban uses, aircraft, and other noise sources typical in urban and developed areas. The health of the resource is affected by noise from I-710, local arterial roadways and surrounding noise-generating land uses such as the ports of Los Angeles and Long Beach. As the Study Area has become more densely developed over time and traffic volumes on the I-710 have increased, the background levels of noise in much of the RSA have increased and, in some areas, already exceed the applicable noise standards. Existing background traffic noise levels in the RSA are provided in Table 3.14-2 in Section 3.14, Noise.

PROJECT IMPACTS. During construction of the project, noise from construction activities may occasionally dominate the noise environment in the immediate project area. Equipment involved in construction is expected to generate noise levels ranging from 70 to 90 A-weighted decibels (dBA) at a distance of 50 feet. Normally, construction noise levels should not exceed 86 dBA maximum instantaneous noise level (L_{max}) at a distance of 50 feet. No adverse noise impacts from construction are anticipated because construction will be conducted in accordance with Caltrans Standard Specifications and would be short-term, intermittent, and dominated by local traffic noise.

The comparison of build alternative noise impacts to the future No Build condition and existing Baseline conditions indicates that traffic noise would increase as a result of the project. Traffic noise impacts are predicted to occur at noise-sensitive land uses within the Study Area, and noise abatement has been considered. There are some areas where the proposed project would result in substantial increases in noise from existing levels without the proposed project, where sound barriers would not reduce traffic noise levels to future No Build levels. Because not all noise increases may be able to be abated, this noise impact would be an unavoidable adverse impact of the project.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas where cumulative projects would be constructed, which are located throughout the Study Area. Projects with particular relevance to noise impacts include all construction projects and projects that would result in an increase in traffic noise levels. These projects include all projects listed in Table 3.25-2 with the exception of the Middle Harbor Redevelopment Project, the Gerald Desmond Bridge Project, the Los Angeles River Master Plan, and the RiverLink Plan.

CUMULATIVE IMPACTS. As shown in Table 3.25-2, a large number of transportation projects are proposed in the RSA within the Study Area. Similar to the proposed project, it is expected that some of those projects would result in increases in the ambient noise levels in the long term that cannot be avoided or substantially mitigated.

The build alternatives would result in increased noise levels in the Study Area compared to existing Baseline conditions and future No Build conditions, and some of those increases cannot feasibly be abated. It is also expected that many of the other cumulative transportation and land use projects in the area would also result in increases in long-term noise levels in the RSA, some of which may also not be substantially or feasibly abated. Therefore, the I-710 Corridor Project build alternatives may contribute to long-term cumulative adverse noise impacts.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. The build alternatives include some new soundwalls, as well as increases in heights in existing soundwalls along the I-710 corridor and would result in only a minor increase in ambient noise levels. According to the environmental documents for the I-5 Corridor Improvement Project, the SR-47 Expressway, the Pier B On-Dock Rail Support Facility, the Washington Blvd. Improvement Project, the SR 710 North Study, the SCIG Project, the Pier A East and West Expansion, the Pier S Marine Terminal, and the ICTF, these projects also include appropriate noise abatement for long-term impacts on sensitive receptors, which could include new soundwalls, increases in heights of existing soundwalls, other buffers, and/or structural features (sound proofing, double-paned windows, etc.), as appropriate for each project. For those projects listed in Table 3.25-2 in which environmental documents are not available, it is anticipated that similar noise abatement measures would be provided to comply with CEQA and/or NEPA. However, it is not expected that all the increases in noise levels in the RSA associated with those projects can be abated to levels equivalent to those under no project conditions. As a result, the other cumulative projects are anticipated to contribute to a long-term increase in ambient noise levels in the RSA with the likelihood that some of those effects cannot be substantially abated. Because traffic noise from a freeway in an urban area (where other manmade noise sources are part of ambient background noise) becomes less audible with increasing distance from the freeway, the potential for cumulative noise impacts is limited to those receivers that are within the noise exposure area from more than one freeway widening project. Based on the list of cumulative projects in Table 3.25-1, only areas in the City of Commerce and the community of East Los Angeles that are within the noise exposure area of both the I-710 Corridor Project and the I-5 Widening and HOV Lane Project would experience cumulative noise impacts during construction or operation.

Construction activities of some phases of the I-710 Corridor Project, the SR-47 Expressway Project, and the Middle Harbor Redevelopment Project are anticipated to overlap and would temporarily affect ambient noise levels in the southern portion of the Study Area. Temporary impacts related to noise would be reduced by complying with Caltrans standard practices and local noise ordinances. In some cases, temporary noise barriers would be constructed.

3.25.4.14 ENERGY

This section is based on Sections 3.15 and 3.24.3.15 of this RDEIR/SDEIS and the *Energy Technical Report* (June 2017) prepared for the project.

RESOURCE STUDY AREA. The Study Area consists of approximately 18 linear miles along the I-710 Corridor, from Ocean Blvd. to SR-60. The Study Area also includes a portion of the interchanges with I-405, SR-91, I-105, I-5, and SR-60 to accommodate for proposed interchange improvements. The project area spans the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, and parts of unincorporated Los Angeles County, including the community of East Los Angeles. Because energy consumption is typically tracked on a regional or State level, consideration of cumulative effects related to energy consumption is considered in the context of the SCAG planning region.

HEALTH AND HISTORICAL CONTEXT. Driven by high demand from California's many motorists, major airports, and military bases, the transportation sector is the State's largest energy consumer. California's electricity mix is generated by natural gas (44.5 percent); coal (6.4 percent); large hydroelectric (5.5 percent); nuclear (8.5 percent); and renewable (20.1 percent) sources. In 2014, California produced 67 percent of the electricity it used; the rest was imported from the Pacific Northwest (13 percent) and the Desert Southwest (20 percent).

PROJECT IMPACTS. Direct energy consumption during project construction involves energy used by the construction equipment, work trucks, haul trucks, and worker commutes. There is the potential for permanent impacts as a result of increased capacity and use to occur as a result of project implementation for both build alternatives; however, the Study Area as a whole is expected to show improvements as a result of the project. Alternatives 5C and 7 improvements would increase average travel speeds during peak hours, remove bottlenecks, and reduce delays. This alleviating of stop-and-go conditions, which requires the use of more energy, decreases the amount of energy used in the Study Area. However, VMT in the I-710 Corridor Project Study Area would also increase when comparing any of the build alternatives with the 2035 No Build condition (Alternative 1).

Alternatives 5C and 7 would both fund up to 4,000 zero emission/near zero emission (ZE/NZE) heavy-duty trucks. Alternative 7 would restrict the freight corridor to ZE/NZE trucks but allow any truck type on the mainline. Although Alternatives 5C and 7 would reduce the vehicle hours traveled (VHT) by diesel heavy trucks and increase the VHT by ZE/NZE trucks when compared with the 2035 No Build condition, this would have little or no effect on overall energy demand. This is because ZE/NZE trucks use different energy sources, but do not use substantially less energy than traditional diesel-powered trucks.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would be those related to energy use associated with traffic generated by future planned land uses and the effects of other future planned transportation improvements on regional energy consumption. The reasonably foreseeable actions include:

- SR-47 Expressway Project

- SCIG Project
- Middle Harbor Redevelopment Project
- California High Speed Rail Project
- SR 710 North Study

CUMULATIVE IMPACTS. The build alternatives would not result in or substantially contribute to adverse cumulative energy effects. Increases in energy use would be limited to those occurring during construction of the I-710 Corridor Project, and energy use would return to normal levels following project completion. There is the potential for increased energy use during construction of all of the cumulative projects; however, this increase would be temporary and would not have the potential to result in substantial permanent impacts once the project has been completed. Construction activities of some phases of the I-710 Corridor Project, the SCIG Project, the California High Speed Rail Project, the SR-47 Expressway Project, the SR 710 North Study, and the Middle Harbor Redevelopment Project are anticipated to overlap and would temporarily increase energy usage in the Study Area. The I-710 Corridor Project and the California High Speed Rail Project would not have substantial energy impacts contributing toward cumulative energy consumption because the energy saved by relieving congestion and by using other transportation efficiencies from the region over its design life would be substantially greater than the energy consumed to construct it. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to energy.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. In order to reduce potential temporary construction effects and permanent operational increases in energy consumption, measures that improve siting, construction procedures, and traffic operations to minimize energy consumption and reduce peak energy demand, and that incorporate the use of alternative fuels, would be incorporated during the design phase. Similar measures would also be required for any reasonably foreseeable actions to comply with CEQA and/or NEPA.

3.25.4.15 NATURAL COMMUNITIES

The analysis in this section is based on Sections 3.16 and 3.24.3.16 of this RDEIR/SDEIS and the *Natural Environment Study* (June 2017) prepared for the project.

RESOURCE STUDY AREA. The RSA for natural communities is consistent with the biological Study Area (BSA) established for the I-710 Corridor Project. The BSA is approximately 18 linear miles along the I-710 Corridor, from Ocean Blvd. to SR-60. The BSA also includes a portion of major transportation corridors connecting to I-710, including Interstate 405 (I-405), State Route 91 (SR-91), Interstate 105 (I-105), and Interstate 5 (I-5), to accommodate the proposed interchange improvements. Additionally, the BSA includes improvements to surrounding local arterial intersections that would improve intersection operations. The project passes through

mostly urban settings consisting of residential areas, industrial warehouses, and commercial businesses. The entire BSA is located within the Los Angeles River Watershed.

HEALTH AND HISTORICAL CONTEXT. Land uses/vegetation communities located within the BSA are mostly developed (developed/ornamental/ruderal). Table 3.25-4 lists the acreage of each of the vegetation communities present within the BSA.

Table 3.25-4: Acreages of Land Cover or Habitat Types within the Biological Study Area

Vegetation Community	Acreage
Developed/Ornamental/Ruderal	1,869.43
Concrete-Lined Freshwater Waters of the Los Angeles River and Associated Drainages	48.22
Earthen-Bottom Tidal Waters of the Los Angeles River	14.27
Riparian Scrub	8.54
Open Water	5.34
Freshwater Emergent Marsh	1.86
Total	**1,947.66**

Source: LSA Associates, Inc. *I-710 Corridor Project Jurisdictional Delineation Report* (2012); *Memorandum Update to the I-710 Corridor Project Jurisdictional Delineation Report* (2017)

Habitats are considered to be of special concern based on (1) Federal, State, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status plants or animals occurring within the BSA. Within the BSA, there are two primary plant communities that are considered important by State and/or local agencies. These two natural community groups are estuarine habitat associated with the tidal waters of the lower three miles of the Los Angeles River, and riparian/riverine habitats. Sensitive habitats are located primarily in the southern portion of the BSA, where the Los Angeles River and associated wetlands have retained a more natural state.

ESTUARINE HABITAT. Approximately 91 percent of California's coastal wetlands have been lost to development. Estuarine wetland habitats, such as those associated with the lower Los Angeles River, were formerly more abundant in the semi-enclosed coastal waters of California's south coast and included the estuaries of Wilmington Lagoon, Alamitos Bay, Anaheim Bay, Santa Ana River Marsh, and Newport Bay. These tidal wetlands of coastal southern California are now much reduced due to urban diversion, channelization, and other human developments that have altered or eliminated a once-viable system. These habitats are considered high-quality wildlife habitats because they provide protective cover, reproduction and nesting sites, water, and food for a variety of species.

RIPARIAN/RIVERINE HABITATS. Riparian/riverine habitats, such as those within the BSA, were formerly abundant along the major rivers of coastal southern California but have been substantially reduced by urban expansion, flood control, and channel "improvements"

(Holland 1986). These habitats are considered high-quality wildlife habitats because they provide protective cover, water, and food for a variety of species.

PROJECT IMPACTS. Table 3.25-5 shows the impacts to natural communities calculated for each build alternative.

Table 3.25-5 Project Impacts to Natural Communities of Special Concern Occurring within the Biological Study Area

Vegetation Community	Total Acres within BSA	Permanent (Direct)		Permanent (Indirect)		Temporary		Total	
		Alt 5C	Alt 7	Alt 5C	Alt 7	Alt 5C	Alt 7	Alt 5C	Alt 7
Estuarine Habitat									
Earthen-bottom Intertidal portions of the Los Angeles River	14.27	0.18	0.11	5.09	5.02	8.34	8.19	13.61	13.33
Riparian/Riverine Habitats									
Open Water	5.34	0.00	5.34	0.00	0.00	0.00	0.00	0.00	5.34
Concrete-lined Freshwater portions of the Los Angeles River and Associated Drainages	48.22	1.39	1.28	18.02	21.14	19.34	23.51	38.75	45.93
Marsh	1.86	0.01	0.17	0.77	0.65	0.67	0.66	1.45	1.49
Riparian Scrub	8.54	0.15	3.90	2.22	1.74	1.93	1.41	4.30	7.05
Total Riparian/ Riverine Habitats	63.96	1.55	10.69	21.02	23.53	21.93	25.59	44.50	59.81

Source: LSA Associates, Inc. *Natural Environment Study* (June 2017).
Note: Alternative 5C Design Options (1A, 2A, and 3A) have the same habitat impacts as Alternative 5C, and Alternative 7 Design Options (1B and 3B) have the same habitat impacts as Alternative 7.
Alt = Alternative
BSA = Biological Study Area

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which are located throughout the Los Angeles River Basin. Projects with specific relevance to natural communities include those projects that would impact natural communities resources through degradation and removal, and include:

- SR-47 Expressway Project – potential impacts to aquatic communities and habitat associated with the burrowing owl and peregrine falcon
- SCIG Project – affects aquatic and bat and bird roosting habitat
- I-5 Corridor Improvement Project – loss of nesting habitat and minor loss of aquatic habitat
- I-5 Widening and HOV Lane Project – potential for loss of roosting and nesting habitat

- California High Speed Rail – potential for loss of roosting and nesting habitat
- SR 710 North Study – permanent loss of wetlands complex and temporary impacts to nearby riparian habitat (Freeway Tunnel Alternative only)
- Los Angeles River Master Plan – beneficial impact
- RiverLink Plan – beneficial impact

CUMULATIVE IMPACTS. Most of the lands surrounding the BSA are highly urbanized and have already been developed. Those areas not already developed have generally been preserved as city parks or restored areas. Probable future projects in the vicinity (both transportation-related and nontransportation-related) were reviewed as part of this analysis. The cumulative effects of the I-710 Corridor Project, in combination with the SR-47 Expressway Project and the SCIG Project, may incrementally cause further effects to estuarine and riparian/riverine habitats.

Temporary impacts to natural communities may occur during construction where habitats are temporarily disturbed during grading or other activities. The I-710 Corridor Project build alternatives, the SR-47 Expressway Project, and the SCIG Project would impact riparian/riverine and estuarine habitats. Under the I-710 Corridor Project the Dominguez Gap Wetlands restoration area is impacted by the freight corridor proposed in Alternative 7. Construction within the Dominguez Gap Wetlands restoration areas would have permanent, temporary, and indirect effects. The cumulative projects would result in some loss of vacant land but would not increase habitat fragmentation or impede the movement of wildlife in the area. Habitat within the Los Angeles River channel and movement opportunities therein would not be affected by the I-710 Corridor Project implementation because the I-710 Corridor Project essentially modifies an existing transportation facility. According to the Draft EIR/EIS prepared for the SR 710 North Study, the Freeway Tunnel Alternative could result in the permanent loss of wetlands complex and temporary impacts to nearby riparian habitat. None of the other SR 710 North Study Build Alternatives would have temporary or permanent impacts on sensitive natural communities. Permanent benefits to natural communities would occur through implementation of the Los Angeles River Master Plan and the RiverLink Plan. This would offset some of the cumulative impacts as a result of the projects discussed above. With implementation of the avoidance, minimization, and mitigation measures discussed below, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to natural communities.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. A combination of avoidance, minimization, and mitigation measures would reduce the overall adverse effects of the I-710 Corridor Project to sensitive natural communities. Avoidance and minimization measures include but are not limited to avoidance of designated sensitive habitat boundaries to be demarcated by a visible barrier, employee education, and an invasive seaweed abatement program to minimize the importation and spread of nonnative plants. A biologist would monitor construction within the vicinity of estuarine habitat for the duration of the project to flush any

wildlife species present prior to construction and to ensure that vegetation removal guidelines, BMPs, ESA boundaries, and all avoidance and minimization measures are properly constructed and observed.

Compensatory mitigation for estuarine communities would be required to comply with Section 404 of the Clean Water Act (CWA). Typically, estuarine habitat subject to USACE jurisdiction is mitigated at a minimum mitigation-to-effect ratio of 2:1 for permanent effects and 1:1 for temporary effects, which is consistent with the USACE policy of no net loss of estuarine habitat (e.g., wetlands). Compensatory mitigation for riparian/riverine communities would be required for USACE Section 404 and CDFW Section 1600 permitting. Typically, riparian/riverine habitats subject to USACE and CDFW jurisdiction are mitigated at a minimum mitigation-to-effect ratio of 2:1 for permanent effects and 1:1 for temporary effects, which is consistent with the USACE and CDFW policies for no net loss of riparian/riverine habitats (e.g., wetlands).

As stated in the environmental documents for the SR-47 Expressway Project, the SR 710 North Study, the SCIG Project, and the I-5 Corridor Improvement Project, similar measures would be required for reasonably foreseeable actions that impact estuarine or riparian/riverine resources. For those projects in which environmental documents are not available, similar measures would be required to comply with CEQA and/or NEPA.

3.25.4.16 WETLANDS AND OTHER WATERS

The analysis in this section is based on Sections 3.17 and 3.24.3.17 of this RDEIR/SDEIS and the *Natural Environment Study* (June 2017) prepared for the project.

RESOURCE STUDY AREA. The RSA for wetlands and other waters is consistent with the BSA. The BSA is approximately 18 linear miles along the I-710 Corridor, from Ocean Blvd. to SR-60. The BSA also includes a portion of major transportation corridors connecting to I-710, including I-405, SR-91, I-105, and I-5, to accommodate for proposed interchange improvements. From south to north, the BSA is located on the United States Geological Survey (USGS) *Long Beach, South Gate,* and *Los Angeles, California* 7.5-minute series topographical quadrangles. The BSA spans the Cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, and parts of unincorporated Los Angeles County, including the community of East Los Angeles. The project passes through mostly urban settings consisting of residential areas, industrial warehouses, and commercial businesses. The entire BSA is located within the Los Angeles River Watershed.

The Los Angeles River, which flows into the Pacific Ocean, runs parallel to I-710 throughout the BSA. Several drainages within the BSA are tributary to the Los Angeles River and are a mixture of man-made channels with natural earthen bottoms, concrete v-ditches, and concrete-lined channels. In addition, there are numerous roadside drainage ditches within the BSA that are not believed to convey flows at the present time or that are not tributary to the Los Angeles River.

The Los Angeles River channel contains several sections where sufficient sediment has accumulated to support potential wetland waters of the United States. Other potential wetland waters of the United States occur within Compton Creek and in isolated detention basins and/or man-made wetland areas.

A variety of land uses exist adjacent to the BSA, including transportation, residential, commercial, industrial, infrastructure, recreational, undeveloped, and water-related land uses. Some of the restoration areas in the vicinity of the BSA include the Golden Shore Marine Preserve, the Dominguez Gap Wetlands Project, the DeForest Park Restoration Project, Compton Creek Improvement Project, and South Gate Riparian Habitat Restoration Project.

HEALTH AND HISTORICAL CONTEXT. The upper portion of the Los Angeles River Watershed is covered by forest or open space, while the remaining watershed, including the BSA, is highly developed with commercial, industrial, or residential uses. The Los Angeles River is the heart of an 834-square-mile watershed that encompasses the Santa Susanna Mountains to the west, the San Gabriel Mountains to the north and east, and the Santa Monica Mountains and Los Angeles Coastal Plain to the south. Channelization started in 1914 as an effort to control the devastating floods that periodically swept through the City of Los Angeles. Subsequent lining of the channel with concrete removed most of the river's vegetation, wetland, wildlife, and ecological richness. Prior to 1960, 80 percent of the rainwater in the Los Angeles River Watershed would percolate into the ground. Today, that figure is estimated to be 8 percent, with the remainder draining out into the ocean.[9] Of the 51 miles of the Los Angeles River, 13 miles retain the natural riverbed. The only portion of the Los Angeles River with a natural bottom adjacent to the BSA is the southernmost three miles of the river.

Riparian/riverine habitats, such as those within the BSA, were formerly abundant along the major rivers of coastal Southern California but have been substantially reduced by urban expansion, flood control, and channel "improvements" (Holland 1986). The typical association of riparian/riverine habitat types with drainages indicates that they are "protected" under the Fish and Game Code and, to certain extent, by the CWA. These habitats are considered high-quality wildlife habitats because they provide protective cover, water, and food for a variety of species.

[9] *The River Project.* Website: http://www.theriverproject.org/learn/habitat (accessed March 10, 2017).

In addition, approximately 91 percent of California's coastal wetlands have been lost to development.[10] Estuarine wetland habitats, such as those associated with the lower Los Angeles River, were formerly more abundant in the semi-enclosed coastal waters of California's south coast and included the estuaries of Wilmington Lagoon, Alamitos Bay, Anaheim Bay, Santa Ana River Marsh, and Newport Bay. These tidal wetlands of coastal southern California are now much reduced due to urban diversion, channelization, and other human developments that altered or eliminated a once-viable system. These habitats are considered high-quality wildlife habitats because they provide protective cover, reproduction, nesting, water, and food for a variety of species. Many animal species are estuarine wetland habitat obligates. Estuaries such as the lower Los Angeles River serve as nurseries for marine fish and provide sediment traps, erosion control, and natural flood control.

PROJECT IMPACTS. There were 24 drainages identified during surveys of the BSA. Most of these drainages connect to the Los Angeles River either directly or through the storm drain system.

A formal Jurisdictional Delineation survey determined that there are jurisdictional features within the BSA, including wetland areas, that are subject to the jurisdiction of the USACE, CDFW, and the Regional Water Quality Control Board (RWQCB). Because of this, the I-710 Corridor Project would require permits from regulatory agencies, including the USACE (pursuant to Section 404 of the CWA), the CDFW (pursuant to Section 1602 of the California Fish and Game Code), and the RWQCB (pursuant to Section 401 of the CWA).

Table 3.25-6 shows that based on the information currently available, the worst-case impact scenario associated with Alternative 5C would result in direct permanent impacts to approximately 1.74 acres and indirect permanent impacts to approximately 26.13 acres of USACE jurisdictional areas. Alternative 5C would result in direct permanent impacts to 2.13 acres and indirect permanent impacts to approximately 36.51 acres of CDFW jurisdictional areas.

The worst-case impact scenario associated with Alternative 7 is expected to result in direct permanent impacts to approximately 1.54 acres and indirect permanent impacts to approximately 28.56 acres of USACE jurisdictional areas. Alternative 7 would result in direct permanent impacts to 10.80 acres and indirect permanent impacts to approximately 28.72 acres of RWQCB jurisdictional areas. Alternative 7 would result in direct permanent impacts to 1.96 acres and indirect permanent impacts to approximately 42.20 acres of CDFW jurisdictional areas.

[10] California Department of Fish and Game. 2001. *Coastal Wetlands - Emergent Marshes. California's Living Marine Resources: A Status Report.* December. Website: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=34250 (accessed February 24, 2017).

Table 3.25-6 Project Impacts to Potentially Jurisdictional and Nonjurisdictional Areas

Jurisdictional Areas	Permanent (acres)		Temporary (acres)
	Direct	Indirect	
USACE Jurisdictional Areas			
Alternative 5C	1.74	26.13	30.21
Alternative 7	1.54	28.56	33.70
RWQCB Jurisdictional Areas			
Alternative 5C	1.74	26.29	30.29
Alternative 7	10.80	28.72	33.79
CDFW Jurisdictional Areas			
Alternative 5C	2.13	36.51	55.73
Alternative 7	1.96	42.20	71.66
RWQCB-only Jurisdictional Areas			
Alternative 5C	0.00	0.15	0.08
Alternative 7	9.26	0.16	0.08

Source: LSA Associates, Inc. *Natural Environment Study* (June 2017).
Note: Impacts for all Design Options (Alternative 5C - 1A, 2A, or 3A and Alternative 7 - 1B or 3B) are the same as for their corresponding alternatives.
CDFW = California Department of Fish and Wildlife
I-710 = Interstate 710
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers

REASONABLY FORESEEABLE ACTIONS. Most of the lands surrounding the BSA are highly urbanized and have already been developed. Those areas not already developed have generally been preserved as city parks or restored areas. The reasonably foreseeable actions would generally occur in areas with minimal or no wetlands and other waters of the United States. Reasonably foreseeable actions with particular relevance to wetlands and other waters include roadway, freeway, bridge and development projects that would impact those resources. Those projects are:

- I-5 Corridor Improvement Project – potential for loss of wetlands or other waters of the U.S.
- SR 710 North Study – potential for temporary and permanent impacts to non-wetland waters (Freeway Tunnel Alternative only)
- Los Angeles River Master Plan – beneficial impact
- RiverLink Plan – beneficial impact

CUMULATIVE IMPACTS. The cumulative effects of the I-710 Corridor Project, in combination with reasonably foreseeable projects listed above, would incrementally cause further effects to riparian/riverine habitats and estuarine wetland habitats. Impacts to riparian/riverine habitats would result in direct and indirect permanent effects through disturbance and/or removal of

existing vegetation. Furthermore, construction would indirectly affect riparian/riverine habitats permanently through shading of the areas below bridges or elevated roads and enhancing the germination and proliferation of nonnative invasive plant species. Permanent impacts to estuarine habitat, including a reduction in soft-bottom habitat, would result from the construction of abutments and driving of piles. In addition to direct permanent effects, indirect permanent effects would result from permanent shading associated with bridges or elevated roadways. In addition, construction would indirectly affect estuarine habitats permanently through enhancing the germination and proliferation of nonnative invasive plant species. Permanent benefits to wetlands and other waters of the U.S. would occur through implementation of the Los Angeles River Master Plan and the RiverLink Plan. This would offset some of the cumulative impacts as a result of the projects discussed above. With implementation of the avoidance, minimization, and mitigation measures discussed below, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to wetlands.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. A combination of avoidance, minimization, and mitigation measures would reduce the overall adverse effects of the I-710 Corridor Project to wetlands and other waters. To offset effects to jurisdictional areas, a compensatory mitigation program would be developed. Typically, habitat subject to USACE and CDFW jurisdiction is mitigated at a minimum mitigation-to-effect ratio of 2:1 for permanent effects and 1:1 for temporary effects, which is consistent with USACE and CDFW policies for no net loss of riparian/riverine habitat (e.g., wetlands). Compensatory mitigation may be in the form of habitat restoration and/or enhancement in on- or off-site areas where similar riparian/riverine habitats exist, or a monetary contribution toward an in-lieu fee program, as acceptable by the regulatory agencies. The final compensatory mitigation program is expected to fully offset project-related jurisdictional effects by providing “no net loss” of estuarine and riparian/riverine habitats. Because each cumulative project would be required to comply with CEQA and/or NEPA and replace impacted wetlands and other waters, additional mitigation for the cumulative effects of the proposed I-710 Corridor Project is not warranted.

3.25.4.17 PLANT SPECIES

The analysis in this section is based on Sections 3.18 and 3.24.3.18 of this RDEIR/SDEIS and the *Natural Environment Study* (June 2017) prepared for the project.

RESOURCE STUDY AREA. The RSA for plant species is consistent with the BSA for the I-710 Corridor Project. The BSA is approximately 18 linear miles along the I-710 Corridor, from Ocean Blvd. to SR-60. The BSA also includes a portion of the major transportation corridors connecting to I-710, including I-405, SR-91, I-105, and I-5, to accommodate for the proposed interchange improvements. The project passes through mostly urban settings consisting of residential areas, industrial warehouses, and commercial businesses. The entire BSA is located within the Los Angeles River Watershed.

HEALTH AND HISTORICAL CONTEXT. Because the BSA is mostly developed (1,869.43 acres), very little suitable habitat for sensitive plant species (78.23 acres or 4.2 percent) exists within the BSA.

PROJECT IMPACTS. Direct impacts would result from implementation of the I-710 Corridor Project. Alternative 5C, including the design options, would result in direct permanent impacts to two populations of southern tarplant identified within the BSA, comprising approximately 96 plants. Alternative 7, including its design options, would result in direct permanent impacts to all three populations of southern tarplant, comprising approximately 8,896 plants and including the largest population near Rosecrans Ave. Alternatives 5C and 7 would not result in indirect permanent impacts to southern tarplant from shading.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment, which are located throughout the BSA. The reasonably foreseeable actions relevant to impacts to plant species include those transportation and development projects that would result in vegetation removal and degradation of existing plant populations. Those projects are:

- I-5 Corridor Improvement Project – Potential for loss of sensitive plant species
- SR 710 North Study – Removal of trees protected by local ordinances (BRT, LRT, and Freeway Tunnel Alternatives) and potential for loss of sensitive plant species (LRT and Freeway Tunnel Alternatives)
- Los Angeles River Master Plan – Beneficial impact
- RiverLink Plan – Beneficial impact

CUMULATIVE IMPACTS. The cumulative effects of the I-710 Corridor Project, in combination with reasonably foreseeable development in the vicinity, may incrementally cause further effects to plants as follows: Impacts to plants from the I-710 Corridor Project are limited to direct impacts to southern tarplant populations as a result of drilling or driving piles required to construct bridge columns and shading effects of elevated structures. Therefore, cumulative impacts to plants could only result from the build alternatives impacts, in combination with other past, present and reasonably foreseeable projects, such as roadway, freeway, and bridge projects that would result in impacts to southern tarplant. With implementation of the avoidance, minimization, and mitigation measures discussed below, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts on plant species.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. In order to mitigate for permanent impacts to southern tarplant populations, the affected southern tarplant populations will be relocated from within the BSA to nearby protected open space areas in order to maintain these few remaining populations within the vicinity of the I-710 Corridor. Otherwise, to compensate for

the loss of these populations, collection and scattering of seed in sunny areas with suitable soil and hydrologic conditions in the region, such as in areas adjacent to existing and remaining populations, during the appropriate time of year may improve the potential for populations of this species to remain stable in future years. Consultation with the CDFW would be completed prior to the restoration effort. This measure is outlined in Section 3.18, Plant Species (Measure PS-1). The avoidance and minimization measures outlined in Section 3.16, Natural Communities, and Section 3.24, Construction Impacts, would be implemented to avoid and minimize impacts to southern tarplant.

Although environmental documents are not yet available for the I-5 Corridor Improvement Project, in order to comply with CEQA and/or NEPA, this future project that could impact southern tarplant would include similar avoidance and minimization measures. Additionally, the Los Angeles River Master Plan and the RiverLink Plan would enhance the natural environment in the Study Area which may result in habitat suitable for sensitive species such as southern tarplant. The I-5 Corridor Improvement project would remove a large amount of vegetation and mature trees and result in a minor loss of aquatic vegetation, but avoidance measures, such as keeping disturbed areas to a minimum and new landscaping, would potentially mitigate for loss. It does not contain suitable southern tarplant habitat. Therefore, cumulative impacts to southern tarplant as a result of the I-710 Corridor Project in combination with other reasonably foreseeable projects are not anticipated.

3.25.4.18 ANIMAL SPECIES

The analysis in this section is based on Sections 3.19 and 3.24.3.19 of this RDEIR/SDEIS and the *Natural Environment Study* (June 2017) prepared for the project.

RESOURCE STUDY AREA. The RSA for animal species is consistent with the BSA. The BSA is approximately 18 linear miles along the I-710 Corridor, from Ocean Blvd. to SR-60. The BSA also includes a portion of the major transportation corridors connecting to I-710, including I-405, SR-91, I-105, and I-5, to accommodate for the proposed interchange improvements. The project passes through mostly urban settings consisting of residential areas, industrial warehouses, and commercial businesses. The entire BSA is located within the Los Angeles River Watershed.

HEALTH AND HISTORICAL CONTEXT. Although most of the BSA is developed and urbanized, the BSA still supports suitable habitat for a variety of special-status wildlife species. Areas along the Los Angeles River, south of the I-710/Willow St. interchange, provide the most valuable habitat for shorebirds in the BSA. Bridge structures within the BSA provide habitat for various bat species. After a thorough literature review, it was determined that 157 special-status wildlife species have the potential to occur within the vicinity of the BSA.

PROJECT IMPACTS.

BURROWING OWLS. Burrowing owls were detected in two locations during surveys of the BSA. No direct impacts would occur in the area where burrowing owl presence was confirmed. However, open areas within the BSA and its vicinity would still provide habitat for the species.

SPECIAL-STATUS SPECIES ASSOCIATED WITH RIPARIAN/RIVERINE AND AQUATIC HABITATS. The proposed project is not expected to directly affect any additional animal species as a result of the avoidance and minimization measures described below; however, the I-710 Corridor Project is expected to have indirect and temporary effects on animal species through the loss of potential habitat.

Hydraulic changes to the Los Angeles River could alter the value of the habitat in the lower portion of the river. Potential hydraulic effects are associated with bridge modifications and the relocation of a segment of electrical transmission lines along the edge of the river. However, as analyzed in Section 3.8, the proposed modifications would mimic the existing pier configurations upstream and downstream, and there would be no substantial effects to the water surface elevation, velocity of flood flows, sedimentation, or scour in the vicinity of the new piers. Because there are no substantial effects at the location of the modifications, there are no substantial effects to downstream locations.

SPECIAL-STATUS SPECIES ASSOCIATED WITH BRIDGES AND CREVICES. Project effects to special-status bridge- and crevice-dwelling animal species would include temporary indirect disturbance (such as noise, vibration, dust, night lighting, and human encroachment) from construction. Indirect permanent issues associated with human encroachment, such as the introduction of nonnative species and trash, would permanently contribute to the degradation of foraging habitat (e.g., riparian/riverine vegetation) in the vicinity. There is a small potential for bat mortality, which could be a permanent project impact.

In addition, construction could temporarily impede access to roost sites (existing and future) in the crevices of bridges, culverts, and overhead structures. Only a small portion of roosting habitat (existing and future) may be permanently altered by the I-710 Corridor Project. However, the widening and modification of bridge, culvert, and overhead structures would more likely increase future potential roosting habitat.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment that are located throughout the BSA. These projects relevant to consideration of impacts to animal species include transportation and development projects that could impact potential habitat for animal

species or that may result in direct impacts, such as harassment or take during construction or roadkill during operation of the completed project. Those projects are:

- SR-47 Expressway Project – Potential impacts to burrowing owl; special-status species associated with riparian/riverine and aquatic habitats;
- Pier B On-Dock Rail Support Facility – Potential impacts to migratory species associated with bridges and crevices
- Gerald Desmond Bridge Project – Potential impacts to special-status species associated with riparian/riverine and aquatic habitats and bridges and crevices
- SCIG Project – Potential impacts to special-status species associated with riparian/riverine and aquatic habitats and bridges and crevices
- I-5 Corridor Improvement Project – Potential impacts to special-status species associated with riparian/riverine and aquatic habitats and bridges and crevices
- I-5 Widening and HOV Lane Project – Potential for impacts to animal species
- California High Speed Rail – Potential for impacts to animal species
- SR 710 North Study – Potential for impacts to animal species

CUMULATIVE IMPACTS.

BURROWING OWL. Project effects of the I-710 Corridor Project to habitat for the burrowing owl would not likely threaten the continued existence of the individual(s) identified during the surveys, much less threaten the existence of the species. The environmental document for the SR-47 Expressway Project identifies temporary impacts to the burrowing owl that would be mitigated to not be adverse. Environmental documents for the Pier B On-Dock Rail Support Facility, the Gerald Desmond Bridge Project, the SR 710 North Study, the SCIG Project, and the I-5 Corridor Improvement Project did not identify impacts to the burrowing owl. Although environmental documents are not available for the I-5 Widening and HOV Lane and California High Speed Rail projects, any impacts to the burrowing owl would be avoided, minimized, and/or mitigated in order to comply with CEQA and/or NEPA. Therefore, the impacts of the I-710 Corridor Project on this species, in combination with those of reasonably foreseeable projects in the vicinity, would not be substantial.

SPECIAL-STATUS SPECIES ASSOCIATED WITH RIPARIAN/RIVERINE AND AQUATIC HABITATS. The I-710 Corridor Project's effects to habitat for species dependent on riparian/riverine and aquatic habitats would not likely threaten the continued existence of the populations nearby, much less threaten the existence of the species. The environmental documents for the SR-47 Expressway Project, the Gerald Desmond Bridge Project, the SCIG Project, the SR 710 North Study, and the I-5 Corridor Improvement Project identify impacts to these species but also identify avoidance, minimization, and/or mitigation measures to offset these

impacts. Although environmental documents are not available for the I-5 Widening and HOV Lane, California High Speed Rail, and SR 710 North Study projects, any impacts to habitat for species dependent on riparian/riverine and aquatic habitats would be avoided, minimized, and/or mitigated in order to comply with CEQA and/or NEPA. Therefore, the impacts of the I-710 Corridor Project, in combination with those of reasonably foreseeable projects in the vicinity, would result in incremental, cumulative effects on these species.

SPECIAL-STATUS SPECIES ASSOCIATED WITH BRIDGES AND CREVICES. The widening and modification of bridge, culvert, and overhead structures for the I-710 Corridor Project and the projects listed above, would likely increase future potential roosting habitat if additional crevices are created within the new or modified structures. The environmental documents for the Pier B On-Dock Rail Support Facility, the Gerald Desmond Bridge Project, the SCIG Project, and the I-5 Corridor Improvement Project may have potential impacts to bats and other migratory species. The I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts on special-status species associated with bridges and crevices.

It should also be noted that the Los Angeles River Master Plan and the RiverLink Plan would enhance the natural environment in the Study Area that may result in habitat improvements for the species listed above in this section.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES.

BURROWING OWL. To ensure that any burrowing owls that may occupy the site in the future are not affected by construction activities, preconstruction surveys would be required. If any of the preconstruction surveys determine that burrowing owls are present, one or more of the following measures may be required: (1) avoidance of active nests and the surrounding buffer area during construction activities; (2) passive relocation of individual owls; (3) active relocation of individual owls; and (4) preservation of on-site habitat with long-term conservation value for the owl.

SPECIAL-STATUS SPECIES ASSOCIATED WITH RIPARIAN/RIVERINE AND AQUATIC HABITATS. Because these species occupy the riparian/riverine and aquatic natural communities, avoidance and minimization efforts for special-status riparian/riverine and aquatic animal species would be the same as those described for the riparian/riverine natural communities in Section 3.25.4.15 of this RDEIR/SDEIS.

SPECIAL-STATUS SPECIES ASSOCIATED WITH BRIDGES AND CREVICES. Preconstruction surveys performed by a qualified bat biologist would be required to assess the potential for use of the project area as a maternity roost. To prevent potential effects to bridge and crevice nesting bats, all work on existing bridges with potential bat habitat conducted between December 1 and October 31 would have bat exclusion devices installed under the supervision of a qualified biologist.

The reasonably foreseeable projects with potential to affect the species listed above would include similar avoidance, minimization, and/or mitigation measures in order to comply with CEQA and/or NEPA. Therefore, adverse cumulative impacts to these species are not anticipated as a result of the I-710 Corridor Project.

3.25.4.19 THREATENED AND ENDANGERED SPECIES

The analysis in this section is based on Sections 3.20 and 3.24.3.20 of this RDEIR/SDEIS and the *Natural Environment Study* (June 2017) prepared for the project.

RESOURCE STUDY AREA. The RSA for threatened and endangered species is consistent with the BSA. The BSA is approximately 18 linear miles along the I-710 Corridor, from Ocean Blvd. to SR-60. The BSA also includes a portion of major transportation corridors connecting to I-710, including I-405, SR-91, I-105, and I-5, to accommodate for the proposed interchange improvements. The project passes through mostly urban settings consisting of residential areas, industrial warehouses, and commercial businesses. The entire BSA is located within the Los Angeles River Watershed.

HEALTH AND HISTORICAL CONTEXT. Historically, the health of this resource has become more degraded by development over time but suitable habitat for some threatened/endangered species is present as described below.

THREATENED AND ENDANGERED PLANT SPECIES. The BSA supports suitable habitat for a few special-status plant species that are tolerant of conditions within or adjacent to an urban environment. After a thorough literature review, it was determined that a total of 14 Federally and/or State-listed as endangered or threatened plant species, or proposed or delisted endangered or threatened, have the potential to occur in or within the vicinity of the BSA. Suitable habitat does not exist within the BSA for any of these plant species.

THREATENED AND ENDANGERED ANIMAL SPECIES. The BSA supports suitable habitat for a variety of special-status wildlife species. Areas along the Los Angeles River south of the I-710/Willow St. interchange provide the most valuable habitat for shorebirds in the BSA. After a thorough literature review, it was determined that 42 animal species or habitats that are Federally and/or State-listed as endangered or threatened, candidate, or proposed or delisted endangered or threatened, regulated by the National Marine Fisheries Service (NMFS), or are considered California Fully Protected Species (CFP) species by the State of California have the potential to occur within the BSA. Potentially suitable habitat for only six of these species or habitats still exists within the BSA. There is potential for the Federally listed as endangered Southern California steelhead Distinct Population Segment (DPS), the Federally listed as threatened green turtle and western snowy plover coastal population, and the Federally and State-listed as endangered California least tern to use downstream areas of the Los Angeles River. Additionally, the California sea lion, which is not a Federally listed

species or California species of special concern but is protected under the Marine Mammal Protection Act (MMPA), is occasionally found within the BSA in the lower reaches of the Los Angeles River. Also, an area designated by the National Oceanic and Atmospheric Administration's NMFS as Essential Fish Habitat (EFH) is located within the BSA. This habitat includes those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity.

PROJECT IMPACTS. Construction activities within the Los Angeles River channel would be planned carefully to prevent any disturbance of normal river processes that might affect Southern California steelhead, green turtle, western snowy plover, California least tern, California sea lion, species utilizing EFH, or other species using the river itself or the marine environment at its mouth.

Based on available data, steelhead appear to be extirpated from the BSA. Steelhead are large, highly mobile fish and would likely move out of the area if disturbed by construction activities. The riverine habitat upstream of the estuarine habitat within the BSA is primarily concrete-lined and does not provide suitable habitat for steelhead.

Any green turtles that might visit the area around the mouth of the Los Angeles River could be affected indirectly by changes in water quality originating upstream. Such changes could involve increased pollution levels, increased turbidity, or impacts on sea grasses and algae on which green turtles feed.

The coastal population of the western snowy plover could be affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the invertebrates on which they feed. New bridge designs could result in occasional bird strikes. There is no critical habitat for this species within the BSA; therefore, no critical habitat would be impacted by the proposed project.

California least terns could be affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the fish on which they feed. New bridge structures could result in occasional bird strikes. This species leaves California altogether for more than half of each year so that, other than potential long-term effects on fish populations, there would be no potential effects when the species is absent.

The I-710 Corridor Project would include the driving of piers on the following bridges over the lower Los Angeles River that could affect California sea lions: the 7th St. Bridge, Anaheim St., Pacific Coast Hwy, Hill St., and Willow St. A new bridge would be constructed over the lower Los Angeles River at 7th St., and a pedestrian bridge would be added at Hill St., while Anaheim St., Pacific Coast Hwy., and Willow St. would be expanded. Percussive forces generated during any pile-driving activities may result in injury to California sea lions within and adjacent to the

BSA, where estuarine habitat exists. Once the pile driving and bridge construction are completed, bridges associated with the project would not impede the movement of California sea lions through the channel. Based on the environmental document for the SR-47 Expressway Project, an Incidental Harassment Authorization may be required for project construction effects on the California sea lion. The SR-47 Expressway Project would not be under construction at the same as the I-710 Corridor Project; therefore, these construction-related impacts would not result in a temporary cumulative impact to the California sea lion. The environmental documents for the Pier B On-Dock Rail Support Facility, the Gerald Desmond Bridge Project, the SCIG Project, and the I-5 Corridor Improvement Project did not identify impacts to California sea lion. As the I-5 Widening and HOV Lane, California High Speed Rail, and the SR 710 North Study projects are all located far from California sea lion habitat, no impacts to this species would occur. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts on California sea lion.

The designated Essential Fish Habitat within the BSA could be temporarily affected by construction activities. The I-710 Corridor Project would not permanently impede movement of fish into and out of the Los Angeles River corridor. A temporary loss of habitat may result from construction activities; however, no permanent impacts would occur to the habitat except for a minimal loss of channel bottom where the piles would be placed. In addition, no permanent impacts would occur from dewatering activities, as dewatering materials would be removed upon completion of bridge construction. Alternatives 5C and 7 would include driving of piers/support structures in tidal waters across the Los Angeles River at the 7th St., Anaheim St., Pacific Coast Hwy., Hill St., and Willow St. crossings. Furthermore, numerous pilings would be required upstream of tidal waters in the freshwater areas of the Los Angeles River to accommodate improvements to other crossing structures. The percussive forces generated during pile-driving activities may also result in injury and death to fish within the impact area. Based on the environmental documents for the SR-47 Expressway Project and the Gerald Desmond Bridge Project, temporary impacts to fish species and their habitats would occur. However, these projects would not be under construction at the same time as the I-710 Corridor Project; therefore, these construction-related impacts would not result in temporary cumulative impacts to fish species and their habitats. As the SCIG Project, the I-5 Corridor Improvement Project, the I-5 Widening and HOV Lane Project, the California High Speed Rail Project, and the SR 710 North Study are all located far from fish species habitat, no impacts would occur. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts on fish species and their habitat.

REASONABLY FORESEEABLE ACTIONS. Most of the lands surrounding the BSA are highly urbanized and have already been developed. Those areas not already developed have generally been preserved as city parks or restored areas. Reasonably foreseeable actions with particular relevance to threatened and endangered species include all transportation and development projects that could result in impacts to potential habitat for these species or that

may result in direct impacts to these species, such as harassment or take during construction or roadkill during operation of the completed project. Those projects are:

- SR-47 Expressway Project – Potential for impacts to California sea lion, and fish; potential for Federally listed as threatened green turtle and the Federally and State-listed as endangered California least tern impacts; Similar to the I-710 Corridor Project.
- Gerald Desmond Bridge Project – Potential for impacts to fish; potential for Federally listed as threatened green turtle and the Federally and State-listed as endangered California least tern; Similar to the I-710 Corridor Project.
- SCIG Project – Potential for Federally listed as threatened green turtle and the Federally and State-listed as endangered California least tern; Similar to the I-710 Corridor Project.
- I-5 Corridor Improvement Project – Potential for Federally listed as threatened green turtle and the Federally and State-listed as endangered California least tern; Similar to the I-710 Corridor Project.
- California High Speed Rail – Environmental Document not available; Threatened or endangered species impacts will be avoided.
- SR 710 North Study – Potential indirect temporary impacts to listed riparian obligate bird species.

CUMULATIVE IMPACTS. As identified in the environmental documents for the SR-47 Expressway Project, the Gerald Desmond Bridge Project, and the SCIG Project, and the I-5 Corridor Improvement Project, construction activities may incrementally result in impacts similar to those described above for the I-710 Corridor Project. However, these impacts have been identified as being strictly temporary during construction. As stated in the Draft EIR/EIS for the SR 710 North Study, the LRT and Freeway Tunnel Alternative could result in indirect temporary impacts to listed riparian obligate bird species as a result of their proximity to potential nonbreeding habitat in riparian areas during construction. The SR 710 North Study Draft EIR/EIS also indicates that the TSM/TDM Alternative could result in temporary indirect impacts to Townsend's big-eared bats during construction. Although environmental documents are not available for the California High Speed Rail Project, any impacts to threatened and endangered species would be avoided, minimized, and/or mitigated to comply with CEQA and/or NEPA. Therefore, the impacts of the I-710 Corridor Project, in combination with reasonably foreseeable projects in the vicinity, would result in minor incremental, cumulative effects on the green turtle and the California least tern.

It should also be noted that the Los Angeles River Master Plan and the RiverLink Plan would enhance the natural environment in the Study Area that may result in habitat suitable for threatened and endangered species.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. The avoidance and minimization measures outlined above in Section 3.16, Natural Communities, would ensure that no noticeable changes in water conditions would occur. This would keep any potential effects of the proposed build alternatives on green turtles and California least terns from implementation minimal.

CALIFORNIA SEA LION. Due to the deterrent effect of construction noise, if present during construction, it is anticipated that most California sea lions would avoid the BSA, but it is possible that some individuals may be present in the work area at various times during construction activity. Therefore, measures proposed in the Fisheries Management Plan to be prepared for the I-710 Corridor Project would provide avoidance and minimization measures that would be suitable for California sea lions should they be present in the lower Los Angeles River during construction.

FISH. Acoustic monitoring, as stipulated in the *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish* (prepared and updated for Caltrans in November 2015), would be conducted during pile-driving activities. Attenuation devices would be used to bring the sound levels below the threshold levels.

Construction of the I-710 Corridor Project on dry land is not expected to impact fish, provided that sediments and construction materials are retained on land and measures are implemented to prevent the movement of soil, concrete, and other construction materials into the river channel.

3.25.4.20 INVASIVE SPECIES

The analysis in this section is based on Sections 3.21 and 3.24.3.21 of this RDEIR/SDEIS and the *Natural Environment Study* (June 2017) prepared for the project.

RESOURCE STUDY AREA. The RSA for invasive species is consistent with the BSA. The BSA is approximately 18 linear miles along the I-710 Corridor, from Ocean Blvd. to SR-60. The BSA also includes a portion of the major transportation corridors connecting to I-710, including I-405, SR-91, I-105, and I-5, to accommodate for the proposed interchange improvements. The entire BSA is located within the Los Angeles River Watershed.

HEALTH AND HISTORICAL CONTEXT. On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112, requiring Federal agencies to combat the introduction or spread of invasive species in the United States. Exotic plant species exist within the nonnative plant communities throughout the BSA, within patches of native plant communities, and in areas that have been disturbed by human uses. Exotic species are typically more numerous adjacent to roads and developed areas and frequently border the ornamental landscape. A total of 31 exotic

plant species occurring on the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory were identified within the BSA.

PROJECT IMPACTS. Highway corridors provide opportunities for the movement of invasive species through the landscape. Construction of the I-710 Corridor Project has the potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway. Although no *Caulerpa taxifolia* (a nonnative seaweed) was observed in the BSA during the 2009 or 2015 biological surveys, the project could result in the spread of this species into the BSA if preventive measures are not taken. However, the potential for introduction of *Caulerpa taxifolia* into the BSA is minimized where additional shading is provided from structures such as widened bridges over the Los Angeles River. Impacts associated with Alternative 7 would be greater than impacts associated with Alternative 5C, given the larger area of disturbance associated with the freight corridor.

REASONABLY FORESEEABLE ACTIONS. The reasonably foreseeable actions would occur in the areas that are planned for development or redevelopment that are located throughout the BSA. The reasonably foreseeable actions are listed in Table 3.25-2. All projects involving construction have potential concerns regarding invasive species.

CUMULATIVE IMPACTS. Most of the lands surrounding the BSA are highly urbanized and have already been developed. Those areas not already developed have generally been preserved as city parks or restored areas. Probable future projects in the vicinity (both transportation-related and nontransportation-related) were reviewed as part of this analysis. The weed abatement program that would be implemented as part of the proposed project would minimize any potential project contribution to cumulative effects related to invasive species. Therefore, the I-710 Corridor Project build alternatives would not contribute to cumulative adverse impacts related to invasive species.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES. In compliance with EO 13112, a weed abatement program would be developed, and temporarily affected areas would be revegetated with plant species to help prevent the introduction or spread of invasive species. The weed abatement program (Measure IS-1) is discussed in greater detail in Section 3.21.4. Eradication strategies would be employed should an increase in invasive plants occur. Similar weed abatement and evaluation strategies would be implemented for reasonably foreseeable actions.

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4.0 CALIFORNIA ENVIRONMENTAL QUALITY ACT EVALUATION

4.1 DETERMINING SIGNIFICANCE UNDER CEQA

The proposed project is a joint project by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) and is subject to State and Federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA's responsibility for environmental review, consultation, and any other action required in accordance with NEPA and other applicable Federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (USC) 327. Caltrans is the lead agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement (EIS) or a lower level of documentation will be required. NEPA requires that an EIS be prepared when the proposed Federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated, and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report (EIR) must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

In making determinations of significance under CEQA, the impacts of the build alternatives are analyzed relative to baseline conditions which, for the Interstate 710 (I-710) Corridor Project, were the existing conditions in the I-710 Corridor in 2012. For comparison under NEPA, Alternative 1 provides the basis for comparison of 2035 No Build conditions with the 2035 build alternatives.

4.2 DISCUSSION OF SIGNIFICANCE OF IMPACTS

The significance of the potential impacts of the I-710 Corridor Project build alternatives under CEQA was assessed based on the CEQA Checklist provided in Appendix A of this RDEIR/SDEIS and the analyses of project impacts discussed in detail in Chapter 3.0, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures, along with additional CEQA-specific analysis. The CEQA impacts of the project build alternatives are summarized in the following sections, based on the level of significance of the project's impacts under CEQA.

Project impacts vary among the two build alternatives, with one alternative having greater impacts to a particular environmental factor than another. For this reason, significance under CEQA is generally discussed in terms of the alternative with the most significant adverse impact. In cases where the impacts of the alternatives vary widely, clarification is provided regarding which alternatives have the most adverse impacts to a particular environmental factor.

The following analysis is organized as follows:

- Checklist questions answered "No Impact"
- Checklist questions answered "Less Than Significant Impacts"
- Checklist questions answered "Less Than Significant Impacts with Mitigation Incorporated"
- Checklist questions answered "The Project will result in a Significant Adverse Effect"
- Checklist questions are shown in **Bold.**

4.2.1 NO IMPACTS

For the following topics, the build alternatives would have no impacts.

4.2.1.1 AESTHETICS (CEQA CHECKLIST QUESTION I.B)

b) Will the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Reference: Section 3.6

I-710 is not a designated State Scenic Highway,[1] and there are no heritage trees, historic buildings, or unique land forms that would be impacted by the build alternatives; therefore, the build alternatives would not damage scenic resources within a designated scenic corridor.

[1] California Department of Transportation (Caltrans). Website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm (accessed March 10, 2017).

4.2.1.2 AGRICULTURE AND FORESTRY RESOURCES (CEQA CHECKLIST QUESTIONS II.A, II.B, II.C, II.D, AND II.E)

a) Would the project: convert Prime Farmland, Unique Farmland, or Farmland of statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Reference: Section 3.0

The Study Area does not include any designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, the build alternatives would not result in any temporary or permanent impacts related to designated farmlands.

The build alternatives would not result in conversion of areas currently used for agricultural production (nursery uses) to nonagricultural use.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Reference: Section 3.0

None of the lands in the Study Area are zoned for agricultural uses. Additionally, the Study Area does not include any property under Williamson Act contract. Therefore, there would be no impact.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Reference: Section 3.0

The I-710 Corridor Project Study Area does not contain any zoned forest lands or timberlands.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

Reference: Section 3.0

The I-710 Corridor Project would not result in the loss of forest land or conversion of forest land to non-forest use, as there are no such lands within the Study Area.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use?

Reference: Section 3.0

Given the lack of agricultural lands, forest lands, and timberlands in the Study Area, the project would also not involve other changes in the existing environment which, due to their location or nature, could result in a conversion of farmland to nonagricultural use or a conversion of forest land to non-forest use. Therefore, the build alternatives would not result in impacts to agriculture and forest resources.

4.2.1.3 BIOLOGICAL RESOURCES (CEQA CHECKLIST QUESTIONS IV.E AND IV.F)

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Reference: Cities of Long Beach[2] and Los Angeles[3] and County of Los Angeles[4]

The build alternatives would not conflict with any local policies or ordinances protecting biological resources. The Cities of Long Beach and Los Angeles and the County of Los Angeles are the only jurisdictions in the Study Area that have biological policies relevant to the I-710 Corridor Project. The County policy is related to the protection of native oak trees, none of which were identified within the Study Area. The Cities of Los Angeles and Long Beach have guidelines for acquiring tree removal permit compliance during implementation of the build alternatives. Additionally, the City of Long Beach requires that trees located within the Coastal Zone not be removed during the nesting season and that pre-construction surveys be conducted one week prior to construction activities. The build alternatives would comply with all of these local policies and ordinances, and no impacts would occur.

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2 City of Long Beach. City of Long Beach Municipal Code, Chapter 14.28 Trees and Shrubs, 14.28.050 – Planting or removing – Permit required. Website: https://www.municode.com/library/ca/long_beach/codes/municipal_code? nodeId=TIT14STSI_CH14.28TRSH_14.28.050PLREONRE (accessed March 10, 2017).

3 City of Los Angeles. Ordinance No. 177404 (Protected Trees. Website: https://cityplanning.lacity.org/Code_Studies/Other/ProtectedTreeOrd.pdf (accessed March 15, 2017).

4 County of Los Angeles. County of Los Angeles Oak Tree Ordinance. Website: http://www.montecitohts.org/oaktreeordinance.pdf (accessed March 10, 2017).

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Reference: Section 3.16.3

The Study Area is within areas that are largely developed and is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or any other approved local, regional, or State Habitat Conservation Plan. Therefore, the build alternatives would not result in conflicts with any biological resource habitat plans.

4.2.1.4 GEOLOGY AND SOILS (CEQA CHECKLIST QUESTION VI.E)

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Reference: Chapter 2.0, Project Alternatives

No septic tanks or alternative wastewater disposal systems are included in the build alternatives, and soil issues related to these facilities would not be encountered. Therefore, the build alternatives would not result in impacts related to alternative wastewater disposal and soils.

4.2.1.5 HAZARDS AND HAZARDOUS WASTE (CEQA CHECKLIST QUESTIONS VIII.E THROUGH VIII.H)

The following two questions are addressed together.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Reference: Section 3.1, Review of Existing Land Use Maps and Airport Locations (see Figure 3.1-1)

The I-710 Corridor Project is not located within an airport land use plan, within two miles of an airport, or within the vicinity of a private airstrip. Therefore, the build alternatives would not result in a safety hazard to aircraft operations or persons living or working near an airport.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Reference: Section 3.24.4.4

The build alternatives would not impair the implementation of, or physically interfere with, the adopted emergency response or evacuation plans of the cities in the Study Area and the County of Los Angeles. By providing a freeway that operates more efficiently, the build alternatives would have a beneficial effect on emergency response and evacuation.

Temporary impacts to emergency services would be addressed through preparation of the Transportation Management Plan (TMP) as required in Measure CON-TR-1, as well as the specific measures required in Measure CON-U&ES-1. Note that these measures are standard Caltrans measures applicable to such large construction projects.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Reference: Section 3.1, Existing Land Uses, as shown in Figure 3.1.1

The I-710 Corridor Project is located in developed areas and is not located within areas that are at high risk for wildland fires. As a result, the build alternatives would not result in or be affected by wildland fires.

4.2.1.6 HYDROLOGY AND WATER QUALITY (CEQA CHECKLIST QUESTIONS IX.G, IX.I, AND IX.J)

g) Would the project place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Reference: Section 3.8.2.1; and Section 3.8.3.1

The build alternatives would improve and modify an existing transportation facility. This would not result in the placement of any housing in a 100-year flood hazard area and would not result in adverse impacts related to the placement of housing in a 100-year flood hazard area.

i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Reference: Section 3.8.3.1

There are no dams located in the immediate upstream area of the project whose failure could affect the project area. The build alternatives would not change the risk for people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, and would not result in adverse impacts related to risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

j) Would the project [result in increased risk for] inundation by seiche, tsunami, or mudflow?

Reference: Sources from the California Department of Conservation website listed below

A seiche is an earthquake-induced wave motion in a water body such a lake or inlet. There are no such lakes or inlets within the project area, and no identified risk from seiches.

A tsunami is an earthquake-induced wave motion in a sea or ocean. Tsunamis could be generated in the Pacific Ocean off the coast of Southern California and/or around the Pacific Ocean basin. The California Emergency Management Agency has prepared maps of estimated tsunami inundation areas.[5] These maps indicate that the southern end of the project, located generally south of Anaheim Blvd., could be subject to inundation in a tsunami.

However, the existing I-710 freeway is located in these same areas, and implementation of any of the build alternatives would not change the risk of inundation of the facility. In addition, the development of expanded capacity along I-710 would increase the capacity of evacuation routes when a tsunami is forecast. As such, this is a beneficial effect of the project.

Mudflows result when rainstorms inundate mountain areas, particularly after fire events. The proposed project is located over ten miles from the nearest mountain range (San Gabriel Mountains) and would not be subject to mudflows.

4.2.1.7 LAND USE AND PLANNING (CEQA CHECKLIST QUESTION X.C)

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

Reference: Section 3.16.3

The Study Area is not located within any applicable Habitat Conservation Plan or Natural Community Conservation Plan. Therefore, the build alternatives would not result in impacts related to conflicts with any biological resource habitat plans.

4.2.1.8 MINERAL RESOURCES (CEQA CHECKLIST QUESTIONS XI.A AND XI.B)

The following two questions are addressed together

a) Would the project: result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

b) Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Reference: Section 3.1, Review of Existing Land Use Maps (see Figure 3.1-1)

There are no existing mineral resources operations in the Study Area. Therefore, the project would not have any impacts on mineral resources or mineral resource extraction operations. The project would utilize some mineral resources for project construction (e.g., concrete, asphalt, rock), but would not result in a significant depletion of the base resources. California State Department of Conservation (DOC) maps of the areas surrounding the project Study Area do not indicate any mineral extraction zones (California DOC 2001).[6]

4.2.1.9 NOISE (CEQA CHECKLIST QUESTIONS XII.E AND XII.F)

The following two questions are addressed together:

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Reference: Los Angeles County Airport Land Use Plan[7]

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[5] California Department of Conservation. Website: http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/LosAngeles/Documents/Tsunami_Inundation_LongBeach_Quad_LosAngeles.pdf (accessed March 10, 2017).

[6] California Department of Conservation. 2001. (Maps)

[7] Los Angeles County Department of Regional Planning. Website: http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf.

The I-710 Corridor Project is not located within an airport land use plan or within two miles of a public or private airport. Therefore, the build alternatives would not result in the exposure of people to excessive noise related to aircraft or airport operations.

4.2.1.10 RECREATION (CEQA CHECKLIST QUESTION XV.B)

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Reference: Section 3.1.3.2 and Section 3.24.3.1

The I-710 Corridor Project does not include recreation facilities and does not require the expansion or construction of recreation facilities. As identified in Table 3.1-5, several existing recreational facilities would be subject to direct and/or indirect impacts as a result of project implementation; however, the project would not require the construction or expansion of these affected recreational facilities that would be subject to an adverse physical effect on the environment.

4.2.1.11 TRANSPORTATION/TRAFFIC (CEQA CHECKLIST QUESTIONS XVI.C THROUGH XVI.F)

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Reference: Chapter 2; Los Angeles County Airport Land Use Plan[8]

The I-710 Corridor Project is not located within an airport land use plan or within two miles of a public or private airport facility, and the build alternatives (including the freight corridors included under Alternative 7) do not include any features that would be of sufficient height to affect airspace above the Study Area. As a result, the build alternatives would not impact air traffic patterns.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Reference: Chapter 2; Caltrans *Highway Design Manual*; and Caltrans *Standard Specifications*

The build alternatives would improve and modify an existing transportation facility. The build alternatives would not introduce any incompatible uses (e.g., farm equipment).

[8] Ibid.

The build alternatives would be designed and constructed in compliance with Caltrans *Standard Specifications* and other applicable professional, design, and construction standards. As such, the build alternatives would not include hazardous design features. The build alternatives would improve I-710, which was designed and constructed in the 1950s, and would result in a modernized design compared to the existing transportation facility.

e) Would the project result in inadequate emergency access?

Reference: Section 3.24.3.4

The build alternatives would have a beneficial effect on emergency access and response, as they would improve the operation of the I-710 mainline, and impacts related to emergency access would not occur.

Temporary impacts to emergency services would be addressed through preparation of the TMP as required in Measure CON-TR-1, as well as the specific measures required in Measure CON-U&ES-1. Note that these measures are standard Caltrans measures applicable to such large construction projects.

f) Would the project conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Reference: Chapter 2.0 and Section 3.5.3.1

The project includes changes to arterial interchanges and intersections that may affect sidewalks and bicycle lanes. The I-710 Corridor Project will provide facilities for bicycles and pedestrians in locations where local streets are affected by construction of the proposed project. These facilities will be designed consistent with the respective local General Plan Circulation Element and will comply with Americans with Disabilities Act of 1990 (ADA) requirements. The project will improve pedestrian facilities (sidewalks) by replacing the existing ones that will be removed as part of the project. Bicycle travel would also be improved by providing wider shoulders and new pavement (which would provide a better riding surface) on the arterial bridges that will be replaced over I-710 and the Los Angeles River. Class I Bikeways within the Study Area will be maintained with the proposed build alternatives. In addition to the widening of existing bridges and overcrossings to accommodate bicycle and pedestrian traffic, three pedestrian and bicycle-only bridges are proposed that would be constructed under both build alternatives, and an additional two (for a total of five) are proposed under Alternative 5C. Because bicycle and pedestrian facilities will be maintained or improved, the effect of the I-710 Corridor Project is that travel by walking and bicycling will not substantially change as a result of the implementation of the build alternatives.

Measure CON-TR-1 (Preparation of the TMP) includes measures to minimize construction impacts to bicyclists and pedestrians.

Based on these considerations, the project would not result in impacts to bicycle and pedestrian facilities.

4.2.1.12 Utilities and Service Systems (CEQA Checklist Questions XVII.a, XVII.d, XVII.e, and XVII.g)

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Reference: Section 3.9.1

The build alternatives would not generate demand for wastewater conveyance or treatment facilities. As a result, the build alternatives would not result in significant impacts related to wastewater treatment facilities or wastewater treatment requirements.

Measures WQ-1 through WQ-3 (Compliance with National Pollutant Discharge Elimination System [NPDES] Permit and Waste Discharge Requirements [WDRs]) includes the necessary procedures to ensure that the project complies with stormwater and wastewater treatment requirements.

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Reference: Section 3.4.2.2

While some existing water conveyance facilities may conflict with proposed structures during project construction, the build alternatives are not anticipated to generate a substantial demand for water supplies, and these existing impacted facilities would be relocated as needed. Some water may be needed during construction of the build alternatives and as landscaping is planted to allow the landscaping to become established. The demand for water during construction and operation of the build alternatives is not anticipated to exceed existing entitlements or require the expansion of existing water supply facilities to serve the project. Therefore, there would be no impact to water supplies.

e) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Reference: Section 3.24.4.9

While some existing wastewater conveyance facilities may conflict with proposed structures during project construction, the project would not result in the generation of additional wastewater. Therefore, it would not result in exceedances of the ability of area wastewater treatment providers to accommodate the project. Operation of the build alternatives would not result in impacts to wastewater utility systems.

g) Comply with Federal, State, and local statutes and regulations related to solid waste?

Reference: Section 3.24.1.1

Construction waste from the build alternatives would be limited to debris such as materials from demolished structures within the project right of way. Operational solid waste material would be generated as part of landscape maintenance and picking up of litter along the road. All of the solid waste generated by the build alternatives would be disposed of in accordance with Federal, State, and local regulations related to recycling. Therefore, the build alternatives would not result in impacts related to Federal, State, or local statutes and regulations related to solid waste. Additionally, no solid waste facilities are located within the Study Area; therefore, no such facilities would be directly or indirectly impacted by the build alternatives.

4.2.2 Less Than Significant Impacts of the Proposed Project

The following impacts resulting from the build alternatives have been determined to be less than significant.

4.2.2.1 Aesthetics (CEQA Checklist Questions I.a and I.d)

a) Would the project have a substantial adverse effect on a scenic vista?

Reference: Section 3.6.3.1

For purposes of determining significance under CEQA, a scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. In addition, some scenic vistas are officially designated by public agencies, or informally designated by tourist guides. A substantial adverse effect to such a scenic vista is one that degraded the view from such a designated viewpoint.

The area surrounding the existing I-710 Corridor is essentially a flat coastal plain, with background views of local hills and mountains on days when visibility permits. The horizontal view plane is intermittently broken with electrical transmission towers, transportation facilities, and an occasional high-rise building.

No governmentally-designated scenic vista has been identified within the project limits. In addition, no specific scenic viewpoint has been identified in the project area.

While there are no officially designated scenic vistas in the project area, certain long-range views would change for members of the motoring public and from users of the nearby Los Angeles River Trail. However, since these are not designated scenic vistas, and because the changes would add additional facilities typical in urbanized areas, the impacts are considered less than significant.

As described in Section 3.24.3.6, temporary visual impacts to sensitive receptors would occur under the build alternatives during the construction period and would include views of demolition of existing structures, clearing of existing vegetation, construction of the I-710 mainline widening and structures, construction vehicles, and temporary construction easements (TCEs). Construction impacts under Alternative 7 would be greater than under Alternative 5C due to construction of the elevated freight corridor. However, the construction activities would be temporary, and the adverse visual impacts related to construction would cease after completion of the build alternatives. Additionally, the impacts of vegetation clearing would gradually improve over time as landscaping for the I-710 Corridor Project matures. Temporary visual impacts related to construction would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Reference: Section 3.6.3

As described in Section 3.6, Visual/Aesthetics, due to the expanded I-710 mainline footprint under both of the build alternatives, safety lighting and vehicle lights would be closer to surrounding land uses. As a result, viewers within the Study Area will experience increased night lighting and glare. Alternative 7 would also add safety lighting and vehicle lights associated with the freight corridor, which would not occur under Alternative 5C. However, the impacts of the lighting under either of the build alternatives would be reduced by utilizing light control appliances on the safety lighting fixtures, as described in Section 3.6. Glare impacts would be minimized through construction of soundwalls and screen walls and by the distance of the viewers from the lighting source.

Based on the above, permanent light and glare impacts would be less than significant for each build alternative.

4.2.2.2 AIR QUALITY (CEQA CHECKLIST QUESTIONS III.A AND III.E)

a) Would the project: conflict with or obstruct implementation of the applicable air quality plan?

Reference: Section 3.13.3

For purposes of determining significance under CEQA, a potentially significant impact would be failure to conform to the applicable air quality plan, or obstructing implementation of such a plan.

As discussed in Section 3.13, the project area currently exceeds State and/or Federal standards for ozone (O_3), particulate matter less than 10 microns in size (PM_{10}), and particulate matter less than 2.5 microns in size ($PM_{2.5}$), while meeting State and/or Federal standards for carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2).

The applicable "Air Quality Plan" is the current South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan/State Implementation Plan (AQMP/SIP) that was adopted by the SCAQMD in 2012. Implementation of the SIP would bring the region into conformance with the applicable air quality standards. If a project "conforms" with the SIP, it would not conflict with or obstruct implementation of the applicable air quality plan. Project conformity with the SIP is demonstrated by:

- Inclusion of the project in the current Regional Transportation Plan (RTP)
- Detailed project-level analyses demonstrating that the project will not result in an exceedance of local standards for CO and particulates.

As noted in Section 3.13, the project is consistent with the adopted AQMP and versions are listed in both the approved 2016 RTP/Sustainable Communities Strategy (SCS) (Project ID No. 1C0401) and the 2017 Federal Transportation Improvement Program (FTIP) (Project ID No. LA0B952). Although the full scope of the project is not currently in the FTIP and the Project Description as noted in the RTP/SCS does not match either of the currently proposed build alternatives, both the RTP and the FTIP will be amended to be consistent with the preferred alternative prior to the approval of the Final EIR/EIS. Air quality models are used to demonstrate that the project's emissions will not contribute to the deterioration of or impede the progress of air quality goals stated in the AQMP. The air quality models for this project used project-specific data to estimate the quantity of pollutants generated from implementation of the project. The results for the No Project (No Build) Alternative and the proposed project (build alternatives) scenarios in the horizon year are compared to the AQMP's air quality projections. Results indicate that the proposed project would not significantly contribute to or cause deterioration of existing air quality; therefore, mitigation measures are not required for the long-term operation of the project. Because the project "conforms" with the SIP, it would not conflict with or obstruct the

implementation of the applicable air quality plan, and potential impacts would be less than significant.

e) Create objectionable odors affecting a substantial number of people?

Reference: Section 3.24.3

Highway improvement projects do not typically produce odors that would affect off-site sensitive receptors. Implementation of the SCAQMD and Caltrans standard conditions, along with the measures identified in Section 3.24.4.13 of this RDEIR/SDEIS, will address short-term project air quality impacts, including objectionable orders. Impacts would be less than significant.

4.2.2.3 BIOLOGICAL RESOURCES (CEQA CHECKLIST QUESTION IV.D)

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Reference: Section 3.16.2.3

The I-710 Corridor has restricted wildlife movement and resulted in habitat fragmentation for many years, and the build alternatives are not expected to have an adverse impact on wildlife movement. The build alternatives would follow the course of the existing freeway and would not increase habitat fragmentation or impede the movement of wildlife in the area. Habitat within the Los Angeles River channel and movement opportunities therein would not be affected by project implementation because the build alternatives essentially modify an existing transportation facility. Construction of the build alternatives may temporarily impede wildlife movement in construction areas; however, this impact would be localized to the construction area and temporary during construction. Therefore, impacts related to wildlife movement would be less than significant.

4.2.2.4 CULTURAL RESOURCES (CEQA CHECKLIST QUESTIONS V.A THROUGH V.D)

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Reference: Section 3.7.3.1

Five resources within the project's Supplemental Area of Potential Effect (APE) were identified as potentially eligible for listing in the National Register of Historic Places (National Register). Please see Section 3.7 for additional discussion.

One cultural resource, Dale's Donuts in Compton, has been determined eligible for listing in the National Register in the context of architecture. This determination has been made by Caltrans

in accordance with stipulation VIII.C.5.a of the Section 106 Programmatic Agreement with the State Historic Preservation Officer (SHPO). Dale's Donuts would be impacted by acquisition of part of the parking lot, which is not a contributing factor to the historical significance of this property. As such, the project would not adversely affect this resource.

The Union Pacific Railroad (UP Railroad), formerly the Southern Pacific Railroad, Segment (Resource No. 19-186110) is eligible for listing in the National Register and would be impacted by the project. The segment of the rail line, including a bridge, that would be impacted has already been altered and does not contribute to the significance of the UP Railroad. An additional UP Railroad (formerly Southern Pacific) Segment (Resource No. 19-186112) that is eligible for National Register/California Register of Historical Resources (California Register) inclusion would not be impacted by the project. Therefore, the build alternatives would not cause a significant impact on the historic rail line because the rail line would continue to be eligible for the National Register.

The Boulder Dam-Los Angeles 287.5-kilovolt Transmission Line is eligible for listing in the National Register and would be impacted by the project. The towers on either side of I-710 would be heightened by 55 feet to make room for construction of the freight corridor under Alternative 7. This would not be required under Alternative 5C. However, the integrity of the Transmission Line would not be reduced to the degree that it would no longer be eligible for the National Register. Therefore, the build alternatives would not cause a significant impact on the historic Transmission Line.

Drake Park Historic District was determined eligible for listing in the National Register in 1987. It had been previously designated as a local "historic landmark district" by the City of Long Beach in 1980, and expanded in 1982. In 1998, Long Beach combined the Drake Park Historic Landmark District with nearby Willmore City Historic Landmark District to form a new, larger local district called the Drake Park/Willmore City Historic Landmark District. Only the smaller Drake Park Historic District area within the larger Drake Park/Willmore City Landmark Historic District is eligible for the National Register. It is significant at the local level under Criteria A and C. No existing buildings or structures within the Drake Park Historic District would be directly affected by the proposed construction activities along the roadways identified above for either build alternative. Therefore, construction of the proposed project would result in a less than significant impact to a historic resource and no mitigation is required.

In summary, the build alternatives would result in a finding of No Adverse Effect under Section 106 of the National Historic Preservation Act (NHPA). Under CEQA, the impacts of the I-710 Corridor Project to historic resources would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Reference: Section 3.7.3.1

As described in Section 3.7.2, no archaeological resources requiring evaluation were identified within the Supplemental APE. The archaeological survey area has been extensively disturbed by construction of the existing freeways and roads, railroads, urban development, river channel, and other infrastructure. As a result, the potential for intact archaeological resources to be present within the Study Area appears to be low.

An Archaeological Sensitivity Study (2017) was prepared subsequent to the archaeological survey study. For the Archaeological Sensitivity Study, a proximity analysis was conducted using a Geographic Information System (GIS) and used four data layers: elevation highpoints, the historic alignments of the Los Angeles River, the locations of ethnohistoric villages, and the locations of previously recorded cultural resources identified by SCCIC records searches. Sanborn Fire Insurance Maps were also reviewed. As part of the Archaeological Sensitivity Study, settlement modeling reveals patterned human behavior and the repeated use over time of elevated landforms bordering the lower floodplain. High energy meanderings of the river channel will have erased a great deal of potential archaeological evidence. The area of direct effects (Direct APE) is considered to have very low sensitivity for the presence of buried archaeological resources within existing freeway rights-of-way (existing I-710 footprint) as any construction activities will likely be limited to within the existing engineered fill. If any excavations occur within the Direct APE outside the existing freeway footprint (i.e., within the existing rights of way) or if deep excavations occur within the freeway footprint/existing rights of way, there is the potential to encounter undisturbed sediments that may contain archaeological resources. In other words excavations within native deposits below and/or outside the existing freeway alignment as part of freeway expansion have the potential to encounter archaeological resources. Pile driving and the construction of retaining walls within previously disturbed deposits do not have the potential. The construction design plans are currently at a 30 percent level of completion; therefore, specific construction details are unknown at this time. Further construction details will be refined at 65 and 95 percent design review. Once specific areas of impact are defined at a 95 percent design review, areas of potential archaeological sensitivity can be reassessed.

Sensitivity study analyses identified three areas recommended for monitoring that exhibit the possibility to contain previously unrecorded archaeological resources. The level and daily duration of monitoring is dependent on several factors, including the nature of construction and the nature of the deposits observed. If previously disturbed and/or fill deposits are observed during monitoring, monitoring is not necessary. The presence of monitors may not be necessary for the entire construction day. In total, monitoring is recommended for 94 acres (3.6 percent) of

the Direct APE at 30 percent design review. Spot checking is recommended for 1,178 acres (45.4 percent) of the Direct APE, and no additional work is recommended for 1,321 acres (50.9 percent) of the Direct APE. The recommendation for spot checking is based on the potential observation of native (previously undisturbed) deposits. The need for spot checking is negated by the observation during spot checking of previously disturbed and/or fill deposits. One of the main purposes of spot checking is to confirm the absence of native deposits. We anticipate that the 94 acres (3.6 percent) recommended for monitoring at this stage of design may be further reduced upon review at 65 percent and 95 percent design review. The 1,178 acres (45.4 percent) recommended for spot checking will likely be reduced at 65 percent and 95 percent design review. Additionally, the as-builts for the areas of focused consideration (7 areas) will be examined at 65 percent design review to define, if possible, areas of prior disturbance as the result of original freeway construction. The final monitoring recommendations would be determined once the plans are developed at 65 percent and refined at 95 percent following review by a qualified Caltrans PQS–Principal Investigator in Prehistoric or Historic Archaeology.

In a letter dated June 1, 2017, the SHPO concurred with the Supplemental HPSR and finds the analysis contained in the Archaeological Sensitivity Study to be sufficient, but concluded that Caltrans cannot fully determine how the undertaking may affect unknown historic properties in the Direct APE and advised Caltrans to move forward with a project-level Programmatic Agreement (project-level PA) for this undertaking to phase identification, evaluation, and findings of effect of unknown historic properties [pursuant to Stipulation XII.A of the Section 106 PA]. Caltrans will develop the project-level PA following submittal of the Supplemental Finding of Effect document.

A Historic Properties Treatment Plan (HPTP) will be developed by a qualified archaeologist in consultation with Caltrans PQS Principal Investigator-Prehistoric or Historic Archaeology to plan for the for the identification, evaluation, and treatment of archaeological resources should they be discovered during construction. The HPTP will be attached to the project-level PA, both of which will be conditions of the Supplemental Finding of Effect for the undertaking. Caltrans will continue consultation with the SHPO on the recommendation for preparation of the project-level PA at the time the Supplemental Finding of Effect is submitted for SHPO review. In case cultural materials are discovered during construction of the build alternatives, Measure CON-CUL-1 (a standard Caltrans requirement) requires that all earthmoving activity in and around the immediate discovery area be diverted until a qualified archaeologist can assess the nature and significance of the find. Also, Measure CON-CUL-3 states that a cultural resource monitoring area will be established prior to construction, consistent with the recommendations of the Archaeological Sensitivity Study (2017) and its updates at 65 and 95 percent design completion, and a qualified archaeologist and a qualified Native American Monitor will monitor ground-disturbing activities within the cultural resource monitoring area. With incorporation of these measures, potential impacts would be less than significant.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Reference: Section 3.7.4 and Section 3.24.4.7

No known human remains are present on the project site, and there are no facts or evidence to suggest that Native American or any other human remains are buried in the Direct APE. However, in the unlikely event that human remains are encountered during project grading, the Los Angeles County Coroner would be notified, and standard procedures for the respectful handling of human remains during the earthmoving activities would be adhered to as described in Measure CON-CUL-2 (Caltrans Standard Procedure). Through adherence to this standard procedure, potential impacts would be less than significant.

4.2.2.5 GEOLOGY AND SOILS (CEQA CHECKLIST QUESTIONS VI.A I, II, AND IV, VI.B, AND VI.D)

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

ii) Strong seismic ground shaking?

iv) Landslides?

Reference: Section 3.10.2.6 and Section 3.24.4.10

Based on the discussion in Sections 3.10.2.6 and 3.24.4.10, the build alternatives would be subject to potential temporary and permanent impacts from faulting/seismicity and landslide soil types. The primary geologic and geotechnical constraints affecting the design and construction of the build alternatives include:

- Moderate to high ground accelerations due to the presence of nearby active faults and fault zones, including the Newport-Inglewood (Cherry Hills segment), Puente Hills, Compton, and Palos Verdes Faults.
- Fault rupture associated with the Cherry Hill segment of the Newport-Inglewood Fault Zone.
- Seismically induced settlement in areas of shallow groundwater and loose alluvial soils. Most of the Study Area is within an area identified as having the potential for liquefaction.

- Earthquake-induced slope instability in areas near slopes such as the Los Angeles River.

These potential impacts would be minimized through implementation of safe construction practices and compliance with Caltrans and California Occupational Safety and Health Administration (Cal-OSHA) requirements. Additionally, preparation of a design-level geotechnical report and quality assurance/quality control plan, as specified in Measures GEO-1 and CON-GEO-1 (Caltrans standard requirement) would reduce geologic impacts. Therefore, geologic impacts related to earthquakes, seismic shaking, and landslides would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Reference: Section 3.10.3 and Section 3.24.3.10

As discussed in Sections 3.10.3 and 3.24.3.10, during construction of the proposed project, excavated soil would be exposed that would increase the potential for soil erosion. Additionally, during a storm event, soil erosion could occur at an accelerated rate. The I-710 Corridor Project would be required to adhere to the requirements of the General Construction Permit and implement erosion and sediment control Best Management Practices (BMPs) specifically identified in a project Storm Water Pollution Prevention Plan (SWPPP) in order to keep sediment from moving off site. Impacts related to soil erosion would be less than significant with compliance with these standard requirements.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Reference: Section 3.10.2.1 and Section 3.10.3

As discussed in Section 3.10.2.1, the on-site soils consist generally of coarse-grained materials that are not highly expansive, but some fine-grained soils susceptible to high degrees of expansion do exist. Required compliance with the Caltrans standard design requirements would result in these impacts being less than significant.

4.2.2.6 HAZARDS AND HAZARDOUS WASTE (CEQA CHECKLIST QUESTIONS VIII.A THROUGH VIII.C)

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Reference: Section 3.12.3 and Section 3.24.3.12

As described in Section 3.12.3, Hazards and Hazardous Waste, operation and maintenance of the transportation facilities proposed as part of either of the build alternatives would not introduce new sources of hazardous materials or waste. Routine maintenance activities would

be required to follow applicable regulations with respect to the handling and disposal of potentially hazardous materials.

As further described in Section 3.24.3.12, based on the findings of the records search and the site survey, the following hazardous materials may be encountered during excavation and construction activities for the build alternatives.

- Elevated concentrations of aerially deposited lead (ADL) may be present along existing roadways that would be modified by the build alternatives. During grading activities, there is the possibility for hazardous concentrations of ADL to be released into the environment and affect construction workers.
- Structures that would be removed or modified as part of the build alternatives may contain asbestos-containing materials, polychlorinated biphenyls (PCBs), and/or lead-based paint, which could be released into the environment if not properly handled and removed for disposal.
- Any transformers that would be removed or relocated during construction of the build alternatives would be considered PCB-containing, unless labeled or tested otherwise. Leaking transformers that impact adjacent soils would be a concern during project construction because they could affect construction workers and the environment.
- Preliminary findings regarding utilities that may be potentially impacted by the I-710 Corridor Project including their relocation strategies can be found in the various Utility Impacts Reports. These utilities include petroleum pipelines that would require relocation and/or would be exposed during construction. Based on the presence and contents of these pipelines, it is likely that during relocation and/or construction, impacts to the subsurface may be encountered. Impacts to the subsurface encountered from these pipelines would be the responsibility of the pipeline owner.
- Yellow traffic striping and pavement-marking materials (paint, thermoplastic material, permanent tape, and temporary tape) that would be removed as part of the project may contain elevated concentrations of metals such as lead.
- Soils along the railroad tracks located near Washington Blvd., within the project disturbance limits, are assumed to be impacted by petroleum hydrocarbons, lead, and arsenic. During grading or excavation within the railroad right of way, hazardous concentrations of the contaminants listed above could be released into the environment and affect construction workers.
- Previously unknown contaminants could be encountered at the properties to be acquired as part of the build alternatives.

As described in Section 3.12.3, many listed sites were identified as having the potential to pose an environmental concern within the Study Area. Considering the history and nature of activities

conducted at some of the sites identified within the Study Area, contaminated groundwater may be encountered during construction. Dewatering of contaminated groundwater during construction of the build alternatives could impair adjacent surface waters. As a result, site investigations would be performed at all hazardous materials sites within the right of way of the build alternatives to determine whether hazardous materials are present on site. Hazardous material spills associated with any acquired property would be removed and remediated prior to construction of the build alternatives. Implementation of Avoidance and Minimization Measures HW-1 through HW-11 listed in Section 3.12.4 and Avoidance and Minimization Measures CON-HW-1 through CON-HW-2, would minimize or avoid impacts related to hazardous materials and hazardous wastes during construction of the build alternatives. Therefore, hazardous wastes and materials impacts associated with the project would be less than significant.

By improving the safety of I-710 through the modernized design features discussed in Chapter 2.0, operation of the build alternatives would not result in a significant permanent adverse impact related to transport or emissions of hazardous waste and materials.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Reference: Section 3.12.3.1

As discussed in Section 3.12, vehicles utilizing the I-710 Corridor would continue to transport hazardous substances that could spill and impact the roadway and adjacent properties or resources. However, the purpose of the I-710 Corridor Project is to improve traffic safety, which would help to minimize impacts related to hazardous waste spills. In addition, transport of hazardous materials is subject to strict regulation. Caltrans, the California Highway Patrol, and local police and fire departments are trained in emergency response procedures for safely responding to accidental spills of hazardous substances on public roads, which further reduces impacts. For these reasons, operation of either of the build alternatives would not result in a significant permanent impact related to transport or upset of hazardous waste and materials.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Reference: Section 3.12.3.1, page 3.12-127

As discussed in the response to Checklist Question VIII.B above, the project would continue to transport hazardous substances that could spill and impact the roadway and adjacent properties or resources. However, the purpose of the I-710 Corridor Project is to improve traffic safety, which would help to minimize impacts related to hazardous waste spills. In addition, transport of

hazardous materials is subject to strict regulation. For these reasons, operation of either of the build alternatives would not result in a significant permanent impact within 0.25 mile of existing and proposed schools.

4.2.2.7 HYDROLOGY AND WATER QUALITY (CEQA CHECKLIST QUESTIONS IX.A THROUGH IX.F AND IX.H)

The following three questions are addressed together below.

a) Will the project violate any water quality standards or waste discharge requirements?

e) Will the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

f) Will the project otherwise substantially degrade water quality?

Reference: Section 3.9.3 and Section 3.24.3.9

Soil disturbance and accidental spills during construction of either of the build alternatives could potentially impact water quality. Construction of either of the build alternatives would comply with the provisions of the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ, NPDES No. CAS000002), which includes implementation of Erosion and Sediment Control BMPs.

Both of the build alternatives would add new impervious surfaces, thereby increasing the amount of storm water runoff within the project limits and introducing additional water pollutant loads into the runoff in the area. The typical roadway pollutants are washed off impervious surface areas by storm water flows and then discharged to the local receiving water bodies. Permanent water quality impacts would be addressed in the project design to the extent required under the Caltrans Storm Water Management Plan. Treatment BMPs, such as detention basins and bioswales, would be included in the project design to address long-term water quality impacts. As discussed in Section 3.24.3.9, for temporary construction impacts related to water quality and the additional runoff associated with the added impervious areas, Minimization Measures CON-WQ-1 and CON-WQ-2 are included to address water quality issues.

The Study Area is located within the Coastal Plain of the Los Angeles Groundwater Basin and is specifically underlain by the West Coast and Central Subbasins. Groundwater has been encountered in many test borings along the project alignment during previous investigations for bridge construction by Caltrans and Los Angeles County. Groundwater was encountered at depths ranging from 2.2 feet below ground surface (bgs) to 113 feet bgs.

Water quality impacts during construction of either of the build alternatives would occur with the removal and disposal of groundwater that has passively seeped into the channels. Dewatered groundwater may contain high levels of total dissolved solids, salinity, or other contaminants, which could be introduced to surface waters during construction. The construction of support structures would use either the cast-in-drilled-hole (CIDH) or cast-in-steel-shell (CISS) methods. In the CIDH method, a hole is drilled, filled with slurry to prevent cave-ins, and then pumped with concrete (which displaces the slurry and is reused). The hole is expected to passively fill with groundwater, which would be removed prior to filling with slurry and concrete. The removed groundwater would then be disposed of according to the selected method (treatment on site, treatment and disposal off site, or disposal into the local sewer system). Project construction is not expected to affect groundwater movement because the slurry would prevent such movement and there would not be active dewatering aside from emptying the hole prior to filling it with slurry. Because active dewatering is not anticipated during construction, groundwater movement is not expected to be significantly impacted.

With the application of these construction methods and Measures CON-WQ-1 and CON-WQ-2, the project would not violate any water quality standard and would not violate any waste discharge requirements. Impacts would be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Reference: Section 3.9.3 and Section 3.24.3.9

The project would not affect groundwater supplies since it would not use substantial amounts of water. As discussed in the response to the Checklist Question above, the project would not result in significant impacts to groundwater supplies.

The following three questions are addressed together below.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Reference: Section 3.8.3.1

As discussed in Section 3.8, Hydrology and Floodplain, the build alternatives would result in transverse encroachments of the Los Angeles River and Compton Creek 100-year floodplains. With both build alternatives, one transverse encroachment of the Rio Hondo 100-year floodplain would also occur. These improvements include widening of existing bridges, construction of new bridges, modification of existing levees, and utility relocations, which would encroach on the 100-year floodplain. As discussed in Section 3.8.3, construction of the improvements within the 100-year floodplain is not anticipated to substantially increase the base flood elevations of the Los Angeles River, Compton Creek, or the Rio Hondo Channel. In addition, as discussed in detail in Section 3.8.3, the proposed 100-year floodplain encroachment would not result in any adverse impacts on natural and beneficial floodplain values, would not result in a substantial change in flood risk or damage, and does not have substantial potential to cause interruption or termination of emergency services or emergency routes.

Alternative 7 would result in greater permanent impacts to the 100-year floodplain compared to Alternative 5C because more improvements within the 100-year floodplain are proposed due to the freight corridor feature. The encroachments would result from construction of new columns or piers and extension of existing piers. Although Alternative 7 would result in more 100-year floodplain encroachments than Alternative 5C, permanent impacts related to emergency response, risks to life and property, incompatible floodplain development, and natural and beneficial floodplain values would be the same as those under Alternative 5C. It is anticipated that a Conditional Letter of Map Revision (CLOMR) would be required. No revisions to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) maps are anticipated. A Final Flood Control Facilities Report/Final Location Hydraulic Study would be prepared during final project design as specified in Measure FP-1. The change in floodplain elevations would be evaluated based on final design plans of the bridges and other structures where they encroach on the 100-year floodplain. The modeling results would be included in the application for a CLOMR or an LOMR, if required, which would be processed through the Los Angeles County Flood Control District (LACFCD) and FEMA. Therefore, impacts under either of the build alternatives are considered less than significant.

4.2.2.8 Land Use and Planning (CEQA Checklist Questions X.b)

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Reference: Section 3.1.1.21 and Section 3.3.1.2

Based on the analysis in Section 3.1, Land Use, and Section 3.3, Community Impacts, the build alternatives would have a less than significant impact on land use for the following reasons.

With regard to overall General Plan and zoning consistency, the existing land uses in the Study Area are generally compatible with the build alternatives. I-710 has been considered in the General Plans of the County of Los Angeles and the cities in the Study Area since its construction as a freeway in the 1950s.

As discussed in Section 3.1.1.2, adoption of a build alternative would require several cities to amend their General Plan Land Use and Circulation Elements to reflect modifications to arterials, interchange modifications, and elimination of land uses that may need to be acquired for the I-710 Corridor Project. This RDEIR/SDEIS is intended to provide adequate environmental documentation in support of each agency's action to amend their General Plans. With the implementation of Measure LU-1 in Section 3.1.2.4, long-term adverse impacts as a result of the build alternatives would be reduced to a level below significance as a result of the Cities and the County amending their General Plans to reflect the adopted I-710 Corridor Project Alternative.

With regard to the Coastal Zone, consistency of the project with the California Coastal Act is assessed in Table 3.1-2 in Section 3.1.2.4. The analysis demonstrates that the project is consistent with the California Coastal Act.

The I-710 Corridor Project is generally consistent with the adopted goals and policies of the General Plans because it addresses the main components found in the General Plan policies, including community participation, improved air quality, and reduced traffic congestion. Therefore, the build alternatives would result in a less than significant impact regarding the creation of incompatible land uses or incompatibility with land use regulations.

4.2.2.9 NOISE (CEQA CHECKLIST QUESTIONS XII.D)

d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Reference: Section 3.24.3.14

The permanent increase in ambient noise levels in the project vicinity above levels existing without the project is addressed in response to CEQA Checklist Question XII.c in Section 4.2.3. Temporary construction noise issues are addressed in the following paragraphs.

As discussed in Section 3.24.3.14, during construction of the project, noise from construction activities may occasionally dominate the noise environment in the immediate project area.

Construction noise is regulated by Caltrans *Standard Specifications*, Section 14-8.02, "Noise Control." These requirements state that noise levels generated during construction shall be controlled and monitored and a maximum noise level of 86 A-weighted decibels (dBA) will not be exceeded between the hours of 9:00 p.m. and 6:00 a.m.

Figure 3.24-1 in the Construction Impacts section of this RDEIR/SDEIS, Section 3.24, summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. As indicated, equipment involved in construction is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet. Noise produced by construction equipment would reduce over distance at a rate of approximately six dBA per doubling of distance. Normally, construction noise levels should not exceed 86 dBA maximum instantaneous noise level (L_{max}) at a distance of 50 feet. No adverse noise impacts from construction are anticipated because construction will be conducted in accordance with the Caltrans *Standard Specifications* and would be short term, intermittent, and dominated by local traffic noise. With compliance with the Caltrans *Standard Specifications* and implementation of Minimization Measures CON-N-1 through CON-N-10, construction noise would be considered less than significant.

4.2.2.10 Population and Housing (CEQA Checklist Questions XIII.a)

a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)

Reference: Section 3.2.2, Section 3.3.1.3, and Section 3.24.3.2

The project does not propose the direct construction of new homes and businesses.

As described in Section 3.24.3.2, the build alternatives would not result in temporary or permanent impacts to the rate of population, housing, or employment growth. The additional capacity that could be provided under the build alternatives would have a positive impact on goods movement and would help achieve one component of the I-710 Corridor Project's purpose. Therefore, the I-710 Corridor Project would result in beneficial growth-related effects relative to employment and economic activities associated with goods movement. Given the existing constraints to growth as well as the projected growth trends described in Section 3.2, the I-710 Corridor Project is not expected to result in a substantial change in the location, distribution, or rate of population and housing growth within the Study Area and impacts are considered less than significant.

As described in Section 3.3, Community Impacts, the I-710 Corridor Project would result in the acquisition of existing residential uses and the relocation of occupants of those residential uses. However, with the exception of residents with special relocation needs (e.g., low-income and minority residents), the residential relocations required under the build alternatives are not

anticipated to require construction of replacement housing. Last Resort Housing may be required for relocation of residents with special needs, such as low-income, elderly, and handicapped residents. Additionally, special assistance may be needed to relocate smaller or marginal businesses and minority businesses that need to be located next to a specific customer base. Therefore, displacement and relocation of special needs residents and businesses is addressed under potentially significant impacts. Section 3.3 describes that adequate housing stock currently exists within the Study Area to meet the needs of the relocations, other than special needs residents and businesses.

4.2.2.11 UTILITIES AND SERVICE SYSTEMS (CEQA CHECKLIST QUESTIONS XVII.B, AND XVII.F)

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Reference: Section 3.24.1.1

As a transportation improvement, the project will not require any new water or wastewater treatment facilities or the expansion of existing facilities, as the project would not result in an increase in population and a corresponding demand for these services.

Both of the build alternatives would generate storm water runoff from the increase in impervious surfaces from the expanded transportation facility. The build alternatives include appropriate storm water drainage, collection, control, treatment, and release facilities within the project right of way. As a result, impacts related to storm water drainage would be less than significant.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Reference: Section 3.24.2

Construction of either of the build alternatives would generate construction waste material from demolished structures. The waste would include concrete, asphalt, vegetation, soil, rebar, and other similar materials. The construction contractors would be required to divert construction waste material (by reduction, recycling, reuse, and composting) from landfills within Los Angeles County. As a result of these reduction and recycling activities, the total amount of construction waste material anticipated to be disposed of in area landfills under the build alternatives would be limited and is not expected to exceed the permitted capacity of the regional landfills.

During operation of either of the build alternatives, waste material would be generated as part of landscape maintenance and picking up of litter along the road. Vegetative material generated during landscape maintenance would be disposed of at a composting facility. Trash and other waste material collected along the road would be disposed at area recycling facilities and in

landfills. The total amount of litter generated under the build alternatives would not be substantial, and because of the composing and recycling activities, it is not expected to exceed the permitted capacity of the regional landfills; therefore, impacts to landfills would be less than significant.

4.2.3 Significant Impacts of the Proposed Project That Can be Mitigated to Below a Level of Significance

The following project impacts have been determined to be significant under CEQA. The majority of these significant impacts can be mitigated to below a level of significance. Where they cannot be mitigated, they have been identified as such, and the specific impacts that remain significant are summarized in Section 4.2.4.

4.2.3.1 Aesthetics (CEQA Checklist Questions I.c)

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Reference: Section 3.6.3, page 3.6-80

Section 3.6.3 contains an extensive analysis of the project's impacts to visual character at 25 different key views that represent typical views throughout the I-710 Corridor. As shown in that analysis, aesthetic impacts from either of the build alternatives would be low or very low at many of these viewpoints within the I-710 Corridor. However, aesthetic impacts from some views in the Study Area would be higher due to the location of existing sensitive viewers (primarily residents) in close proximity to the I-710 mainline alignment. Alternative 7 would create aesthetic impacts of greater magnitude when compared to Alternative 5C in the Cities of Long Beach and South Gate because of the close proximity of the elevated freight corridor to the existing residential properties. With implementation of Measures VIS-1 through VIS-12 provided in Section 3.6.4, Visual/Aesthetics of this RDEIR/SDEIS, permanent visual impacts would be mitigated to less than significant for both of the build alternatives.

4.2.3.2 Biological Resources (CEQA Checklist Questions IV.a, IV.b, and IV.c)

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Reference: Section 3.18.1.1, Section 3.19.3.1, Section 3.20.3.1, and Section 3.24.4.18

Plant Species

The only sensitive plant species identified in the Biological Study Area (BSA) was the southern tarplant. Southern tarplant was observed in three locations within the BSA during 2009 botanical surveys conducted during the blooming period for this species (May through November). The largest population consisted of approximately 9,000 plants just north of the I-710/Rosecrans Ave. interchange on the east side of I-710. Approximately 90 plants were found in sunny areas near the I-710/Atlantic Blvd. interchange, and six plants were found southeast of the I-710/ Interstate 405 (I-405) interchange.

Temporary and permanent impacts to populations of southern tarplant could result from implementation of either of the build alternatives. As proposed, the elevated structures associated with Alternative 7 would span the populations, creating some degree of permanent shade where sunny conditions currently exist. Since the southern tarplant is a sun-loving species, shading is anticipated to result in a negative indirect impact to the portions of the populations lying below the proposed elevated structures.

As discussed in detail in Section 3.18.1.1, permanent impacts to this species cannot be avoided by the I-710 Corridor Project. Alternative 5C would result in the loss of the two smaller populations of southern tarplant, and Alternative 7 would result in the loss of all three populations, including the largest population near the I-710/Rosecrans Ave. interchange. Minimization efforts are warranted to minimize disturbance to larger portions of the populations than are necessary to improve the I-710 Corridor. In order to mitigate for impacts to populations, it may be beneficial to relocate the affected southern tarplant populations from within the BSA to nearby protected open space areas in order to maintain these few remaining populations within the vicinity of the I-710 Corridor. Otherwise, to compensate for the loss of these populations, collection and scattering of seed in sunny areas with suitable soil and hydrologic conditions in the region, such as in areas adjacent to existing and remaining populations during the appropriate time of year, may improve the potential for populations of this species to remain stable in future years. Consultation with the California Department of Fish and Wildlife (CDFW) would be completed prior to the restoration effort.

The avoidance, minimization, and mitigation measures outlined in Section 3.16, Natural Communities (NC-1), Section 3.18 Plant Species (PS-1), and Section 3.24, Construction Impacts (CON-NC-1, CON-NC-2, CON-NC-4, CON-NC-6, CON-NC-8, CON-NC-11, CON-NC-12, CON-NC-13, CON-PS-1, and CON-INV-3), would be implemented to avoid and minimize impacts to southern tarplant. Measure NC-1 requires the preparation of a Habitat Mitigation Monitoring Plan (HMMP) that shall comply with all terms and conditions set forth in the permits and opinions issued by the resource agencies, as well as annual monitoring and reporting of the success of the HMMP for a duration that would be established by resource agency permit conditions. Measure PS-1 states that the affected southern tarplant populations will be relocated from within the BSA to nearby protected open space areas in order to maintain these few remaining populations within the vicinity of the I-710 Corridor. Otherwise, to compensate for the

loss of these populations, collection and scattering of seed in sunny areas with suitable soil and hydrologic conditions in the region, such as in areas adjacent to existing and remaining populations, during the appropriate time of year may improve the potential for populations of this species to remain stable in future years. Consultation with the CDFW would be completed prior to the restoration effort. The various measures related to potential construction impacts would also serve to reduce impacts to a less than significant level by requiring:

- The placement of highly visible barriers to prevent ground disturbance within environmentally sensitive areas (CON-NC-1);
- Monitoring construction within the vicinity of estuarine and riparian/riverine habitats for the duration of the project (CON-NC-2);
- Development and implementation of a construction personnel education program to educate construction personnel on the environmental protection (CON-NC-4);
- Prohibiting the use of toxic liquids (e.g., rodenticides, herbicides, and insecticides) in and adjacent to sensitive habitats and requiring monitoring by a qualified biologist when these toxic liquids are used (CON-NC-6);
- Preparing a construction SWPPP and soil erosion and sedimentation plan to minimize erosion and protect water quality (CON-NC-8);
- Requiring that maintenance, staging, and fueling activities be conducted in non-sensitive upland habitat areas located in strategic locations to prevent runoff and spills from entering sensitive habitats and waters of the United States (CON-NC-11);
- Enforcing the proper use and disposal of oil, fuel, lead paint, antifreeze, and other toxic substances and ensuring that the storage of construction materials, equipment, debris, and waste would not occur in areas subject to tidal erosion and dispersion (CON-NC-12);
- Implementation of measures to contain contaminated soils and material and removal of such soils and material to an approved disposal site (CON-NC-13);
- Requiring a qualified biologist be present to monitor construction activities in the vicinity of smooth tarplant populations for the duration of the project to ensure compliance with all avoidance and minimization measures required to protect the species (CON-PS-1); and
- Development of a weed abatement program to minimize the importation of nonnative plant material during and after construction and implementation of eradication strategies in the event an increase in invasive plant species occurs (CON-INV-3).

ANIMAL SPECIES

Impacts to animal species as discussed in Section 3.19 are summarized below:

- There would be no permanent impacts to burrowing owl under any of the build alternatives because the location where burrowing owls were observed is not within the permanent project footprint of the build alternatives. Temporary impacts to burrows that could be used by the owls may result from all build alternatives. Implementation of the avoidance, minimization, and/or mitigation measures described in Section 3.24.4.16, Natural Communities (CON-NC-1), and Section 3.24.4.19, Animal Species (CON-AS-1) would ensure that temporary impacts to burrowing owl are absent or minimal. Measure CON-NC-1 is described above in the discussion on tarplants. Measure CON-AS-1 requires monitoring by a biologist within the vicinity of burrowing owl locations (if present).
- The I-710 Corridor Project is not expected to substantially affect long-term use of the structures by bats. There is no critical habitat for any bat species within the BSA; therefore, no critical habitat would be impacted by the proposed project. Permanent impacts would be similar for either build alternative (5C or 7), since the vast majority of structures housing or potentially housing bats, including the multiple bridge and culvert structures where roosting bats (including special-status bat species) and/or sign of roosting bats were observed during the focused surveys performed in 2009 and 2015, will be subject to impacts in all alternatives. Indirect permanent issues associated with human encroachment, such as the introduction of nonnative species and trash, from either build alternative (5C or 7) would permanently contribute to the degradation of foraging habitat (e.g., riparian/riverine vegetation) and would, therefore, result in permanent impacts to special-status bat species. Previously identified Measure NC-1 would reduce potential impacts to foraging habitat to a less than significant level.

  Temporary impacts to special-status bat species would include temporary indirect disturbance (such as noise, vibration, dust, night lighting, and human encroachment) from construction. In addition, construction could temporarily impede access to roost sites (existing and future) in the crevices of bridges, culverts, and overhead structures. Only a portion of roosting habitat (existing and future) may be permanently altered by the I-710 Corridor Project, and provision of alternative roosting habitat would serve to minimize or mitigate these impacts by avoiding net loss of roosting habitat. The avoidance and minimization measures described in Section 3.24.4.19 (CON-AS-6, CON-AS-7, CON-AS-8, CON-AS-9, CON-AS-10, and CON-AS-12) would ensure that temporary effects to bat species are absent or minimal from implementation of either of the proposed alternatives. These measures require preconstruction surveys at least one year in advance (in June or July) to determine presence or absence of bat species and potential roosting locations within the project limits; installation of bat exclusion devices, between September 1 and November 30, where suitable roosting locations are determined to be present to exclude bats from active work areas and/or humane

evictions of bats if present; provision of alternate bat-roosting habitat structures prior to exclusion/eviction activities at a 1:1 ratio to ensure no net loss of roosting habitat; prohibiting tree removal or trimming during the bat maternity season (April 1–August 31); and, ensuring that removal of swallows nests, where some bats may roost, is conducted in a manner so they do not fall to the ground and are made available for inspection to determine they are not occupied.

- Permanent and temporary impacts to nonlisted special-status species could occur during construction from temporary indirect disturbance (noise, vibration, dust, night lighting, and human encroachment) and loss of potential habitat. Impacts to these habitats are discussed in Section 3.16, Natural Communities. Measures described in Section 3.16, Natural Communities, and Section 3.24, Construction Impacts, will be implemented to avoid and minimize impacts to special-status animal species. Following implementation of these measures, impacts to non-listed special-status animal species from the proposed project will be reduced to less than significant levels.
- New bridge structures, or significant changes to existing bridge structures, could result in occasional bird strikes and is considered to be a potentially significant impact. The potential for bird-vehicle collisions cannot be quantified but is recognized as a potentially significant impact. However, direct mortality is not expected with implementation of the proposed Avoidance and Minimization Measure AS-1 (see Section 3.19.4). With adherence to Measure AS-1, which requires that new project structures be designed to ensure the safety of birds flying (e.g., provision of suitable fencing or other structures on the sides of bridges to direct birds up and out of the way of traffic), impacts would be reduced to a less than significant level.
- Both build alternatives would include the construction of piers/support structures on the following bridges within the lower Los Angeles River that could affect California sea lions: the 7th St. Bridge, Anaheim St., Pacific Coast Hwy., Hill St., and Willow St. The percussive forces generated during any pile-driving activities may result in injury to California sea lions within and adjacent to the BSA, where estuarine habitat exists, as California sea lions occasionally forage within this habitat at these locations. The proposed project may be able to drive the piles at a sound level less than the threshold that has been identified as harmful to marine mammals such as California sea lions. A sound level below 190 decibels (dB) re 1 micropascal (microPa) root-mean-square (rms) would not result in Level A harassment of pinnipeds and the onset of temporary threshold shift (TTS) in pinniped hearing (National Marine Fisheries Service [NMFS] 2003). The driving of the steel piles could exceed the Level A harassment levels if no attenuation methods are implemented. Use of appropriate attenuation methods during pile driving, such as bubble curtains or blocks, is expected to reduce the sound pressure levels below the harassment level. The avoidance and minimization measures described in Section 3.9, Water Quality, for water quality protection; Section 3.16, Natural

Communities, requiring the preparation of an HMMP that shall comply with all terms and conditions set forth in the permits and opinions issued by the resource agencies; and Section 3.24, Construction Impacts (specifically CON-TES-3 and CON-TES-4 in Section 3.24.4.20, which require minimal impact construction equipment and methods [e.g., a vibrating driver, crane, vibratory hammer, or hydraulic press] and sound level monitoring), will ensure that impacts to California sea lion are less than significant. It should be noted that Alternative 5C may have a greater impact on the habitat (estuarine) within the BSA that could potentially be utilized by this species than Alternative 7. There is no critical habitat for this species within the BSA; therefore, no critical habitat would be impacted by the proposed project.

- Both build alternatives will include construction of piers/support structures in tidal waters across the Los Angeles River at the 7th St., Anaheim St., Pacific Coast Hwy., Hill St., and Willow St. crossings. The percussive forces generated during pile-driving activities may result in injury and death to fish within the impact area. Both the peak sound pressure level and the sound exposure level may result in damage to the auditory tissue of fishes or temporary hearing loss. Temporary hearing loss occurs at lower levels than auditory tissue damage and is dependent on the size of the fish, with smaller fish being affected at lower levels than larger fish. In addition to the direct impacts of hearing loss and auditory tissue damage, sound levels from pile driving may also result in indirect impacts, such as the inability to avoid predators or detect prey and the inability to communicate or detect the environment. In addition to auditory tissue damage and temporary hearing loss, increased sound levels associated with pile driving may also affect fish by causing physiological and anatomical damage. Nonauditory tissue damage may include capillary rupture in the skin, neurotrauma, eye hemorrhage, swim bladder rupture, and death of individual fish. Such impacts may be the result of single or repeated exposure to elevated sound levels. The avoidance and minimization measures described in Section 3.24, Construction Impacts (specifically CON-TES-1 through CON-TES-4 in Section 3.24.4.20, which require the preparation of a Fisheries Management Plan if required by the NMFS, the presence of a biological monitor during pile-driving activities to monitor fish, minimal impact construction equipment and methods [e.g., a vibrating driver, crane, vibratory hammer, or hydraulic press] and sound level monitoring), will ensure that impacts to fishes are less than significant.

  Additionally, numerous pilings would be required upstream of tidal waters in the freshwater areas of the Los Angeles River to accommodate improvements to other crossing structures. Fish moving through the river may be directly affected by bridge construction at the mouth of the Los Angeles River. While dewatering of the entire Los Angeles River would not occur, some minimal isolation of work (e.g., an air bubble curtain system or air-filled isolation casings around bridge support structures) may be required during bridge construction; this impact would be temporary during the period of pile driving and bridge deck construction. Once the pile driving and bridge construction

are complete, the bridges would not impede the movement of fish through the channel. Construction of the proposed project on dry land is not expected to impact fish, provided that sediments and construction materials are retained on land and measures are implemented to prevent the movement of soil, concrete, and other construction materials into the river channel. It should be noted that Alternative 5C may have a greater impact on the habitat (estuarine) within the BSA that could potentially be utilized by this species than Alternative 7. There is no critical habitat for any fish species within the BSA; therefore, no critical habitat would be impacted by the proposed project.

- No permanent effects would occur to essential fish habitat (EFH) except for a minimal permanent loss of channel bottom where the piles would be placed. During surveys conducted in October 2009, intertidal areas of riprap consisted of relatively low species diversity and included barnacles (*Balanus amphitrite* and *B. glandula*), mussels (*Mytilus galloprovincialis* and *Geukensia demissa*), a green algae (*Ulva* sp.), and filamentous red algae turf. Barnacles exist at the bridge abutments. No rooted eelgrass or kelp forests were observed in the BSA. Construction would have a temporary effect on fish that inhabit the river during pile-driving operations and potential isolated dewatering activities. In addition to the injury and mortality that may result from pile driving and dewatering, pile driving and dewatering would likely make the channel bottom in the vicinity of the bridges unsuitable for fish during these operations. This would be a temporary loss of habitat, and no permanent impacts would occur to the habitat except for a minimal loss of channel bottom where the piles would be placed. In addition, no permanent impacts would occur from dewatering activities, as dewatering materials would be removed upon completion of bridge construction.

THREATENED AND ENDANGERED SPECIES

Impacts to threatened and endangered species as discussed in Section 3.20 are summarized below:

- Based on available data, southern California steelhead appear to be extirpated from the BSA. Steelhead are large highly mobile fish and would likely move out of the area if disturbed by construction activities (e.g., pile-driving). Nonetheless, in the unlikely event that steelhead are present in the BSA, the mitigation measures outlined for fish in general (see the Measures noted above) should avoid and minimize potential impacts to this species. Alternative 5C may have a greater impact on the habitat (estuarine) within the BSA that could potentially be utilized by this species at this time than Alternative 7. The riverine habitat upstream of the estuarine habitat within the BSA is primarily concrete-lined and does not provide suitable habitat for steelhead. Impacts to estuarine habitat are discussed in Section 3.16, Natural Communities. The avoidance and minimization measures described in Section 3.24, Construction Impacts (specifically

CON-TES-1 through CON-TES-4 in Section 3.24.4.20) will ensure that impacts to southern California steelhead are less than significant.

- Although no green sea turtles were observed in the BSA, any green sea turtles that might visit the area around the mouth of the Los Angeles River could be affected indirectly by changes in water quality originating upstream. Such changes could involve increased pollution levels, increased turbidity, or impacts on the sea grasses and algae on which green sea turtles feed. However, by implementing the avoidance and minimization measures outlined in Section 3.16, Natural Communities, no noticeable changes in water conditions would occur and impacts to green sea turtles would be less than significant. There is no critical habitat for this species within the BSA; therefore, no critical habitat would be impacted by the proposed project.
- The coastal population of western snowy plover could be affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the invertebrates on which they feed. New bridge designs could result in occasional bird strikes. However, by following the avoidance and minimization measures outlined in Sections 3.16, Natural Communities, and 3.19, Animal Species, no noticeable changes in water conditions or bird strike frequency would occur and impacts would be less than significant. There is no critical habitat for this species within the BSA; therefore, no critical habitat will be impacted by the proposed project.

  Due to its larger footprint, Alternative 7 may have a greater impact on the habitats within the BSA that are utilized by this species than Alternative 5C.
- California Least Tern could be affected indirectly by project-generated changes in water quality. Such changes could involve increased pollution levels, increased turbidity, or impacts on the fish on which they feed due to shading. New bridge designs could result in occasional bird strikes. However, by following the avoidance and minimization measures outlined in Section 3.16 (Natural Communities), no noticeable changes in water conditions or bird strike frequency would occur. Furthermore, several avoidance and minimization measures identified in Sections 3.24.4.9 and 3.24.4.16 are identified to protect habitat associated with the California Least Tern and to maintain water quality. These measures require a qualified biologist to be present during construction activities to monitor for special-status species. This species is absent from California for more than half of the year. Other than potential long-term impacts on fish populations (California Least Tern's food source), there would be no potential impacts when the species is absent. With adherence to the specified measures above, impacts would be less than significant. There is no critical habitat for this species within the BSA; therefore, no critical habitat would be impacted by the proposed project.

The HMMP (Measure NC-1) described in Section 3.16.4; Measure AS-1 described in Section 3.19.4; and Measures CON-AS-1 through CON-AS-10 described in Section 3.24.4 would reduce the impacts described above to a level below significance by imposing enforceable measures that would be incorporated into the project design as well as the construction plans and specifications. These measures are consistent with the guidance provided in the *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish*.[9]

b) Will the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Reference: Section 3.16.3.2, page 3.16-6

For purposes of determining significance under CEQA, the project would have a substantial adverse effect if it caused a permanent direct impact of such riparian habitat or other sensitive habitats.

As described in Section 3.16, two general natural community groups of concern were identified within the Study Area. These include estuarine habitat associated with the tidal waters of the lower three miles of the Los Angeles River and riparian/riverine habitats. The sensitive habitats are located primarily in the southern portion of the Study Area, where the Los Angeles River and associated wetlands have retained a natural state.

As described in Section 3.16, under the worst-case impact scenario, Alternatives 5C and 7 are expected to result in direct permanent impacts to 0.18 acre or 0.11 acre, respectively, of estuarine habitat (earthen-bottom intertidal portions of the Los Angeles River) due to the construction of abutments and driving of piles, and a reduction in soft-bottom habitat as a consequence of the placement of piers and abutments. In addition to direct permanent impacts, Alternatives 5C and 7 would result in indirect permanent effects to 5.09 acres or 5.02 acres, respectively, of estuarine habitat. Indirect permanent effects would result from permanent shading associated with bridges or elevated roadways. In addition, construction may indirectly affect estuarine habitats permanently through enhancing the germination and proliferation of nonnative invasive plant species. Potential hydraulic effects are associated with bridge modifications and the relocation of a segment of electrical transmission lines along the edge of the river, upstream. However, the proposed modifications would mimic the existing pier

[9] Caltrans. 2015. Division of Environmental Analysis and Environmental Engineering Hazardous Waste, Air, Noise, Paleontology Office. *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish.* November, Website: http://www.dot.ca.gov/hq/env/bio/files/bio_tech_guidance _hydroacoustic _ effects _110215.pdf (accessed March 10, 2017).

configurations upstream and downstream, and there would not be substantial effects to the water surface elevation, velocity of flood flows, sedimentation, or scour in the vicinity of the new piers. Because there are no substantial effects at the location of the modifications, there would be no substantial effects to downstream locations, including the estuarine habitat.

The build alternatives would result in direct and indirect permanent impacts to riparian/riverine natural communities through disturbance and/or removal of existing vegetation. Furthermore, construction may indirectly affect riparian/riverine habitats permanently through shading of the areas below bridges or elevated roads and enhancing the germination and proliferation of nonnative invasive plant species. Permanent impacts to riparian/riverine habitats would be greater under Alternative 7 than under Alternative 5C. Alternative 7 is expected to result in direct permanent effects to 10.69 acres and indirect permanent effects to 23.53 acres of riparian/ riverine habitats. Alternative 5C would result in permanent direct impacts to 1.55 acres and permanent indirect impacts to 21.02 acres of riparian/riverine habitats.

The majority of the existing estuarine communities within Los Angeles County fall under the regulatory jurisdiction of the United States Army Corps of Engineers (USACE) pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. Most of the impacts to USACE jurisdictional waters as a result of the I-710 Corridor Project would occur to estuarine wetlands above the high tide line. Therefore, the impacts are anticipated to be primarily to waters under the jurisdiction of Section 404, and mitigation would occur under the Section 404 program. The Minimization, Avoidance, and Mitigation Measure NC-1 described in Section 3.16.4 would reduce project impacts below a level of significance by providing for restoration and replacement of riparian habitats and sensitive natural communities.

c) Will the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Reference: Section 3.16.3.2 and Section 3.17.3.1

For purposes of determining significance under CEQA, the project would have a substantial adverse effect if it caused a permanent direct impact of such wetlands or other sensitive habitats.

As discussed in Section 3.17, Wetlands and Other Waters, the build alternatives would result in direct and indirect impacts to USACE, Regional Water Quality Control Board (RWQCB), and CDFW jurisdictional waters. The worst-case impact scenario associated with Alternative 5C is expected to potentially result in direct permanent impacts to approximately 1.74 acres and indirect permanent impacts to approximately 26.13 acres of USACE jurisdictional areas. In addition, Alternative 5C is expected to potentially result in direct permanent impacts to

approximately 2.13 acres and indirect permanent impacts to approximately 36.51 acres of CDFW jurisdictional areas. Furthermore, Alternative 5C is expected to potentially result in direct permanent impacts to approximately 1.74 acres and indirect permanent impacts to approximately 26.29 acres of RWQCB jurisdictional areas.

The worst-case impact scenario associated with Alternative 7 is expected to potentially result in direct permanent impacts to approximately 1.54 acres and indirect permanent impacts to approximately 28.56 acres of USACE jurisdictional areas. In addition, Alternative 7 is expected to potentially result in direct permanent impacts to approximately 1.96 acres and indirect permanent impacts to approximately 42.20 acres of CDFW jurisdiction. Furthermore, Alternative 7 is expected to potentially result in direct permanent impacts to approximately 10.80 acres and indirect permanent impacts to approximately 28.72 acres of RWQCB jurisdictional areas.

Existing or proposed wetland restoration areas identified in the BSA may be affected by the I-710 Corridor Project. The Los Angeles County Department of Public Works identified the boundaries of County restoration areas (Rivera [December 30, 2009] and Su [January 11, 2009], personal communication). Two areas were found to overlap the limits of the BSA. The Dominguez Gap Wetlands would be impacted by the freight corridor proposed in Alternative 7. Furthermore, the BSA boundaries of all alternatives overlap with the DeForest Treatment Wetlands, although within the BSA, none of the build alternatives are expected to impact the DeForest Treatment Wetlands. However, construction within the Dominguez Gap Wetlands area would have permanent impacts.

Compensatory mitigation for jurisdictional waters, as specified in Section 3.16.4, Natural Communities, Avoidance, Minimization, and/or Mitigation Measures, including estuarine communities and riparian/riverine communities, would be required for USACE Section 404 and CDFW Section 1600 permitting. Typically, riparian/riverine and estuarine habitat subject to USACE and CDFW jurisdiction is mitigated at a minimum mitigation-to-impact ratio in excess of 1:1 for permanent effects and 1:1 for temporary effects, which is consistent with the USACE and CDFW policies for no net loss of riparian/riverine and estuarine habitat (e.g., wetlands). Compensatory mitigation may be in the form of habitat restoration and/or enhancement in on- or off-site areas where similar riparian/riverine and estuarine habitat exists, or a monetary contribution toward an in-lieu fee program, as acceptable by the regulatory agencies. Impacts to USACE and CDFW jurisdictional waters would be reduced to a less than significant level with the compensatory mitigation specified in Section 3.16.4.

4.2.3.3 CULTURAL RESOURCES (CEQA CHECKLIST QUESTION V.C)

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Reference: Section 3.11.3.1

Based on the discussion in Section 3.11.3, the Study Area crosses two deposits of Early to Late Pleistocene sediments, which are soils that have a high potential to include fossiliferous content. Therefore, it is possible that unknown paleontological resources may be disturbed during construction of the build alternatives. Measure PAL-1, which requires the preparation of a Paleontological Mitigation Plan, including monitoring and resource recovery, is included in the project to address this potential. With incorporation of this measure, potential impacts would be reduced to a less than significant level.

4.2.3.4 GEOLOGY AND SOILS (CEQA CHECKLIST QUESTIONS VI.A.III AND VI.C)

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

iii) Seismic-related ground failure, including liquefaction?

Reference: Section 3.10.2.4 and Section 3.24.3.10

Based on the discussion in Sections 3.10.2 and 3.24.3.10, both of the build alternatives would be subject to potential temporary and permanent impacts from landslides, liquefaction, and unstable soil types. The primary geologic and geotechnical constraints affecting the design and construction of the build alternatives include:

- Liquefaction and seismically induced settlement in areas of shallow groundwater and loose alluvial soils. Most of the Study Area is within an area identified as having the potential for liquefaction.
- Earthquake-induced slope instability associated with liquefaction in areas of moderate to high liquefaction potential and near slopes such as the Los Angeles River.

These potential impacts would be minimized through implementation of safe construction practices and compliance with Caltrans and Cal-OSHA requirements. Additionally, preparation of a design-level geotechnical report and quality assurance/quality control plan, as specified in Measures GEO-1, and CON-GEO-1 would reduce geologic impacts. Therefore, geologic impacts related to earthquakes, seismic shaking, liquefaction, landslides, and unstable soils would be less than significant with implementation of Measures GEO-1 and CON-GEO-1.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Reference: Section 3.10.2.6 and Section 3.24.3.10

Most of the project area could be subject to subsidence and liquefaction. Measures GEO-1 and CON-GEO-1, cited in Section 3.10.4 and 3.24.4.10, respectively, would require the project to be developed to Caltrans' most current seismic design criteria, ensure that geotechnical/geologic recommendations are fulfilled, and reduce impacts to a less than significant level.

4.2.3.5 HAZARDS AND HAZARDOUS WASTE (CEQA CHECKLIST QUESTION VIII.D)

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Reference: Section 3.12.3.1 and Section 3.24.3.12

As described in Section 3.12 (see Tables 3.12-1, 3.12-2, 3.12-3, and 3.12-4), many listed sites were identified as having the potential to pose an environmental concern within the Study Area, including hazardous materials sites compiled pursuant to Government Code Section 65962.5. Considering the history and nature of activities conducted at some of the sites identified within the Study Area, contaminated groundwater may be encountered during construction. Dewatering of contaminated groundwater during construction of either of the build alternatives could impair adjacent surface waters. As a result, site investigations would be performed at all hazardous materials sites within the right of way of the proposed project to determine whether hazardous materials are present on site. Hazardous material spills associated with any acquired property would be removed and remediated prior to construction of the proposed project. With implementation of Measures HW-1 through HW-11 listed in Section 3.12.4 and Measures CON-HW-1 through CON-HW-3 listed in Section 3.24.4.12, impacts related to hazardous materials and hazardous wastes during construction of the proposed project and for the post- project condition would be less than significant.

4.2.3.6 NOISE (CEQA CHECKLIST QUESTIONS XII.B)

The following two questions are addressed together.

a) Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

c) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Reference: Section 3.14

The Caltrans *Traffic Noise Analysis Protocol* (Protocol) specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction of Federal or Federal-aid highway projects. The Noise Abatement Criteria (NAC) specified in the Protocol are the same as those specified in 23 CFR 772. The FHWA NAC were established by considering: (1) hearing impairment, (2) annoyance, sleep, and task interference or disturbance, and (3) interference with speech communication. For example, the NAC for Activity Category B (Residential) establishes an exterior noise level of 67 L_{eq} (h) because this is the noise level at which hearing impairment, annoyance, sleep, and task interference or disturbance and interference with speech generally occurs. The Protocol defines a noise increase as "substantial" when the predicted noise levels under build conditions exceed existing noise levels by 12 dBA. The Protocol also states that a sound level is considered to approach an NAC level when the sound level is within one dB of the NAC identified in 23 CFR 772 (e.g., 66 dBA is considered to approach the NAC of 67 dBA, but 65 dBA is not). For this CEQA analysis, the federal NAC has been used as the "applicable standards of other agencies" referred to in Checklist question XII.A, and a 12 dBA increase in noise over existing levels is considered the "substantial permanent increase" per Checklist question XII.C.

Noise analysis for projects under CEQA centers on whether the proposed project or the proposed noise abatement would result in significant adverse environmental effects. Whether an increase in future noise level would result in a significant effect for purposes of CEQA is determined by comparing the existing noise level (or baseline environmental setting) to the predicted noise level with the project. The CEQA noise analysis is completely independent of the 23 CFR 772 noise analysis, which is centered on the federal noise abatement criteria. Under CEQA, the assessment entails looking at the setting of the noise impact and then how large or perceptible any noise increase would be in the given area. Key considerations include the uniqueness of the setting, the sensitive nature of the noise receptors, the magnitude of the noise increase, the number of residences affected, and the absolute noise level.

Land uses in the vicinity of the proposed project vary and include residential, commercial, industrial, parks, recreation areas, and undeveloped land. Schools and medical facilities are located throughout the Study Area. The existing ambient noise levels in the Study Area are between 46 and 79 dBA. As shown in Table 3.14-2 in Section 3.14, 17 receptors within the I-710 Study Area would experience a substantial noise increase of 12 dBA or more over existing noise levels for both build alternatives. Of the 17 affected receptors that would experience a substantial noise increase of 12 dBA, the greatest noise increase experienced reaches 16.6 dBA over existing conditions for Alternative 5C, and 16.9 dBA over existing conditions for

Alternative 7. Soundwalls that are considered both reasonable and feasible would be constructed to minimize these impacts. Additionally, as part of the Early Action Soundwall Project, the Los Angeles County Metropolitan Transportation Authority (Metro) identified five miles of new soundwalls along I-710, plus an additional seven miles of existing soundwalls that can be aesthetically treated to match the new soundwalls.

For the 17 receptors that would be potentially exposed to increases in noise levels above 12 dBA, the provision of new soundwalls under Alternative 5C and Alternative 7, as required by Measure N-1, would mitigate project-related noise impacts along the I-710 freeway to a level below significance under CEQA. All proposed feasible and reasonable soundwalls included in the project would effectively attenuate noise levels at receiving receptors so that none of the receptors would experience an increase in noise levels above 12 dBA. As such, there would be no significant and unavoidable adverse noise impacts to any of the locations for either Alternative 5C or Alternative 7.

b) Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Reference: Section 3.14.4.1

For purposes of determining significance under CEQA, the Caltrans *Transportation- and Construction-Induced Vibration Guidance Manual* (September 2013) shows that the vibration damage threshold for continuous/frequent intermittent sources is 0.25 peak particle velocity (PPV) inches per second (in/sec) for historic and old buildings, 0.3 PPV in/sec for old residential structures, and 0.5 PPV in/sec for new residential structures. The same manual shows the vibration annoyance potential criteria to be barely perceptible at 0.01 PPV in/sec, distinctly perceptible at 0.04 PPV in/sec, strongly perceptible at 0.1 PPV in/sec, and severe at 0.4 PPV in/sec. Both of these criteria for damage and annoyance were used to evaluate short-term, construction-related groundborne vibration.

Because the rubber tires and suspension systems of trucks and other on-road vehicles provide vibration isolation, it is unusual for on-road vehicles to cause groundborne noise or vibration problems. When on-road vehicles cause effects such as rattling of windows, the source is almost always airborne noise. Groundborne vibrations are mostly associated with passenger vehicles and trucks traveling on roadways with poor conditions such as potholes, bumps, expansion joints, or other discontinuities in the road surface. Smoothing the bump or filling the pothole will usually solve the problem. As the proposed project will use new asphalt pavement followed with proper maintenance, there will be no potholes, bumps, expansion joints, or other discontinuities in the road surface that would generate groundborne vibration or direct or indirect noise impacts from vehicular traffic traveling on the I-710 freeway.

Vibration generated by construction equipment can result in varying degrees of ground vibration, depending on the equipment. The operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings situated on soil near the active construction area respond to these vibrations, which range from imperceptible to low rumbling sounds with perceptible vibrations and slight damage at the highest vibration levels. Typically, construction-related vibrations do not reach vibration levels that would result in damage to nearby structures. However, old and fragile structures would require special consideration to avoid damage.

The proposed project may require the use of pile drivers and other heavy-tracked construction equipment during construction. The Federal Transit Administration (FTA), in its *Transit Noise and Vibration Assessment* (FTA, May 2006), shows that a typical-impact pile driver would generate approximately 0.644 PPV in/sec when measured at 25 feet. It also shows that typical heavy-tracked construction equipment would generate approximately 0.003 to 0.089 PPV in/sec when measured at 25 feet.

Potential pile-driving activities would be located within existing channel or tidal waters and approximately 50 feet from the closest residence. The closest residence would be subject to a vibration level of 0.3 PPV in/sec. This vibration level is considered to be strongly perceptible and would have the potential to damage residential structured that are considered old, such as many of the structures that could be exposed to these vibration levels during construction activities. Other construction equipment and activities would generate vibration levels much lower than those of pile driving and heavy-tracked construction equipment and would therefore result in lower vibration levels at adjacent receiver locations. With implementation of Measures CON-N-9 and CON-N-10 that require pre-construction and post-construction surveys and alternatives to pile driving, respectively, for residential structures that are located 50 feet or closer from pile-driving activities, groundborne vibration levels generated by the proposed project would be less than significant.

4.2.3.7 PUBLIC SERVICES (CEQA CHECKLIST QUESTION XIV.A)

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- **Fire protection?**
- **Police protection?**
- **Schools?**

- **Parks?**
- **Other public facilities?**

Reference: Section 3.3.1.3 and Section 3.4.1.1

As described in Sections 3.3 and 3.4, there are numerous public service facilities in the Study Area. The build alternatives will provide improved transportation facilities within the Study Area. As a result of improved traffic flow, the build alternatives would have beneficial effects for emergency service providers. The beneficial effects would allow fire, law enforcement, and emergency service providers to travel faster to emergency situations and move emergency equipment on the improved transportation network. The emergency service response times would be maintained or potentially improved.

Both build alternatives would require acquisition and relocation of the City of Vernon Fire Station No. 4. While a potential site for relocation of the existing fire station has been not been identified at this time, Caltrans would be required to assist the City of Vernon in identifying a new site for relocation within the general vicinity of the existing station so as to maintain the existing response times and service area. In addition, the existing fire station would remain in use until the new fire station is operational.

Alternative 7 would result in direct impacts to the Multi-Service Center in the City of Long Beach. Alternative 7 would require acquisition and relocation of this facility due to the construction of freight corridor ramps at the I-710/Anaheim St. interchange. Alternative 5C would not directly or indirectly impact this facility.

Alternative 7 would also require the partial acquisition of the Salvation Army's Bell Shelter within the City of Bell and displacement of the transitional housing structures, as well as the full acquisition of the nearby S. Mark Taper Foundation Shelter Resource Bank, whose operations are interrelated to those of the Bell Shelter. Alternative 5C would avoid impacts to the Bell Shelter, but would require a partial acquisition of the Shelter Resource Bank, along the western side of the property.

Measures C-1 through C-4 are identified to address acquisition and relocation impacts of the build alternatives. With implementation of these measures, impacts would be less than significant.

Direct impacts to law enforcement facilities and schools would not occur from the build alternatives. Impacts to park facilities within the Study Area are described below under Section 4.2.2.24, Recreation.

Indirect impacts may occur to public facilities in the Study Area. These include potential temporary access, noise, and aesthetic impacts that may occur during construction. Visual and

noise construction impacts to the public facilities would be temporary and intermittent and would be less than significant. The impact of temporary construction-related disruptions to freeway access and emergency service providers would be addressed through the TMP required by Measure CON-TR-1. With implementation of this measure, potential emergency access constraints during construction would be less than significant.

4.2.3.8 RECREATION (CEQA CHECKLIST QUESTION XV.A)

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Reference: Section 3.1.3 and Section 3.24.3.14

As discussed in Section 3.1.3, there are hundreds of parks and recreation facilities within the Study Area that are both publicly and privately owned. The build alternatives also have the potential to result in direct and indirect impacts to several parks and recreation facilities, including Cesar E. Chavez Park, Parque Dos Rios, Bandini Park, the Los Angeles River Trail, and the Rio Hondo Trail. The build alternatives provide enhancements to Cesar E. Chavez Park in the City of Long Beach. The enhancements to this park would improve access to the park as well as provide for a larger contiguous recreation area. Construction impacts related to enhancement of this recreation facility are included in the construction analysis for the overall I-710 Corridor Project, as discussed within this RDEIR/SDEIS. Several measures (PR-1 through PR-21) are identified to address potential direct and indirect impacts to these recreational facilities described above. With implementation of these measures, impacts to recreational facilities would be less than significant.

The build alternatives will provide improved transportation facilities within the Study Area, which may contribute to increased use of recreation facilities in the Study Area. However, the contribution of the build alternatives to increased use of recreation facilities is anticipated to be very small compared to the contribution of the projected growth in the Study Area. A substantial physical deterioration of existing recreational facilities is not expected to occur from project implementation. As a result, the build alternatives would result in a less than significant impact relative to increased use of existing recreation facilities.

4.2.3.9 UTILITIES AND SERVICE SYSTEMS (CEQA CHECKLIST QUESTION XVII.C)

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Reference: Section 3.8.3.1

On-site drainage systems include inlets, paved channels, and underground storm drain systems. While the proposed freeway improvements under all build alternatives may alter the location of existing pump stations and on-site flow patterns in localized areas, the confluence locations will remain in the general vicinity, and existing Los Angeles River outlets will be utilized whenever possible to minimize impacts to the river channel. The existing inflow drainage connections will be maintained and accommodated with the proposed on-site drainage systems. Existing drainage patterns on the arterial streets would be maintained by utilizing existing underground drains wherever possible. Because the existing alignment of the freeway would be shifted horizontally and/or vertically, most of the freeway pavement would be reconstructed on I-710, which would require reconstruction of most of the drainage systems. This includes both on-site systems and off-site systems within the proposed right of way.

There are 37 existing drainage outlets impacted by the proposed improvements. Of the 37 existing outlets identified, 27 are proposed to be protected in place under the build alternatives. The remaining outlets would require removal and reconstruction based on the physical impacts by the proposed improvements or based on the need to increase hydraulic capacity of the outlet. Table 3.8-2 lists the facilities requiring removal and reconstruction.

There are 22 existing pump stations impacted by the build alternatives. Out of the 22 locations, 18 locations require modification including upgrading facilities to accommodate projected peak flows, relocation due to proposed improvements, or reconstruction due to freeway widening and/or profile changes. All pump stations located on the east side of the Los Angeles River would be protected-in-place during project construction. Table 3.8-3 lists the name, location and modifications for each pump station that would be affected.

As described in Section 3.8.3.1, the build alternatives will require substantial reconstruction of the existing drainage systems including drainage inlets, storm drains, cross culverts, dikes, overside drains, concrete and earthen channels, pump stations, and detention basins. Most of the existing on-site drainage systems will be replaced with new facilities. Some existing facilities may be extended to accommodate the wider freeway. The existing Dominguez Gap Spreading Grounds located in the northeast quadrant of the I-710/I-405 interchange would not be impacted by the I-710 Corridor improvements associated with Alternative 5C, as there are no proposed improvements adjacent to the existing basin.

As discussed in Section 3.8.3.1, the Dominguez Gap Spreading Grounds would be impacted by the freight corridor in Alternative 7. As discussed in additional detail in Measure FP-2, discussions will be held with local agencies and cities for the relocation of the Dominguez Gap Spreading Grounds that could be used to mitigate for the loss in recharge areas. Measure FP-2, in Section 3.8, requires that prior to the completion of final design of Alternative 7, Caltrans shall coordinate with the Los Angeles County Department of Public Works to identify suitable locations for replacement of the Interstate 105 (I-105) freeway retention basin and the

Dominguez Gap Basin that would provide equal or greater capacity than the basins impacted by the freight corridor. Therefore, with implementation of Mitigation Measures FP-2, impacts associated with the construction of new basins for retention and groundwater recharge would be reduced to less than significant.

4.2.3.10 MANDATORY FINDINGS OF SIGNIFICANCE (CEQA CHECKLIST QUESTION XVIII.A)

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Both of the build alternatives have the potential to degrade the environment as a result of impacts to natural communities, plant communities, and wetlands and other waters. Measures provided for these resources in Section 4.4, Mitigation Measures for Significant Impacts under CEQA, would reduce those impacts to below a level of significance.

4.2.4 UNAVOIDABLE SIGNIFICANT IMPACTS OF THE PROPOSED PROJECT

4.2.4.1 AIR QUALITY (CEQA CHECKLIST QUESTION III.B, III.C AND III.D)

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Reference: Section 3.13.3

For purposes of determining significance under CEQA, the project would result in a potentially significant impact if it resulted in the exceedance of Federal or State air quality standards.

Regional consistency with applicable State and Federal air quality standards is discussed in Section 3.13 and in the response to Checklist Question III.a above. Implementation of the SIP would bring the region into conformance with the applicable air quality standards. The analysis in Section 3.13 indicates that implementation of either of the build alternatives would not create a violation of applicable air quality standards.

The project is included in the recently adopted 2016 RTP/SCS. The analyses in the *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (AQ/GHG/HRA Technical Study) (June 2017), as summarized in Section 3.13, demonstrate that the project alternatives, compared to the 2012 Baseline, would generally not cause additional local exceedances for CO and particulates. However, the 8 percent to 9 percent increase in $PM_{2.5}$ emissions along the I-710 freeway for Alternative 5C as compared to the 2035 No Build condition falls within the range of the percent increase (5 to 26 percent) needed in the future

annual average $PM_{2.5}$ ambient concentrations to exceed the annual $PM_{2.5}$ NAAQS. Hence, Alternative 5C may cause new violations of annual $PM_{2.5}$ NAAQS. Additionally, Alternative 7 is expected to increase the $PM_{2.5}$ emissions from the I-710 freeway by 30 percent to 31 percent in 2035 when compared to the 2035 No Build condition. This increase falls within the range of the percent increase (5 to 34 percent) needed in the future $PM_{2.5}$ ambient concentrations to exceed the $PM_{2.5}$ NAAQS. As a result, the emission increases of the build alternatives may cause new violations of the 24-hour or annual $PM_{2.5}$ NAAQS. The project may result in the violation of an air quality standard or contribute substantially to an existing or projected air quality violation; therefore, impacts are potentially significant and unavoidable.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable Federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Reference: Section 3.13

For purposes of determining significance under CEQA, the project would result in a potentially significant impact if, at the time of the analysis, the region was in nonattainment under applicable Federal or State ambient air quality standards and the project contributed to such a designation.

According to the AQ/GHG/HRA Technical Study (June 2017), the project area would be in attainment with applicable air quality standards in design year 2035. In some cases, the project would increase the local emissions of such pollutants, although such an increase would be offset by reductions in congestion on other roadways and future background concentrations would be expected to be lower than the current background concentrations. Each of the alternatives would result in lower NO_x (an ozone precursor), CO, $PM_{2.5}$, and VOC emissions when compared to the 2012 Baseline. Incremental SO2 emissions decrease for each of the project alternatives compared to the 2012 Baseline (with the exception of Alternative 7, which experiences an increase of one pound per day within the Study Area). The analysis in Section 3.13 demonstrates that the area would remain in attainment for most criteria pollutants. However, the overall decrease in exhaust $PM_{2.5}$ emissions for both alternatives as compared to the 2012 Baseline is greater than the sum of the increases in tire wear, brake wear, and entrained road dust emissions. As a result, total $PM_{2.5}$ emissions show decreases for the build alternatives when compared to the 2012 Baseline for all I-710 Corridor Project study areas. In the case of PM_{10} emissions, the increases in entrained road dust, tire wear and brake wear far outweigh the decrease in exhaust PM_{10}. Therefore, there are increases in total PM_{10} emissions for both build alternatives when compared to the 2012 Baseline.

As such, the project may result in a cumulatively considerable increase in some criteria pollutants.

d) Expose sensitive receptors to substantial pollutant concentrations?

Reference: Section 3.13

CRITERIA AIR POLLUTANTS – CONSTRUCTION. The project area is in a nonattainment area for the one-hour and eight-hour ozone standards, annual and 24-hour $PM_{2.5}$ standards, and the PM_{10} 24-hour and annual CAAQS. The project area is in an attainment/maintenance area for the NO_2 and CO NAAQS and CAAQS and the $PM_{2.5}$ 24-hour NAAQS. As discussed in Section 3.13, peak daily construction emissions were analyzed for seven freeway segments along the 18-mile length of the project. While construction may or may not occur on different segments (or parts of these segments) over the same time interval, construction emissions were calculated for a "worst-case" scenario that assumed that construction would occur simultaneously in the seven segments to provide a conservative estimate of maximum peak daily emissions. Peak daily emissions associated with a single freeway segment were also analyzed. Two sets of emission estimates, one for the Baseline Compliance Scenario and the other for the All Best Available Control Technology (BACT) Scenario, were analyzed. The Baseline Compliance Scenario assumes that all construction equipment are in compliance with ARB's In-Use Off-Road Diesel Fueled Fleets Regulation, and the All BACT Scenario assumes that all construction equipment meet ARB's Tier 4-Final engine standards for off-road equipment.

The results of the analysis showed that for the worst-case construction scenario, peak daily emissions for Alternatives 5C and 7 would exceed SCAQMD CEQA significance thresholds for NO_X, CO, PM_{10}, $PM_{2.5}$, and VOCs for both the for Baseline Compliance Scenario and the All BACT Scenario. Emissions of SO_X would not be exceeded under both scenarios. For a single freeway section, peak daily criteria air pollutant emission estimates for Build Alternatives 5C and 7 are below SCAQMD CEQA significance criteria for all pollutants except total PM_{10} for both the Baseline Compliance and All BACT scenarios and NO_X for the Baseline Compliance Scenario only. Actual construction phasing and scheduling could further reduce construction peak emissions.

Compliance with SCAQMD rules and regulations during construction would reduce construction-related air quality impacts from fugitive dust emissions and construction equipment emissions. In addition, the measures listed in Section 3.24.4.13 address temporary air quality impacts.

While not adopting them, Caltrans has considered the SCAQMD CEQA significance thresholds in this analysis. While the measures listed in Section 3.24.4.13 reduce temporary air quality impacts, the short-term construction emissions would continue to exceed the SCAQMD's CEQA thresholds. The SCAQMD thresholds seek to limit daily emissions of pollutants from project sites. The only feasible additional mitigation measure that would further reduce emissions to levels below the SCAQMD thresholds would be to severely limit the total daily construction activity. However, such mitigation would have two additional adverse impacts:

- The construction period would be extended, thereby extending the period of local disruption from construction activities. Under a best case scenario, using BACT technologies for construction, the proposed project would take more than five times longer to construct.
- The project costs would increase due to the loss of economies of scale during construction and extended construction schedules. It is estimated that project costs would more than double.

Therefore, this additional mitigation was rejected since it would (1) create additional environmental impacts, and (2) substantially increase project costs. Therefore, the project's short-term impact would be potentially significant and unavoidable.

CRITERIA AIR POLLUTANTS – OPERATION. Mass emissions of criteria air pollutants related to freeway/roadway traffic were calculated for the I-710 Corridor Project Study Area to determine the impact of the proposed I-710 Corridor Project on the surrounding area and region. The incremental regional traffic emissions of criteria pollutants for the South Coast Air Basin, the Area of Interest (AOI), and I-710 as compared to 2012 existing conditions is presented in Table 3.13-13 in Section 3.13. These comparisons are performed for each of the criteria pollutants and for the three project study areas (the South Coast Air Basin, the I-710 Study AOI, and the I-710, which include the freight corridor under Alternative 7). Each of the alternatives will result in lower NO_x, CO, $PM_{2.5}$, and VOC emissions for all study areas when compared to 2012. NOX, CO, and VOC emissions show decreases of 73 percent to 93 percent for the build alternatives when compared to the 2012 Baseline. These results indicate that a reduction in emissions due to improved vehicle technology outpaces the increases in emissions resulting from increased vehicle volume in 2035.

Incremental SO_2 emissions decreased for each of the project alternatives in each study area, compared to 2012, with the exception of Alternative 7 in the I-710 Study Area, which increased by one pound per day.

Total PM_{10} and $PM_{2.5}$ emissions consist of vehicle exhaust emissions, tire wear, brake wear, and entrained road dust emissions. The exhaust portion of PM emissions for all build alternatives follow a trend similar to the other criteria pollutants, showing decreases from 2012 Baseline PM_{10} exhaust emissions. These reductions are primarily driven by cleaner heavy duty trucks in 2035 as compared to 2012 resulting from the implementation of ARB programs regulating truck and bus emissions.

The AQ/GHG/HRA Technical Study analysis identifies that the decrease in exhaust $PM_{2.5}$ emissions for all build alternatives as compared to the 2012 Baseline is greater than the sum of the increases in tire wear, brake wear, and entrained road dust emissions. As a result, total $PM_{2.5}$ emissions show decreases for the build alternatives when compared to the 2012 Baseline

for all I-710 Corridor Project study areas. In the case of PM_{10} emissions, the increases in entrained road dust, tire wear and brake wear far outweigh the decrease in exhaust PM_{10}. Therefore, the modeling results show increases in total PM_{10} emissions for all the build alternatives when compared to the 2012 Baseline.

SO_2 emissions are formed by the conversion of fuel sulfur into SO_X during the combustion process. California already has ultra-low sulfur fuel standards in place. Therefore, there will be no significant change in the fuel sulfur content from 2012 to 2035. The analysis shows a 14 percent to 31 percent reduction in SO_2 emissions for the build alternatives as compared to the 2012 Baseline in all three I-710 Corridor Project study areas (except for Alternative 7 as compared to the 2012 Baseline on the I-710 freeway). These reductions are driven by the increased fraction of fuel efficient and electric vehicles in the light-duty fleet resulting from the implementation of the Pavley Standard. For the comparison of SO_2 emissions from the I-710 freeway for Alternative 7 to the 2012 Baseline, the increases in SO_2 emissions associated with the additional ZE/NZE trucks (assumed to be NZE for emission estimates) on the freight corridor cancels out the decreases seen in the light-duty vehicle fleet; therefore, there is no significant change in SO_2 emissions for this scenario.

Total $PM_{2.5}$ emissions, which consist of vehicle exhaust emissions, tire wear, brake wear, and entrained road dust emissions, show mostly decreases on the freeways, arterials, and roadways in the AOI for the 2035 alternatives as compared to the 2012 Baseline. The only increases seen in these charts occur in the port areas and a portion of the I-710 north of I-10 where the proposed State Route 710 (SR-710) North Project would be located in 2035.

As shown in Table 3.13-13 in Section 3.13, while incremental emissions of NO_X, CO, VOCs, and SO_X would decrease for Alternatives 5C and 7 when compared to the 2012 Baseline, incremental emissions of PM_{10} and $PM_{2.5}$ for Alternatives 5C and 7 would increase when compared to the 2012 Baseline. Operational emissions of the project are attributable to vehicular emissions which are controlled by ARB and EPA. Programmatic features to fund ZE/NZE trucks and provide a grant program to fund projects that would improve air quality and public health in the corridor are included in both build alternatives and described in Section 2.3.2.1, Common Features of the Build Alternatives.

Caltrans is committed to working with SCAQMD, ARB, and EPA to continue to develop data in the I-710 Corridor that will contribute to improved air quality planning and project design in the future. As part of that commitment, the I-710 Corridor Project will provide funding for four new air quality monitoring stations within the I-710 Corridor, per Measure AQ-1. Additionally, to further reduce exposure of sensitive receptors to near roadway emissions, Caltrans will provide air filtration systems to all schools within 0.25 mile of the I-710 that currently lack air filtration systems, which is incorporated as Measure AQ-2 in Section 3.13.4. These measures would

apply to both of the build alternatives. Despite the implementation of measures to address short-term and long-term air quality impacts, impacts remain significant and unavoidable.

MOBILE SOURCE AIR TOXICS. For purposes of determining significance under CEQA, any increase in Mobile Source Air Toxics (MSAT) concentrations at a sensitive receptor is considered significant.

The MSAT analysis provided in Section 3.13 presents MSAT incremental emissions for each of the build alternatives compared with the 2012 existing conditions (Baseline) for all study areas. This analysis focuses on the seven MSAT pollutants identified by the EPA as being the highest priority MSATs: acrolein, benzene, 1,3-butadiene, diesel particulate matter (DPM), formaldehyde, naphthalene, and polycyclic organic matter (POM). MSAT emission inventories for all project alternatives and baselines were developed for the I-710 Corridor Project study areas using the emission factors of non-criteria air pollutants in the South Coast Air Basin, I-710 Traffic Model data, and ARB and EPA speciation profiles for reactive organic gases (ROG), total organic gases (TOG), and $PM_{2.5}$. MSAT emission inventories for the I-710 freeway were also developed for the project alternatives and the Baseline conditions using the emission factors of non-criteria pollutants in Los Angeles County, post-processed traffic data, and ARB/EPA speciation profiles.

The existing I-710 Corridor has elevated levels of traffic congestion, elevated truck volumes, and several sensitive receptors located directly adjacent to the corridor; thus, existing MSAT emissions are already a concern in the project area. The analysis indicates there would be lower incremental MSAT emissions in the Study Area under the build alternatives relative to the existing Baseline conditions (2012) due to the improvement in traffic level of service (LOS) and the reduction of delay at the project intersections, as well as improvements resulting from stricter engine and fuel regulations issued by the EPA. Alternative 7 includes a separated freight corridor that is restricted to use by ZE/NZE trucks only, rather than conventionally powered trucks. Compared to 2012, reductions under Alternative 7 were approximately 1 percent greater than reductions under Alternative 5C. Both ZE/NZE trucks for Alternative 7, and ZE trucks in the ZE Design Option for Alternative 7 are assumed to be non-diesel vehicles. As a result, MSAT emissions estimates of diesel-fueled vehicles for these two project alternatives are identical and the results are identical.

While the MSAT analysis showed that there would be an overall reduction of MSAT emissions in the South Coast Air Basin and the I-710 AOI, the build alternatives would result in near-roadway incremental emissions concentrations in a few areas very near I-710 (particularly Alternative 7). Therefore, the project's long-term impacts are potentially significant and unavoidable at these near-roadway locations.

These localized increases in emissions are the result of increased total traffic volumes on the facility. Further mitigation of these emissions is not feasible, since Caltrans does not control the emission characteristics of vehicles using the freeway. The forecast emissions take into account the planned reductions in MSAT emissions as promulgated by regulatory agencies with jurisdiction over MSAT emissions. Further reductions would require additional regulatory controls beyond the authority of Caltrans. Therefore, further mitigation by Caltrans is not technically feasible.

The project will substantially reduce the public health risk to residents in the South Coast Air Basin, the AOI, and near the I-710 freeway who are currently exposed to MSAT emissions.

As with criteria air pollutants, the greatest air toxic emission impacts occur along I-710. This occurs as the increased vehicle miles traveled (VMT) (all alternatives) and increased capacity (build alternatives) increase emissions along I-710, although improved mobility and less traffic on local roadways can decrease emissions in the larger AOI and South Coast Air Basin study areas. To address this, incremental health risk impacts (cancer risk and non-cancer acute and chronic hazard indices) resulting from emissions from the project alternatives were modeled.

Table 4.2-1 compares maximum relative health impacts between each of the project alternatives and the 2012 Baseline.

Table 4.2-1: Comparison of Incremental MSAT Health Risk Impacts for All Alternatives Compared to 2012

Health Impact	Alt 1 vs. 2012	Alt 5C vs. 2012	Alt 7 vs. 2012	SCAQMD Significance Threshold[1]	Above Significance Criteria?
Cancer Risk (Risk in 1 million)	-7.26	-7.31	-7.40	10 in 1 million	No
Chronic Non-Cancer Hazard Index (unitless)	-0.00196	-0.00198	-0.00198	1.0 (hazard index)	No
Acute Non-Cancer Hazard Index (unitless)	-0.00118	-0.00145	-0.00174	1.0 (hazard index)	No

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).
[1] The SCAQMD significance thresholds are presented for information only.
Alt = Alternative
MSAT = Mobile Source Air Toxics
SCAQMD = South Coast Air Quality Management District

Cancer risk and non-cancer risk decrease in residential areas and at sensitive receptors[10] (e.g., schools, hospitals, and daycare and elder care centers) for all build alternatives when compared to the 2012 Baseline, with the greatest reductions generally occurring in Alternative 7. Both build alternatives predominantly display decreases in cancer risk with some increases within 110 yards of the I-710 freeway. For Alternative 7, the increase in risk is less than one in one million. For Alternative 5C, the maximum increase in risk is approximately three in one million.

DESIGN OPTION 7ZE. Figures F-7-1 and F-7-2 (provided in Appendix Q of this RDEIR/SDEIS) show comparisons of the maximum incremental cancer risk (MICR), chronic health index (CHI), and index for acute health hazard (IAH) impacts for the ZE Design Option for Alternative 7 as compared to the 2012 Baseline and Alternative 1. As shown in these figures, there is little change in maximum incremental heath risk impacts of Alternative 7-ZE when compared to Alternative 7.

4.2.4.2 LAND USE AND PLANNING (CEQA CHECKLIST QUESTIONS X.A)

a) Physically divide an established community?

Reference: Section 3.3

Alternative 5C would result in physical changes in the Study Area; however, the existing community character and cohesion for the affected communities would remain intact, except for one mobile home park in the City of Compton. Alternative 7 would result in impacts to community cohesion similar to those resulting from Alternative 5C; however, additional impacts to the community would result from implementation of Alternative 7 due to the increased right of way required for the four-lane freight corridor. The analysis in Section 3.3 discusses significant adverse effects to communities as a result of Alternative 7 that cannot be mitigated (dependent on the alternative) to a level below significance, as described below.

- Within the City of Commerce, Alternative 7 would result in adverse impacts to community character and cohesion as a result of relocations in the Ayers and Sydney neighborhoods and similar impacts would also occur under Alternative 7, Design Option 1B. Due to the shift east to accommodate construction of the four-lane freight corridor requiring additional right-of-way under Alternative 7, Design Option 1B, there would be several residential displacements within the Ayers and Sydney neighborhoods. Therefore, under Alternative 7, including Design Option 1B, adverse impacts to community character and cohesion and impacts associated with physically dividing an established community in the City of Commerce would be potentially significant and unavoidable.

[10] Receptors on the Los Angeles River were excluded from the incremental residential cancer risk assessments.

- In the City of Bell, several commercial/industrial parcels and one residential parcel would be fully acquired under Alternative 7. Many of the acquired properties are vital community facilities that will need to be relocated. Therefore, under Alternative 7, adverse impacts to community character and cohesion and impacts associated with physically dividing an established community in the City of Bell would be potentially significant and unavoidable. Several residential and non-residential acquisitions would be required with construction of Alternative 7 resulting in the relocation of existing residents, businesses, and employees.
- In the City of Long Beach, there would be adverse impacts to community character and cohesion as a result of relocations of residents, businesses, and/or vital community facilities under Alternative 7. Therefore, under Alternative 7, adverse impacts to community character and cohesion and impacts associated with physically dividing an established community in the City of Long Beach would be potentially significant and unavoidable.
- In Compton, one mobile home park located on Atlantic Ave. would be partially impacted under both build alternatives and would require the permanent relocation of five mobile homes. Mobile home communities are typically very cohesive neighborhoods; thus, the build alternatives would have an impact to community cohesion for this mobile home community in Compton. Housing of Last Resort[11] may have to be considered for relocating the affected residential properties such as mobile homes. Adequate relocation resources for mobile homes in particular do not currently exist within the Study Area. There are limited relocation opportunities within the Study Area for mobile homes (assuming they preferred to remain in a mobile home); therefore, this impact is considered significant and unavoidable under both build alternatives.

4.2.4.3 POPULATION AND HOUSING (CEQA CHECKLIST QUESTIONS XIII.B AND XIII.C)

The following two questions are addressed together.

[11] The Urban Redevelopment Authority (URA) requires that comparable decent, safe, and sanitary replacement housing within a person's financial means be made available before that person may be displaced. When such housing cannot be provided by using replacement housing payments, the URA provides for "housing of last resort." Housing of last resort may involve the use of replacement housing payments that exceed the URA maximum amounts. Housing of last resort may also involve the use of other methods of providing comparable decent, safe, and sanitary housing within a person's financial means. Refer to §49 CFR 24.404 and Chapter 3 of the U.S. Housing and Urban Development (HUD) Handbook 1378 for more information (Website: https://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing/training/web/relocation/lastresort, accessed February 20, 2017).

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Reference: Section 3.3.1.3

As described in Section 3.3.1.3, Community Impacts, the build alternatives would result in the acquisition of existing residential uses and the relocation of occupants of those residential uses. Last Resort Housing may be required for relocation of residents with special needs, such as low-income, elderly, and handicapped residents. Additionally, special assistance may be needed to relocate smaller or marginal businesses and minority businesses that need to be located next to a specific customer base. As described in Section 3.3.1.3, while adequate comparable replacement housing appears to exist presently in neighboring cities, new replacement dwellings under Last Resort Housing may be considered for these cities as a method of providing comparable replacement housing to displaced persons who reside in areas where the replacement housing is low. Last Resort Housing is being considered in response to the affected cities' request to keep housing within their cities rather than having the replacement housing be in neighboring cities.

Within the Study Area, Alternative 5C and the Design Options would result in a total of between 109 and 128 residential relocations and 157 and 165 nonresidential relocations. Alternative 7 and the Design Options would result in a total of between 121 and 140 residential and between 206 and 213 nonresidential displacements, depending on the design option. Under all build alternatives, the City of Commerce would experience the most residential relocations. All design options under Alternative 5C would necessitate the relocation of 58 residences within the City of Commerce, and Alternative 7 would necessitate the relocation of between 58 and 73 residences, depending on the design option. Additionally, Alternative 5C in the City of Commerce would result in 39 or 40 nonresidential relocations, depending on the design option, and Alternative 7 and the Design Options would result in 44 nonresidential relocations. The build alternatives would result in a greater impact to retail and service businesses than any other type of business. Some of these displaced residences are in areas where there is insufficient replacement housing available, such as the Ayers neighborhood in the City of Commerce and the mobile homes in the City of Compton. Therefore, it may not be possible to relocate all displaced residents within their community or within an area within reasonable proximity to their community. For this reason, construction of replacement housing in the Cities of Commerce and Compton may be necessary. Therefore, impacts related to the displacement of existing housing and people necessitating the construction of replacement housing are potentially significant and unavoidable.

4.2.4.4 TRANSPORTATION AND TRAFFIC (CEQA CHECKLIST QUESTIONS XVI.A AND XVI.B)

The following two questions are addressed together.

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Reference: Section 3.5.3.1

For the purposes of the CEQA traffic analysis, levels of service (LOS) were examined on I-710 to determine if the build alternatives would result in additional segments of unacceptable LOS (LOS E or worse) relative to existing travel conditions.

The build alternatives will provide additional capacity to address projected traffic volumes, will improve traffic safety by removing existing design deficiencies, and will provide infrastructure to address the projected growth in population, employment, and activities related to goods movement in the Study Area.

As described in the *Traffic Operations Analysis Report* (March 2017), existing traffic count data for the traffic study area were collected in spring of 2013 and 2014 as well as collected from available sources. Traffic conditions for Baseline/Existing (2012/2013) and Design Year 2035 were analyzed to determine LOS without the I-710 Corridor Project.

In the case of the I-710 Corridor Project, the proposed improvements constitute a significant increase in capacity over the existing 2012/2013 Baseline condition.

Figures 4.2-1 and 4.2-2 provide a summary comparison of the existing conditions to the Year 2035 conditions with the project alternatives.

As shown in the *Traffic Operations Analysis Report* (2017), in the existing condition:

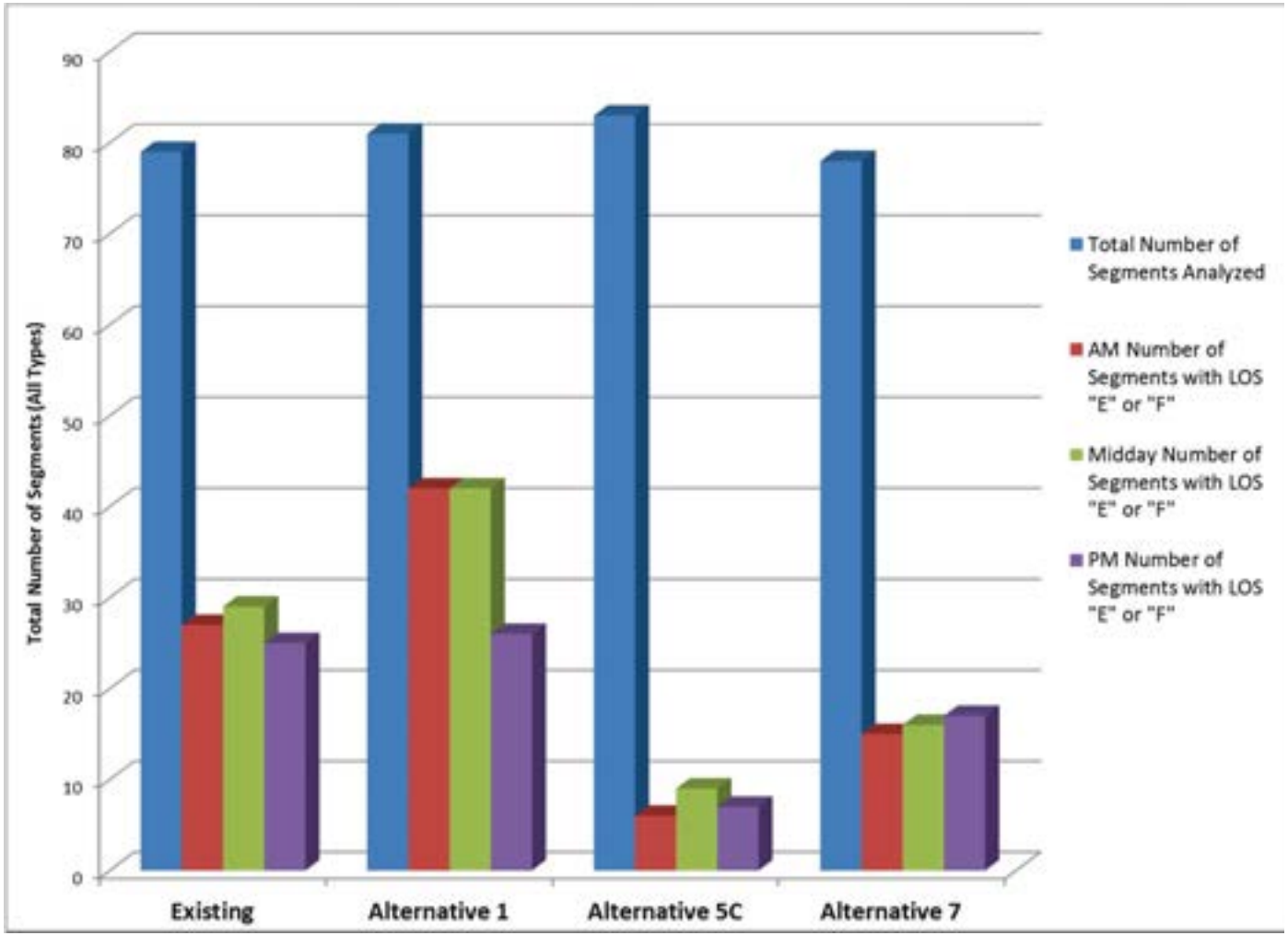

FIGURE 4.2-1

I-710 Corridor Project RDEIR/SDEIS

I-710 Northbound Peak Hour
Level of Service Comparison
07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: Metro

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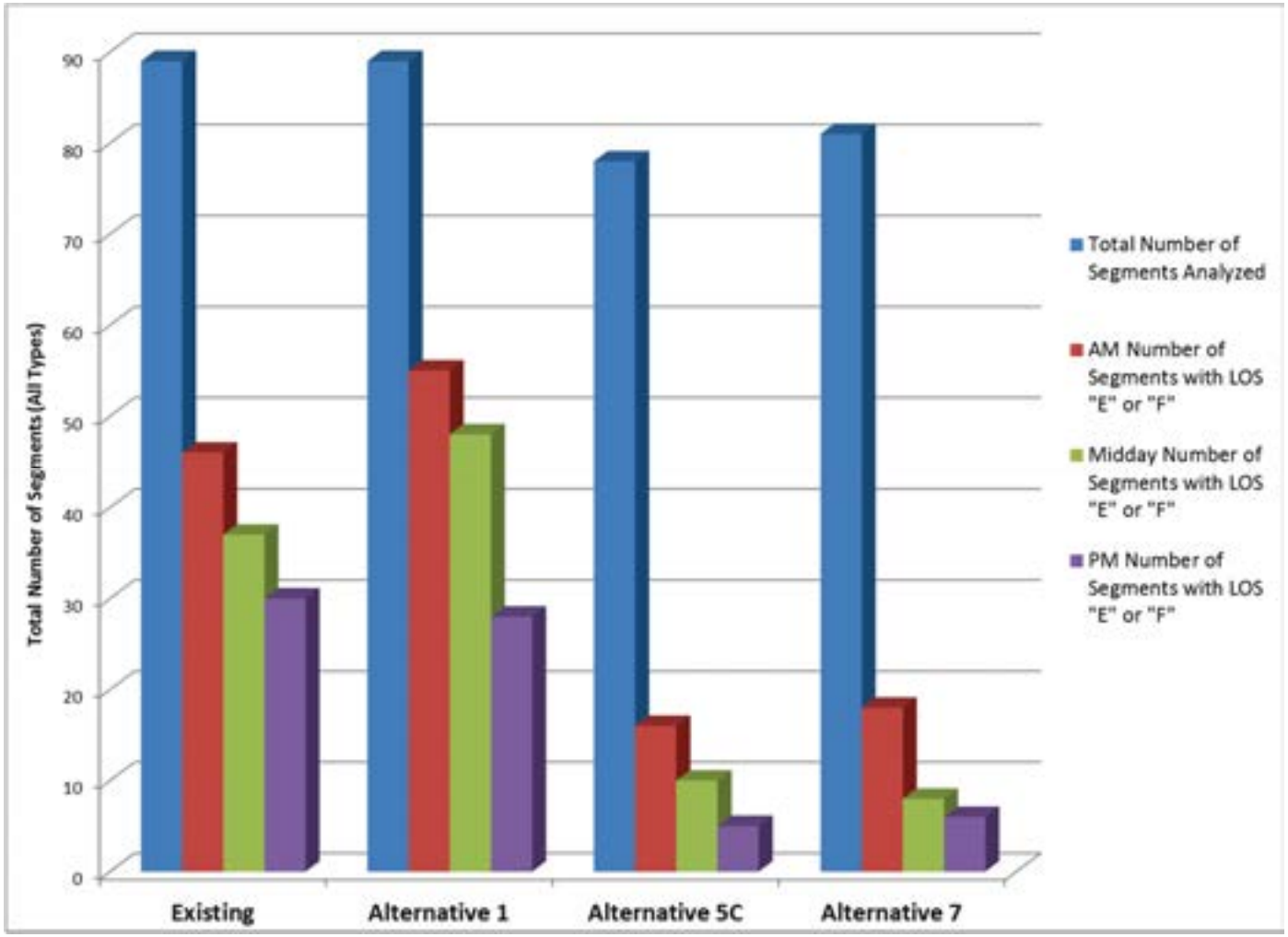

FIGURE 4.2-2

I-710 Corridor Project RDEIR/SDEIS

I-710 Southbound Peak Hour
Level of Service Comparison

07-LA-710-PM 5.4/24.5
EA 249900; EFIS 0700000443

SOURCE: I-710 Corridor Project Traffic Operations Analysis Report, URS Corporation, 2011.

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- **I-710 Northbound Direction:** 19 basic, ten weaving segments, and four merge or diverge segments currently operate at unsatisfactory LOS E or F in the existing condition.
- **I-710 Southbound Direction:** 26 basic, seven weaving segments, and 21–35 percent of the merge or diverge segments currently operate at unsatisfactory LOS E or F in the existing condition.

There are several deficient segments on the mainline in the existing condition. The I-710 Corridor project would increase capacity under both alternatives, which would maintain or improve LOS on many of the freeway basic, weave, and merge/diverge segments under the build alternatives. As such, the project would not have adverse impacts on I-710 traffic.

The roadway segment analysis is provided in the *Intersection Traffic Impact Analysis Report* (2017). The following is a summary of the roadway segments that experience volume-to-capacity (v/c) ratios approaching or exceeding the available capacity and operating at LOS E or F with the project build alternatives. Under Alternative 5C, 35 roadway segments would operate at LOS E or F. Under Alternative 7, 35 roadway segments would operate at LOS E or F. The I-710 build alternatives do not measurably alter roadway operations within the Study Area. This is because improvements cause less I-710 traffic to be diverted onto local arterials under the I-710 Project Corridor build alternatives.

As indicated in the traffic analysis, deficiencies were present in the existing (2012/2013) condition at ramps and existing interchanges at four ramp interchanges during the p.m. peak hour. However, it should be noted that several ramp interchanges along the corridor were not analyzed under the existing (2012/2013) conditions since they are operating on low-speed cloverleaf designs that do not have controlled intersections to be analyzed. Under build alternative conditions, all interchanges and ramps are being improved along the I-710 Corridor between Ocean Blvd./Harbor Scenic Dr. and Washington Blvd. The build alternatives would add capacity and operational efficiency as compared to existing conditions, which would lead to improved LOS and operations as well as improved safety. Additionally, Alternative 7 includes a new freight corridor interchange connection at Slauson Ave., which is located between existing interchanges at Florence Ave. and Bandini Blvd.

An analysis of the Study Area intersections is provided in the *Intersection Traffic Impact Analysis Report* (2017). The following summary describes the 2012/2013 existing intersection operations for the a.m., midday, and p.m. peak hours. It should be noted that fewer intersections were evaluated in the midday peak hour due to the lack of available midday peak-hour traffic count volumes at many intersections. The total number of intersections with poor LOS E or F under existing conditions is shown below:

- **Morning Peak Hour:** 18 of 172 (10 percent) under existing conditions
- **Midday Peak Hour:** three of 158 (5 percent) under existing conditions
- **Evening Peak Hour:** 36 of 172 (21 percent) under existing conditions

As shown in the *Traffic Impact Analysis Report* (2017), the interchange intersection LOS under Alternatives 5C and 7 would generally improve when compared to the No Build conditions. As described in Section 3.5, implementation of the project would result in a significant project impact at 42 intersections in the Study Area. These impacted intersections are projected to operate at LOS E or F, and the intersection delay is projected to increase under the build alternatives for most affected intersections (in some cases, delay is improved although the LOS would remain deficient). To mitigate the impact of the project on these intersections, Measure TR-1, as identified in Section 3.24.4.5, would be implemented. Implementation of this measure would reduce impacts to the 42 impacted intersections to a less than significant level at all but four intersections.

The LOS and/or intersection delay on the Study Area intersections would generally be maintained or improved during the peak hours in 2035 under the build alternatives compared to the Alternative 1. However, there would be degradation in LOS with the project build alternatives at some locations.

Based on the arterial intersection LOS analysis, 42 Study Area intersections have been identified as being adversely impacted by the project under the proposed build alternatives. Intersections impacted by each of the build alternatives are summarized in Section 3.5, Traffic, in Table 3.5-22. As this table shows, 32 intersections are projected to be impacted under Alternative 5C, 30 impacted under Alternative 7, and 22 intersections are projected to be impacted under both Alternatives 5C and 7. Mitigation measures to improve these impacted locations are described in Section 3.5, Traffic.

Four intersections within the Study Area are projected to operate at unacceptable LOS (E or F) as a result of the project; however, mitigation measures have not been recommended at these intersections because mitigation is infeasible due to right-of-way constraints and other limitations identified during coordination meetings with the staff of the affected cities. These intersections include the following: Pacific Coast Hwy./Long Beach Blvd., Willow St./Atlantic Ave., 37th St./Santa Fe Ave., and Pacific Coast Hwy./Harbor Ave.

The four intersections listed above will be adversely impacted by the build alternatives and will not meet the LOS standard of LOS D or better. Therefore, the I-710 Corridor Project would have a potentially significant unavoidable impact on traffic at these four intersections.

4.2.4.5 MANDATORY FINDINGS OF SIGNIFICANCE (CEQA CHECKLIST QUESTION XVIII.B AND C)

The build alternatives, when combined with other cumulative projects, would contribute to cumulative impacts related to air quality, land use and planning, noise, population and housing, and transportation and traffic. The build alternatives would not contribute to cumulative adverse impacts related to aesthetics, agricultural resources, biological resources, geology and soils, hazards and hazardous waste, hydrology and water quality, mineral resources, public services, recreation, or utilities and service systems.

The proposed build alternatives would result in unavoidable significant impacts related to air quality, land use and planning, noise, population and housing, and transportation and traffic. Based on the analysis of potential mitigation for these impacts provided in Chapter 3.0, there is no feasible mitigation to avoid or reduce these impacts while still achieving the project goals and objectives. Therefore, the project would have direct and indirect adverse impacts on human beings that cannot be mitigated to a level below significance.

4.2.5 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 3.22 (Relationship between Local Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity) and Section 3.23 (Irreversible and Irretrievable Commitments of Resources that would be Involved in the proposed project) describe the potential long-term commitments of resources if a build alternative is implemented. Construction of the build alternatives would result in long-term and permanent commitments of natural, physical, human, and fiscal resources to the project. Land acquired for the project would be permanently committed to a transportation use and would no longer be available for residential, nonresidential, historical resource, or other uses. Other permanent environmental changes associated with the build alternatives include increased noise levels, increased nighttime lighting, altered viewsheds, consumption of construction materials and energy, permanent impacts to wetlands and other natural communities, removal of residential and nonresidential uses, and the loss of a park (Parque Dos Rios) as a result of Alternative 7.

4.3 CLIMATE CHANGE

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gases (GHGs), particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988, has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs related to human activity that include carbon dioxide (CO_2), methane

(CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2–tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts due to climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).[12]

4.3.1 REGULATORY SETTING

This section outlines Federal and State efforts to comprehensively reduce GHG emissions from transportation sources.

4.3.1.1 FEDERAL

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.[13] This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of

[12] Transportation and Climate Change Resource Center. Website: http://climatechange.transportation.org/ghg_mitigation/.

[13] Federal Highway Administration (FHWA). Sustainable Highways Initiative. Website: https://www.fhwa.dot.gov/environment/sustainability/resilience/.

sustainability."[14] Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR) was passed by Congress and set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

Energy Policy Act of 2005 (109th Congress H.R.6 (2005–2006) sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

Energy Policy and Conservation Action of 1975 and Corporate Average Fuel Standards: The Energy Policy and Conservation Act of 1975 (42 USC Section 6201 [1975]) establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, 74 *Federal Register* 52117 (October 8, 2009): This federal EO set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. It instituted as policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities.

[14] FHWA. Sustainable Highways Initiative. Website: https://www.sustainablehighways.dot.gov/overview.aspx.

Executive Order 13693, *Planning for Federal Sustainability*, 80 Federal Register 15869 (March 2015). This EO reaffirms the policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. It sets sustainability goals for all agencies to promote energy conservation, efficiency, and management by reducing energy consumption and GHG emissions. It builds on the adaptation and resiliency goals in EO 13693 to ensure agency operations and facilities prepare for impacts of climate change. This EO revokes EO 13514.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts* v. *EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010[15] and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and ARB will decide on CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered the EPA to reopen the review and reconsider the mileage target.[16]

[15] Center for Climate and Energy Solutions. Website: http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq.

[16] NBC News. March 16, 2017. Website: http://www.nbcnews.com/business/autos/trump-rolls-back-obama-era-fuel-economy-standards-n734256 and https://www.federalregister.gov/documents/2017/03/22/2017-05316/notice-of-intention-to-reconsider-the-final-determination-of-the-mid-term-evaluation-of-greenhouse.

NHTSA and EPA issued a Final Rule for "Phase 2" for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO_2 emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

Presidential Executive Order 13783, *Promoting Energy Independence and Economic Growth*, of March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

4.3.1.2 STATE

With the passage of legislation including State Senate and Assembly bills and executive orders, California has been innovative and proactive in addressing GHG emissions and climate change.

Assembly Bill 1493, Pavley Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (June 1, 2005): The goal of this executive order (EO) is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and SB 32 in 2016.

Assembly Bill 32 (AB 32), Chapter 488, 2006: Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

Senate Bill 97 (SB 97), Chapter 185, 2007, Greenhouse Gas Emissions: This bill requires the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

Senate Bill 391 (SB 391), Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Executive Order B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero emission vehicles. It directs these entities to achieve various benchmarks related to zero emission vehicles.

Executive Order B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$). Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, (SB 32) Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

4.3.2 ENVIRONMENTAL SETTING

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. ARB approved the ***First Update to the Climate Change Scoping Plan*** on May 22, 2014. ARB is moving forward with a

discussion draft of an updated Scoping Plan that will reflect the 2030 target established in EO B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California.[17] ARB is responsible for maintaining and updating California's GHG Inventory per Health and Safety Code Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure 4.3-1 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in demonstrating progress toward meeting the 2020 goal of 431 MMTCO2e.[18] The 2017 edition of the GHG emissions inventory (released June 2017) found total California emissions of 440.4 $MMTCO_2e$, showing progress towards meeting the AB 32 goals.

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated from Pavley I and the Renewable Electricity Standard (30 $MMTCO_2e$ total). With these reductions in the Baseline, estimated 2020 statewide BAU emissions are 509 $MMTCO_2e$.

[17] 2016 Edition of the GHG Emission Inventory Released (June 2016): https://www.arb.ca.gov/cc/inventory/data/data.htm

[18] The revised target using Global Warming Potentials (GWP) from the IPCC Forth Assessment Report (AR4)

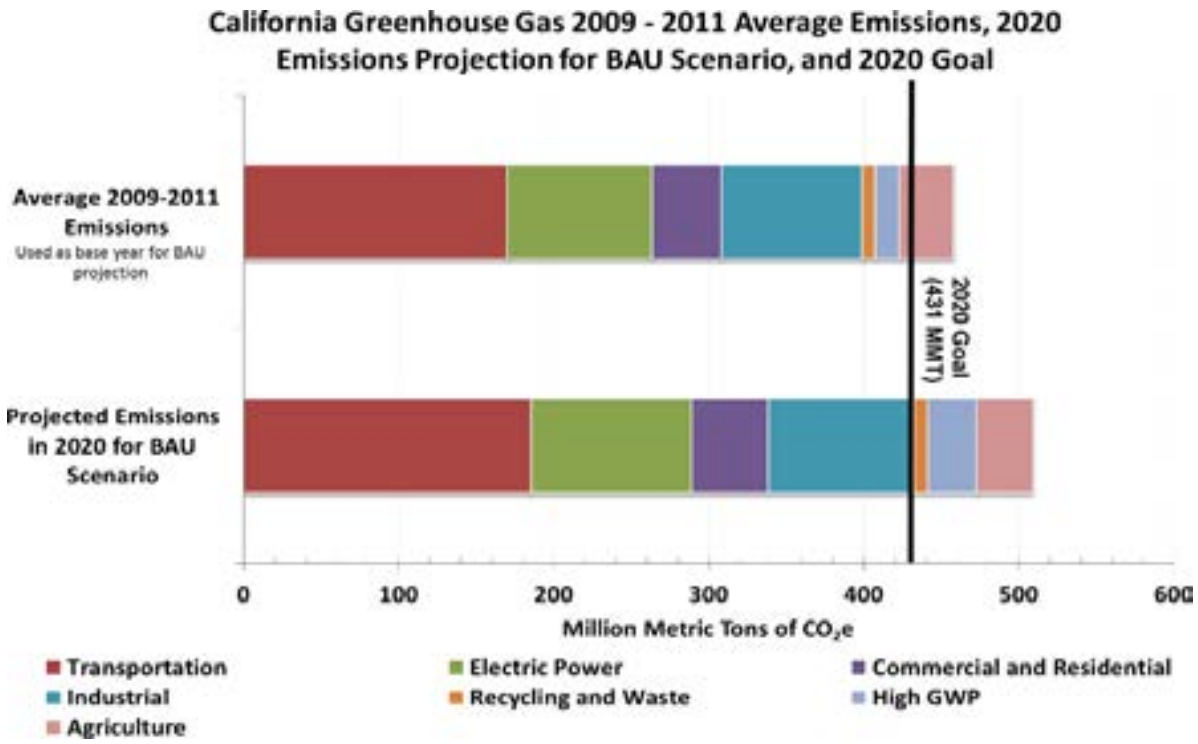

Figure 4.3-1: Projected 2020 Emissions

4.3.3 PROJECT ANALYSIS

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations.

4.3.4 LONG-TERM OPERATIONAL EMISSIONS

Four primary strategies can reduce GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity), (3) transitioning to lower GHG-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective all four strategies should be pursued concurrently.

FHWA supports these strategies to lessen climate change impacts and correlate with efforts that the state of California is undertaking to reduce GHG emissions from the transportation sector.

The highest levels of CO_2 from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 4.3-2, below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, GHG emissions, particularly CO_2, may be reduced. The purpose of the proposed

project is to (1) improve air quality and public health, (2) improve traffic safety, (3) modernize freeway design, (4) accommodate projected traffic volumes, and (5) address increased traffic volumes resulting from projected growth in population, employment, and economic activities

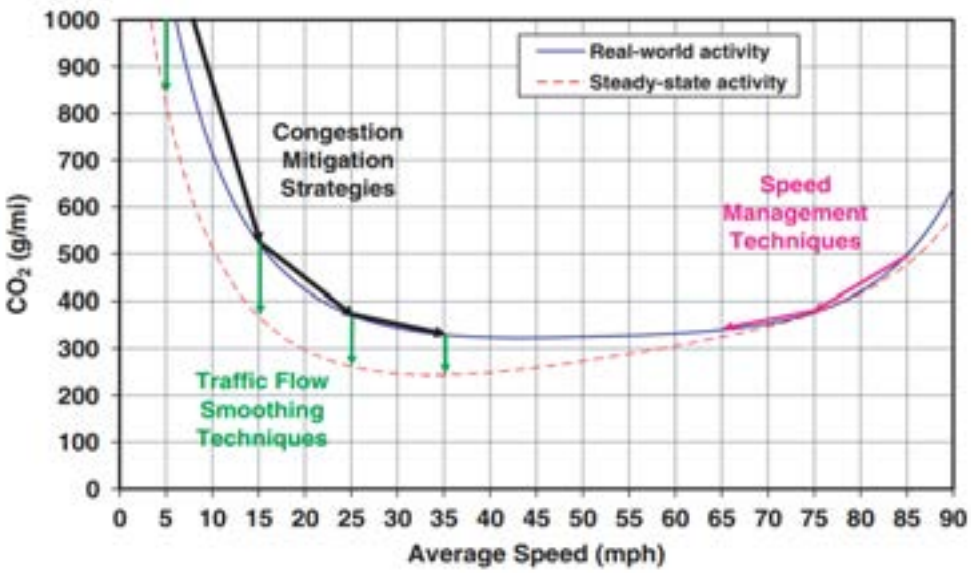

Figure 4.3-2: Possible Use of Traffic Operation Strategies in Reducing On-Road CO_2 Emission[19]

[19] Transportation Research Board Publications. 2010. *Traffic Congestion and Greenhouse Gases*. Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010). Website: http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf.

related to goods movement. Southern California Association of Governments (SCAG) included an SCS as part of both its 2012 and 2016 RTP/SCS. Under SB 375, the primary goal of the SCS is to provide a vision for future growth that will decrease per capita GHG emissions from automobiles and light trucks. By providing a modernized design, increased capacity, and improved interchange connections, the proposed build alternatives would help achieve the improved access and mobility goals of SCAG's 2016 RTP/SCS.

Analyses of GHG emissions were performed for the following conditions:

- 2012 Existing/Baseline Year
- 2035 Future Year for Alternatives 1 (No Build), 5C, and 7

An analysis of VMT and vehicle hours of delay (VHD) within the Study Area is shown in the table below. Table 4.3-1 compares the VMT and VHD for 2012 Baseline, Alternative 1 (No Build), and the build alternatives.

Table 4.3-1: Vehicle Miles Traveled and Vehicle Hours of Delay

	2012 Baseline	Alternative 1 (2035 No Build)	Alternative 5C	Alternative 7
Vehicle Miles Traveled	20,709,520	22,078,747	22,467,694	22,682,844
Vehicle Hours Traveled	555,282	613,918	616,375	614,294
Vehicle Hours of Delay	83,454	105,752	102,387	99,333

Source: AECOM. *Traffic Operations Analysis Report* (March 2017).

As shown in Table 4.3-1, compared to both the 2012 Baseline and the No Build Alternative, VMT associated with the build alternatives would increase throughout the Study Area, most likely due to the increase in capacity associated with the I-710 Corridor improvements. As capacity is added, additional drivers may choose to use the I-710 Corridor. It should be noted that although the VMT would increase, VHD is forecast to decrease compared to the no build alternative throughout the Study Area, which is also likely due to the capacity improvements proposed as part of Alternatives 5C and 7. VHD associated with the build alternatives increases compared to the 2012 baseline, likely due to anticipated population and job growth in the Study Area.

As discussed previously in Chapter 2.0, alternative travel modes were considered during the early planning studies. A separate Transportation System Management/Transportation Demand Management (TSM/TDM) alternative (Alternative 2) was considered for inclusion in the Draft EIR/EIS but withdrawn from consideration because TSM/TDM measures alone could not satisfy the purpose of and need for the I-710 Corridor Project. While Alternative 2 comprised transit, policy, Intelligent Transportation Systems (ITS) application, and operational improvements that would have a beneficial effect on mobility in the project area, the screening analysis demonstrated that these transportation improvements did not go far enough in resolving the worst of the congestion problems, air quality issues, design deficiencies, and safety concerns that affect motorists and residents within the overall I-710 Corridor area. Instead, TSM/TDM measures were incorporated into the Reduced Set of Alternatives for the I-710 Corridor Project, as discussed in detail in Section 2.4.1.2.

4.3.4.1 QUANTITATIVE ANALYSIS

A combination of the methodologies, provided in the California Climate Action Registry's *General Reporting Protocol* (CCAR GRP), Version 3.0 (CCAR 2008), and fuel consumption/efficiency data developed using EMFAC 2014 and OFFROAD 2007 models, was used to calculate the GHG emissions associated with the project.

The total GHG emissions in CO_2e from the 2012 Baseline condition were reported in carbon dioxide equivalents (CO_2e) and are shown in Table 4.3-2, below. CO_2e is the universal unit of measurement to indicate the global warming potential (GWP) of each of the six GHGs, expressed in terms of the GWP of one unit of CO_2. It is used to evaluate the impact of different GHGs on a common basis. Emissions of each GHG were converted to CO_2e by multiplying the CH_4 and N_2O emissions with the respective GWP. Additional details on the methodology and detailed emission calculation tables can be found in Appendix C of the AQ/GHG/HRA Technical Study (June 2017). To focus on the impact of the proposed project build alternatives, Table 4.3-2 summarize the results of the traffic-related GHG emissions for the 2012 Baseline, the 2035 No Build Alternative (Alternative 1), and the 2035 Build Alternatives (Alternatives 5C and 7). The CO_2 emissions for Alternative 7 in Table 4.3-2 include the emissions that would be generated from the electricity required to power the zero-emission corridor.

Table 4.3-2: 2035 GHG Emissions using the I-710 Traffic Model Data as Compared to 2012 Baseline for the South Coast Air Basin

GHG	2012 Baseline (MT/year)	Alt. 1 – 2035 (MT/year)	Alt. 5C – 2035 (MT/year)	Alt. 7 – 2035 (MT/year)	Alt. 7-ZE – 2035 (MT/year)
CH_4[1]	2,816	952.8	951.7	949.7	931.1
N_2O[1]	1,467	675.8	676.2	676.7	633.0
CO_2	52,100,000	39,450,000	39,470,000	39,480,000	38,170,000
Total (CO_2e)	**52,610,000**	**39,680,000**	**39,690,000**	**39,700,000**	**38,380,000**

Source: : Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).

[1] CH_4 and N_2O are converted to CO_2e using GWPs of 25, and 298, respectively. GWP values were taken from the 2007 IPCC Fourth Assessment Report and are consistent with the values used by ARB in the 2016 Edition of the *California Greenhouse Gas Emission Inventory.*

ARB = California Air Resources Board
Alt. = Alternative
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent: CO_2e is the universal unit of measurement to indicate the GWP of each of the six GHGs, expressed in terms of the GWP of one unit of CO_2. It is used to evaluate the impact of different GHGs on a common basis.
GHG = greenhouse gas
GWP = global warming positions
I-710 = Interstate 710
IPCC = Intergovernmental Panel on Climate Change
MT = metric tonne(s)
N_2O = nitrous oxide

All of the alternatives, when compared to the 2012 Baseline, including the No Build Alternative, would decrease the regional GHG emissions by approximately 13,000,000 metric tons of CO_2e per year. When compared to the No Build conditions, the regional GHG emissions would remain approximately the same for Alternatives 5C and 7. When compared to the 2035 No Build Alternative, Alternative 5C would increase the regional GHG emissions by approximately 10,000 metric tons of CO_2e per year, and Alternative 7 would increase the regional GHG emissions by 20,000 metric tons of CO_2e per year.

DESIGN OPTION 7ZE. When compared to the 2012 Baseline condition, methane (CH_4) and nitrous oxide (N_2O) do not change appreciably in the ZE Design Option in 2035 (compared to Alternative 7 in 2035 evaluated in the AQ/GHG/HRA Technical Study [June 2017]) because trucks are an insignificant source of these emissions.[20] The total GHG emissions decrease by approximately 1.3 million metric tonnes of CO_2e (tons of CO_2 equivalents) for Alternative 7 in the ZE Design Option in 2035 as compared to the original Alternative 7 in 2035 evaluated in the AQ/GHG/HRA Technical Study (June 2017). When compared to Existing Baseline 2012, 2035 Design Option 7ZE displays a decrease in total GHGs by 14.2 million metric tons of CO_2e. When compared to 2035 Alternative 1 (No Build Alternative), 2035 Design Option 7ZE displays a decrease in total GHGs (approximately 3 percent), while 2035 Alternative 7 displays a negligible change.

4.3.4.2 LIMITATIONS AND UNCERTAINTIES WITH MODELING

EMFAC. Although EMFAC can calculate CO_2 emissions from mobile sources, the model does have limitations when it comes to accurately reflecting changes in CO_2 emissions due to impacts on traffic. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008) and a 2009 University of California study,[21] brief but rapid accelerations, such as those occurring during congestion, can contribute significantly to a vehicle's CO_2 emissions during a typical urban trip. Current emission-factor models do not distinguish the emission of such modal events (i.e., acceleration or deceleration) in the operation of a vehicle and instead estimate emissions by the average trip speed. It is difficult to model this because the frequency and rate of acceleration or deceleration at which drivers choose to operate their vehicles depends on each individual's human behavior, their reaction to other vehicles' movements around them, and their acceptable safety margins. Currently, the EPA and the ARB have not approved a modal emissions model that is capable of conducting such detailed modeling. This limitation is a factor to consider when comparing the model's estimated emissions for various project alternatives against a baseline value to determine impacts.

OTHER VARIABLES. With the current understanding, project-level analysis of GHG emissions has limitations. Although a GHG analysis is included for this project, there are numerous external variables that could change during the design life of the proposed project and would thus change the projected CO_2 emissions.

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[20] Ramboll-Environ. 2016. Appendix F – 2035 Alternative 7 Zero Emission Option. *Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* for the I-710 Corridor Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement, June 2017.

[21] Matthew Bartha, Kanok Boriboonsomsin. 2009. *Energy and emissions impacts of a freeway-based dynamic eco-driving system.* Transportation Research Part D: Transport and Environment. Volume 14, Issue 6, August 2009, Pages 400–410.

First, vehicle fuel economy is increasing. The EPA's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2012,"[22] which provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy improves each year with a noticeable rate of change beginning in 2005. Corporate Average Fuel Economy (CAFE) standards remained the same between model years 1995 through 2003, subsequently increasing to higher fuel economy standards for future vehicle model years. The EPA estimates that light-duty fuel economy rose by 16 percent from 2007 to 2012. Table 4.3-4 shows the increases in required fuel economy standards for cars and trucks between Model Years 2012 and 2025, as available from the NHTSA for the 2012–2016 and 2017–2025 CAFE Standards.

Table 4.3-4: Average Required Fuel Economy (mpg)

	2012	2013	2014	2015	2016	2018	2020	2025
Passenger Cars	33.3	34.2	34.9	36.2	37.8	41.1–41.6	44.2–44.8	55.3–56.2
Light Trucks	25.4	26	26.6	27.5	28.8	29.6–30.0	30.6–31.2	39.3–40.3
Combined	29.7	30.5	31.3	32.6	34.1	36.1–36.5	38.3–38.9	48.7–49.7

Source: United States Environmental Protection Agency (2013) (Website: http://www.epa.gov/fueleconomy/fetrends/1975-2012/420r13001.pdf).
mpg = miles per gallon

Second, new lower emissions and zero emission vehicles will come into the market within the expected design life of this project. According to the 2013 Annual Energy Outlook (AEO2013):

> "Light Duty Vehicles (LDVs) that use diesel, other alternative fuels, hybrid-electric, or all-electric systems play a significant role in meeting more stringent GHG emissions and CAFE standards over the projection period. Sales of such vehicles increase from 20 percent of all new LDV sales in 2011 to 49 percent in 2040 in the AEO2013 Reference case."[23]

The greater percentage of lower emissions and zero emission vehicles on the road in the future will reduce overall GHG emissions as compared to scenarios in which vehicle technologies and fuel efficiencies do not change.

Third, California adopted a low-carbon transportation fuel standard in 2009 to reduce the carbon intensity of transportation fuels by 10 percent by 2020. The regulation became effective on January 12, 2010 (codified in Title 17, California Code of Regulations, Sections 95480-95490).

[22] EPA. Website: http://www.epa.gov/oms/fetrends.htm.

[23] U.S. Energy Information Administration (EIA). 2013. *Annual Energy Outlook 2013 with Projections to 2040.* Website: http://www.eia.gov/forecasts/aeo/ pdf/0383 pdf.

Beginning January 1, 2011, transportation fuel producers and importers must meet specified average carbon intensity requirements for fuel in each calendar year.

4.3.4.3 LIMITATIONS AND UNCERTAINTIES WITH IMPACT ASSESSMENT

Taken from page 5-22 of the NHTSA Final EIS for model year 2017–2025 CAFE Standards (July 2012), Figure 4.3-3 illustrates how the range of uncertainties in assessing GHG impacts grows with each step of the analysis:

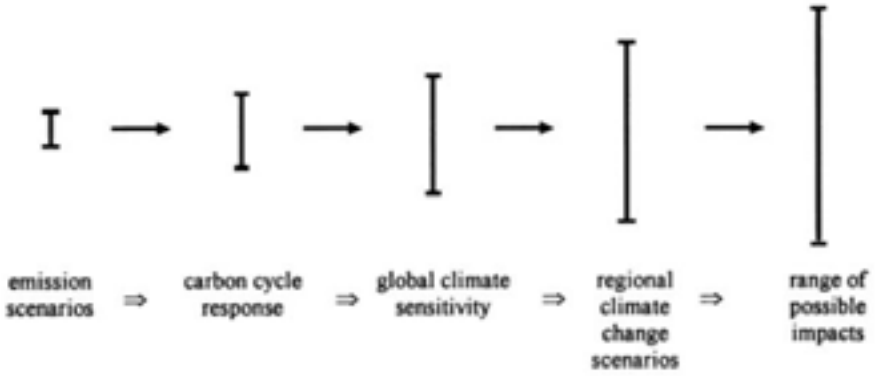

Figure 4.3-3 Cascade of Uncertainties

> *"Cascade of uncertainties typical in impact assessments showing the 'uncertainty explosion' as these ranges are multiplied to encompass a comprehensive range of future consequences, including physical, economic, social, and political impacts and policy responses."*

Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in CO_2 emissions would mean for climate change given the overall California GHG emissions inventory of approximately 430 million tons of CO_2e. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global GHG emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce GHG emissions. Non-mitigation IPCC scenarios project an increase in global GHG emissions by 9.7 up to 36.7 billion metric tons CO_2 from 2000 to 2030, which represents an increase of between 25 and 90 percent.[24]

[24] Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. Website: http://www.ipcc.ch/SPM2feb07.pdf.

The assessment is further complicated by the fact that changes in GHG emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of GHG emissions, rather than causing "new" GHG emissions. It is difficult to assess the extent to which any project level increase in CO_2 emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

The complexities and uncertainties associated with project-level impact analysis are further borne out in the recently released Final EIS completed by the NHTSA CAFE standards (October 2008). As the text quoted below shows, even when dealing with GHG emission scenarios on a national scale for the entire passenger car and light-truck fleet, the numerical differences among alternatives is very small and well within the error sensitivity of the model.

> *"In analyzing across the CAFE 30 alternatives, the mean change in the global mean surface temperature, as a ratio of the increase in warming between the B1 (low) to A1B (medium) scenarios, ranges from 0.5 percent to 1.1 percent. The resulting change in sea level rise (compared to the No Action Alternative) ranges, across the alternatives, from 0.04 centimeter to 0.07 centimeter. In summary, the impacts of the model year 2011–2015 CAFE alternatives on global mean surface temperature, sea level rise, and precipitation are relatively small in the context of the expected changes associated with the emission trajectories. This is due primarily to the global and multi-sectoral nature of the climate problem. Emissions of CO_2, the primary gas driving the climate effects, from the United States automobile and light truck fleet represented about 2.5 percent of total global emissions of all greenhouse gases in the year 2000 (EPA, 2008; CAIT, 2008). While a significant source, this is a still small percentage of global emissions, and the relative contribution of CO_2 emissions from the United States light vehicle fleet is expected to decline in the future, due primarily to rapid growth of emissions from developing economies (which are due in part to growth in global transportation sector emissions)." [NHTSA Draft EIS for New CAFE Standards, June 2008, pp. 3-77 to 3-78].*

4.3.5 CONSTRUCTION EMISSIONS

Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. Calculations included in Appendix B of the AQ/GHG/HRA Technical Study (June 2017) using the I-710 Construction Emissions Model, a modified version of the Sacramento Metropolitan Air Quality Management District (SMAQMD) Road Construction Emissions Model,

version 8.1.0, estimate that thirty-year amortized annual average construction GHGs are calculated to be approximately 4,700 or 7,500 metric tons per year of CO_2e for Alternatives 5C and 7, respectively. Table 4.3-5 lists the GHG emissions that would be generated in each of the construction years along with the total GHG emissions that would be generated by each of the build alternatives. Measures listed in Section 3.24.4.13 would reduce the GHG emissions generated by on-site construction equipment. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

Table 4.3-5: Yearly Mass Emissions of CO_2e for Construction of Alternatives 5C and 7

Year	Alternative 5C (metric tons)/year	Alternative 7 (metric tons)/year
2021	1,200	No Data
2022	9,800	1,000
2023	17,000	8,300
2024	25,000	19,000
2025	31,000	30,000
2026	20,000	33,000
2027	16,000	33,000
2028	5,000	29,000
2029	6,900	22,000
2030	2,300	12,000
2031	4,200	10,000
2032	3,300	17,000
2033	No Data	10,000
Total	**140,000**	**220,000**

Source: Ramboll-Environ. *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (June 2017).
CO_2e = carbon dioxide equivalent: CO_2e is the universal unit of measurement to indicate the global warming potential (GWP) of each of the six GHGs, expressed in terms of the GWP of one unit of CO_2. It is used to evaluate the impact of different GHGs on a common basis.

4.3.6 CEQA Conclusion

As discussed above, the proposed project would result in a small decrease (less than 1 percent) in CO_2e emissions within the region in 2035 when compared to the 2035 without-project conditions. When compared to the 2012 existing Baseline, the proposed project would decrease the regional GHG emissions by approximately 13,000,000 metric tons of CO_2e per year. The project would result in a slight increase in GHG emissions during construction. In addition, as discussed above, there are also limitations with EMFAC and with assessing what a given CO_2e emissions increase means for climate change. While it is Caltrans' determination that in the

absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

4.3.7 GREENHOUSE GAS REDUCTION STRATEGIES

4.3.7.1 STATEWIDE EFFORTS

In an effort to further the vision of California's GHG reduction targets outlined an AB 32 and SB 32, Governor Brown identified key climate change strategy pillars (concepts); see Figure 4.3-4. These pillars highlight the idea that several major areas of the California economy will need to reduce emissions to meet the 2030 GHG emissions target. These pillars are (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farm and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that we build on our past successes in reducing criteria and toxic air pollutants from transportation and goods movement activities. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. One of Governor Brown's key pillars sets the ambitious goal of reducing today's petroleum use in cars and trucks by up to 50 percent by 2030.

Governor Brown called for support to manage natural and working lands, including forests, rangelands, farms, wetlands, and soils, so they can store carbon. These lands have the ability to remove carbon dioxide from the atmosphere through biological processes, and to then sequester carbon in above- and below-ground matter.

Figure 4.3-4: The Governor's Climate Change Pillars: 2030 Greenhouse Gas Reduction Goals

CALTRANS ACTIVITIES

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set a new interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

CALIFORNIA TRANSPORTATION PLAN (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system. It serves as an umbrella document for all of the other statewide transportation planning documents.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

CALTRANS STRATEGIC MANAGEMENT PLAN

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT per capita
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

FUNDING AND TECHNICAL ASSISTANCE PROGRAMS

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several funding and technical assistance programs that have GHG reduction benefits. These include the Bicycle Transportation Program, Safe Routes to School, Transportation Enhancement Funds, and Transit Planning Grants. A more extensive description of these programs can be found in Caltrans Activities to Address Climate Change (2013).

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a department policy that will ensure coordinated efforts to incorporate climate change into departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce GHG emissions resulting from agency operations.

PROJECT-LEVEL GHG REDUCTION STRATEGIES

Through coordination with the project development team, the following measures will be implemented in the I-710 Corridor Project to reduce GHG emissions and potential climate change impacts from the project:

- Caltrans and the California Highway Patrol are working with regional agencies to implement ITS to help manage the efficiency of the existing highway system. ITS is commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system. Proposed work under the build alternatives includes the addition of updated fiber-optic communications to interconnect traffic signals along major arterial streets to provide for continuous, real-time adjustment of signal timing to improve traffic flow, as well as other technology improvements, and Transportation Management Center (TMC) upgrades and inter-ties necessary to control and monitor the ITS system.

- Transit elements, described more fully in Section 2.3.2.1, are included in the scope of both proposed build alternatives. These transit elements include increased bus and rail service throughout the Study Area, as well as three new Metro Rapid and Express lines.
- Landscaping reduces surface warming, and through photosynthesis, decreases CO_2. Landscaping would be provided consistent with the *I-710 Corridor Aesthetic Master Plan* where necessary within the corridor to provide aesthetic treatment, replacement planting, or mitigation planting for the I-710 Corridor Project. The landscape planting would help offset any potential CO_2 emissions increase. The number of new trees, shrubs, and foliage planted within Caltrans' right of way will be maximized, and of species that are drought resistant and have superior biosequestration and biofiltration capabilities.
- The project would incorporate the use of energy-efficient lighting, such as light-emitting diode (LED) traffic signals. LED bulbs—or balls, in the stoplight vernacular—cost $60 to $70 apiece but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED balls themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the project's CO_2 emissions.[25] An area lighting plan will be prepared prior to the completion of final design (see Section 3.15.5.3 for more details).
- According to Caltrans *Standard Specifications*, idling time for lane closure during construction is restricted to ten minutes in each direction. In addition, the contractor must comply with Title 13, California Code of Regulations §2449(d)(3), adopted by ARB on June 15, 2008. This regulation restricts idling of construction vehicles to no longer than five consecutive minutes. Compliance with this regulation reduces harmful emissions from diesel-powered construction vehicles.
- The project will implement "Complete Streets" treatments that promote sustainable and "livable neighborhoods" for arterials, ramp termini, and intersections improved as part of the project. Designs shall be consistent with the principles outlined in Caltrans' *Main Streets, California: A Guide for Improving Community and Transportation Vitality* (2013). This includes the provision of up to five bicycle/pedestrian overcrossings in order to improve active transportation and mobility within the corridor. Improvements (including addition of turn lanes and other spot improvements) at impacted arterial intersections are also proposed to improve traffic flow on arterials.
- Both build alternatives include the ZE/NZE Truck Technology Deployment Program (see Section 2.3.2.1 for more detail), which would provide funding to individual owner-

[25] Knoxville Business Journal. 2008. *LED Lights Pay for Themselves*. Website: http://www.knox news.com/news/ 2008/may/19/led-traffic-lights-pay-themselves/ (accessed May 19, 2008).

operators and privately owned truck fleets to subsidize the purchase of heavy-duty ZE/NZE trucks for use within the I-710 Corridor.

- A construction efficiency plan and a maintenance efficiency plan (refer to Section 3.15.5 for the specific elements of these plans) will be prepared in order to maximize and promote energy efficiency during the construction and maintenance phases of the project.
- CON-AQ-1 (see Section 3.24.4.13): The Construction Contractor would comply with Caltrans Standard Specifications, Sections 7-1.01F and 10. Section 7, "Legal Regulations and Responsibility to the Public," addresses the Construction Contractor's responsibility on many items of concern, such as air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 7-1.01F specifically requires compliance by the Construction Contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
- CON-AQ-7 (see Section 3.24.4.13): The Construction Contractor would establish Environmentally Sensitive Areas (ESAs) for sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited to the extent feasible. In addition, a strong anti-idling policy will be implemented at all construction sites as part of an air quality impact training program that will include education on potential health risks to nearby receptors and ways to reduce emissions, including no idling, use of PM filters, use of alternative fuels, etc.
- CON-AQ-15 (see Section 3.24.4.13): Dependent upon the responsible agency that administers the construction contract, construction equipment may meet equivalent emissions performance to that of United States Environmental Protection Agency (EPA) Tier 4 standards and California Air Resources Board (ARB) requirements for non-road engines, if such construction equipment is available. Metro's Green Construction Policy would be utilized if Metro administers the construction contract.
- CON-AQ-16 (see Section 3.24.4.13): Comply with ARB's anti-idling rule, which prohibit diesel truck idling in excess of five minutes.
- In addition, depending upon the agency (i.e., Caltrans or Metro) that administers the construction contract, legally enforceable measures intended to reduce GHG emissions from the 2016 SCAG RTP/SCS will be included in the Plans, Specifications, and Estimates package prepared for the project.

4.3.8 ADAPTATION STRATEGIES

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the State's transportation infrastructure and strengthen or protect the facilities from damage—or, put another way, planning and design for resilience. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds by longer periods of intense heat, increasing storm damage from flooding and erosion, and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. These types of impacts to the transportation infrastructure may also have economic and strategic ramifications.

4.3.8.1 FEDERAL EFFORTS

At the Federal level, the Climate Change Adaptation Task Force, co-chaired by the CEQ, the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011,[26] outlining the Federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provided an update on actions in key areas of Federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as fresh water, and providing accessible climate information and tools to help decision-makers manage climate risks.

The federal Department of Transportation issued the *U.S. DOT Policy Statement on Climate Adaptation* in June 2011, committing to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of the DOT in order to ensure that taxpayer resources are invested wisely and that transportation infrastructure, services and operations remain effective in current and future climate conditions."[27]

To further the DOT Policy Statement, on December 15, 2014, FHWA issued order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*). This directive established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The FHWA will work to integrate consideration of these risks into its planning, operations, policies, and

[26] The White House. Council on Environmental Quality. Website: https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience.

[27] FHWA. Office of Planning, Environment, & Realty. Sustainability. Website: https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm.

programs in order to promote preparedness and resilience; safeguard Federal investments; and ensure the safety, reliability, and sustainability of the nation's transportation systems.

FHWA has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, state, and local levels.[28]

4.3.8.2 STATE EFFORTS

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of State agencies to address California's vulnerability to sea-level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea-level rise and directed all State agencies planning to construct projects in areas vulnerable to future sea-level rise to consider a range of sea-level rise scenarios for the years 2050 and 2100, assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea-level rise. Sea-level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, and storm surge and storm wave data.

Governor Schwarzenegger also requested the National Academy of Sciences to prepare an assessment report to recommend how California should plan for future sea-level rise. The final report, *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (Sea-Level Rise Assessment Report)[29] was released in June 2012 and included relative sea-level rise projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates; and the range of uncertainty in selected sea-level rise projections. It provided a synthesis of existing information on projected sea-level rise impacts to State infrastructure (such as roads, public facilities, and beaches), natural areas, and coastal and marine ecosystems; and a discussion of future research needs regarding sea-level rise.

In response to EO-S-13-08, the California Natural Resources Agency (Resources Agency), in coordination with local, regional, State, Federal, and public and private entities, developed *The California Climate Adaptation Strategy* (Dec 2009),[30] which summarized the best available science on climate change impacts to California, assessed California's vulnerability to the identified impacts, and outlined solutions that can be implemented within and across State

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[28] FHWA. Office of Planning, Environment, & Realty. Sustainability. Website: https://www.fhwa.dot.gov/environment/sustainability/resilience/.

[29] *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.

[30] California Climate Change. Website: http://www.climatechange.ca.gov/adaptation/strategy/index.html.

agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan).

Governor Jerry Brown enhanced the overall adaptation planning effort by signing EO B-30-15 in April 2015, requiring State agencies to factor climate change into all planning and investment decisions. In March 2016, sector-specific Implementation Action Plans that demonstrate how State agencies are implementing EO B-30-15 were added to the Safeguarding California Plan. This effort represents a multi-agency, cross-sector approach to addressing adaptation to climate change-related events statewide.

EO S-13-08 also gave rise to the *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided "guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California," specifically, "information and recommendations to enhance consistency across agencies in their development of approaches to SLR." The March 2013 update[31] finalizes the SLR Guidance by incorporating findings of the National Academy's 2012 final Sea-Level Rise Assessment Report; the policy recommendations remain the same as those in the 2010 interim SLR Guidance. The guidance will be updated as necessary in the future to reflect the latest scientific understanding of how the climate is changing and how this change may affect the rates of SLR.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation, and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is actively engaged in in working towards identifying these risks throughout the state and will work to incorporate this information into all planning and investment decisions as directed in EO B-30-15.

All projects that have filed a Notice of Preparation (NOP) as of the date of the EO S-13-08, and/or are programmed for construction funding through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines.

An NOP was posted at the State Clearinghouse (SCH No. 2008081042) and circulated to public agencies and other interested parties in compliance with Section 15082 of the CEQA Guidelines on August 15, 2008. The NOP notified the public of the EIR/EIS being prepared along with the scoping meeting locations and how to provide comments on the project. Since an NOP has been filed for the I-710 Corridor Project, no further analysis is mandated. However, the project

[31] State of California Ocean Protection Council. Website: http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document/.

may be subject to the effects of sea level rise at the south end. Climate change impact and risk assessments for California's water resources conducted by the California Department of Water Resources utilized a sequence of models to translate global scenarios to regional and local impacts.[32] Sea level rise projections presented in the June 2012 National Research Council report on *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*[33] show that projected sea level rise from a 2000 baseline south of Cape Mendocino will be up to 0.98 feet in 2030, up to 2.0 feet in 2050, and up to 5.48 feet in 2100. The anticipated design life of the project is 40 years. The project limits themselves would not be directly affected by the projected rises in sea level; however, traffic (particularly truck trips, which are a substantial component of the purpose and need for the project) that has origins and/or destinations at the Ports of Los Angeles and Long Beach may be drastically reduced, as the Port complex would likely be inundated.

4.4 MITIGATION MEASURES FOR SIGNIFICANT IMPACTS UNDER CEQA

As discussed above, mitigation measures were developed to address the significant adverse impacts of the build alternatives. Those measures are listed below by environmental topic.

- **Aesthetics:** See Section 3.6.4.
- **Biological Resources:** See Sections 3.16.4; 3.19.4; and 3.21.4.
- **Hazards and Hazardous Materials:** See Section 3.12.4.
- **Land Use and Planning:** See Section 3.3.2.4.
- **Geology:** See Section 3.10.3.
- **Paleontological Resources:** See Section 3.11.4.
- **Air Quality:** See Section 3.13.4.
- **Noise:** See Section 3.14.5.
- **Population and Housing:** See Section 3.3.2.4.
- **Transportation/Traffic:** See Section 3.5.4.
- **Utilities and Service Systems:** See Section 3.4.3.
- **Construction (all topics):** See Section 3.24.4.

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[32] California Department of Water Resources, 2008. *Progress on Incorporating Climate Change into Management of California's Water Resources.* January.

[33] National Research Council, 2012. *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*. Washington, DC: The National Academies Press. Website: doi:https://doi.org/10.17226/13389.

5.0 COMMENTS AND COORDINATION

5.1 INTRODUCTION

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners to determine the necessary scope of environmental documentation and level of analysis required, and to identify potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including an extensive multi-tiered community participation process with numerous public meetings and interagency coordination meetings. This chapter summarizes the results of the efforts by the California Department of Transportation (Caltrans), the Los Angeles County Metropolitan Transportation Authority (Metro), and the Interstate 710 (I-710) partner agencies to fully identify, address, and resolve project-related issues through early and continuing coordination.

This chapter focuses on coordination efforts since the release of the 2012 Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). For more detailed information on scoping and other coordination efforts leading up to the 2012 public comment period, please refer to Chapter 5.0 of the I-710 Corridor Project Draft EIR/EIS.

5.2 2012 DRAFT EIR/EIS COMMENT PERIOD

5.2.1 DISTRIBUTION OF 2012 DRAFT EIR/EIS

The Draft EIR/EIS for the I-710 Corridor Project was approved on June 29, 2012. A Notice of completion of the Draft EIR was sent to the State Clearinghouse and posted June 27, 2012**.** The availability of the Draft EIS and Section 4(f) evaluation was advertised in Volume 77, Issue No. 124 of the Federal Register on June 27, 2012. In addition, the Draft EIR/EIS was submitted to the California Transportation Commission by Caltrans Headquarters.

Several methods were utilized to notify the public of the availability of the document. A letter, included in Appendix J of this RDEIR/SDEIS, Comments and Coordination, was mailed to those on the distribution list as included in the 2012 Draft EIR/EIS. A notice of availability of the Draft EIR/EIS with instructions on how and where to access the document and submit comments, as well as information on the public hearings, was published in the Los Angeles Times on June 29 and August 4, 2012; the Long Beach Press-Telegram on June 29 and August 3, 2012; La Opinion (Spanish-language publication) on June 29 and August 3, 2012; the Los Angeles Eastside Sun on July 7 (internet only), July 12, and August 3, 2012; and the Los Angeles Watts Times on July 5 and August 2, 2012. The text of the newspaper advertisements in both English and Spanish is also included in Appendix J. In addition, a postcard mailer was sent to all property owners and occupants within a 300-foot radius of the project improvements notifying

them of the availability of the document and of the opportunity to review and comment. Notices were sent via email to the email addresses on file in the project database maintained by Metro.

The Draft EIR/EIS along with all supporting technical studies was made available for download on the Caltrans District 7 website (http://www.dot.ca.gov/dist07), and linked from the Metro and the Gateway Cities Council of Governments (Gateway Cities COG) websites. Electronic (CD) copies of the document were mailed via the U.S. Postal Service to the distribution list included in Chapter 7.0 of the 2012 Draft EIR/EIS. Hard copies of the Draft EIR/EIS were distributed to five corridor-area public libraries, as well as made available for review at the Caltrans District 7 office, located at 100 S. Main St., Los Angeles, CA 90012; the Dorothy Peyton Grey Transportation Library located at Metro, and at the Gateway Cities COG office located in Paramount. A total of 39 libraries throughout the Study Area received CD copies of the Draft EIR/EIS and supporting technical studies.

The Executive Summary of the Draft EIR/EIS was translated and released in Spanish, Khmer, Korean, Vietnamese, and Tagalog. They were posted online and made available in hard copy at the five libraries within the Study Area where hard copies of the Draft EIR/EIS were made available.

The public circulation period was originally scheduled to last 60 days, beginning on June 29, 2012, and ending on August 29, 2012. However, Caltrans, in coordination with the project funding partners and in response to public requests, extended the circulation end date to September 28, 2012 for a 91-day total circulation period. The Notice of Availability letter that extended the comment period until September 28, 2012, is included in Appendix J.

5.2.2 2012 DRAFT EIR/EIS PUBLIC HEARINGS

Three public hearings were held in support of the release of the Draft EIR/EIS. Locations were chosen throughout the corridor to maximize the potential attendance. The public hearings were held as follows:

- Tuesday, August 7, 2012, 6:00 p.m. to 9:00 p.m., Progress Park, Paramount
- Wednesday, August 8, 2012, 6:00 p.m. to 9:00 p.m., Silverado Park Community Center, Long Beach
- Thursday, August 9, 2012, 4:00 p.m. to 8:00 p.m., Rosewood Park, Commerce

Public hearings were held in a format that combined an “open house” style wherein attendees could view exhibits and speak with agency and consultant staff, followed by a more formal public hearing. Spanish-language and sign language translators were made available during the entirety of the meeting, as well as court reporters who transcribed the formal hearing, as well as

received and transcribed comments and testimony from attendees. Transcripts of each hearing are located in Appendix S, Response to Comments.

Upon arrival at the hearings, attendees were asked to sign in, and were provided an array of collateral materials available in both English and Spanish, including fact sheets, frequently asked questions, comment and speaker cards, and information on property acquisitions. During the open house, attendees were encouraged to view the exhibits set up around the facility and speak to staff at hand. Stations were set up around the venues that presented information specific to several resource areas, including air quality, community impacts, geometrics, visual impacts and photo simulations, traffic, noise, and Geographic Information Systems (GIS). Stations for viewing copies of the Draft EIR/EIS, technical studies, and for providing comments were also set up.

The public hearings were attended by nearly 500 people in total; 117 signed in at the Progress Park hearing, 205 at the Silverado Park hearing, and 166 at the Rosewood Park hearing. Progress Park heard nine attendees give public testimony, and one additional comment given directly to the court reporter, including nine comment cards. Silverado Park heard 39 attendees give public testimony, with three additional speaker cards and 29 comment cards submitted, one comment submitted via the laptop station present, and 13 comments dictated to the court reporter directly. Rosewood Park heard 22 attendees give public testimony, and received 29 comment cards, with four comments submitted via laptop station, and seven comments dictated directly to the court reporter.

In addition to the formal public hearings, the public was invited to a series of three “Study Sessions.” These study sessions were informational in nature and intended to be a forum for review of the technical information contained within the Draft EIR/EIS with the Project Team (the “Project Team” refers to staff from Caltrans, Metro, the Gateway Cities COG, and project consultants working on the I-710 Corridor Project), as well as an opportunity to ask questions regarding the technical analysis, in order to submit informed comments on the project. Each of the study sessions were three hours and held at the Progress Park Community Center in Paramount. The first session focused on project design elements, aesthetics, and traffic and was held on July 19, 2012. The second session was held on August 2, 2012, and focused on air quality and health risk assessment. The third and final session was held on August 16, 2012, and focused on community impacts and noise. The public was notified of these study sessions via email to the email addresses on file in the project database maintained by Metro, as well as announcements on Metro’s I-710 Corridor Project website.

Over 20 public informational meetings were held in several locations along the I-710 Corridor between June and September 2012, at the request of local elected officials, community groups, community facilities, and others. These meetings were intended to be a “community update”

and discuss with the Project Team the "highlights" of the Draft EIR/EIS, including impacts identified that were specific to the local jurisdiction or area.

5.2.3 RESPONSE TO COMMENTS

Comments were submitted via mail, e-mail, and in various ways at the public hearings. In total, nearly 3,000 individual comments were submitted on the Draft EIR/EIS. After review of the comments in March 2013, Caltrans decided to move forward with a Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS) that would analyze a refined set of alternatives. A letter issued by Caltrans dated March 15, 2013, notifying the public of the future recirculation of the RDEIR/SDEIS was sent to those that submitted comments on the Draft EIR/EIS, and is included in Appendix J. Responses to comments received during the 2012 public circulation period are included in Appendix S to this RDEIR/SDEIS.

5.3 2013 STAKEHOLDER MEETINGS

Shortly after the decision to revise the set of alternatives and prepare an RDEIR/SDEIS, the Project Team conducted a series of meetings in the spring and summer of 2013 with several stakeholders, particularly those who submitted substantive comments on the Draft EIR/EIS. Over the course of several months, the Project Team met with approximately 17 stakeholder groups to ensure that the Project Team had a comprehensive understanding of the groups' comments on the Draft EIR/EIS, to discuss any points of concern, and answer questions about the recirculation process.

5.4 COMMUNITY ALTERNATIVE 7 (CA-7) WORKSHOPS

As discussed in Section 2.2.2.1, the Coalition for Environmental Health and Justice (CEHAJ), a coalition of organizations, associations, and community groups working towards air quality, community health, and quality of life improvements for I-710 Corridor residents, submitted a comprehensive comment on the Draft EIR/EIS (see Comment No. IP-22 in Appendix S) that proposed a new alternative called "Community Alternative 7" (CA-7). Coordination between CEHAJ and the Project Team occurred regularly after the close of the comment period regarding the disposition of CA-7. Many community members requested that Caltrans include CA-7, in its entirety, as a stand-alone alternative in the RDEIR/SDEIS. Although many of the elements of CA-7 were adopted and led to the development of Alternative 7, as analyzed in this document, some others were not. Elements of CA-7 not adopted as part of Alternative 7 included improvements to the Los Angeles River, a comprehensive bicycle/pedestrian program, "Complete Streets" improvements on local arterials throughout the Study Area, a comprehensive community benefits program, including park upgrades and public art, and the commitment to a local job program during construction of the I-710 Corridor Project. Many of these elements are programmatic in nature and beyond the jurisdiction or ability of Caltrans to implement. Therefore, it would be infeasible to include them in an EIR/EIS prepared to analyze the impacts of a freeway project.

CEHAJ, Metro, Caltrans, the Gateway Cities COG, and the California State Transportation Agency (CalSTA) facilitated and attended a series of three workshops, held in December 2014 and January 2015, to discuss the elements of CA-7 and Alternative 7, and how to find a common ground between them. The workshops were intended to be fact-finding and collaborative, during which all parties involved could ask and provide clarification about CA-7 and Alternative 7. Each workshop covered different topical areas. The first workshop covered geometric design, transit elements, and pedestrian and bicycle elements. Workshop No. 2 covered revitalization of the Los Angeles River, targeted local hiring elements, and public-private partnership opportunities. The final workshop discussed financing of the project, feasibility, and mitigation opportunities.

Notable items resulting from the workshops and ongoing coordination included the I-710 Livability Initiative and Metro Board Motion 22.1. The Livability Initiative was developed by the Project Team as a conceptual framework in which some of the CA-7 programs and projects outside the purview of Caltrans could be pursued by and with the appropriate responsible jurisdictions (such as local cities or other agencies). The Gateway Cities COG has assumed responsibility to develop the framework of the Livability Initiative, including determining the structure and oversight of the program, identifying local and regional partners, developing a strategic direction, and seeking out project funding opportunities.

In order to explore other ways in which all elements of CA-7 could be pursued within the I-710 Corridor Project RDEIR/SDEIS, CEHAJ worked with the office of Los Angeles County 1st District Supervisor and Metro Board Member Hilda L. Solis. As a result, in October 2015, the Metro Board of Directors approved Motion 22.1, which tied the inclusion of some elements of CA-7 to the I-710 Corridor Project RDEIR/SDEIS, and instructed Metro to evaluate other elements in a parallel process outside of the development of the RDEIR/SDEIS. See section 2.2.2.1 in this RDEIR/SDEIS for more detail on Motion 22.1.

The CA-7 proposal led to the development of Alternative 7 as analyzed in this RDEIR/SDEIS. Although not every element of CA-7 is implementable by Caltrans, the approving authority of this document, Caltrans adopted the elements appropriate for inclusion in a highway project into Alternative 7, including no expansion of general-purpose lanes, a zero emission/near-zero emission (ZE/NZE) freight corridor, a programmatic community and health benefit program, “Complete Streets” improvements, minimization of right-of-way acquisitions to the greatest extent possible, inclusion of transit service improvements, Intelligent Transportation Systems (ITS) and Transportation System Management (TSM) operational improvements, and the addition of pedestrian and bicycle-only crossings throughout the corridor.

5.5 23 USC 139 Coordination Process

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 United States Code [USC] 327, for more than five years, beginning

July 1, 2007, and ending September 30, 2012. With the Pilot Program, the Federal Highway Administration (FHWA) assigned, and Caltrans assumed, all of the U.S. Department of Transportation (DOT) Secretary's responsibilities under the National Environmental Policy Act (NEPA), including environmental coordination and consultation under other Federal environmental laws pertaining to the review or approval of projects under the Pilot Program. The Moving Ahead for Progress in the 21st Century Act (MAP-21) amended 23 USC 327 to establish a revised and permanent Surface Transportation Project Delivery Program.

5.5.1 COOPERATING AND/OR PARTICIPATING AGENCIES

Pursuant to the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Section 6002, Caltrans sent letters to Federal agencies, inviting them to be Cooperating and/or Participating Agencies for the EIR/EIS for the proposed project, and also sent letters to non-Federal agencies that may have an interest in the project in August 2008, inviting them to be Participating Agencies. A total of 67 agencies (seven Federal, 17 State, and 43 regional/County) were asked to accept or decline Caltrans' invitation to become a Cooperating and/or Participating Agency.

SAFETEA-LU was superseded by MAP-21 in July 2012, and amendments to the environmental review process were codified at 23 USC 139. These provisions were retained in the Fixing America's Surface Transportation (FAST) Act, signed by President Obama in December 2015. The roster of Cooperating and Participating Agencies has remained the same since the initial invitations to agencies in 2008. For more details on the agency responses, please see Chapter 5.0 of the 2012 Draft EIR/EIS.

5.5.2 AGENCY INVOLVEMENT

Opportunities for involvement by the Cooperating and Participating Agencies for the I-710 Corridor Project have been provided since the circulation period of the 2012 Draft EIR/EIS. Many of the Cooperating and Participating Agencies provided comments on the Draft EIR/EIS, and the responses to those comments are contained in Appendix S. The project Purpose and Need has remained the same since circulation of the Draft EIR/EIS. As the project alternatives have been refined, correspondence was exchanged to solicit input from the Cooperating and Participating Agencies on the alternatives proposed for evaluation in this RDEIR/SDEIS and the updated *I-710 Corridor Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Study* (AQ/GHG/HRA Technical Study) (June 2017) and technical methodology protocol. Copies of all correspondence since the 2012 comment period are listed below and provided in Appendix J. The following is a summary of coordination activities that have occurred since the 2012 comment period.

- On April 16, 2014, an Air Quality Agency Technical Meeting was held with the Project Team, the United States Environmental Protection Agency (USEPA), the California Air

Resources Board (ARB), and the South Coast Air Quality Management District (SCAQMD) to discuss the fleet mix and associated assumptions.

- On April 20, 2015, a teleconference/webinar was held with the Project Team and the USEPA to provide an update on the build alternatives; the overall RDEIR/SDEIS process; CA-7 and the I-710 Livability Initiative; ongoing coordination between the Project Team, ARB, and SCAQMD; proposed programmatic air quality features; development of the AQ/GHG/HRA protocol; and cost and phasing assumptions.

- From April 2014 through March 2015, a series of focused meetings with the Project Team, ARB, and SCAQMD occurred to discuss in more detail the technical issues related to the air quality and health risk analyses, including (but not limited to) traffic forecasts, design of the freight corridor, 2035 baseline conditions and assumptions, and emission factors.

- On May 13, 2014, Caltrans provided a response letter to USEPA questions posed as a result of the April 16 teleconference regarding fleet mix and other assumptions.

- On June 16, 2015, Caltrans submitted letters to all Cooperating and Participating Agencies requesting agency review and comment on the I-710 Corridor Project revised set of alternatives for analysis in the RDEIR/SDEIS. Responses were received from three agencies: the EPA, the Los Angeles County Department of Public Works, and the Sanitation Districts of Los Angeles County.

- On July 15, 2015, the Los Angeles County Department of Public Works provided a response to Caltrans' June 16, 2015, letter.

- On July 27, 2015, the Sanitation Districts of Los Angeles County provided a response to Caltrans' June 16, 2015, letter.

- On July 29, 2015, the USEPA provided a response to Caltrans' June 16, 2015, letter.

- On October 12, 2015, Metro distributed an invitation letter and the October 2015 draft AQ/GHG/HRA Revised Protocol to the members of the Agency Air Technical Working Group for review and comment.

- On November 13, 2015, SCAQMD provided comments on the October 2015 draft AQ/GHG/HRA Revised Protocol.

- On November 13, 2015 (letter erroneously dated November 13, 2014), the USEPA provided comments on Caltrans' October 2015 draft AQ/GHG/HRA Revised Protocol.

- On February 5, 2016, Caltrans provided a partial response to comments in response to the comments received on the draft AQ/GHG/HRA Revised Protocol contained in the USEPA's November 13, 2015, letter. As of the date of response, some comments pertained to issues that were still outstanding.

- On February 8, 2016, an interagency call took place between Caltrans and USEPA to discuss the draft responses to comments provided on February 5, 2016.

- On April 18, 2016, the USEPA provided a response to Caltrans' response to comments dated February 5, 2016.

- On May 19, 2016, Caltrans responded to the USEPA's letters of November 13, 2015, and April 18, 2016, responding to comments received on the draft AQ/GHG/HRA Revised Protocol.

- On June 3, 2016, a meeting was held between the Project Team and the United States Army Corps of Engineers (USACE) on project updates, updates to technical studies, and the RDEIR/SDEIS.

- On June 16, 2016, a teleconference was held between the Project Team and the USACE on project updates, updates to technical studies, and the RDEIR/SDEIS.

- On June 27, 2016, a teleconference was held between the Project Team and the USEPA to further discuss EPA's comments on the draft AQ/GHG/HRA Revised Protocol.

- On December 13, 2016, a teleconference was held between the Project Team and the USEPA to discuss Caltrans' responses to USEPA's comments on the draft AQ/GHG/HRA Revised Protocol.

- On March 1, 2017, a teleconference was held between the Project Team and the USEPA to discuss AQ/GHG/HRA methodology, the status of the Administrative Draft RDEIR/SDEIS, and the overall project schedule.

- On March 22, 2017, Caltrans submitted the environmental justice analysis and public health consideration sections (Chapters 6 and 7, respectively) of the Community Impact Assessment (CIA) to USEPA for their review and comment.

- On March 27, 2017, Caltrans submitted the body of the AQ/GHG/HRA report to USEPA for their review and comment.

- On March 30, 2017, a meeting was held between the Project Team and the USEPA to discuss the environmental justice and air quality analyses conducted for the CIA.

In addition, the Federal Cooperating Agencies were afforded the opportunity to review and comment on an Administrative Draft of the RDEIR/SDEIS on June 23, 2017.

5.6 AGENCY COORDINATION MEETINGS

The Project Team has coordinated with several agencies and public utilities, including the USACE, the Los Angeles County Flood Control District, Los Angeles City Department of Water and Power, and Southern California Edison, in order to discuss potential effects to their facilities that may be impacted by the I-710 Corridor Project. The following is a description of other various agency coordination meetings held for the I-710 Corridor Project:

- **I-710 Funding Partner Meetings:** The I-710 Funding Partner agencies include Metro, Caltrans, the Gateway Cities COG, the Port of Los Angeles (POLA), the Port of Long Beach (POLB), the Southern California Association of Governments (SCAG), and the Interstate 5 Joint Powers Authority (I-5 JPA). These agencies have entered into a partnership agreement with Metro. Funding Partner representatives meet monthly to review project status, discuss critical issues, and develop presentations, recommendations, and responses to address the interests of the various committees.

- **Technical Advisory Committee:** The Technical Advisory Committee (TAC) provides a forum for interagency coordination with local and regional agencies. Monthly meetings are held to develop recommendations and provide technical direction to the I-710 Project Team. The TAC had substantial input on the roadway geometrics. Geometrics are reviewed with the TAC as a whole, as well as subgroups of TAC members representing various areas along the I-710 Corridor. In addition, individual meetings are held with affected jurisdictions to discuss specific design concerns for respective communities. The TAC has continued to meet since the end of the 2012 Draft EIR/EIS comment period. The TAC is further discussed as part of the overall community participation process in Section 5.6.4.

- **Agency Air Technical Working Group:** The Agency Air Technical Working Group (AATWG) was contacted in October 2015 to solicit feedback and comments on the draft AQ/GHG/HRA Revised Protocol. Previously, the AATWG was convened during the development of the 2012 Draft EIR/EIS to seek agency input and consensus on the technical issues, approaches, and tools for assessing air quality impacts of the proposed project.

- **Historical Coordination:** Local historical societies and local governments were identified and invited to participate in the Section 106 process in accordance with 36 Code of Federal Regulations (CFR) Section 800.3(f)(1). Supplemental historical consultation was conducted with the groups and individuals listed below on March 4, 2016, who were first contacted regarding this project on September 30, 2009. No

additional comments were received in response to this supplemental consultation (*Supplemental Historic Property Survey Report*; Attachment F).

- Bellflower Heritage Society (16601 Civic Center Dr., Bellflower, CA 90706)
- City of Bell Community Development Department (Clifford Graves, Interim Director, 6330 Pine Ave., Bell, CA 90201)
- City of Bell Gardens Community Development and Planning Division (Carmen Morales, Interim Community Development Director, 7100 S. Garfield Ave., Bell Gardens, CA 90201)
- City of Bell Gardens Cultural Heritage Board (Marta Solano, 7100 S. Garfield Ave., Bell Gardens, CA 90201)
- City of Carson Planning Division (Saied Naaseh, Planning Manager, 701 E. Carson St., Carson, CA 90745)
- City of Commerce Planning Division (Matt Marquez, Deputy Director of Development Services, 2535 Commerce Wy., Commerce, CA 90040)
- City of Compton Community Development Department (Robert Delgadillo, Planning Manager, 205 S. Willowbrook Ave., Compton, CA 90220)
- City of Lynwood Development Services Department (Jonathan Colin, Director of Development Services, 11330 Bullis Rd., Lynwood, CA 90262)
- City of Monterey Park Planning Division (Michael A. Huntley, Community and Economic Development Director, 320 W. Newmark Ave., Monterey Park, CA 91754)
- City of Monterey Park Historic Heritage Commission (Harry Panagiotes, 320 W. Newmark Ave., Monterey Park, CA 91754)
- City of Paramount Community Development (Joe Perez, Community Development Director, 16400 Colorado Ave., Paramount, CA 90723)
- City of South Gate Planning Division (Alvie Betancourt, Senior Planner, 8650 California Ave., South Gate, CA 90280)
- City of Vernon Community Services Planning Division (Sergio Canales, Planning Assistant, 4305 Santa Fe Ave., Vernon, CA 90058)
- Historical Society of Long Beach (Julie Bartolotto, Executive Director, 4260 Atlantic Ave., Long Beach, CA 90807)
- Historical Society of Monterey Park (781 S. Orange Ave., Monterey Park, CA 91754)

- Historical Society of Southern California (Post Office Box 93487, Pasadena, CA 91120)
- Long Beach Heritage (Mary Kay Knottage, Executive Director, Post Office Box 92521, Long Beach, CA 90809)
- Los Angeles Conservancy (Adrian Scott Fine, Director of Advocacy, 523 W. 6th St., Ste. 826, Los Angeles, CA 90014)
- County of Los Angeles Regional Planning (Richard Bruckner, Director of Regional Planning, 320 W. Temple St., 13th Floor, Los Angeles, CA 90012)
- City of Long Beach Planning Bureau (Linda Tatum, Planning Bureau Manager, 333 W. Ocean Blvd., 4th Floor, Long Beach, CA 90802)

In addition to local historical societies and local governments, Caltrans has performed coordination with the State Historic Preservation Officer (SHPO) in accordance with its responsibilities under Section 106 of the National Historic Preservation Act. For more information on Section 106, please refer to Section 3.7 of this document. Correspondence with SHPO is contained in Appendix J.

5.7 NATIVE AMERICAN COORDINATION

Coordination with Native American tribes continued from initial notification of the project during scoping in August 2008. In December 2015, four individuals were added to the contact list. Tribes, groups, and individuals were contacted via a letter sent by certified mail on January 28, 2016, and again by either follow-up email or phone call during February and March 2016, depending on whether a response to the letter was received. A summary of coordination efforts and responses received is as follows:

- Los Angeles City/County Native American Indian Community, Ron Andrade, Director; Mr. Andrade will defer to Anthony Morales.
- Gabrielino Tongva Council/Gabrielino Tongva Nation, Sam Dunlap, Tribal Secretary; no response was received.
- Ti'At Society, Cindi Alvitre; Ms. Alvitre had previously recommended having mitigation measures in place in the event of cultural resources discoveries and would like to be notified of any discoveries. No response to the January 2016 letter was received.
- Gabrielino Tongva Indians of California Tribal Council: Robert Dorame, Tribal Chair/ Cultural Resources; Mr. Dorame had previously indicated he would like to be notified of any cultural resource discoveries. No response to the January 2016 letter was received.

- Tongva Ancestral Territorial Tribal Nation, John Tommy Rosas; Mr. Rosas had previously responded by email in 2008 to request full Section 106 consultation and copies of all project-related documents. He also stated his opposition to the project as having the potential to result in "many negative impacts." Mr. Rosas responded to a follow-up email sent on March 3, 2016, to request information on "excavation areas" and "cubic yards" and also stated that his Tribe would like to monitor regardless. An email was sent on May 4, 2016, indicating that the information he had requested was unavailable at this stage of project design and asking if he had any further comments; no response was received at that time. Mr. Rosas was also contacted via email on April 19, 2017. He replied on April 19 requesting electronic copies of the two documents for review. Both documents were forwarded to him via electronic dropbox (Hightail) on April 24, 2017. Mr. Rosas also indicated that if a meeting were to be scheduled to review the results outlined in the documents, he would be unable to attend.

- Gabrielino-Tongva Tribe, Bernie Acuna; no response was received.

- Gabrieleno/Tongva San Gabriel Band of Mission Indians, Anthony Morales, Chairperson; Mr. Morales had previously responded by telephone in 2008 to state that he considers the area to be sensitive for cultural resources. He recommended monitoring by both a Native American and an archaeologist during all ground-disturbing activities. He would also like to be notified of any cultural resource discoveries. He also responded by telephone on February 18, 2016, to state that areas in the vicinity of the Los Angeles River are very sensitive for cultural resources as there were prehistoric villages along its banks. He recommends monitoring throughout the project by a Native American monitor from his group.

- Gabrielino-Tongva Tribe, Linda Candelaria, Chairwoman; no response was received.

- Gabrieleno Band of Mission Indians, Andrew Salas, Chairperson; Mr. Salas responded with a letter attached to an email on February 5, 2016, that stated at one time, there were hundreds of prehistoric settlements that inhabited the entire route of the project and that have never been documented. The entire project runs right alongside what was once the main water resource for the Gabrielino people and also a traditional trading route. From the map, it is evident that the project not only runs directly alongside the river (*Wenot*) but through traditional Gabrieleno villages. This area was highly utilized by his ancestors and is considered highly sensitive. Therefore, he would like to request that one of his Tribal monitors be on site at this project, as well as archaeological monitors, during all ground disturbance (including, but not limited to, pavement removal, potholing or auguring, boring, grading, excavation and trenching). Mr. Salas was contacted again via email on April 19, 2017; however, the email address was incorrect. A telephone call was placed to his listed number and his secretary took a message and indicated that he

would return the call later. No response has been received from Mr. Salas since April 19, 2017. Upon request Caltrans will schedule a presentation of the results of the Archaeological Sensitivity Study.

- Gabrieleno/Tongva San Gabriel Band of Mission Indians, Adrian Morales, Cultural Resources Management; Mr. Morales responded via email on March 8, 2016, to request the status of the cultural resources report and the Programmatic Agreement; on May 5, 2016, a response was sent to Mr. Morales indicating that the report was being finalized, and the link to the Programmatic Agreement was provided. Mr. Anthony Morales was also contacted via email on April 19, 2017. A response was received on April 24, 2017 from Adrian Morales (Mr. Morales' son) indicating that they would like to attend a meeting if one is scheduled. Adrian Morales also requested that one hard copy of each document plus an electronic copy burned onto a CD/DVD be mailed to his address. These documents were mailed on April 25, 2017.

- Pechanga Band of Luiseno Indians, Anna Hoover, Pechanga Cultural Resources Center; Ms. Hoover responded to a follow-up email sent March 3, 2016, to state that the project is outside her Tribe's traditional territory and that they will defer to closer tribes.

- Soboba Band of Luiseno Indians, Joseph Ontiveros, Cultural Resource Director; Mr. Ontiveros responded via letter on February 25, 2016, that stated while the project does fall within the bounds of their Tribal Traditional Use Areas, they do not have specific concerns at this time. They request that appropriate consultation continue to take place. In addition, because the project is in a Traditional Use Area and there is the possibility of encountering cultural resources, they request monitoring by a qualified Native American monitor during all ground-disturbing activities and recommend Gabrieleno Tribal Consultants who are closer to the project area.

It has been indicated during consultation that Caltrans will schedule a presentation of the results of the Archaeological Sensitivity Study upon request. Consultation with Native American Tribes and individuals is ongoing.

5.8 COMMUNITY PARTICIPATION PROCESS

Through an extensive community participation framework, community participation activities for the I-710 Corridor Project have been designed to provide various community stakeholders the opportunity to work with the technical team throughout the process. The community participation framework for the I-710 Corridor Project is modeled on the program used to complete the I-710 Major Corridor Study (MCS) and has remained the same throughout the development of the project. As discussed in the following sections, there are several Local Advisory Committees (LACs) and one active Subject Working Group (SWG) committee that make recommendations to the Corridor Advisory Committee (CAC), and both the CAC and the TAC make

recommendations to the Project Committee, which in turn makes recommendations to the Executive Committee.

The public is invited to attend all of the committee meetings and is given the opportunity at these meetings to comment or express any concerns relative to the project. The following sections describe the committees in more detail, the frequency of the meetings, and the general topics discussed at the meetings since the 2012 Draft EIR/EIS comment period.

5.8.1 LOCAL ADVISORY COMMITTEES

The Local Advisory Committees (LACs) represent each of the cities and unincorporated county areas along the I-710 Corridor and are comprised of representative s from each of these communities in the I-710 Corridor. There are a total of 13 LACs for the I-710 Corridor Project, and while some LACs include five to ten members, others include one or two representatives from the respective city staff. LACs have been formed in the following cities and communities: Bell, Bell Gardens, Carson, Commerce, Cudahy, East Los Angeles, Huntington Park, Lynwood, Maywood, Paramount, South Gate, and Vernon. The City of Long Beach has formed the I-710 Project Oversight Committee that serves as the City's LAC. Not all LACs have been active since the 2012 Draft EIR/EIS comment period. The following discussion describes activities undertaken by the active LACs since 2012.

The Bell Gardens LAC has met once since 2012 to review project updates and conceptual plans for Alternatives 5C and 7.

The Carson LAC has met four times since 2012 to review project updates, Motion 22.1 items, and geometric designs.

The Commerce LAC has met seven times since 2012 to review project updates and geometric designs, and to recommend representatives to the CAC.

The East Los Angeles LAC has met twice since 2012 to review project updates and refined geometrics.

The Long Beach Oversight Committee has convened five times since 2012 to review project updates.

The Paramount LAC has met four times since 2012 to review project updates.

The South Gate LAC has met four times since 2012 to review project updates, refined geometrics, potential soundwalls proposed as part of the Early Action Soundwall project, and Motion 22.1 items.

The Vernon LAC has met once since 2012 to discuss project updates, Motion 22.1 items, and geometric designs.

5.8.2 SUBJECT WORKING GROUPS

The Subject Working Groups (SWGs) are open-participation groups made up of representatives from the LACs, as well as other appointees with subject matter interest and expertise. The SWGs review transportation, community design, and environmental issues in greater depth than the LACs and provide key findings and recommendations to the CAC. Only the Transportation SWG (TSWG) has been active since the 2012 Draft EIR/EIS comment period; the TSWG convened once in February 2014 to review updated traffic forecasts prepared for the revised alternatives.

5.8.3 CORRIDOR ADVISORY COMMITTEE

The Corridor Advisory Committee (CAC) is an advisory group comprised of the Chairs of each LAC and the TAC, as well as other appointees representing corridor-wide interests. The CAC also makes recommendations to the Project Committee and meets on a monthly basis to review topics discussed at the LAC, SWG, and TAC meetings. The CAC has met several times since 2012 to review and discuss the topics including the following: general project updates, traffic forecasts, geometric concepts, ZE truck commercialization, alternatives refinement, programmatic elements, Motion 22.1 items, and the Livability Initiative.

5.8.4 TECHNICAL ADVISORY COMMITTEE

The Technical Advisory Committee (TAC) is comprised of technical experts from corridor jurisdictions, city staff, and Funding Partner agencies and advises the Project Committee on technical aspects of the I-710 Corridor Project. The TAC meets on a monthly basis and has met several times since 2012 to review, discuss, and/or make recommendations on the following topics: port cargo, traffic demand forecasts, refined alternatives, ZE truck commercialization, programmatic elements, traffic operations/design enhancements, and early action project updates.

5.8.5 PROJECT COMMITTEE

The Project Committee is made up of elected officials and Funding Partner representatives and makes recommendations to the Funding Partners and Caltrans on key assumptions and decisions in the EIR/EIS process. The Project Committee has met several times since 2012 to review and discuss general project updates, early action project updates, Motion 22.1 items, the Livability Initiative, and other items.

5.8.6 EXECUTIVE COMMITTEE

The Executive Committee is a high-level committee comprised of representatives from the Metro Board of Directors and the Funding Partner agencies, as well as the co-Chairs of the

Project Committee. The Executive Committee provides policy direction and final recommendations to the Metro Board of Directors to provide to Caltrans. The Executive Committee has not convened since 2012.

6.0 LIST OF PREPARERS

This chapter lists the State and other agency personnel, including consultants, who were primarily responsible for preparing this Recirculated Draft Environmental Impact Report/ Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS).

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7.0 DISTRIBUTION LIST

The Recirculated Draft Environmental Impact Report /Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) and/or Notice of Availability was distributed to Federal, State, regional, local, and local agencies and elected officials, as well as Native American representatives, utility providers, and other interested parties listed on the following pages. In addition to the list provided below, all property owners/occupants within a 500-foot radius of the Interstate 710 (I-710) Corridor Project Build Alternatives and interested public members on the I-710 Corridor Project public mailing list were mailed a postcard informing them of the availability of the RDEIR/SDEIS.

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