Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter describes the current state of the resources in the study area and identifies the potential effects of implementing the proposed Westbound State Route 91 (SR-91) Improvement Project (project). Each subsection describes the present conditions, discusses the potential impacts of building the proposed project, and indicates what measures would be taken to avoid, minimize, or mitigate those impacts.

The environmental analysis contained within the following chapter considers the potential environmental consequences associated with implementation of the two proposed alternatives (the No Build Alternative and the Build Alternative).

The environmental impact analyses discuss potential impacts in three general categories: human environment, physical environment, and biological environment. As part of the scoping and environmental analysis carried out for the project, the following environmental issues were considered, but no adverse impacts were identified. As a result, there is no further discussion about these issues in this document:

- **Coastal Zone:** California's Coastal Zone generally extends 1,000 yards inland from the mean high tide line. The study area is located approximately 11 miles (mi) from the Pacific Ocean and is not located within the Coastal Zone.
- **Wild and Scenic Rivers:** According to the Bureau of Land Management (BLM), there are no Wild and Scenic Rivers located in the project area.[1]

[1] United States Department of the Interior, Bureau of Land Management (BLM). BLM California Wild and Scenic Rivers. Website: https://blm-prod.opengov.ibmcloud.com/programs/national-conservation-lands/wild-and-scenic-rivers/california (accessed November 28, 2017).

- **Farmland/Timberlands:** There will be no effect on farmland and timberlands resources because the project is not located within farmland and timberland.[1]
- **Hydrology and Floodplain:** There will be no effect on hydrology and floodplain because the project is not located within the 100-year base flood zone.
- **Natural Communities:** According to the *Natural Environment Study (Minimal Impacts)* (2017 and 2018 Errata), the Biological Study Area (BSA) does not contain any sensitive natural communities. The habitat types present in the BSA include flood control channels, transportation, ornamental landscaping, and disturbed or barren areas.
- **Threatened and Endangered Species:** According to the *Natural Environment Study (Minimal Impacts)* (2017 and 2018 Errata), the BSA does not contain suitable habitat for any threatened or endangered species.
    - The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant and animal species. Per the official species list received from the USFWS on March 19, 2018 (provided in Chapter 4), two plant species and five wildlife species that are federally and/or State-listed as endangered or threatened were identified as potentially occurring within the vicinity of the BSA. The plant species are Ventura marsh milk-vetch and the salt marsh bird's-beak. The animal species are western snowy plover, coastal California gnatcatcher, California least tern, least Bell's vireo, and Pacific pocket mouse. None of these species were observed during field surveys and none are expected to occur within the BSA because there is no suitable habitat for these species in the BSA. No effect to USFWS listed species or critical habitat are anticipated.
    - The project is within National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) jurisdiction. Per the NOAA Fisheries Service official species list received on March 19, 2018 (included in Chapter 4), one species, California steelhead trout, was reported to potentially have critical habitat occurring in the United States Geological Survey (USGS) *Los Alamitos, California* or *Whittier, California* 7.5-minute quadrangle areas; however, this habitat is not within or adjacent to the BSA. No effect to NOAA Fisheries Service listed species is anticipated.

[1] California Department of Conservation. 2014. Farmland Mapping and Monitoring Program. San Bernardino Important Farmland. Website: https://maps.conservation.ca.gov/dlrp/ciff/ (accessed November 28, 2017).

The Build Alternative would include project features that are generally applied to California Department of Transportation (Caltrans) highway improvement projects. These standardized features avoid and minimize environmental impacts. The project features proposed as part of the project are provided in Table 2.0.1.

Table 2.0.1 Project Features Summary

Resource	Project Feature No.	Page No.	Title/Summary
Community Impacts	PF-REL-1	2.3-18	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) (Public Law 91-646, 84 Statutes 1894)
	PF-REL-2	2.3-18	TCE Restoration after Construction
	PF-EJ-1	2.3-35	Relocation Assistance Services
Utilities/Emergency Services	PF-UES-1	2.4-2	Utility Relocation Plans
	PF-UES-2	2.4-5	Roadway Closures and Detour Plans
Traffic and Transportation/ Pedestrian and Bicycle Facilities	PF-T-1	2.5-7	Transportation Management Plan
Visual	PF-VIS-1	2.6-30	Landscaping
	PF-VIS-2	2.6-30	Architectural Treatment and Review
	PF-VIS-3	2.6-31	Construction Lighting
Cultural Resources	PF-CR-1	2.7-7	Discovery of Cultural Materials
	PF-CR-2	2.7-8	Discovery of Human Remains
Water Quality and Storm Water Runoff	PF-WQ-1	2.8-11	Caltrans National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit and NPDES General Permit for Storm Water Discharges of Stormwater Runoff Associated with Construction Activities
	PF-WQ-2	2.8-11	Storm Water Pollution Prevention Plan
	PF-WQ-3	2.8-13	Treatment BMPs
Geology/Soils/Seismic/ Topography	PF-GEO-1	2.9-10	Geotechnical Investigation
	PF-GEO-2	2.9-11	Slope Protection
	PF-GEO-3	2.9-11	Soil Settlement and Liquefaction
Paleontology	PF-PAL-1	2.10-3	Paleontological Mitigation Plan
Hazardous Waste/Materials	PF-HAZ-1	2.11-4	Excess Aerially Deposited Lead (ADL) Contaminated Soils
	PF-HAZ-2	2.11-4	Testing for Lead
	PF-HAZ-3	2.11-5	Assessment for the Possible Presence of Asbestos-Containing Materials (ACMs) and Lead-Based Paint (LBP)
	PF-HAZ-4	2.11-5	Lead-Based Paint Survey
	PF-HAZ-5	2.11-5	Implement the Requirements in the Lead-Based Paint Survey Report
	PF-HAZ-6	2.11-9	Monitor Soil Excavation for Visible Soil Staining, Odor, and the Possible Presence of Unknown Hazardous Material Sources
	PF-HAZ-7	2.11-9	Soil Sampling for Pesticides on Any Former Agricultural Parcels
	PF-HAZ-8	2.11-10	Properly Dispose of All Soils Exceeding the Criteria for State or Federal Hazardous Waste
	PF-HAZ-9	2.11-10	Treated Wood Waste
	PF-HAZ-10	2.11-11	Polychlorinated Biphenyls
	PF-HAZ-11	2.11-10	Preliminary Site Investigation
Air Quality	PF-AQ-1	2.12-11	South Coast Air Quality Management District's (SCAQMD) Rule 403
	PF-AQ-2	2.12-12	Ozone (O_3) Precursor Emissions
	PF-AQ-3	2.12-12	Prevention of Excavated or Graded Material Spilling onto Public Streets and Roads
	PF-AQ-4	2.12-12	Standard Specifications for Construction (Sections 14-9.02 and 14-9.03)
	PF-AQ-5	2.12-12	Removal of Asbestos-Containing Materials (ACMs)
	PF-AQ-6	2.12-12	Prohibited from Idling in Excess of 5 Minutes
Noise	PF-N-1	2.13-21	Standard Specifications, Section 14-8.02, Noise Control
	PF-N-2	2.13-22	Construction Equipment Mufflers
	PF-N-3	2.13-22	Construction Staging Areas
	PF-N-4	2.13-22	Sensitive Receptors

Table 2.0.1 Project Features Summary

Resource	Project Feature No.	Page No.	Title/Summary
Wetlands and Other Waters	PF-WET-1	2.14-7	United States Army Corps of Engineers (USACE) Pursuant to Section 404 of the Clean Water Act
	PF-WET-2	2.14-8	Watershed Streambed Alteration Agreement (WSAA; in Combination with an LOP) or a Streambed Alternation Agreement (SAA; in Combination with an Individual Permit) with the California Department of Fish and Wildlife (CDFW)
	PF-WET-3	2.14-8	Section 401 Water Quality Certification (Certification) from the Los Angeles Regional Water Quality Control Board (RWQCB)
	PF-WET-4	2.14-8	Best Management Practices (BMPs) to Prevent Loose Soil or Pollutants Associated with the Project from Inadvertently Entering the Drainage Features
Animal Species	PF-BIO-1	2.16-32	Avoidance of Breeding Season
	PF-BIO-2	2.16-29	Nighttime Exit Counts and Acoustic Surveys
	PF-BIO-3	2.16-29	Avoidance of Bat Roosts
	PF-BIO-4	2.16-29	Avoidance of Maternity Colonies
	PF-BIO-5	2.16-29	Humane Bat Eviction
	PF-BIO-6	2.16-30	Installation of Alternate Roosting Habitat
	PF-BIO-7	2.16-30	Night Lighting During Construction
	PF-BIO-8	2.16-30	Avoidance of Foliage-Roosting Bats
	PF-BIO-9	2.16-30	Biological Monitoring by a Bat Specialist
	PF-BIO-10	2.16-31	Access to Bat-Roosting Habitat
	PF-BIO-11	2.16-31	Inspection of Swallow Nests
	PF-BIO-12	2.16-31	Best Management Practices During Construction
Invasive Species	PF-BIO-13	2.17-3	Plant Removal
	PF-BIO-14	2.17-3	Prevention of the Spread of Invasive Species

BMP = best management practice
LOP = Letter of Permission
TCE = temporary construction easement

This page intentionally left blank

HUMAN ENVIRONMENT

2.1 Land Use

This section is based on a review of local planning documents and geographic information systems (GIS) land use data, the *Community Impact Assessment* (2018), as well as information from Section 2.3, Community Impacts, and Appendix A, Section 4(f) Analysis.

2.1.1 Existing and Future Land Uses

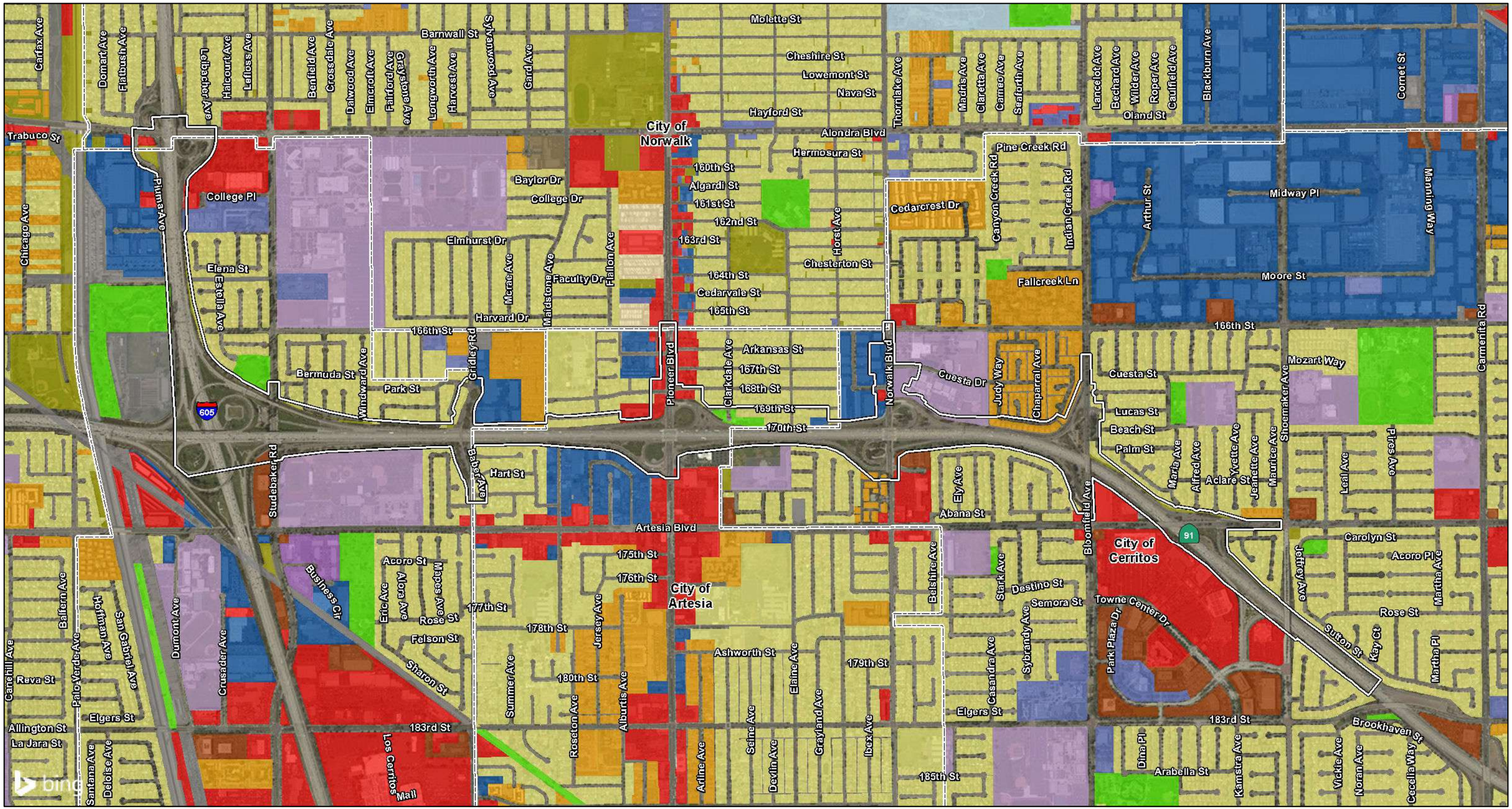
The study area for the land use analysis includes the project area (the physical area that would be directly affected by the proposed project) and the adjacent neighborhoods within the Cities of Artesia, Cerritos, and Norwalk (Census Tracts 5530.00, 5545.12, 5545.13, 5545.14, 5545.21, 5546.00, 5547.00, 5548.01, and 5548.02). The census tracts and block groups are depicted later on Figure 2.3-1 in Section 2.3, Community Impacts.

2.1.1.1 Existing Land Uses

The existing land uses in the study area are shown on Figure 2.1-1. North of State Route 91 (SR-91), existing land uses are a mix of single- and multi-family residential, commercial and services, industrial, education, and open space and recreation uses. South of SR-91, the primary existing land uses are similar. Existing land uses surrounding Interstate 605 (I-605) north of SR-91 include single-family residential, commercial, institutional, religious, medical, and park uses to the east and commercial, industrial, recreational (golf course), and utility facilities (Los Coyotes Water Reclamation Plant) to the west. The acreages and percentages of existing land uses in the study area are shown in Table 2.1.1.

As indicated in Table 2.1.1, approximately 18 acres (ac), or approximately 37 percent of the study area, consists of existing single-family residential uses. As shown on Figure 2.1-1, single-family residential uses are the predominant land use type within the study area, with the exception of the areas adjacent to the SR-91/I-605 interchange. Commercial and service uses and industrial uses are the second- and third-most common existing land uses, respectively, in the study area.

This page intentionally left blank



LEGEND

Study Area Limits

Existing Land Uses

- Single Family Residential
- Multi-Family Residential
- Mobile Homes and Trailer Parks
- General Office
- Commercial and Services
- Facilities
- Education
- Industrial
- Transportation, Communications, and Utilities
- Mixed Commercial and Industrial
- Mixed Residential and Commercial
- Open Space and Recreation
- Vacant
- Water

N

0 625 1250
FEET

SOURCE: Bing Maps (2015); Michael Baker (8/2017); SCAG (2012)

I:\RBF1601\GIS\MXD\ISEA\LandUse_Existing.mxd (3/29/2018)

FIGURE 2.1-1

Westbound SR-91 Improvement Project

Existing Land Uses

07-LA-91
SR-91 PM 16.9-19.8; I-605 PM 5.0-5.8
EFIS 0716000284; EA 29811

This page intentionally left blank

Table 2.1.1 Existing Land Uses in the Land Use Analysis Study Area

Land Use	Acres				Percentage of Total Study Area
	Artesia	Cerritos	Norwalk	Study Area Total	
Commercial and Services	4.74	2.57	0.75	8.10	16.74%
Education	–	4.79	–	4.79	9.93%
Facilities	–	0.37	–	0.37	0.76%
General Office	–	0.94	–	0.94	1.96%
Industrial	1.09	4.10	0.02	5.21	10.80%
Multi-Family Residential	–	3.68	–	3.68	7.64%
Single-Family Residential	8.10	9.86	0.02	17.93	37.17%
Open Space and Recreation	1.77	0.83	–	2.60	5.40%
Transportation, Communications, and Utilities	–	1.34	–	1.34	2.78%
Vacant	–	3.06	0.24	3.29	6.83%
Total	**15.65**	**31.54**	**1.03**	**48.25**	**–**

Source: Southern California Association of Governments (SCAG). GIS Open Data Portal. Website: http://gisdata-scag.opendata.arcgis.com/ (accessed March 2018).
Note: Percentages are based on the total acreage within the study area (48.25 acres). The land use categories above do not capture local roadways, and the local rights-of-way are not included in the sum of the "Acres" columns. Therefore, percentages do not add up to 100.

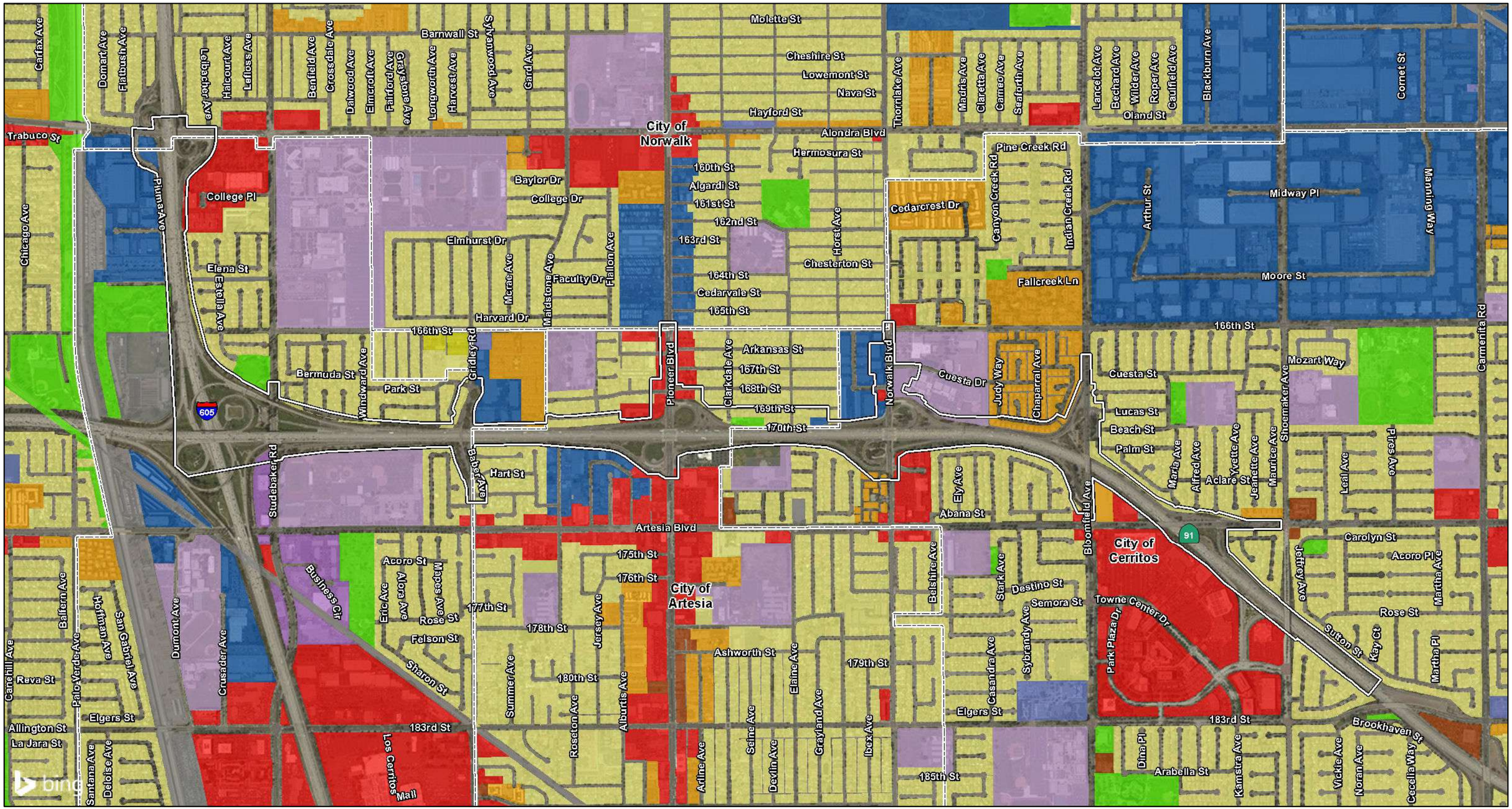
2.1.1.2 General Plan Land Uses

General Plan land use designations, which guide future development in a jurisdiction, are depicted on Figure 2.1-2 for the study area and surrounding areas. In the study area north of SR-91, the General Plan land uses in the cities of Artesia, Cerritos, and Norwalk are predominantly single-family residential uses, followed by educational and facilities uses.

South of SR-91, the predominant General Plan land use in the cities of Artesia and Cerritos is also single-family residential, followed by commercial and services uses and educational uses. Next to the SR-91/I-605 interchange, the predominant uses include educational, industrial, and mixed commercial/industrial uses.

As shown in Table 2.1.2, single-family residential makes up the largest category of planned land uses within the study area (43.27 percent), followed by commercial and services uses and industrial uses (16.27 percent and 14.45 percent, respectively). The existing land uses in the study area are consistent with the land use designations in the General Plans of the Cities of Artesia, Cerritos, and Norwalk.

This page intentionally left blank



LEGEND

Study Area Limits

General Plan Land Use Designation

- Single Family Residential
- Multi-Family Residential
- Mixed Residential
- General Office
- Commercial and Services
- Facilities
- Education
- Industrial
- Transportation, Communications, and Utilities
- Mixed Commercial and Industrial
- Open Space and Recreation

0 625 1250
FEET

SOURCE: Bing Maps (2015); Michael Baker (8/2017); SCAG (2012)

I:\RBF1601\GIS\MXD\ISEA\LandUse_GeneralPlan.mxd (3/29/2018)

FIGURE 2.1-2

Westbound SR-91 Improvement Project

General Plan Land Use Designations

07-LA-91
SR-91 PM 16.9-19.8; I-605 PM 5.0-5.8
EFIS 0716000284; EA 29811

This page intentionally left blank

Table 2.1.2 General Plan Land Uses in the Land Use Analysis Study Area

Land Use	Acres	Percentage
Commercial and Services	7.85	16.27%
Education	4.79	9.93%
Industrial	6.97	14.45%
Mixed Commercial and Industrial	0.55	1.14%
Multi-Family Residential	4.08	8.45%
Open Space and Recreation	1.92	3.98%
Single-Family Residential	20.87	43.27%
Transportation, Communications, and Utilities	1.21	2.50%
Total	**48.24**	**–**

Source: Southern California Association of Governments (SCAG). GIS Open Data Portal. Website: http://gisdata-scag.opendata.arcgis.com/ (accessed January 2018).

Note 1: Percentages are based on the total acreage within the study area, approximately 47.44 acres. The land use categories above do not capture local roadways, and the local rights-of-way are not included in the sum of the Acres column. Therefore, percentages do not add up to 100.

Note 2: The acreage of land identified in the study area for general plan land uses does not add up to the acreage of land identified in the study area for existing land uses, due to slight differences in SCAG existing land use and General Plan land use data.

2.1.1.3 Development Trends

The city of Artesia encompasses an area of 1.62 square miles (sq mi) and was incorporated in 1959 (City of Artesia 2017). The population of the city of Artesia in 2012 was 16,600, compared to 16,380 in 2000, according to the Southern California Association of Governments (SCAG) (2017). The city of Artesia has grown at a rate of 1.34 percent between 2000 and 2012 and has grown at a faster rate than the city of Cerritos during the same period. (SCAG 2017). The Artesia General Plan 2030 identifies the opportunity for infill and redevelopment projects, emphasizing a focus on new mixed-use development, diversifying housing types, and revitalizing existing commercial centers (City of Artesia, nd). Based on SCAG (2017) growth projections, employment in the city of Artesia is projected to increase by 6.13 percent from 2015 to 2040.

The city of Cerritos encompasses an area of 8.85 sq mi, and was incorporated in 1956 as the City of Dairy Valley, which reflected the agricultural focus of the community at the time (City of Cerritos 2016). The name change to Cerritos was made official on January 19, 1967. The population of the city of Cerritos in 2012 was 49,300, compared to 51,488 in 2000 (SCAG 2017). With a population growth rate of 1.85 percent expected between 2015 and 2040, the city of Cerritos is growing at a slower rate than the city of Artesia (SCAG 2017). The City of Cerritos General Plan recognized the city's opportunity for infill and redevelopment projects. The General Plan outlines goals to develop two new parks and a mixed-use town center, along

with various redevelopment projects. In addition, the City of Cerritos adopted the Los Cerritos and the Los Coyotes redevelopment plans with the intent to revitalize existing buildings and facilities to improve aesthetics and meet the changing needs of the community (City of Cerritos, 2004). According to SCAG (2017) growth projections, the city of Cerritos is projected to increase job growth by 10.8 percent from 2012 to 2040.

Approved and planned projects in the study area are described in Table 2.18.1 and shown on Figure 2.18-1 in Section 2.18, Cumulative Impacts.

2.1.1.4 Environmental Consequences

Temporary Impacts

Build Alternative (includes Design Options)

Construction of the Build Alternative would require temporary construction easements (TCEs) along the north side of SR-91 for certain areas of the project segment to allow access for the construction of best management practices (BMPs) for water quality, retaining walls, and roadway and/or interchange widening. TCEs are also required at the Alondra Boulevard/I-605 interchange northbound off-ramp. The affected parcels are identified in Table 2.3.9 and the locations of the parcels that would be affected by these TCEs are shown on Figure 2.3-3 in Section 2.3, Community Impacts. The largest TCEs occur between the Artesia Boulevard/SR-91 interchange and the Bloomfield Avenue/SR-91 interchange on the north and south sides of SR-91, as well as adjacent and east of Norwalk Boulevard north of the Norwalk Boulevard/SR-91 westbound exit ramp where it intersects with Norwalk Boulevard (at Tracy High School). Staging activities may result in temporary increases in dust and noise levels in the vicinity of these staging areas; however, such activities are not anticipated to interfere with existing uses on the parcels or result in land use conflicts with adjacent businesses and residences near SR-91 or I-605. These impacts would be temporary and would cease when the project construction is complete.

Open space and recreation uses make up the greatest share of existing land uses that would be impacted by TCEs. As shown in Table 2.1.3, the Build Alternative would result in the use of approximately 0.2 ac of existing commercial and services uses, approximately 0.03 ac of existing educational/institutional uses, approximately 0.5 ac of existing industrial uses, approximately 0.4 ac of existing residential uses, approximately 1.2 ac of existing open space and recreational uses, and approximately 0.03 ac of existing vacant land for TCEs.

Table 2.1.3 Existing Land Use Impacts

Permanent and Temporary Impacts	Build Alternative (acres)	Build Alternative with Design Option 1 (Reduced Lane/ Shoulder Width) (acres)	Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) (acres)	Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) and Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) (acres)
Permanent Impacts				
Commercial and Services	0.4	0.4	0.4	0.4
Education/Institutional	0.03	0.1	0.03	0.1
Industrial	0.5	0.0	0.5	0.0
Residential	1.4	1.2	2.1	1.9
Open Space and Recreation	0.03	0.3	0.03	0.3
Utility and Flood Control	0.0	0.0	0.0	0.0
Vacant	0.4	0.02	0.8	0.42
Permanent Impacts Total	**2.8**	**2.0**	**3.9**	**3.12**
TCEs				
Commercial and Services	0.2	0.2	0.2	0.2
Education/Institutional	0.03	0.1	0.03	0.1
Industrial	0.5	0.0	0.5	0.0
Residential	0.4	0.4	0.5	0.5
Open Space and Recreation	1.2	1.2	1.2	1.2
Utility and Flood Control	0.0	0.0	0.0	0.0
Vacant	0.03	0.0	0.03	0.0
TCE Total	**2.36**	**1.9**	**2.46**	**2.0**

Source: Southern California Association of Governments (SCAG). GIS Open Data Portal. Website: http://gisdata-scag.opendata.arcgis.com/ (accessed March 2018).
Note: Totals may not appear to sum correctly due to rounding.
GIS = geographic information system
TCEs = temporary construction easements

The Build Alternative would require TCEs on 30 parcels in the project area (refer to Table 2.3.9 in Section 2.3, Community Impacts).

Following completion of the project, areas that are temporarily disturbed by construction activities would be returned to their property owners in the same or better condition than prior to construction. As stated in Section 2.3.1.3 in PF-REL-2. owners of parcels where TCEs would be required would receive compensation for the temporary use of a portion of their property. Therefore, the temporary use of land during construction of the Build Alternative would have no substantial adverse effects.

Generally, any freeway lane or ramp closures would occur during off-peak and overnight hours, minimizing delays to the traveling public and local business operations. When full or partial closures of the freeway mainline are required, they would occur primarily at nighttime and on weekends to minimize delays to the traveling public. Access to all nearby businesses would be maintained during any freeway, ramp, and/or local street closures through the identification of detour routes on alternate freeway off-ramps and local streets. Although construction of the Build Alternative would not substantially interfere with any adjacent land uses, there would be inconveniences due to construction-related delays, temporary closures, and construction equipment operations. Full and partial closures will be coordinated with local jurisdictions as described in the Transportation Management Plan (Project Feature PF-T-1 in Section 2.5.3.2).

Construction of the Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) would also require TCEs along the north side of SR-91 for certain areas of the project segment to allow access for the construction of BMPs for water quality, retaining walls, and roadway and/or interchange widening; however, due to the reduced lane and shoulder widths, the number of TCEs would be reduced from that needed for the Build Alternative. TCEs are also required at the Alondra Boulevard/ I-605 interchange northbound off-ramp. The affected parcels are identified in Table 2.3.10 and the locations of the parcels that would be affected by these TCEs are shown on Figure 2.3-4 in Section 2.3, Community Impacts. The largest TCEs occur between the Artesia Boulevard/SR-91 interchange and the Bloomfield Avenue/SR-91 interchange on the south side of SR-91, as well as adjacent and east of Norwalk Boulevard north of the Norwalk Boulevard/SR-91 westbound exit ramp where it intersects with Norwalk Boulevard (at Tracy High School). Staging activities may result in temporary increases in dust and noise levels in the vicinity of these staging

areas; however, such activities are not anticipated to interfere with existing uses on the parcels or result in land use conflicts with adjacent businesses and residences near SR-91 or I-605. These impacts would be temporary and would cease when project construction is complete.

Open space and recreation uses make up the greatest share of existing land uses that would be impacted by TCEs. As shown in Table 2.1.3, the Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) would result in the use of approximately 0.2 ac of existing commercial and services uses, approximately 0.1 ac of existing educational/institutional uses, approximately 0.4 ac of existing residential uses, and approximately 1.2 ac of existing open space and recreational uses for TCEs.

Construction of the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) would require the same TCEs as the Build Alternative but would require additional TCEs due to the ramp configuration at Pioneer Boulevard/168th Street. The affected parcels are identified in Table 2.3.11 and the locations of the parcels that would be affected by these TCEs are shown on Figure 2.3-3 in Section 2.3, Community Impacts. Staging activities may result in temporary increases in dust and noise levels in the vicinity of these staging areas; however, such activities are not anticipated to interfere with existing uses on the parcels or result in land use conflicts with adjacent businesses and residences near SR-91 or I-605. These impacts would be temporary and would cease when project construction is complete.

Open space and recreation uses make up the greatest share of existing land uses that would be impacted by TCEs. As shown in Table 2.1.3, the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) would result in the use of approximately 0.2 ac of existing commercial and services uses, approximately 0.03 ac of existing educational/institutional uses, approximately 0.5 ac of industrial existing uses, approximately 0.4 ac of existing residential uses, approximately 1.2 ac of existing open space and recreational uses, and approximately 0.03 ac of existing vacant land for TCEs.

Construction of the Build Alternative with Design Options 1 and 3 (Reduced Lane/Shoulder Width, and Pioneer Boulevard Westbound Ramps/168th Alignment, respectively) would require the same TCEs as the Build Alternative but also the TCEs identified under each respective design option. The affected parcels are identified in Table 2.3.12 and the locations of the parcels that would be affected by these TCEs are

shown on Figure 2.3-4 in Section 2.3, Community Impacts. Staging activities may result in temporary increases in dust and noise levels in the vicinity of these staging areas; however, such activities are not anticipated to interfere with existing uses on the parcels or result in land use conflicts with adjacent businesses and residences near SR-91 or I-605. These impacts would be temporary and would cease when project construction is complete.

Open space and recreation uses make up the greatest share of existing land uses that would be impacted by TCEs. As shown in Table 2.1.3, the Build Alternative with Design Options 1 and 3 (Reduced Lane/Shoulder Width, and Pioneer Boulevard Westbound Ramps/168th Alignment, respectively) would result in the use of approximately 0.2 ac of existing commercial and services uses, approximately 0.1 ac of existing educational/institutional uses, approximately 0.5 ac of existing residential uses, and approximately 1.2 ac of existing open space and recreational uses for TCEs.

The Build Alternative including the diamond ramp configurations at Pioneer Boulevard and Norwalk Boulevard in lieu of the proposed Type L-7 cloverleaf interchange configurations (Design Option 4), four-lane Gridley Avenue overcrossing in lieu of the existing two-lane Gridley Avenue overcrossing (Design Option 5), and keeping the Type L-9 interchange configuration at Pioneer Boulevard (Design Option 2) would not result in any change in the number of required TCEs when compared to the Build Alternative.

No Build Alternative

The No Build Alternative would not result in the construction of any improvements to the project segment of SR-91 and the SR-91/I-605 interchange other than routine maintenance. As a result, the No Build Alternative would not result in temporary adverse effects related to existing and planned land uses.

Permanent Impacts

Build Alternative (includes Design Options)

The Build Alternative would require the permanent conversion from current and planned land uses to transportation uses to accommodate the proposed improvements. As shown in Table 2.1.3, the Build Alternative would result in the conversion of approximately 0.4 ac of existing commercial and services uses, approximately 0.03 ac of existing educational/institutional uses, approximately 0.5 ac of existing industrial uses, approximately 1.4 ac of existing residential uses, approximately 0.03 ac of open space and recreation uses, and approximately 0.4 ac of existing vacant land. As

shown in Table 2.1.4, the Build Alternative would result in the conversion of approximately 0.07 ac of land planned for commercial and services uses, approximately 0.16 ac of planned educational/institutional uses, approximately 0.07 ac of planned single-family residential uses, approximately 0.01 ac of planned multifamily residential uses, and approximately 0.01 ac of planned open space and recreation uses, as identified in local General Plans.

The project would require 18 residential and 2 non-residential full acquisitions of right-of-way (ROW) under the Build Alternative. The full acquisitions would be required on land that is currently used for residential and commercial properties. The privately owned properties that would be fully acquired for the proposed project would be converted from their current and planned land uses to transportation land uses, and would no longer be available for future residential use. All of the proposed property acquisitions are situated adjacent to existing residential land uses but are contiguous. Although the project would result in a change in land use, there are plans to expand the A.J. Padelford Park and North Artesia Community Center parkland into the residential area that is being acquired. Project improvements would be compatible with the adjacent highway uses. In addition, the project would result in several benefits to the existing land uses, such as relieving congestion and improving freeway operations, including both the mainline and ramp connections.

Some of the partial acquisitions may result in the loss of landscaping or setbacks, or in noncompliance with other development standards on the remaining lot**.** As part of the acquisition process, coordination with the property owner and the local jurisdiction would be undertaken to address any variances needed resulting from noncompliance with development standards.

Design Option 1 (Reduced Lane/Shoulder Width) at 170th Street would reduce the amount of ROW required along westbound SR-91. This design option would eliminate the ROW impacts at 170th Street and would not require the acquisition of 18 homes and 1 business under the Build Alternative. As shown in Table 2.1.3, the total permanent impact area to existing land uses is 0.8 ac less than that of the Build Alternative.

Table 2.1.4 General Plan Land Use Impacts

Permanent Impacts	Build Alternative (acres)	Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) (acres)	Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Street Alignment) (acres)	Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) and Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) (acres)
Commercial and Services	0.07	0.07	0.80	0.76
Educational/Institutional	0.16	0.17	0.17	0.17
Industrial	0.0	0.0	0.0	0.0
Single-Family Residential	0.07	0.04	0.31	0.28
Multi-Family Residential	0.01	0.00	0.01	0.0
Open Space and Recreation	0.01	0.0	0.01	0.0
Permanent Impacts Total	**0.32**	**0.28**	**1.29**	**1.21**

Source: Southern California Association of Governments (SCAG). GIS Open Data Portal. Website: http://gisdata-scag.opendata.arcgis.com/ (accessed January 2018). Data compiled by LSA and Michael Baker International.

Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) would require the acquisition of an additional eight properties, including five residential properties and three vacant lots, within Census Tract 5548.01. These eight properties are located along 168th Street in a cul-de-sac adjacent to the east side of Pioneer Boulevard in Artesia. As shown in Table 2.1.3, the total permanent impact area to existing land uses would be 1.1 ac greater when compared to just the Build Alternative.

The Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) and Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) would be a combination of the reduction and addition of acquisitions as described above and would result in a total permanent impact area of 3.12 ac to existing land uses.

Impacts to General Plan planned land uses show a similar trend with inclusion of the design options when compared to the Build Alternative as shown in Table 2.1.4.

No Build Alternative

The No Build Alternative would not result in any improvements on SR-91 and the SR-91/I-605 interchange within the study area. As a result, the No Build Alternative would not result in permanent impacts related to existing and planned land uses.

Avoidance, Minimization, and Mitigation Measures

The proposed project would not result in substantial permanent effects related to land use compatibility. No additional measures or mitigation are required.

2.1.2 Consistency with State, Regional, and Local Plans and Programs

This section discusses the project's consistency with the SCAG 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), the SCAG 2017 Federal Transportation Improvement Program (FTIP), the SCAG 2004 Growth Vision Report, the SCAG 2008 Regional Comprehensive Plan (RCP), the Los Angeles County Metropolitan Transportation Authority's (Metro) 2010 Congestion Management Program (CMP), and the General Plans of the Cities of Artesia and Cerritos.

2.1.2.1 Southern California Association of Governments Regional Transportation Plan/Sustainable Communities Strategy

SCAG is the Metropolitan Planning Organization (MPO) for six counties and 187 cities. SCAG prepares long-range planning documents guiding responses to

regional challenges in the areas of transportation, air quality, housing, growth, hazardous waste, and water quality. Because these issues cross city and county boundaries, SCAG works with cities, counties, and public agencies in the six-county region (i.e., Los Angeles, Orange, Ventura, San Bernardino, Riverside, and Imperial Counties) to develop strategies to specifically address the growth and transportation issues facing Southern California.

The RTP is a long-range transportation plan that is developed and updated by SCAG every 4 years. The RTP provides a vision for transportation investments throughout the region. The proposed project is listed in Amendment #3 to the 2016 RTP/SCS with Project ID 1163S012. The 2016 RTP was approved by the Regional Council of SCAG on April 7, 2016, and Amendment #3 is scheduled to be adopted in December 2018.

2.1.2.2 Southern California Association of Governments Federal Transportation Improvement Program

The FTIP is a listing of all capital transportation projects proposed over a 6-year period for the SCAG region. The FTIP documents the funding programmed to implement the projects and programs listed in the RTP, and is developed in compliance with State and federal requirements. A new FTIP is prepared and approved every 2 years. These funded projects include highway improvements; transit, rail, and bus facilities; carpool lanes; signal synchronization; intersection improvements; freeway ramps; and other related improvements.

Federal law requires that all federally funded projects and regionally significant projects (regardless of funding) must be listed in an FTIP. The proposed project is not currently programmed in the FTIP. The proposed project will be added to the FTIP prior to completion of the Project Approval and Environmental Documentation (PA&ED) phase.

2.1.2.3 Los Angeles Metropolitan Transportation Authority's 2010 Congestion Management Program

Metro's 2010 CMP was developed to meet the requirements of Section 65089 of the California Government Code (Metro 2010). On October 28, 2010, the Metro Board adopted the 2010 CMP for Los Angeles County. The 2010 CMP summarizes the results of 18 years of CMP highway and transit monitoring and 15 years of monitoring local growth. CMP implementation guidelines for local jurisdictions are also contained in the 2010 CMP.

2.1.2.4 Local General Plans

General Plans contain policies that guide land use-related decisions within a city. General Plans address issues that directly and indirectly influence land uses (e.g., housing, noise, transportation, public services and facilities, and conservation and open space). Refer to Section 2.1.5 for an analysis of the consistency of the proposed project with the local planning document.

City of Artesia General Plan

Relevant circulation, recreation and resources, and land use-related policies in the City of Artesia General Plan are described below.

- **Land Use Element** (2016)
  - **Policy Action LU 1.3.1:** Enhance access, safety and the streetscape experience for pedestrians, bicyclists and transit riders; and focus improvements in areas with the highest need.
  - **Policy Action LU 2.1.1:** Maintain standards for circulation, noise, setbacks, buffer areas, landscaping and architecture to ensure compatibility between different uses.
- **Circulation Element** (2008)
  - **Policy Action CIR 1.1.3:** Identify necessary improvements associated with growth and land use change through the City's Capital Improvements Program.
  - **Policy Action CIR 2.1.4:** Work with Caltrans to ensure that sound walls along State facilities are landscaped and maintained with plant materials.
  - **Policy Action CIR 3.2.1:** Identify and implement necessary improvements associated with growth and land use change to maintain adequate capacity on major arterials.
  - **Policy Action CIR 6.1.1:** Work with Caltrans to review, monitor, and improve as necessary on-/off-ramps at the 91 freeway.
  - **Policy Action CIR 3.2.1:** Compliance with provisions of the Congestion Management Program (CMP).

City of Cerritos General Plan

Relevant circulation and land use-related policies in the City of Cerritos General Plan are described below.

- **Land Use Element** (2004)
  - **Policy LU-16.1:** Work with Caltrans to provide and maintain an attractive freeway environment in Cerritos, including access ramps and freeway interchanges.
- **Circulation Element** (2004)
  - **Policy CIR-1.6:** Where deemed necessary, upgrade major arterial facilities to accommodate regional traffic demand, improve access to and from freeway ramp facilities and to facilitate truck movements.
  - **Policy CIR-9.5:** Design and maintain landscaped parkways, decorative median islands and entrance planters at freeway on-ramps and off-ramps.
    - **Policy (a):** Align roadways in relationship to adjoining land uses to minimize noise and visual impacts.

2.1.2.5 Specific Plans

Some municipalities adopt specific plans to implement the policies established in the General Plan in a specific geographical area. The Cities of Artesia and Cerritos do not have specific plans within the study area.

2.1.2.6 Environmental Consequences

Temporary Impacts

Build Alternative (includes Design Options)

Consistency with State, regional, and local plans and programs is related to the consistency of permanent project changes with those plans. As a result, the construction of the Build Alternative would not result in any inconsistencies with State, regional, and local plans and policies.

No Build Alternative

Consistency with State, regional, and local plans and programs is related to the consistency of permanent changes with those plans. Therefore, there would be no temporary impacts under the No Build Alternative.

Permanent Impacts

Build Alternative (includes Design Options)

The local land use policies consistency analysis for the Build Alternative (including all the design options) is provided in Table 2.1.5. The Build Alternative would be generally consistent with the applicable policies and objectives contained in the General Plans of the Cities of Artesia and Cerritos. Specifically, the project is consistent with the policies and objectives to improve regional transportation facilities, maximize the efficiency of the circulation system, and improve access to city streets. In addition, implementation of the Build Alternative would not result in changes to existing land use patterns along SR-91 and I-605 because these freeways are existing transportation facilities located in a highly developed area, and the Build Alternative would result in a limited number of acquisitions. The Build Alternative would not require amendment of the affected Cities' General Plans.

No Build Alternative

The existing condition of SR-91 and the SR-91/I-605 interchange in the project area is generally not consistent with the regional mobility objectives of the City of Artesia and the City of Cerritos General Plan Circulation Elements. As shown in Table 2.1.5, the No Build Alternative would be generally inconsistent with the policies in these Cities' General Plans related to circulation and level of service (LOS) because the implementation of the No Build Alternative would not facilitate transportation improvements along SR-91.

Avoidance, Minimization, and Mitigation Measures

The proposed project would not result in substantial permanent effects related to plan consistency. No additional measures or mitigation are required.

2.1.3 Parks and Recreational Facilities

2.1.3.1 Regulatory Setting

This project will affect facilities that are protected by the Park Preservation Act (California Public Resources Code [PRC] Sections 5400-5409). The Park Preservation Act prohibits local and state agencies from acquiring any property which is in use as a public park at the time of acquisition unless the acquiring agency pays sufficient compensation or land, or both, to enable the operator of the park to replace the park land and any park facilities on that land.

Table 2.1.5 Consistency with Regional and Local Plans and Programs

Policy	No Build Alternative	Build Alternative
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM		
Policy Guideline: Each project in the County 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.	**Consistent.** The proposed project will be added to the FTIP prior to completion of the PA&ED phase. Therefore, the No Build Alternative would be inconsistent with this policy guideline.	**Consistent.** The 2016 RTP was approved by the Regional Council of SCAG on April 7, 2016. The proposed project is listed in Amendment #3 to the 2016 RTP/SCS with Project ID 1163S012. However, the proposed project is not currently programmed in the FTIP. The proposed project will be added to the FTIP prior to completion of the PA&ED phase. Therefore, the project is consistent with this policy guideline.
2004 Growth Vision Report		
Principle #1: Improve mobility for all residents. Encourage transit-oriented development. Promote a variety of travel choices	**Consistent.** The No Build Alternative would not result in any changes to existing conditions and would therefore not conflict with this principle. However, this alternative would not achieve the transportation improvements projected to result under the Build Alternative.	**Consistent.** By increasing operational efficiencies at SR-91, the Build Alternative would enhance transit and improve traffic conditions. Therefore, the project would be consistent with this principle.
2008 Regional Comprehensive Plan		
Transportation Goal: A more efficient transportation system that reduces and better manages vehicle activity.	**Consistent.** The No Build Alternative would not result in any changes to existing conditions and would therefore not conflict with this goal. However, this alternative would not achieve the transportation improvements projected to result under the Build Alternative.	**Consistent.** The Build Alternative would result in a more efficient transportation system by adding another lane on SR-91. Therefore, the project would be consistent with this goal.
Security and Emergency Preparedness Goal: Ensure transportation safety, security, and reliability for all people and goods in the region.	**Consistent.** The No Build Alternative would not result in any changes to existing conditions and would therefore not conflict with this goal. However, this alternative would not achieve the transportation improvements projected to result under the Build Alternative.	**Consistent.** The Build Alternative would help to ensure transportation safety, security, and reliability by adding another lane on SR-91. Therefore, the project would be consistent with this goal.
2016-2040 Regional Transportation Plan/Sustainable Communities Strategy		
Goal 2: Maximize mobility and accessibility for all people and goods in the region.	**Consistent.** The No Build Alternative would not result in any changes to existing conditions and would therefore not conflict with this goal. However, this alternative would not achieve the transportation improvements projected to result under the Build Alternative.	**Consistent.** The Build Alternative would maximize mobility and accessibility in the region by improving operational efficiency at SR-91. Therefore, the project would be consistent with this goal.
Goal 3: Ensure travel safety and reliability for all people and goods in the region.	**Consistent.** The No Build Alternative would not result in any changes to existing conditions and would therefore not conflict with this goal. However, this alternative would not achieve the transportation improvements projected to result under the Build Alternative.	**Consistent.** The Build Alternative would help to ensure transportation safety, security, and reliability by improving operational efficiency at SR-91. Therefore, the project would be consistent with this goal.

Table 2.1.5 Consistency with Regional and Local Plans and Programs

Policy	No Build Alternative	Build Alternative
LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY		
2010 Congestion Management Program		
Goals: To link local land use decisions with their impacts on regional transportation, and air quality; and to develop a partnership among transportation decision makers on devising appropriate transportation solutions that include all modes of travel.	**Consistent.** The No Build Alternative would not result in any changes to existing conditions and would therefore not conflict with these goals. However, this alternative would not achieve the transportation improvements projected to result under the Build Alternative.	**Consistent.** The Build Alternative would improve operational efficiencies at SR-91 and would therefore enhance transportation, resulting in improvements to regional transportation and air quality. Therefore, the project would be consistent with this goal.
CITY OF ARTESIA GENERAL PLAN		
Land Use Element (2016)		
Policy Action LU 1.3.1: Enhance access, safety and the streetscape experience for pedestrians, bicyclists and transit riders; and focus improvements in areas with the highest need.	**Inconsistent.** The No Build Alternative would not provide any enhancements related to access, safety, and the streetscape experience for pedestrians, bicyclists, and transit riders.	**Consistent.** The proposed project is an improvement to existing infrastructure. It would provide an opportunity for the incorporation of enhancements to access, safety, and the streetscape experience for pedestrians, bicyclists, and transit riders.
Policy Action LU 2.1.1: Maintain standards for circulation, noise, setbacks, buffer areas, landscaping and architecture to ensure compatibility between different uses.	**Consistent.** The No Build Alternative does not introduce a disruptive, non-conforming use to the surrounding land uses.	**Consistent.** The proposed project is an improvement to existing infrastructure. It is does not introduce a disruptive, non-conforming use to the surrounding land uses.
Circulation Element (revised 2008)		
Policy Action CIR 1.1.3: Identify necessary improvements associated with growth and land use change through the City's Capital Improvements Program.	**Inconsistent.** The No Build Alternative would not improve conditions on SR-91 or local roadways and would not implement necessary improvements to accommodate growth and land use change.	**Consistent.** The proposed project would improve conditions on SR-91 and local roadways, and would implement necessary improvements to accommodate growth and land use change.
Policy Action CIR 2.1.4: Work with Caltrans to ensure that sound walls along State facilities are landscaped and maintained with plant materials.	**Inconsistent.** The No Build Alternative would not result in the construction of sound walls with landscaped plant materials.	**Consistent.** Where feasible and practical, the proposed project would incorporate landscaped plant materials on new or reconstructed sound walls.
Policy Action CIR 3.2.1: Identify and implement necessary improvements associated with growth and land use change to maintain adequate capacity on major arterials.	**Inconsistent.** The No Build Alternative would not improve conditions on SR-91 or local roadways and would not implement necessary improvements to accommodate growth and land use change to maintain adequate capacity on major arterials.	**Consistent**. Where feasible and practical, the proposed project would implement necessary improvements to maintain adequate capacity on major arterials.
Policy Action CIR 6.1.1: Work with Caltrans to review, monitor, and improve as necessary on-/off-ramps at the 91 freeway.	**Inconsistent.** The No Build Alternative would not improve conditions on SR-91 and would not implement necessary improvements to accommodate growth and land use change to maintain adequate capacity on SR-91 on-/off-ramps..	**Consistent.** The proposed project would improve conditions on SR-91, and would implement necessary improvements to accommodate growth and land use change to maintain adequate capacity on SR-91 on-/off-ramps.
Policy Action CIR 3.2.1: Compliance with provisions of the Congestion Management Program (CMP).	**Consistent.** While no changes would occur under the No Build Alternative, it would not be inconsistent with the provision of the CMP.	**Consistent.** The improvements associated with the proposed project would be consistent with the provisions of the CMP.

Table 2.1.5 Consistency with Regional and Local Plans and Programs

Policy	No Build Alternative	Build Alternative
CITY OF CERRITOS GENERAL PLAN		
Land Use Element (2004)		
Policy LU-16.1: Work with Caltrans to provide and maintain an attractive freeway environment in Cerritos, including access ramps and freeway interchanges.	**Inconsistent.** The No Build Alternative would not improve conditions on SR-91 or at ramps and interchanges, and would not implement improvements to maintain an attractive freeway environment.	**Consistent.** The proposed project would improve conditions on SR-91 and at ramps and interchanges, and would implement improvements to maintain an attractive freeway environment where feasible and practical.
Circulation Element (2004)		
Policy CIR-1.6: Where deemed necessary, upgrade major arterial facilities to accommodate regional traffic demand, improve access to and from freeway ramp facilities and to facilitate truck movements.	**Inconsistent.** The No Build Alternative would not improve conditions on SR-91 or major arterials, and would not implement necessary improvements to accommodate regional traffic demand and would not improve access.	**Consistent.** The proposed project would improve conditions on SR-91 and along major arterials, and would implement necessary improvements to accommodate regional traffic demand and improve access.
Policy CIR-9.5: Design and maintain landscaped parkways, decorative median islands and entrance planters at freeway on-ramps and off-ramps. **Policy (a):** Align roadways in relationship to adjoining land uses to minimize noise and visual impacts.	**Inconsistent.** The No Build Alternative would not improve conditions on SR-91 or at ramps and interchanges, and would not implement improvements to maintain an attractive freeway environment. No features would be constructed to minimize noise and visual impacts.	**Consistent.** The proposed project would improve conditions on SR-91 and at ramps and interchanges, and would implement improvements to maintain an attractive freeway environment where feasible and practical. Project elements would be incorporated to minimize noise and visual impacts.

Source: *Community Impact Assessment* (2018).
Caltrans = California Department of Transportation
FTIP = Federal Transportation Improvement Program
PA&ED = Project Approval/Environmental Documentation
RTP/SCS = Regional Transportation Program/Sustainable Communities Strategy
SR-91 = State Route 91
TIP = Transportation Improvement Program

2.1.3.2 City of Artesia

The City of Artesia operates and maintains a total of three city parks: Artesia Park, A.J. Padelford Park, and Baber Park (City of Artesia 2017). The following parks and recreational facilities in the city of Artesia are within 0.5 mile (mi) of the project area:

- **A.J. Padelford Park, 16912 Clarkdale Avenue, Artesia** (**Map ID No. P-6):** This neighborhood park features one full basketball court, two playgrounds, a Teen Center, and one multi-purpose room. This park is 1.56 ac and is located partially within the study area of the proposed project.
- **Baber Park, 17101 Baber Avenue, Artesia (Map ID No. P-5):** This park is a passive open space area. This park is 0.9 ac and is located partially within the study area of the proposed project.

- **North Artesia Community Center, 11870 169th Street, Artesia (Map ID No. P-6):** This community center is located within A.J. Padelford Park and provides a location for City of Artesia-sponsored educational and recreational opportunities.

2.1.3.3 Affected Environment

City of Cerritos

The City of Cerritos operates and maintains a total of 20 community parks and 6 recreational facilities, including community gyms at three high schools, the Cerritos Olympic Swim and Fitness Center, the Iron-Wood Nine Golf Course, and the Cerritos Regional Park, Sports Complex and Skate Park (City of Cerritos 2017). The following parks and recreational facilities in the city of Cerritos are within 0.5 mi of the project area:

- **Satellite Park, 12410 Ash Creek Road (Map ID No. P-8):** This park features ball courts and fields, picnic shelters, and play areas. This park is approximately 1.9 ac and is located approximately 570 feet (ft) from the project area.
- **Reservoir Hill Park, 16733 Studebaker Road (Map ID No. P-3):** This park features play areas. This park is 4.6 ac and is located partially within the project area.
- **Cerritos Park East, 13234 East 166th Street (Map ID No. P-13):** This park features ball courts and fields, a meeting room, picnic shelters, restrooms, play areas, a spray pool, and on-site staff. This park is approximately 29.9 ac and is located approximately 1,640 ft from the project area.
- **Frontier Park, 16910 Maria Avenue (Map ID No. P-10):** This park features ball courts, fields, a meeting room, picnic shelters, a restroom, play areas, and on-site staff. This park is approximately 2.6 ac and is located approximately 890 ft from the project area.
- **Ecology Park, 17133 Gridley Road (Map ID No. P-4):** This park features ball courts and play areas. This park is approximately 1.5 ac and is located partially within the project area.
- **Saddleback Park, 13037 Acoro Street (Map ID No. P-12):** This park features ball courts and play areas. This park is 1.5 ac and is located approximately 360 ft from the project area.
- **Loma Park, 17503 Stark Avenue (Map ID No. P-9):** This park features picnic shelters and play areas. This park is approximately 0.8 ac and is located approximately 1,155 ft from the project area.

- **Rosewood Park, 17715 Eric Avenue (Map ID No. 16):** This park features ball courts and fields, picnic shelters, and play areas. This park is approximately 8 ac and is located approximately 1,940 ft from the project area.
- **Cerritos Sculpture Garden, 183rd Street (Map ID No. 17):** This garden features interior and exterior spaces showcasing art and nature. This garden is approximately 0.02 sq mi and is located approximately 2,160 ft from the project area.
- **Brookhaven Park, 13167 Brookhaven Street (Map ID No. P-14):** This park features ball courts and play areas. This park is approximately 0.7 ac and is located approximately 275 ft from the project area.
- **Heritage Park, 18600 Bloomfield Avenue (Map ID No. P-11):** This park features ball courts and fields, an island playground, a meeting room, picnic shelters, restrooms, play areas, and on-site staff. This park is approximately 15.3 ac and is located approximately 2,380 ft from the project area.
- **Cerritos Park East Community Center, 13234 East 166th Street (Map ID No. P-13):** This community center is located within Cerritos Park East and provides a location for City-sponsored educational and recreational opportunities.
- **Cerritos Olympic Swim and Fitness Center, 13150 East 166th Street (Map ID No. RF-2):** This facility is an enclosed 50-meter (m) pool with dressing rooms, a press box area, and seating capacity for 1,200 spectators. Swimming classes for children and adults are offered here. This facility is located approximately 1,640 ft from the project area.
- **Community Gymnasium at Whitney High School, 16800 Shoemaker Avenue (Map ID No. S-13):** This community gymnasium is a shared facility that hosts organized youth and adult sports classes. This community gymnasium is located approximately 1,265 ft from the project area.
- **Cerritos Center for the Performing Arts, 12700 Center Court Drive (Map ID No. 23):** This facility functions as a performing arts and conference facility, offering performances in music, dance, and theater, as well as a facility for meetings, banquets, and special events. This facility is located approximately 1,000 ft from the project area.
- **Heritage Park Community Center, 18600 Bloomfield Avenue (Map ID No. P-11):** This community center is located within Heritage Park and provides a location for City-sponsored educational and recreational opportunities.
- **Tracy High School, 12222 Cuesta Drive (Map ID No. S-10):** This high school campus encompasses 14.57 ac, is a public continuation high school that serves as an alternative education program, and primarily serves students in grades 10

through 12. The facility contains several amenities, including outdoor basketball courts, blacktop tennis courts, and a multipurpose grass area that primarily serves as a baseball field.

City of Norwalk

The City of Norwalk operates and maintains a total of 12 parks as well as a cultural arts center, a gymnasium, the Hargitt House Museum, the Sproul Museum, the Sproul Reception Center, a teen center, an aquatic pavilion, a golf center, and a senior center (City of Norwalk 2017). The following parks and community centers in the city of Norwalk are within 0.5 mi of the project area:

- **Glazier Park, 10810 Excelsior Drive (Map ID No. P-1):** This park features ball courts, picnic shelters, play areas, restrooms, and passive recreation areas. This park is located approximately 2,430 ft from the project area.
- **Hermosillo Park, 11959 162nd Street (Map ID No. P-7):** This park features ball courts and fields, play areas, and passive recreation areas. This park is located approximately 1,600 ft from the project area.

City of Bellflower

The City of Bellflower operates and maintains a total of four city parks as well as a civic auditorium (City of Bellflower 2017). The following parks and community facilities in the city of Bellflower are within 0.5 mi of the project area:

- **Ruth B. Caruthers Park, 10500 Flora Vista Street (Map ID No. P-2):** This park features ball courts and fields, picnic shelters, a skate park, game room, a wading pool, fitness center, equestrian path, bike trail, and play areas. This park is approximately 20 ac and is located approximately 1,340 ft from the project area.
- **Flora Vista Dog Park, 9203 Flora Vista Street (Map ID No. P-2):** This dog park is part of the larger Ruth B. Caruthers Park.
- **Bellflower Bike Trail (Map ID No. B-1):** A 2.7 mi asphalt bike trail that runs along the former ROW of the Pacific Electric rail system. The trail begins at Ruth B. Caruthers Park and heads northwest to its terminus at Somerset Boulevard.

Parks and recreation resources within 0.5 mi of the project area identified by Map ID are shown on Figure A-1 in Appendix A, Resources Evaluated Relative to the Requirements of Section 4(f).

Bicycle Facilities

On-road bicycle facilities within the project area include:[1]

- A Class III[2] bikeway extends in both directions on 195th Street from the San Gabriel River Trail to Bloomfield Avenue. These bikeways then transition to a Class II bikeway before joining the Coyote Creek Bicycle Path.
- A Class II bikeway extends on Pioneer Boulevard from South Street before turning eastward onto Del Amo Boulevard.
- A Class II bikeway extends on Bloomfield Avenue starting at 183rd Street and ends at South Street before continuing east on South Street to Carmelita Avenue, where another bikeway extends southward on Shoemaker Avenue.

The project area is located between the following two major bike trails in the region owned and operated by the Los Angeles County Department of Public Works Road Maintenance Division:

- The San Gabriel River Bicycle Trail runs 30.2 mi along the San Gabriel River, from San Gabriel Canyon Road in Azusa to an access into El Dorado Park in Long Beach. There are numerous access points along the path. Within the study area, the Trail crosses under SR-91 just west of I-605, which it parallels for much of its length.
- The Coyote Creek Bicycle Trail is a 9.5 mi Class I bike path adjacent to the Coyote Creek flood control channel, extending from Santa Fe Springs to Long Beach, where it joins the San Gabriel River Bicycle Path. It crosses under SR-91 about 1 mi east of the study area, at Carmenita Road.

Park Preservation Act

The project will affect four park facilities that are protected by the Park Preservation Act (California Public Resources Code [PRC] Sections 5400–5409). These park facilities are Reservoir Hill Park, Ecology Park, Baber Park, and A. J. Padelford Park (each described above). The Park Preservation Act prohibits local and State agencies from acquiring any property that is in use as a public park at the time of acquisition

---

1 County of Los Angeles. 2012. *Bicycle Master Plan.* Website: https://dpw.lacounty.gov/pdd/bike/docs/bmp/BMP%20CHP%203.pdf (accessed December 12, 2017).

2 Class I (separate bike path), Class II (bike lane), and Class III (signed as bike route, no striping).

unless the acquiring agency pays sufficient compensation or land, or both, to enable the operator of the park to replace the park land and any park facilities on that land.

2.1.3.4 Environmental Consequences

Temporary Impacts

Build Alternative (includes Design Options)

Construction of the Build Alternative would result in temporary effects at 3 of the 30 parks and recreational resources within the project area as discussed below.

- **Ecology Park:** The project would not require temporary impacts to Ecology Park for construction activities; however, there would be temporary impacts to approximately 0.045 ac of parkland in the northern portion of this resource. This temporary impact area is located beyond the noise barrier that separates the park from SR-91, and it is not accessible from Ecology Park. Therefore, the temporary impact area would not adversely affect users of Ecology Park nor would it adversely affect the facilities, function or activities at the park.
- **A.J. Padelford Park and North Artesia Community Center (A.J. Padelford Park Facility):** The project would require a TCE on approximately 0.13 ac of land along the south side of the property boundary to remove and reconstruct the existing noise barrier that separates westbound SR-91 from the A.J. Padelford Park Facility. The TCE is located to the south of the community center building and recreational resources where there is currently an existing noise barrier. Once the residential and non-residential properties along 170th Street have been acquired, access to the A.J. Padelford Park Facility from 170th Street would be restricted. However, access from the main entrance along 169th Street would remain.

  Construction activities would include the use of vehicles, equipment, or construction staging that would create short-term dust, noise, and visual impacts on the resource from the use of construction equipment, ground disturbance, and other construction activities. However, these impacts would be intermittent and temporary, and use of the playground, handball court, basketball court, and multipurpose field would not be adversely affected. Following construction, the TCE area would be revegetated and improved. Temporary impacts would not interrupt access to the A.J. Padelford Park Facility, and the park and community center would remain open for public use during construction and operation of the project. While temporary impacts to the park facilities would be required, the

temporary impacts area would not adversely affect users of the A.J. Padelford Park Facility.

- **Tracy High School:** The project would require TCEs on approximately 0.84 ac of land at Tracy High School. A TCE on 0.816 ac of land would be required on the parking lot adjacent to Norwalk Boulevard in the western end of the school's boundary for the proposed interchange and intersection improvements at Norwalk Boulevard. A second TCE would be required on 0.023 ac of land along the school's southeastern parking lot for a construction staging area for the reconstruction of the noise barrier along the alleyway adjacent to the school's boundary to accommodate new Caltrans ROW.

  Before construction activities begin, the western parking lot would be reconfigured and restriped; therefore, the project would not limit the number of spaces in the western parking lot.

  During project construction, an existing sewer manhole at the southeast corner of the property would need to be relocated. Several parking stalls would be temporarily unavailable during the manhole and sewer relocation. There could also be short-term dust, noise, and visual impacts on the resource from the use of construction equipment, ground disturbance, and other construction activities. However, these impacts would be intermittent and temporary, and the basketball courts, tennis courts, and multipurpose field would not be adversely affected. Following construction, the TCE area in the southeastern parking lot would be returned to its intended use.

  Temporary impacts would not interrupt access to the recreational resources at this property, and would remain open for public use during construction and operation of the project.

No Build Alternative

The No Build Alternative would not result in the construction of any improvements to the project segment of SR-91 and the SR-91/I-605 interchange other than routine maintenance. As a result, the No Build Alternative would not result in temporary adverse effects related to parks and recreation facilities, or Section 4(f) resources.

Permanent Impacts

Build Alternative (includes Design Options)

The following park and recreation facilities would be impacted with the implementation of the Build Alternative. These park and recreational facilities qualify

for protection under Section 4(f) of the Department of Transportation Act of 1966 and are discussed in more detail in Appendix A, Section 4(f) Analysis.

- **Reservoir Hill Park:** Construction of the Build Alternative would result in a small acquisition (less than 10 square feet [sf]) on the southern property boundary of Reservoir Hill Park to accommodate interchange improvements along the portion of westbound SR-91 that leads to northbound I-605 and would include the expansion of the connector ramp from one lane to two in what is considered a gore point. The permanent incorporation would occur in an area away from the recreational resource and would not interrupt access to the park. The park would remain open for public use during construction and operation of the project.
- **Ecology Park:** The project would result in the permanent incorporation of 0.63 ac of vegetated slope from Ecology Park into the transportation facility. Permanent impacts would not interrupt access to the park, and the park would remain open for public use during construction and operation of the project.

  Construction of the Build Alternative with Design Option 5 (Four-Lane Gridley Road Overcrossing) would include the demolition and reconstruction of the existing Gridley Road overcrossing. While the overcrossing would be removed and replaced, permanent access to an overcrossing connecting to/from Ecology Park would be maintained, and there would be no permanent loss of access to this resource.
- **Baber Park:** The project would result in the permanent incorporation of 0.023 ac of vegetated slope from Baber Park into the transportation facility. Permanent impacts would not interrupt access to the park, and the park would remain open for public use during construction and operation of the project. Construction of the Build Alternative with Design Option 5 (Four-Lane Gridley Road Overcrossing) would include the demolition and reconstruction of the existing Gridley Road overcrossing. While the overcrossing would be removed and replaced, permanent access to/from Baber Park (via Baber Avenue to the east of the park) would be maintained, and there would be no permanent loss of access to this resource.
- **A.J. Padelford Park and North Artesia Community Center (A.J. Padelford Park Facility):** The project would result in the permanent incorporation of 0.0064 ac of parkland from the A.J. Padelford Park Facility into the transportation facility. This would occur in the southeastern portion of the park boundary to accommodate new Caltrans ROW for the widening of westbound SR-91 and the

reconstruction of the noise barrier along 170th Street. Project improvements at this location would include the freeway widening of westbound SR-91 and the demolition and reconstruction of the noise barrier that currently serves as the southern boundary of the A.J. Padelford Park Facility.. Permanent impacts would not interrupt access to the A.J. Padelford Park Facility, and the park and community center would remain open for public use during construction and operation of the Build Alternative.

Under Design Option 1 (Reduced Lane/Shoulder Width), the project would not result in the permanent incorporation of this resource into the transportation facility. Acquisition of park land would not be required, and a new ROW would not be necessary.

- **Tracy High School:** The project would result in the permanent incorporation of 0.32 ac of parking lot from Tracy High School at the western portion of the school boundary to accommodate the interchange reconfiguration and intersection improvements at Norwalk Boulevard. Additional improvements would include the reconfiguration of lanes along Norwalk Boulevard and the reconstruction of the existing Type L-9 cloverleaf interchange into a Type L-7 cloverleaf interchange configuration. The interchange modification would also alter the arterial street operations as a result of the changed interchange access point for the arterial street to westbound SR-91.

  Permanent impacts would not interrupt access to the resource, and would not affect the activities, features, or attributes of this resource. The resource would remain open for public use during construction and operation of the project. The project would result in a portion of the property being permanently incorporated into a transportation facility. To minimize the impact on this resource, the parking lot would be reconfigured and restriped prior to construction so that the number of parking stalls would remain the same despite the permanent impacts.

No Build Alternative

The No Build Alternative would not result in any improvements on SR-91 and the SR-91/I-605 interchange within the study area. As a result, the No Build Alternative would not result in permanent impacts related to parks and recreation facilities, or Section 4(f) resources.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project would not result in substantial permanent effects related to parks and recreation facilities. No additional measures or mitigation are required.

2.2 Growth

2.2.1 Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act (NEPA) of 1969, require 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. The 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…"

2.2.2 Affected Environment

Existing and General Plan land uses in Cerritos and Artesia along the project segment of State Route 91 (SR-91) and Interstate 605 (I-605) and the projected growth rates for the various jurisdictions are discussed in Section 2.1, Land Use, and in Chapter 1, Section 1.2.2.3, Social Demands and Economic Development.

This analysis of potential growth impacts follows the first-cut screening guidelines provided in the California Department of Transportation's (Caltrans) *Guidance for Preparers of Growth-related, Indirect Impact Analysis* (2006). The first-cut screening approach identifies the need for and the extent of growth-related impact analysis based on the responses to various questions related to a project's change in accessibility, its potential to influence growth, and the potential for project-related growth to impact resources of concern.

2.2.3 Environmental Consequences

2.2.3.1 Temporary Impacts

Build Alternative (includes Design Options)

Any potential growth-related impacts of the Build Alternative would be a result of the operation of the Build Alternative and would be permanent. Therefore, the Build

Alternative and its design options would not result in any temporary growth-related impacts.

No Build Alternative

Under the No Build Alternative, none of the proposed improvements to SR-91 and I-605 would be constructed. The No Build Alternative would maintain the existing conditions; therefore, the No Build Alternative would not result in temporary growth-inducing impacts.

2.2.3.2 Permanent Impacts

Build Alternative (includes Design Options)

The assessment of the potential growth-related impacts of the Build Alternative was conducted using the first-cut screening analysis approach, including assessment of whether further analysis would be necessary based on consideration of the following four questions.

1. **How, if at all, does the proposed project potentially change accessibility?**

   The Build Alternative proposes improvements to an existing freeway facility and does not increase the number of access points to or from the facility. The proposed project is located in a highly urbanized area, and the proposed improvements do not provide a new transportation facility or new access to previously inaccessible areas. The Build Alternative would help alleviate existing and forecasted traffic congestion in the study area, resulting in improved operations on the SR-91, the I-605, and on nearby arterials. Additionally, the Build Alternative would help accommodate projected future (2044) traffic volumes in the study area consistent with adopted local land use and transportation plans (as discussed in Section 2.1, Land Use, and in Chapter 1, Section 1.2.2.3, Social Demands and Economic Development). Therefore, the proposed project does not have the potential to change accessibility.

2. **How, if at all, do the project type, project location, and growth pressure potentially influence growth?**

   Growth in Cerritos and Artesia is expected to occur with or without the Build Alternative because growth has continued in the study area even without improvements to SR-91. The Build Alternative would accommodate approved and planned growth in the study area (see Table 2.18.1 for a list of reasonably foreseeable land use and infrastructure projects within the study area) because the

proposed project would add capacity to a heavily traveled segment of SR-91 and I-605 and thereby help alleviate existing and forecasted congestion in the study area. Pressure for growth is a result of a combination of factors, including economic, market, and land use demands and conditions. The study area cities are projected to experience population growth rates ranging from 3 percent (for Cerritos) to 8 percent (for Artesia) between 2012 and 2040 as projected by the Southern California Association of Governments' (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Final Growth Forecasts.[1]

If traffic congestion was a constraint on growth, the improvements to alleviate congestion and expand the capacity of the existing SR-91 and I-605 facilities could make growth in the study area more attractive. However, as shown in Table 2.18.1, a substantial number of development projects were proposed and approved prior to the initiation of the planning studies for the proposed project, which indicates that development in the study area cities is not dependent on the completion of this freeway improvement project. Additionally, the SR-91 and I-605 corridor runs through a heavily urbanized and built-out area, wherein there is not a substantial amount of land available for new development. The project is in conformance with the growth-related objectives and policies of the General Plans of the Cities of Cerritos and Artesia. The overarching goals identified in these General Plans call for the provision of adequate transportation facilities, a reduction in traffic congestion, and interagency coordination to achieve a reduction in regional traffic congestion. The Build Alternative does not propose improvements that are inconsistent with these goals or other related policies. Moreover, the fact that the project is called for in the RTP/SCS, for which each local jurisdiction provides input, suggests that growth policies would effectively manage any growth created by the Build Alternative. Table 2.18.1 provides the status of land use developments within the study area. These developments will be developed with or without the proposed project.

Because it is located within an existing urbanized area, the Build Alternative is unlikely to alter the historic and projected growth patterns within either the

[1] Southern California Association of Governments (SCAG). 2016–2040 RTP/SCS Final Growth Forecast by Jurisdiction. Website: https://www.scag.ca.gov/Documents/2016_2040RTPSCS_FinalGrowthForecastbyJurisdiction.pdf (accessed November 10, 2017).

affected jurisdictions or Los Angeles County and does not encourage growth on undeveloped and unplanned land. Therefore, the Build Alternative would accommodate existing and planned growth, but not influence growth beyond what is currently planned.

3. Is project-related growth reasonably foreseeable as defined in NEPA?

Under NEPA, indirect impacts need only be evaluated if they are reasonably foreseeable, rather than remote and speculative. As discussed above, the Build Alternative would not influence growth beyond those projects currently planned for the area (Table 2.18.1) and would not influence the rate, type, or amount of growth that would otherwise occur. Therefore, no reasonably foreseeable project-related growth would occur under the Build Alternative.

4. If there is project-related growth, how, if at all, will that impact resources of concern?

As indicated above, because the Build Alternative would not influence the rate, type, or amount of growth that would otherwise occur, the reasonably foreseeable growth anticipated to occur in the study area is not project-related.

Because the Build Alternative would not result in growth-inducing impacts, no analysis of those potential impacts beyond what is contained above in the first-cut screening analysis is necessary.

No Build Alternative

Under the No Build Alternative, none of the proposed improvements to SR-91 and I-605 would be constructed. The No Build Alternative would maintain the existing conditions; therefore, the No Build Alternative would not result in growth-related impacts.

2.2.4 Avoidance, Minimization, and/or Mitigation Measures

As the Build Alternative would not result in any temporary or permanent growth-related impacts, no avoidance, minimization, or mitigation measures are required.

2.3 Community Impacts

2.3.1 Community Character and Cohesion

2.3.1.1 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.

2.3.1.2 Affected Environment

The study area for community character and cohesion includes portions of the cities of Artesia, Cerritos, and Norwalk, specifically the 9 census tracts and 20 applicable block groups adjacent to the project area (Census Tracts 5530.00 [Block Groups 3 and 4], 5545.12 [Block Groups 1 and 2], 5545.13 [Block Group 1], 5545.14 [Block Groups 1. 2, and 3], 5545.21 [Block Groups 1 and 3], 5546.00 [Block Groups 1 and 2], 5547.00 [Block Groups 1, 2, and 3], 5548.01 [Block Groups 1 and 2], and 5548.02 [Block Groups 1, 2, and 3], which are shown on Figure 2.3-1). (Please note that the figures for this section have been placed at the end of the text to enhance the section's readability.) Data presented in this section are based on census tract information available from the United States (U.S.) Census Bureau, the 2010 Census, and the

2011–2015 American Community Survey (ACS)[1] 5-Year Estimates. The ACS is a mandatory, ongoing statistical survey that samples a small percentage of the population every year to provide estimates on various community characterisitcs. The 5-Year Estimates include data collected over a 5-year period to provide the most reliable estimates for a community.

Community character consists of all the attributes, including social and economic characteristics, and assets that make a community unique and establish a sense of place for its residents. The southern portion of the study area along State Route 91 (SR-91) consists of a mix of education, industrial, commercial/service, and single-family residential uses, with a smaller number of multi-family residential uses. By contrast, the northern portion of the study area along SR-91 is characterized by more single- and multi-family residences, but also includes areas of commercial, industrial, and educational uses. Land uses surrounding Interstate 605 (I-605) in the study area consist of a mix of transportation, communication, utility, recreation, and industrial uses and a small pocket of commercial uses to the west and a mix of commercial, industrial, single-family residential, and recreational uses to the east.

Community cohesion is the degree to which residents have a sense of belonging to their neighborhoods, a level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Demographic data compiled by the U.S. Census Bureau, including the 2010 Census and the 2011–2015 ACS, may be used to measure a community's level of cohesion. The following demographic indicators tend to correlate with a higher degree of community cohesion and are used to determine the degree of community cohesion in the study area cities and census tracts:

- **Ethnicity:** In general, homogeneity of the population contributes to higher levels of community cohesion. Communities that are ethnically homogeneous often speak the same language, hold similar beliefs, and share a common culture and, therefore, are more likely to engage in social interaction on a routine basis. The U.S. Census Bureau compiles limited data regarding ethnicity. While the U.S.

[1] The ACS is an ongoing survey conducted by the U.S. Census Bureau that provides data every year, supplying communities with current information they need to plan investments and services. ACS data are estimates derived from a sampling of the population, rather than population totals collected for the Decennial Census.

Census Bureau provides data regarding Hispanic/Latino origin, the language spoken at home, and ancestry, it does not provide data regarding religion. Table B03002 of the 2011–2015 ACS provides data regarding the population by ethnicity and race used to identify ethnically homogeneous communities within the study area.

- **Housing Occupancy:** Communities with a high percentage of owner-occupied residences are typically more cohesive because their population tends to be less transient. Because 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. Table B25008 of the 2011–2015 ACS provides data regarding the percentage of housing units in Los Angeles County as well as in each study area city and census tract that is owner-occupied.
- **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. Table B25026 of the 2011–2015 ACS provides data regarding the year that each householder in Los Angeles County and the study area cities and census tracts moved into his or her current housing unit. For purposes of this analysis, those households that moved into their current residence in 2001 or earlier are considered long-term residents since they have lived in their current residence for more than 15 years.
- **Household Size:** In general, communities with a high percentage of families with children are more cohesive than communities made up of largely single people. This appears to be because 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. Table B11016 of the 2011–2015 ACS provides data on household type by household size used to identify family households within the study area.
- **Elderly Residents:** 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 due to its members having more time available to volunteer and participate in social organizations. Table B01001 of the 2011–2015 ACS provides data regarding the age of the population of Los Angeles County and each study area city and census tract.

- **Transit-Dependent Population:** Communities with a high percentage of residents who 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 interactions with each other more frequently than residents who travel by automobile. The transit-dependent population was identified from the U.S. Census Bureau (2015) and data reported in Table S0801 of the 2012–2016 ACS.

These indicators of community character and cohesion in the study area and the applicable local jurisdictions are described in greater detail below.

Ethnicity

Table 2.3.1 provides data regarding ethnicity and race in Los Angeles County, the study area cities of Artesia and Cerritos, and the nine census tracts and associated block groups in the study area, as reported in the 2011–2015 ACS for 2015. The *Community Impact Assessment* (CIA) (2018) prepared for this project also included data from 2013 regarding ethnicity and race for Los Angeles County, the study area cities, and the study area census tract block groups. Table 2.3.1 also identifies whether ethnically homogeneous communities are likely to exist in the study area cities and census tract block groups. Ethnically homogeneous communities are identified in the study area cities and census tract block groups when both of the following criteria are met: (1) a particular ethnic group makes up 30 percent or more of the population within that city or census tract block group; and (2) that particular ethnic group population makes up a higher percentage of the community than it does of Los Angeles County as a whole. These criteria were developed based on a reasonable estimate of the minimum number of residents required before ethnic places of worship, cultural institutions, and/or business districts were established in the community.

As identified in Table 2.3.1, Los Angeles County is predominantly Hispanic or Latino, followed by White and Asian. The composition of the cities of Artesia and Cerritos is predominantly Asian (40 and 60 percent, respectively). In the city of Artesia, the second-largest ethnic population is Hispanic or Latino (37 percent), followed by White (20 percent). In the city of Cerritos, the second-largest ethnic population is White (16 percent), followed by Hispanic or Latino (13 percent). When compared to these two cities and Los Angeles County, Census Tract 5545.14 Block Group 3 has the highest percentage of American Indian and Alaska Native persons

Table 2.3.1 2015 Population by Ethnicity and Race

Area		White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Two or More Races	Hispanic or Latino	Ethnically Homogeneous Communities[1]
County										
Los Angeles County		27%	8%	0.2%	14%	0.2%	0.3%	2%	48%	N/A
Study Area Cities										
City of Artesia		20%	2%	0%	***40%***	0%	0.06%	2%	37%	Yes
City of Cerritos		16%	7%	0.03%	***60%***	0.2%	***0.4%***	2%	13%	Yes
Study Area Census Tracts and Block Groups										
Census Tract 5530.00	Block Group 3 (City of Norwalk)	22%	5%	0%	9%	0%	0%	1%	***62%***	Yes
	Block Group 4 (City of Norwalk)	23%	***10%***	0%	***17%***	0%	***1%***	1%	48%	No
Census Tract 5545.12	Block Group 1 (City of Cerritos)	18%	3%	0%	***73%***	0%	***3%***	1%	3%	Yes
	Block Group 2 (City of Cerritos)	13%	***10%***	***1%***	***64%***	0%	0%	1%	11%	Yes
Census Tract 5545.13	Block Group 1 (City of Cerritos)	7%	8%	***1%***	***72%***	0%	0%	***5%***	7%	Yes
Census Tract 5545.14	Block Group 1 (City of Cerritos)	12%	6%	0%	***30%***	0%	0%	1%	***50%***	Yes
	Block Group 2 (City of Cerritos)	14%	***26%***	0%	***55%***	0%	0%	***3%***	1%	Yes
	Block Group 3 (City of Cerritos)	14%	2%	***2%***	***68%***	0%	0%	2%	12%	Yes
Census Tract 5545.21	Block Group 1 (City of Cerritos)	25%	***10%***	0%	***42%***	0%	0%	***4%***	19%	Yes
	Block Group 3 (City of Cerritos)	22%	***10%***	0%	***47%***	0%	0%	0%	21%	Yes
Census Tract 5546.00	Block Group 1 (City of Norwalk)	12%	3%	***1%***	***33%***	0%	0%	1%	***50%***	Yes
	Block Group 2 (City of Norwalk)	18%	***11%***	0%	***26%***	0%	0%	2%	44%	No
Census Tract 5547.00	Block Group 1 (City of Norwalk)	7%	6%	0%	8%	0%	0%	0%	***79%***	Yes
	Block Group 2 (City of Norwalk)	5%	1%	0%	***17%***	0%	***4%***	0%	***73%***	Yes
	Block Group 3 (City of Norwalk)	4%	3%	0%	6%	0%	0%	0%	***86%***	Yes
Census Tract 5548.01	Block Group 1 (City of Artesia)	1%	0%	0%	3%	0%	0%	0%	***96%***	Yes
	Block Group 2 (City of Artesia)	23%	8%	0%	***39%***	0%	0%	***5%***	26%	Yes
Census Tract 5548.02	Block Group 1 (City of Artesia)	23%	1%	0%	***32%***	0%	0%	***4%***	39%	Yes
	Block Group 2 (City of Artesia)	13%	3%	0%	***58%***	0%	0%	1%	25%	Yes
	Block Group 3 (City of Artesia)	***37%***	8%	0%	***35%***	0%	0%	5%	14%	Yes

Source: United States Census Bureau, 2011–2015 ACS 5-Year Estimates; Table B03002.

Note: ***Bold italicized numbers*** indicate the values are higher than in Los Angeles County as a whole. Shaded numbers indicate the likely presence of an ethnically homogeneous community. Ethnically homogeneous communities were identified in the study area cities and census tract block groups when both of the following criteria are met: (1) a particular ethnic group is 30 percent or more of the population within that city or census tract block group; and (2) that particular ethnic group population makes up a higher percentage of the community than it does of Los Angeles County as a whole.

[1] An ethnically homogeneous community is a geographic area with a high population concentration of a particular ethnic group. Ethnically homogeneous communities often possess a strong cultural identity and typically include a concentration of businesses that cater to the local ethnic group by providing familiar goods and services.

ACS = American Community Survey

N/A = not applicable

(2 percent). Census Tract 5545.12 Block Group 2, Census Tract 5545.13 Block Group 1, and Census Tract 5546.00 Block Group 1 also have higher percentages of American Indian and Alaska Native persons, with each at 1 percent. Census Tract 5547.00 Block Group 2 and Census Tract 5545.12 Block Group 1 have the highest percentage of persons who identify as Other (4 percent and 3 percent, respectively). Census Tract 5548.02 Block Group 3 and Census Tract 5545.21 Block Group 1 have the highest percentages of White persons at 37 percent and 25 percent, respectively. The White populations make up a higher share of the population within these block groups than in the cities of Artesia and Cerritos, but lower than in Los Angeles County.

Between 2013 and 2015, the city of Artesia's population was 36.5 percent Hispanic or Latino on average, while the city of Cerritos's population was 12.5 percent Hispanic or Latino on average in the same time frame. In both cities, Non-Hispanic Asian residents were identified as having the largest ethnic population, making up an average of 38.5 percent of the total population in the city of Artesia and 60.5 percent of the total population in the city of Cerritos.

In half of the studied census tract block groups that surround the project area, the Hispanic or Latino population made up over one-third of the entire area's population in 2015, with 7 of the 10 block groups residing in the city of Norwalk, 2 in the city of Artesia, and 1 in the city of Cerritos.

The highest Non-Hispanic or Latino race identified in 17 of the 20 block groups was Asian, making up an average of 39.5 percent of the population across all 17 block groups; located in the city of Cerritos, Census Tract 5545.12 Block Group 1 had the highest percentage, with 73 percent of residents identifying as Asian.

As shown in Table 2.3.1, both study area cities have one ethnically homogeneous community (Asian alone). A majority of the census tract block groups also have at least one ethnically homogeneous community (either Asian alone, Hispanic or Latino, or White alone). Of the 20 census tract block groups, 2 in the study area do not include at least one ethnically homogeneous community (Census Tract 5530.00 Block Group 4 and Census Tract 5546.00 Block Group 2).

In summary, most of the study area demonstrates strong ethnic homogeneity in a portion of the population.

Housing Occupancy

Table 2.3.2 provides a summary of the percentage of owner-occupied residences for Los Angeles County, the study area cities, and the census tracts based on the 2011–2015 ACS data. As shown in Table 2.3.2, the percentages of owner-occupied residences in both study area cities and all of the census tracts are higher than in Los Angeles County overall (48.6 percent).

Table 2.3.2 Percentage of Owner-Occupied Residences

Area	Owner-Occupied Residences	Long-Term Residents (Moved in 1999 or Earlier)[1]
County		
Los Angeles County	48.6%	48.7%
Study Area Cities		
City of Artesia	***53.7%***	***52.4%***
City of Cerritos	***77.7%***	***58.7%***
Study Area Census Tracts		
Census Tract 5530.00 (City of Norwalk)	***90.6%***	48.3%
Census Tract 5545.12 (City of Cerritos)	***83.8%***	***55.3%***
Census Tract 5545.13 (City of Cerritos)	***70.8%***	***50.3%***
Census Tract 5545.14 (City of Cerritos)	***62.5%***	***57.0%***
Census Tract 5545.21 (City of Cerritos)	***73.5%***	***54.5%***
Census Tract 5546.00 (Cities of Norwalk and Artesia)	***53.6%***	46.8%
Census Tract 5547.00 (City of Artesia)	***61.9%***	***61.7%***
Census Tract 5548.01 (City of Artesia)	***64.1%***	47.9%
Census Tract 5548.02 (City of Artesia)	***49.1%***	***53.8%***

Source: United States Census Bureau, 2011–2015 ACS 5-Year Estimates; Tables B25008 and B25026.
Note: ***Bold italicized numbers*** indicate the values are higher than in Los Angeles County as a whole.
[1] Includes those residents who moved into their current residences in 1999 or earlier, as reported in Table B25026 of the 2011–2015 ACS.
ACS = American Community Survey

Housing Tenure

Data on housing tenure, or how long residents have lived at their current residences, is also shown in Table 2.3.2. In Los Angeles County, 48.7 percent of residents have lived in their current residences for more than 15 years and, therefore, can be considered long-term residents. Table 2.3.2 also shows that each of the study area cities has a larger percentage of long-term residents than Los Angeles County.

A majority of the study area census tracts have a larger percentage of long-term residents when compared to Los Angeles County, consistent with the data shown for the study area cities. The census tract with the highest percentage of long-term residents is Census Tract 5547.00 in the city of Artesia at 61.7 percent. As shown in Table 2.3.2, only three of the nine study area census tracts have a lower percentage of long-term residents than Los Angeles County overall.

Elderly Residents

Table 2.3.3 shows the percentage of the population that is elderly (65 years old or older) in Los Angeles County, the study area cities, and the census tract block groups. As shown in Table 2.3.3, elderly residents make up a larger share of the population in each of the study area cities than in Los Angeles County overall. Table 2.3.3 shows that elderly residents' shares of the population range from approximately 5.2 percent to 34.9 percent in the study area census tract block groups, and that 12 of the 20 study area census tract block groups have a higher percentage of elderly residents than Los Angeles County overall.

Household Size

Table 2.3.3 provides the number of family and non-family households in Los Angeles County and the study area cities and census tract block groups. As shown in Table 2.3.3, the number of family households in both the cities of Artesia and Cerritos (3,747 and 12,784 households, respectively) is significantly higher than the number of non-family households. This trend is also evident within the study area census tract block groups. The largest type of household in both cities is two-person households.

Transit Dependency

Table 2.3.3 shows the percentage of the population that is transit-dependent in Los Angeles County, the study area cities, and the census tract block groups. As shown in Table 2.3.3, the percentage of transit-dependent populations within the cities of Artesia and Cerritos (0.8 percent and 1.1 percent, respectively) are lower than in Los Angeles County overall (2.8 percent). Table 2.3.3 also shows that the transit-dependent population in the study area census tract block groups varies, ranging from approximately 0.0 percent to 3.1 percent of the population, and that only 1 of the 20 study area census tract block groups has a higher percentage of transit-dependent residents than Los Angeles County overall.

Community Cohesion Summary

As described above, both of the study area cities exhibit one or more community cohesion indicators. The city of Cerritos has a higher percentage of owner-occupied residences than the city of Artesia and Los Angeles County overall. Both cities each have a larger percentage of family households than non-family households when compared to Los Angeles County overall. In addition, both of the study area cities have at least one ethnically homogeneous population. All 20 of the census tract block groups in the community impacts study area exhibit one or more community cohesion

Table 2.3.3 Community Cohesion Indicators

Area		Ethnically Homogeneous Communities[1]	Elderly Residents (>64 Years Old)	Households (Family/Non-Family)	Transit-Dependent Population
County					
Los Angeles County		N/A	11.9%	2,186,485 / 1,076,584	2.8%
Study Area Cities					
City of Artesia		Yes	***13.2%***	***3,747 / 811***	0.8%
City of Cerritos		Yes	***20.2%***	***12,784 / 2,254***	1.1%
Study Area Census Tract Block Groups					
Census Tract 5530.00	Block Group 3 (City of Norwalk)	Yes	9.1%	***517 / 13***	1.1%
	Block Group 4 (City of Norwalk)	No	11.4%	***221 / 69***	1.6%
Census Tract 5545.12	Block Group 1 (City of Cerritos)	Yes	***19.8%***	***1,011 / 97***	2.3%
	Block Group 2 (City of Cerritos)	Yes	***26.6%***	***563 / 160***	***3.1%***
Census Tract 5545.13	Block Group 1 (City of Cerritos)	Yes	***19.6%***	***634 / 172***	0.6%
Census Tract 5545.14	Block Group 1 (City of Cerritos)	Yes	10.5%	***327 / 128***	0.0%
	Block Group 2 (City of Cerritos)	Yes	***18.3%***	***379 / 46***	0.0%
	Block Group 3 (City of Cerritos)	Yes	***22.3%***	***434 / 72***	2.1%
Census Tract 5545.21	Block Group 1 (City of Cerritos)	Yes	***16.7%***	***642 / 76***	1.5%
	Block Group 3 (City of Cerritos)	Yes	***34.9%***	***423 / 193***	0.6%
Census Tract 5546.00	Block Group 1 (City of Norwalk)	Yes	***13.7%***	***687 / 211***	0.0%
	Block Group 2 (City of Norwalk)	No	9.2%	***423 / 31***	0.9%
Census Tract 5547.00	Block Group 1 (City of Norwalk)	Yes	10.9%	***314 / 35***	0.3%
	Block Group 2 (City of Norwalk)	Yes	***12.3%***	***414 / 42***	0.1%
	Block Group 3 (City of Norwalk)	Yes	9.5%	***226 / 12***	2.8%
Census Tract 5548.01	Block Group 1 (City of Artesia)	Yes	5.2%	***443 / 74***	0.6%
	Block Group 2 (City of Artesia)	Yes	***18.3%***	***168 / 63***	1.6%
Census Tract 5548.02	Block Group 1 (City of Artesia)	Yes	10.8%	***613 / 128***	0.6%
	Block Group 2 (City of Artesia)	Yes	***16.2%***	***411 / 124***	0.8%
	Block Group 3 (City of Artesia)	Yes	***23.5%***	***364 / 89***	1.8%

Source: United States Census Bureau, 2011–2015 ACS 5-Year Estimates; Tables B01001, B25026, B26001, B25046.

Note: ***Bold italicized numbers*** indicate the values are higher than in the Los Angeles County as a whole. For Households data, a higher value above Los Angeles County as a whole is defined as a case where the number of family households exceed the number of non-family household by more than double.

[1] An ethnically homogeneous community is a geographic area with a high population concentration of a particular ethnic group. Ethnically homogeneous communities often possess a strong cultural identity and typically include a concentration of businesses that cater to the local ethnic group by providing familiar goods and services.

ACS = American Community Survey

N/A = not applicable

indicators, and 11 of the study area census tract block groups (Census Tract 5545.12, Block Groups 1 and 2; Census Tract 5545.13, Block Group 1; Census Tract 5545.14, Block Groups 2 and 3; Census Tract 5545.21, Block Groups 1 and 3; Census Tract 5547.00, Block Group 2; Census Tract 5548.01, Block Group 2; and Census Tract 5548.02 Block Groups 2 and 3) demonstrate three or more community cohesion indicators. Based on these data, the study area census tract block groups with one community cohesion indicator appear to exhibit a moderate degree of community cohesion. Census Tract 5545.12, Block Groups 1 and 2; Census Tract 5545.13, Block Group 1; Census Tract 5545.14, Block Groups 2 and 3; Census Tract 5545.21, Block Groups 1 and 3; Census Tract 5547.00, Block Group 2; Census Tract 5548.01, Block Group 2; and Census Tract 5548.02 Block Groups 2 and 3, which each have three or more community cohesion indicators, appear to exhibit a high degree of community cohesion.

Other Demographics

Employment

Table 2.3.4 provides information regarding the civilian labor force in the study area cities, including the number of employed and unemployed persons and the unemployment rate, with comparisons to Los Angeles County and State employment statistics. Table 2.3.4 also provides the number of primary jobs in the cities, neighborhoods, and communities in the community impacts study area. Unlike the civilian labor force data, which is based on an area's resident labor force, primary jobs relate to the number of jobs physically located in an area. The U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) Program defines a primary job as the job that earned an individual the most money.

As shown in Table 2.3.4, both of the study area cities had a lower unemployment rate (2.6 percent in the city of Artesia and 3.2 percent in the city of Cerritos) than Los Angeles County (4.4 percent) in November 2017.

Table 2.3.4 also shows that, as of 2015, the latest available data, the city of Artesia had approximately 4,472 primary jobs and the city of Cerritos had approximately 34,906 primary jobs. While the city of Cerritos functions as a regional employment center, the city of Artesia has a lower jobs-to-housing ratio.

Table 2.3.4 Study Area Employment

Area	Employment Status				
	Civilian Labor Force	Employed	Unemployed	Unemployment Rate	Primary Jobs[1]
State and County					
California	19,353,400	18,516,000	837,400	4.3%	14,568,990
Los Angeles County	5,164,000	4,939,000	225,000	4.4%	3,928,040
Study Area Cities					
City of Artesia	9,000	8,800	200	2.2%	4,472
City of Cerritos	25,200	24,400	800	3.2%	34,906

Source 1: Employment Development Department, Labor Market Information Division. 2017. Monthly Labor Force Data for Counties, November 2017 – Preliminary. Website: http://www.labormarketinfo.edd.ca.gov/file/lfmonth/1711pcou.pdf (accessed December 16, 2017).

Source 2: Employment Development Department, Labor Market Information Division. 2017. Monthly Labor Force Data for Cities and Census-Designated Places, November 2017 – Preliminary. Website: http://www.labormarketinfo.edd.ca.gov/file/lfmonth/allsubs.xls (accessed December 16, 2017).

Source 3: United States Census Bureau. 2015. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. Website: http://onthemap.ces.census.gov/ (accessed December 16, 2017).

Note: Civilian labor force, employed labor force, unemployed labor force, and unemployment rate (not seasonally adjusted) in August 2017, as reported by the California Employment Development Department. Primary jobs in 2015, as reported by the United States Census. The California Employment Development Department does not compile labor force data at the census tract level.

[1] The United States Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) Program defines a primary job as the job that earned an individual the most money.

Income and Poverty Status

Table 2.3.5 provides the median household income for Los Angeles County, the study area cities, and the census tract block groups. As shown in Table 2.3.5, the median household income in Los Angeles County is $56,196. The median household incomes in the cities of Artesia and Cerritos ($60,749 and $90,321, respectively) are higher than in Los Angeles County. Table 2.3.5 also shows that the median household incomes in the 20 study area census tract block groups ranges from approximately $44,756 in Census Tract 5546.00 Block Group 1 in the city of Artesia to $115,089 in Census Tract 5545.14 Block Group 2 in the city of Cerritos, and that 15 of the 20 study area census tract block groups each has a higher median household income than in Los Angeles County.

The U.S. Department of Health and Human Services (HHS) 2017 Poverty Guidelines lists the median household income for a household of four as $24,600 (HHS 2017). As shown in Table 2.3.5, there are no block groups in the cities of Artesia, Cerritos, or Norwalk with a median income below the HHS threshold. All households in these areas have a median income that ranges from $44,756 to $113,750.

Table 2.3.5 Household Income

Area		Median Household Income[1]	
County			
Los Angeles County		$56,196	
Study Area Cities			
City of Artesia		***$60,749***	
City of Cerritos		***$90,321***	
Study Area Census Tract Block Groups			
Census Tract 5530.00	Block Group 3 (City of Norwalk)	***$82,250***	
	Block Group 4 (City of Norwalk)	***$79,792***	
Census Tract 5545.12	Block Group 1 (City of Cerritos)	***$113,750***	
	Block Group 2 (City of Cerritos)	***$97,574***	
Census Tract 5545.13	Block Group 1 (City of Cerritos)	***$95,294***	
Census Tract 5545.14	Block Group 1 (City of Cerritos)	$50,701	
	Block Group 2 (City of Cerritos)	***$115,089***	
	Block Group 3 (City of Cerritos)	***$88,056***	
Census Tract 5545.21	Block Group 1 (City of Cerritos)	***$84,412***	
	Block Group 3 (City of Cerritos)	***$66,357***	
Census Tract 5546.00	Block Group 1 (Cities of Norwalk and Artesia)	$44,756	
	Block Group 2 (Cities of Norwalk and Artesia)	***$70,476***	
Census Tract 5547.00	Block Group 1 (City of Artesia)	$53,798	
	Block Group 2 (City of Artesia)	***$71,167***	
	Block Group 3 (City of Artesia)	$53,929	
Census Tract 5548.01	Block Group 1 (City of Artesia)	$54,632	
	Block Group 2 (City of Artesia)	***$90,592***	
Census Tract 5548.02	Block Group 1 (City of Artesia)	***$66,719***	
	Block Group 2 (City of Artesia)	***$60,905***	
	Block Group 3 (City of Artesia)	***$62,951***	

Source: United States Census Bureau, 2011–2015 ACS 5-Year Estimates; Table B19103.
[1] ***Bold italicized numbers*** indicate the values are higher than Los Angeles County as a whole.
ACS = American Community Survey

Community Facilities

Table 2.3.6 lists the community facilities (i.e., libraries, hospitals, public and private schools, and privately operated community centers and recreation facilities) within 0.5 mile (mi) of the Build Alternative that were considered in the evaluation of potential effects to community facilities. These facilities are shown on Figure 2.3-2. Refer to Section 2.1, Land Use, for a list of public parks and recreational resources within 0.5 mi of the Build Alternative, and to Section 2.4, Utilities/Emergency Services, for a list of police and fire facilities within 0.5 mi of the Build Alternative.

Property Tax Base

Property taxes are levied on the assessed value of privately owned property. Property taxes generated in the community impacts study area are collected by the County of Los Angeles (County) and apportioned to the applicable jurisdiction and other taxing agencies in which the property is located. The base property tax rate in the State of

Table 2.3.6 Community Facilities

Community ID No.	Community Facility	Address	Owner/Operator
1	Helen Wittmann Elementary School	16801 Yvette Avenue, Cerritos, CA 90703	ABC Unified School District
2	Benito Juarez Academy of Engineering and Technology	11939 Aclare Street, Cerritos, CA 90703	ABC Unified School District
3	Cecil B. Stowers Elementary School	13350 Beach Street, Cerritos, C 90703	ABC Unified School District
4	John F. Kennedy Elementary School	17500 Belshire Avenue, Artesia, CA 90701	ABC Unified School District
5	Luther Burbank Elementary School	17711 Roseton Avenue, Artesia, CA 90701	ABC Unified School District
6	Frank C. Leal Elementary School	12920 Droxford Street, Cerritos, CA 90703	ABC Unified School District
7	Faye Ross Middle School Academy of Creative and Media Arts	17707 Elaine Avenue, Artesia, CA 90701	ABC Unified School District
8	Tracy High School	12222 Cuesta Drive, Cerritos, CA 90703	ABC Unified School District
9	Gahr High School	11111 Artesia Boulevard, Cerritos, CA 90703	ABC Unified School District
10	Gretchen Whitney High School	16800 Shoemaker Avenue, Cerritos, CA 90703	ABC Unified School District
11	ABC Adult School	12254 Cuesta Drive, Cerritos, CA 90703	ABC Unified School District
12	Bellflower High School	15301 McNab Avenue, Bellflower, CA 90706	Bellflower Unified School District
12	Anna M. Glazier Elementary School	10932 East Excelsior Drive, Norwalk, CA 90650	Norwalk-La Mirada Unified School District
12	Arturo Sanchez Elementary School	11960 162nd Street, Norwalk, CA 90650	Norwalk-La Mirada Unified School District
13	Norwalk-La Mirada Adult School	15711 Pioneer Boulevard, Norwalk, CA 90650	Norwalk-La Mirada Unified School District
14	Cerritos Community College	11110 Alondra Boulevard, Norwalk, CA 90650	Cerritos Community College
15	Northwood University at Cerritos College	11111 New Falcon Way, Cerritos, CA 90703	Northwood University
16	PCI College	17215 Studebaker Road, Cerritos, CA 90703	PCI College
17	Fremont College	18000 Studebaker Road, Suite 900A, Cerritos, CA 90703	Fremont College
18	Kings Kids Preschool	18424 Bloomfield Avenue, Cerritos, CA 90703	Private
19	Nazarene Christian School	15014 Studebaker Road, Norwalk, CA 90650	Private
20	Field of Dreams Learning	15014 Studebaker Road, Norwalk, CA 90650	Private
21	Cerritos Institute of Religion	16025 Studebaker Road, Cerritos, CA 90703	Private
22	Valley Christian Elementary	17408 Grand Avenue, Bellflower, CA 90706	Private
23	Valley Christian High School	10818 Artesia Boulevard, Cerritos, CA 90703	Private
24	Twigs to Trees Child Development Center	15108 Studebaker Road, Norwalk, CA 90650	Private
25	Wonderland Preschool	10440 Artesia Boulevard, Bellflower, CA 90706	Private
26	CPC Preschool	11840 178th Street, Artesia, CA 90701	Private
27	Cerritos KinderCare	18727 Carmenita Road, Cerritos, CA 90703	Private

Compiled in 2017.

California is 1 percent of the assessed property's value, while the total property tax rate, which includes additional debt service, varies by jurisdiction. The amount of property tax revenue allocated to each local jurisdiction also varies. According to the County Auditor-Controller's Office, approximately 9.37 percent of each property tax dollar in Los Angeles County was allocated to cities in Fiscal Year (FY) 2016–2017. Table 2.3.7 provides a summary of the property tax revenue collected in the city of Cerritos in FY 2015–2016 and the city of Artesia in FY 2014–2015.

Table 2.3.7 Property and Sales Tax Revenues

Jurisdiction	Property Tax Revenue	Sales Tax Revenue	Average Sales Tax Revenue Per Business
City of Artesia	$1,698,157	$3,096,626	$5,035
City of Cerritos	$11,278,384	$32,846,913	$18,932

Source 1: California State Board of Equalization. Taxable Sales in California Cities, by Type of Business, 2015. June 13, 2017. Website: http://www.boe.ca.gov/news/2015/t4_2015.pdf (accessed December 16, 2017).
Source 2: California State Board of Equalization. Taxable Sales in California Cities, by Type of Business, Third Quarter 2016. Website: http://www.boe.ca.gov/news/2016/t4_3Q16.pdf (accessed December 16, 2017).
Source 3: City of Artesia. 2016. Comprehensive Annual Financial Report Fiscal Year Ended June 30, 2015. Website: http://www.cityofartesia.us/DocumentCenter/View/1556 (accessed December 16, 2017).
Source 4: City of Cerritos. 2016. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016. Website: http://www.cerritos.us/GOVERNMENT/_pdfs/CAFR_2016.pdf (accessed December 16, 2017).
Note: Property and sales tax revenue for the City of Artesia is for Fiscal Year 2014–2015. Property and sales tax revenue for the City of Cerritos is for Fiscal Year 2015–2016. Average sales tax revenue per business is calculated by dividing the total sales tax revenue by the number of business outlets in the city as reported by the California State Board of Equalization in the same fiscal year.

Sales Tax Base

Sales taxes are levied on taxable sales generated in each jurisdiction. Effective October 1, 2017, the sales tax rate in Los Angeles County and in each study area city is 9.5 percent,[1] of which 0.25 percentage point is allocated to County transportation funds and 1 percentage point is allocated to city or County operations.[2] Table 2.3.7 provides the sales tax revenue collected in each study area city in FY 2015–2016.

The California State Board of Equalization tabulates taxable sales transactions for each city and county in California and reports them on a quarterly and yearly basis.

1 California Department of Tax and Fee Administration. 2017. California Sales and Use Tax Rates by County and City, Operative October 1, 2017. Website: http://www.cdtfa.ca.gov/formspubs/cdtfa95.pdf (accessed December 26, 2017).

2 California Department of Tax and Fee Administration, Detailed Description of the Sales & Use Tax Rate. Website: https://www.cdtfa.ca.gov/taxes-and-fees/sut-rates-description.htm (accessed December 26, 2017).

Table 2.3.7 reports the average sales tax revenue per business in each of the study area cities according to their latest published annual reports (2016).

2.3.1.3 Environmental Consequences

Temporary Impacts

Build Alternative (includes Design Options)

Impacts to community cohesion generally depend on whether a project is likely to create a barrier within or disrupt the connectivity of a community. Either of these can result from disruptions to access or residential and/or business acquisitions. Temporary impacts to community character and cohesion can occur from the temporary use of privately owned properties as temporary construction easements (TCEs), short-term air quality and noise effects, and temporary road and ramp closures/detours along and in the immediate vicinity of SR-91 and I-605 within the project limits.

The Build Alternative would require TCEs along the north side of SR-91 for certain areas of the project segment to allow for the construction of best management practices (BMPs) for water quality, retaining walls, and roadway and/or interchange widening adjacent to institutional and residential areas. Additionally, TCEs are required at the Alondra Boulevard/I-605 interchange northbound off-ramp. The locations of the parcels that would be affected by these TCEs are shown on Figure 2.3-3. There is a potential for the temporary use of such land to divide or create barriers between existing communities; however, in several instances, SR-91 and I-605 already bisect existing communities and would not likely result in adverse effects on community cohesion.

Construction activities would result in temporary impacts associated with construction equipment noise and air emissions at residences and businesses adjacent to SR-91 and I-605. These impacts would be temporary and would cease when the project construction is complete.

A Transportation Management Plan (TMP) is included as a project feature (i.e., PF-T-1) and is described in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities. The TMP will be prepared in coordination with the affected cities and access to all businesses would be maintained during construction of the Build Alternative. The TMP will also address traffic delays; maintain traffic flow in the project area; manage detours and temporary road, lane, and ramp closures; provide

ongoing information to the public regarding construction activities, closures, and detours; and maintain a safe environment for construction workers and travelers.

Access to all nearby businesses would be maintained during any temporary mainline, ramp, and arterial closures. All businesses would be accessible from alternate freeway off-ramps and by using local streets. Based on the availability of a well-developed arterial roadway network in the vicinity of the potential closures to accommodate detoured traffic, the increased travel times and distances would be limited and would result in minimal disruption to neighborhoods and businesses adjacent to the project area and would not divide the study area cities or neighborhoods in those cities. Nevertheless, construction-related closures could impede movement within the study area cities. Although community members would still be able to use community services and facilities during the construction period, there would be some degree of inconvenience due to construction-related delays, temporary closures, and construction equipment operation.

Temporary public parking impacts would occur during construction at several locations within the project limits, including:

- 14 parking stalls at the LA Fitness property located along the I-605 northbound Alondra Boulevard off-ramp;
- Approximately 560 feet (ft) of curbside parking along the south side of Beach Street (this impact would not occur under Design Option 1, Reduced Lane/Shoulder Width);
- 6 parking stalls at the Artesia Inn and Suites property located north of SR-91 at the northbound Pioneer Boulevard off-ramp;
- Approximately 630 ft of curbside parking along both sides of 170th Street;
- Approximately 380 ft of curbside parking along both sides of Norwalk Boulevard north of SR-91;
- 76 parking stalls at the Tracy High School property located north of SR-91 at the northbound Norwalk Boulevard off-ramp; and
- 12 parking stalls at the ABC Adult School parking lot near the Cerritos Villas Condominiums.

The availability of parking at the above locations would be restored upon completion of construction.

Construction employment has two components: direct and indirect. The direct effect is the number of construction jobs created to complete the project. The indirect effect is the additional employment and business activity that would be generated in the regional economy by the initial construction expenditure.

Table 2.3.8 shows that construction of the Build Alternative is estimated to generate a total of 1,456 jobs. Design Option 1 (Reduced Lane/Shoulder Width) of the Build Alternative is estimated to generate a slightly lower number of jobs (1,364) when compared to the Build Alternative. In both cases, approximately half of the jobs would be direct jobs, while the other half would be indirect employment. These construction jobs would generate temporary employment and revenues for both local and regional economies.

Table 2.3.8 Estimated Construction Employment Under the Build Alternative

Estimated Project Costs[1]		Estimated Employment Generated		
		Direct Jobs[2]	Indirect Jobs[2]	Total Jobs
Build Alternative	$112,000,000	728	728	1,456
Design Option 1 (Reduced Lane/Shoulder Width)	$105,000,000	682	682	1,364

Source 1: *Draft Project Report* (2018).
Source 2: Federal Highway Administration. 2018. Employment Impacts of Highway Infrastructure Investment. Website: https://www.fhwa.dot.gov/policy/otps/pubs/impacts/ (accessed January 2018).
1 Escalated capital construction costs without right-of-way acquisition costs.
2 Employment impacts vary over time. Based on the latest data provided by the Federal Highway Administration (2018), $1 billion in investments supports approximately 13,000 construction jobs, with approximately 50 percent each for direct and indirect jobs.

No Build Alternative

The proposed improvements would not be constructed under the No Build Alternative. Therefore, no temporary impacts related to community character and cohesion would occur.

Permanent Impacts

Build Alternative (includes Design Options)

The Build Alternative would result in beneficial effects related to community character and cohesion in terms of improved access and connectivity, improved safety, and decreased travel times. In addition, emergency services in the study area cities (fire and police protection, for example) would be more readily available with the construction of the Build Alternative because mobility in the study area would improve over existing conditions. The Build Alternative would provide improvements to a segment of SR-91 and the SR-91/I-605 interchange where traffic operations are

currently deficient. Therefore, the Build Alternative would not create any new or exacerbate any existing physical divisions in the study area or in the cities in the study area.

The widening of the existing Gridley Road overcrossing within the project limits, which is proposed as Design Option 5, would create visual changes for SR-91 drivers and the adjacent communities but would not create a barrier within or disrupt the connectivity of a community.

Permanent public parking impacts would occur at two locations within the project limits, including:

- Approximately 255 ft of curbside parking along both sides of Pioneer Boulevard (only with Design Option 1, Reduced Lane/Shoulder Width); and
- Approximately 630 ft of curbside parking along both sides of Norwalk Boulevard north of SR-91.

After approximately 255 ft of curbside parking is removed along both sides of Pioneer Boulevard, parking would remain available farther north along both sides of Pioneer Boulevard. After approximately 630 ft of curbside parking is removed along both sides of Norwalk Boulevard, parking would remain available farther north along both sides of Norwalk Boulevard.

As described in detail later in Section 2.3.2, Relocations and Real Property Acquisition, the Build Alternative would result in some property acquisition in the project area. The Build Alternative would result in the displacement of 20 total units within the city of Artesia, including 18 residential units, with approximately 80 residential occupants, and 2 non-residential units, which include two commercial businesses. The Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) would result in the displacement of one non-residential unit. The Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) would result in the displacement of 25 total units within Artesia, including 23 residential units, with approximately 102 residential occupants, and 2 non-residential units, which include two commercial businesses. The following Project Feature PF-REL-1 would minimize permanent impacts related to relocations and displacements under the Build Alternative and design options:

PF-REL-1 Property acquisition will be conducted in compliance with the requirements of the Uniform Relocation Assistance and Real Property

Acquisition Policies Act of 1970 (Uniform Act) (Public Law 91-646, 84 Statutes 1894). The Uniform Act mandates that certain relocation services and payments be made available to eligible residents, businesses, and nonprofit organizations displaced by federal or federally assisted 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.

PF-REL-2 After construction, all temporary construction easements (TCEs) would be restored to their original pre-project or better conditions.

Residential Displacements

As described in the CIA (2018), the communities within the replacement areas (the cities of Artesia, Hawaiian Gardens, Norwalk, and Lakewood) are located within 3 mi of the displacement area; therefore, the commute distance to jobs and schools would be reasonable and would not result in substantial hardships for the displacees. In addition, residential displacees would have access to schools within the same school district (i.e., the ABC Unified School District). From preliminary market research, it can be concluded that there are enough residential replacement properties, and it is expected that a similar number and type of properties would be available within the displacement area at the time of property acquisitions.

Replacement neighborhoods are generally homogeneous to those in the displacement area. The housing stock in the replacement areas' census tract block groups includes a total of 5,616 single-family residences, with a total of 148 vacant single-family homes, which translates to a 2.6 percent vacancy rate.

Median home values in the replacement areas range from $262,100 to $533,300, and current rental prices generally range from $2,195 to $2,800 per month for comparable rental homes in the replacement areas. The average ages of the residences within the replacement areas are 50 to 60 years, and the housing conditions range from average to good. All of the residences considered for potential replacement homes are single-family residences, similar to those in the displacement area.

Design Option 1 (Reduced Lane/Shoulder Width), described in Chapter 1, would not result in residential displacements and therefore would have no effect on community character or cohesion.

Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) would require the acquisition of five residential properties within Census Tract 5548.01. These five properties are located along 168th Street in a cul-de-sac adjacent to the east side of Pioneer Boulevard in Artesia.

Non-Residential Displacements

The non-residential displaced properties in the project area include a race car parts dealer, which currently resides in a light industrial zoning area, and a gas station/auto service station. Based on preliminary research documented in the CIA, there are three potential properties with the same zoning and square footage to accommodate the displaced race car parts dealer. A review of available replacement properties for the gas station/auto service station did not result in the identification of a suitable site within the study area for the assessment of project effects related to property acquisition and relocation.

All of the displacees, with the exception of the gas station/auto service station, are anticipated to remain in the project area, which would minimize potential adverse effects to community character and cohesion. Due to the high likelihood of the availability of identical services provided by the gas station/auto service station by other existing gas stations/auto service stations throughout the project area, its relocation to a new area would not disrupt the social fabric of the surrounding communities in the project area.

Overall, it is unlikely that community character and cohesion would be permanently impacted by the project in any of the study area cities. It is also important to note that SR-91 has been a prominent transportation corridor in the area since 1968, and most of the communities in the study area have been established adjacent to the existing right-of-way (ROW). None of the relocations required under the Build Alternative would impact the cohesion of any of the communities in which it is located. Changes associated with the proposed project would result in minimal alterations to community character and cohesion, and no substantial adverse effects to communities would occur.

No Build Alternative

No improvements to SR-91 or the SR-91/I-605 interchange are proposed under the No Build Alternative. Therefore, no permanent impacts to community character and cohesion would occur.

2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures

Because the project will incorporate the project features as described above in Section 2.3.1.3, no substantial adverse impacts to community character and cohesion would occur. Therefore, no avoidance, minimization, and/or mitigation measures are required.

2.3.2 Relocations and Real Property Acquisition

2.3.2.1 Regulatory Setting

The Caltrans Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), 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 C for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix B for a copy of Caltrans Title VI Policy Statement.

2.3.2.2 Affected Environment

The information in this section is summarized from the CIA (2018) and *Relocation Impact Report* (RIR) (2018). As shown on Figure 2.3-1, the study area for the assessment of project effects related to property acquisition and relocation was defined as 20 census tract block groups (Census Tracts 5530.00 [Block Groups 3 and 4], 5545.12 [Block Groups 1 and 2], 5545.13 [Block Group 1], 5545.14 [Block Groups 1. 2, and 3], 5545.21 [Block Groups 1 and 3], 5546.00 [Block Groups 1 and 2], 5547.00 [Block Groups 1, 2, and 3], 5548.01 [Block Groups 1 and 2], and 5548.02 [Block Groups 1, 2, and 3]) in the cities of Artesia, Cerritos, and Norwalk and a 20 mi radius of these census tract block groups. This study area was selected because it covers the entire project area and includes areas in the vicinity of the project area that are likely to be considered for the relocation of businesses or residences displaced by the Build Alternative. As described earlier in Section 2.1, Land Use, the existing land uses in the study area include primarily residential uses (both single-family and multi-family), with some commercial/service, industrial, and open space/recreational uses along SR-91 and single-family residential, commercial, institutional, religious, medical, and park uses along I-605, north of SR-91 in the project area.

2.3.2.3 Environmental Consequences

Temporary Impacts

Build Alternative (includes Design Options)

The Build Alternative would require TCEs along the north side of SR-91 for certain areas of the project segment to allow for the construction of BMPs for water quality, retaining walls, and roadway and/or interchange widening adjacent to institutional and residential areas. Additionally, TCEs are also required at the Alondra Boulevard/I-605 interchange northbound off-ramp. The locations of the parcels that would be affected by these TCEs for the Build Alternative are shown on Figure 2.3-3. Tables 2.3.9, 2.3.10, and 2.3.11 provide detailed information regarding the TCEs required under the Build Alternative, the Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width), and the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment), respectively, including the parcel numbers and street addresses of those parcels where TCEs would be required. The locations of the parcels that would be affected by these TCEs for the Build Alternative, the Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width), and the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) are shown on Figure 2.3-4. Tables 2.3.9, 2.3.10, and 2.3.11 also provide the existing land uses on such parcels.

As shown in Tables 2.3.9, 2.3.10, and 2.3.11, the proposed project would require TCEs of 30 (Build Alternative), 21 (Build Alternative with Design Option 1, Reduced Lane/Shoulder Width), and 30 (Design Option 3, Pioneer Boulevard Westbound Ramps/168th Alignment) parcels, respectively, in the project area. While most of these TCEs would consist of small slivers of land that are currently being used for landscaping or parking lots, or land that is currently vacant, larger TCEs would be required for construction staging areas under the proposed project.

After construction, the TCEs used for the Build Alternative and design options would be restored to their original pre-project conditions. None of the TCEs would require businesses, employees, or residents to relocate. Owners of the parcels affected by TCEs would be compensated for temporary use of their property during construction. For these reasons, the temporary use of land during construction of the Build Alternative and design options would not result in substantial adverse effects.

Table 2.3.9 Build Alternative Proposed Right-of-Way Acquisition and Easements

APN	Address	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
7011-004-076	11820 168th Street, Artesia	Residential	TCE	No
7011-004-901	No Address, Artesia	Open Space	TCE	No
7011-004-902	11814 168th Street, Artesia	Vacant	TCE	No
7011-004-903	Pioneer Boulevard Artesia	Vacant	TCE	No
7011-020-038	11947 170th Street, Artesia	Residential	Full	Yes
7011-020-040	11951 170th Street, Artesia	Residential	Full	Yes
7011-020-041	11955 170th Street, Artesia	Residential	Full	Yes
7011-020-044	11961 170th Street, Artesia	Residential	Full	Yes
7011-020-045	11965 170th Street, Artesia	Residential	Full	Yes
7011-020-049	11973 170th Street, Artesia	Residential	Full	Yes
7011-020-050	11977 170th Street, Artesia	Residential	Full	Yes
7011-020-057	11967 170th Street, Artesia	Residential	Full	Yes
7011-020-061	11957 170th Street, Artesia	Residential	Full	Yes
7011-020-062	11959 170th Street, Artesia	Residential	Full	Yes
7011-020-063	11971 170th Street, Artesia	Residential	Full	Yes
7011-020-064	11949 170th Street, Artesia	Residential	Full	Yes
7011-020-905	16912 Clarkdale Avenue, Artesia	Open Space	Partial/TCE	No
7011-021-030	12017 170th Street, Artesia	Residential	Full	Yes
7011-021-031	12021 170th Street, Artesia	Residential	Full	Yes
7011-021-032	12021 170th Street, Artesia	Residential	Full	Yes
7011-021-059	12001 170th Street, Artesia	Residential	Full	Yes
7011-021-066	12027 170th Street, Artesia	Industrial	Full	No
7011-021-067	12009 170th Street, Artesia	Residential	Full	Yes
7011-021-068	12011 170th Street, Artesia	Residential	Full	Yes
7011-021-069	12015 170th Street, Artesia	Residential	Full	Yes
7012-001-901	12222 Cuesta Drive, Cerritos	Institutional	Partial/TCE	No
7012-003-009	16923 Judy Way	Residential	Access Impact	No
7012-003-010	16921 Judy Way	Residential	Access Impact	No
7012-003-011	16925 Judy Way	Residential	Access Impact	No
7012-003-012	16927 Judy Way	Residential	Access Impact	No
7012-003-013	12412 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-014	12410 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-015	12414 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-016	12408 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-017	12418 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-018	12416 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-019	12420 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-020	12422 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-021	12428 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-022	12426 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-023	12430 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-024	12424 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-025	12434 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-026	12432 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-027	12436 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-028	12438 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-029	12444 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-030	12442 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-031	12446 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-032	12440 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-033	12450 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-034	12448 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-035	12452 Rancho Vista Drive, Cerritos	Residential	Access Impact	No

Table 2.3.9 Build Alternative Proposed Right-of-Way Acquisition and Easements

APN	Address	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
7012-003-036	12454 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-037	12460 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-038	12458 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-039	12462 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-040	12456 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-020-026	12642 Palm Street, Cerritos	Residential	Partial/TCE	No
7012-020-900	No Address, Cerritos	Open Space	TCE	No
7012-027-901	No Address, Cerritos	Open Space	TCE	No
7014-004-005	16809 Pioneer Boulevard, Artesia	Commercial	Full	Yes
7014-004-032	16905 Pioneer Boulevard, Artesia	Commercial	TCE	No
7014-006-005	11616 169th Street, Artesia	Residential	TCE	No
7014-006-006	11612 169th Street, Artesia	Residential	TCE	No
7014-006-007	11606 169th Street, Artesia	Residential	TCE	No
7014-006-008	11602 169th Street, Artesia	Residential	TCE	No
7014-006-009	11564 169th Street, Artesia	Residential	TCE	No
7014-006-010	11558 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-006-011	11554 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-006-012	11548 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-006-013	11542 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-006-014	11536 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-022-197	No Address, Cerritos	Residential	Partial	No
7016-002-044	10802 Alondra Boulevard, Cerritos	Commercial	TCE	No
7016-002-048	10802 College Place, Cerritos	Commercial	TCE	Yes
7016-002-050	10930 Alondra Boulevard, Cerritos	Commercial	TCE	No
7016-018-065	16923 Eric Avenue, Cerritos	Residential	TCE	No
7016-020-046	16920 Harvest Avenue, Cerritos	Residential	TCE	No
7016-020-900	No Address, Cerritos	Open Space	TCE	No
7016-023-041	16811 Westwinds Circle, Cerritos	Residential	TCE	No
7016-023-045	16825 Leeward Avenue, Cerritos	Residential	TCE	No
7016-023-901	No Address, Cerritos	Open Space	TCE	No
7030-001-048	12611 Artesia Boulevard, Cerritos	Residential	Partial/TCE	No

Source: *Westbound SR-91 Improvement Project Estimate Abstract* (2017).
Access Impact = No garage access; replacement parking is available on site
APN = Assessor's Parcel Number
Full = Full acquisition
Partial = Partial Acquisition
PE = Permanent Easement
TCE = Temporary Construction Easement

Table 2.3.10 Build Alternative With Design Option 1 (Reduced Lane/ Shoulder Width) Proposed Right-of-Way Acquisition and Easements

APN	Address	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
7011-004-076	11820 168th Street, Artesia	Residential	TCE	No
7011-004-901	No Address, Artesia	Open Space	TCE	No
7011-004-902	11814 168th Street, Artesia	Vacant	TCE	No
7011-004-903	Pioneer Boulevard, Artesia	Vacant	TCE	No
7011-020-905	16912 Clarkdale Avenue, Artesia	Open Space	Partial/TCE	No
7012-001-901	12222 Cuesta Drive, Cerritos	Institutional	Partial/TCE	No
7012-020-026	12642 Palm Street, Cerritos	Residential	Partial/TCE	No
7012-020-900	No Address, Cerritos	Open Space	TCE	No
7012-027-901	No Address, Cerritos	Open Space	TCE	No
7014-004-005	16809 Pioneer Boulevard, Artesia	Commercial	Full	Yes
7014-004-032	16905 Pioneer Boulevard, Artesia	Commercial	TCE	No
7014-022-197	No Address	Residential	Partial/TCE	No
7016-002-044	10802 Alondra Boulevard	Commercial	TCE	No
7016-002-048	10802 College Place	Commercial	TCE	No
7016-002-050	10930 Alondra Boulevard	Commercial	TCE	No
7016-018-065	16923 Eric Avenue	Residential	TCE	No
7016-020-046	16920 Harvest Avenue	Residential	TCE	No
7016-020-900	No Address	Open Space	TCE	No
7016-023-041	16811 Westwinds Circle	Residential	TCE	No
7016-023-045	16825 Leeward Avenue	Residential	TCE	No
7016-023-901	No Address	Open Space	TCE	No
7030-001-048	12611 Artesia Boulevard	Residential	Partial/TCE	No

Source: *Westbound SR-91 Improvement Project Estimate Abstract* (2017).
APN = Assessor's Parcel Number
Partial = Partial Acquisition
TCE = Temporary Construction Easement

Table 2.3.11 Build Alternative With Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) Proposed Right-of-Way Acquisition and Easements

APN	Address	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
7011-004-076	11820 168th Street, Artesia	Residential	TCE	No
7011-004-901	No Address, Artesia	Open Space	TCE	No
7011-004-902	11814 168th Street, Artesia	Vacant	TCE	No
7011-004-903	Pioneer Boulevard Artesia	Vacant	TCE	No
7011-020-038	11947 170th Street, Artesia	Residential	Full	Yes
7011-020-040	11951 170th Street, Artesia	Residential	Full	Yes
7011-020-041	11955 170th Street, Artesia	Residential	Full	Yes
7011-020-044	11961 170th Street, Artesia	Residential	Full	Yes
7011-020-045	11965 170th Street, Artesia	Residential	Full	Yes
7011-020-049	11973 170th Street, Artesia	Residential	Full	Yes
7011-020-050	11977 170th Street, Artesia	Residential	Full	Yes
7011-020-057	11967 170th Street, Artesia	Residential	Full	Yes
7011-020-061	11957 170th Street, Artesia	Residential	Full	Yes
7011-020-062	11959 170th Street, Artesia	Residential	Full	Yes
7011-020-063	11971 170th Street, Artesia	Residential	Full	Yes
7011-020-064	11949 170th Street, Artesia	Residential	Full	Yes
7011-020-905	16912 Clarkdale Avenue, Artesia	Open Space	Partial/TCE	No
7011-021-030	12017 170th Street, Artesia	Residential	Full	Yes
7011-021-031	12021 170th Street, Artesia	Residential	Full	Yes
7011-021-032	12021 170th Street, Artesia	Residential	Full	Yes
7011-021-059	12001 170th Street, Artesia	Residential	Full	Yes
7011-021-066	12027 170th Street, Artesia	Industrial	Full	No
7011-021-067	12009 170th Street, Artesia	Residential	Full	Yes
7011-021-068	12011 170th Street, Artesia	Residential	Full	Yes
7011-021-069	12015 170th Street, Artesia	Residential	Full	Yes
7012-001-901	12222 Cuesta Drive, Cerritos	Institutional	Partial/TCE	No
7012-003-009	16923 Judy Way	Residential	Access Impact	No
7012-003-010	16921 Judy Way	Residential	Access Impact	No
7012-003-011	16925 Judy Way	Residential	Access Impact	No
7012-003-012	16927 Judy Way	Residential	Access Impact	No
7012-003-013	12412 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-014	12410 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-015	12414 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-016	12408 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-017	12418 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-018	12416 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-019	12420 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-020	12422 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-021	12428 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-022	12426 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-023	12430 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-024	12424 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-025	12434 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-026	12432 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-027	12436 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-028	12438 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-029	12444 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-030	12442 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-031	12446 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-032	12440 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-033	12450 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-034	12448 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-035	12452 Rancho Vista Drive, Cerritos	Residential	Access Impact	No

Table 2.3.11 Build Alternative With Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) Proposed Right-of-Way Acquisition and Easements

APN	Address	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
7012-003-036	12454 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-037	12460 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-038	12458 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-039	12462 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-003-040	12456 Rancho Vista Drive, Cerritos	Residential	Access Impact	No
7012-020-026	12642 Palm Street, Cerritos	Residential	Partial/TCE	No
7012-020-900	No Address, Cerritos	Open Space	TCE	No
7012-027-901	No Address, Cerritos	Open Space	TCE	No
7014-004-005	16809 Pioneer Boulevard, Artesia	Commercial	Full	Yes
7014-004-032	16905 Pioneer Boulevard, Artesia	Commercial	TCE	No
7014-006-005	11616 169th Street, Artesia	Residential	TCE	No
7014-006-006	11612 169th Street, Artesia	Residential	TCE	No
7014-006-007	11606 169th Street, Artesia	Residential	TCE	No
7014-006-008	11602 169th Street, Artesia	Residential	TCE	No
7014-006-009	11564 169th Street, Artesia	Residential	TCE	No
7014-006-010	11558 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-006-011	11554 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-006-012	11548 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-006-013	11542 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-006-014	11536 169th Street, Artesia	Residential	Partial/PE/TCE	No
7014-022-197	No Address, Cerritos	Residential	Partial	No
7016-002-044	10802 Alondra Boulevard, Cerritos	Commercial	TCE	No
7016-002-048	10802 College Place, Cerritos	Commercial	TCE	Yes
7016-002-050	10930 Alondra Boulevard, Cerritos	Commercial	TCE	No
7016-018-065	16923 Eric Avenue, Cerritos	Residential	TCE	No
7016-020-046	16920 Harvest Avenue, Cerritos	Residential	TCE	No
7016-020-900	No Address, Cerritos	Open Space	TCE	No
7016-023-041	16811 Westwinds Circle, Cerritos	Residential	TCE	No
7016-023-045	16825 Leeward Avenue, Cerritos	Residential	TCE	No
7016-023-901	No Address, Cerritos	Open Space	TCE	No
7030-001-048	12611 Artesia Boulevard, Cerritos	Residential	Partial/TCE	No
7011-004-008	168th Street, Artesia	Residential	Full	Yes
7011-004-051	168th Street, Artesia	Residential	Full	Yes
7011-004-055	11826 168th Street, Artesia	Residential	Full	Yes
7011-004-069	11832 168th Street, Artesia	Residential	Full	Yes
7011-004-076	11820 168th Street, Artesia	Residential	Full	Yes
7011-004-070	No Address	Vacant	Full	No
7011-004-902	No Address	Vacant	Full	No
7011-004-903	No Address	Vacant	Full	No

Source: *Westbound SR-91 Improvement Project Estimate Abstract* (2017).
Access Impact = No garage access; replacement parking is available on site
APN = Assessor's Parcel Number
Full = Full acquisition
Partial = Partial Acquisition
PE = Permanent Easement
TCE = Temporary Construction Easement

No Build Alternative

The No Build Alternative would not construct any improvements to SR-91 and the SR-91/I-605 interchange and, therefore, would not require the temporary use of any privately owned land for TCEs or staging areas.

Permanent Impacts

Build Alternative (includes Design Options)

As shown in Table 2.3.9, the Build Alternative would require the partial acquisition of 10 parcels and the full acquisition of 21 parcels resulting in the relocation of two non-residential properties.

As shown in Table 2.3.10, the Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) would require the partial acquisition of five parcels and the full acquisition of one parcel, resulting in the relocation of one non-residential property.

As shown in Table 2.3.11, the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) would require the partial acquisition of 10 parcels and the full acquisition of 26 parcels, resulting in the relocation of two non-residential properties.

Table 2.3.12 provides a list of the permanent relocations required under the Build Alternative. Table 2.3.13 provides a list of the permanent relocations required under the Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width). Table 2.3.14 provides the list of the permanent relocations required under the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment).

As shown in Tables 2.3.12, 2.3.13, and 2.3.14, these relocations would occur in Artesia. No relocations would occur in the city of Cerritos. The Build Alternative and the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/ 168th Alignment) would result in the relocation of two businesses: a race car parts dealer and a gas station/auto service station. These non-residential displacements could affect up to 40 employees. The Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) would result in the relocation of one business: the gas station/auto service station.

Table 2.3.12 Build Alternative Displacements

APN	Address	Business Name(s)	Businesses Displaced	Employees Displaced	Residents Displaced
7011-021-066	Race car parts dealer	Elite Offroad Performance	1	20	N/A
7014-004-005	Gas station/auto service station	Arco	1	20	N/A
7011-020-038	11947 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-064	11949 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-040	11951 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-041	11955 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-061	11957 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-062	11959 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-044	11961 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-045	11956 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-057	11967 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-063	11971 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-049	11973 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-050	11977 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-059	12001 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-067	12009 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-068	12011 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-069	12015 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-030	12017 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-031, 7011-021-032	12021 170th Street, Artesia	N/A	N/A	N/A	4.42
		Total	**2**	**40**	**80**

Source: *Relocation Impact Report* (2018).
APN = Assessor's Parcel Number
N/A = not applicable

Table 2.3.13 Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width) Displacements

APN	Address	Business Name(s)	Businesses Displaced	Employees Displaced	Residents Displaced
7014-004-005	Gas station/auto service station	Arco	1	20	N/A
		Total	**1**	**20**	**N/A**

Source: *Relocation Impact Report* (2018).
APN = Assessor's Parcel Number
N/A = not applicable

Table 2.3.14 Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) Displacements

APN	Address	Business Name(s)	Businesses Displaced	Employees Displaced	Residents Displaced
7011-021-066	Race car parts dealer	Elite Offroad Performance	1	20	N/A
7014-004-005	Gas station/auto service station	Arco	1	20	N/A
7011-020-038	11947 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-064	11949 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-040	11951 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-041	11955 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-061	11957 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-062	11959 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-044	11961 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-045	11956 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-057	11967 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-063	11971 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-049	11973 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-020-050	11977 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-059	12001 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-067	12009 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-068	12011 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-069	12015 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-030	12017 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-021-031, 7011-021-032	12021 170th Street, Artesia	N/A	N/A	N/A	4.42
7011-004-008	11834 168th Street, Artesia	N/A	N/A	N/A	4.42
7011-004-051	11836 168th Street, Artesia	N/A	N/A	N/A	4.42
7011-004-055	11826 168th Street, Artesia	N/A	N/A	N/A	4.42
7011-004-069	11832 168th Street, Artesia	N/A	N/A	N/A	4.42
7011-004-076	11820 168th Street, Artesia	N/A	N/A	N/A	4.42
7011-004-070	Vacant, No Address	N/A	N/A	N/A	N/A
7011-004-902	11814 168th Street, Artesia	N/A	N/A	N/A	NA
7011-004-903	Vacant, No Address	N/A	N/A	N/A	N/A
		Total	**2**	**40**	**102**

Source: *Relocation Impact Report* (2018).
APN = Assessor's Parcel Number
N/A = not applicable

These non-residential relocations in the city of Artesia would displace approximately 40 employees under the Build Alternative, which represents approximately 0.04 percent of the total number of primary jobs in the city of Artesia. Because non-residential relocations under the design options would result in the same or less non-residential relocations than that of the Build Alternative, impacts under the design options would be no greater in magnitude when compared to the Build Alternative. Based on the RIR (2018), there are three locations available for sale and three locations available for lease within 20 mi of the study area to which the displaced race car parts dealer could relocate. As of November 2017, there were three properties with a light industrial/manufacturing or an industrial/warehouse zoning designation for sale in the cities of Downey, Vernon, and South El Monte that could serve as replacement properties for the displaced race car parts dealer. Additionally

there were three properties with an industrial/warehousing zoning designation for lease in the cities of Downey and Cerritos that could serve as replacement properties for the displaced race car parts dealer. Due to the specialty nature of the gas station and the fact that it is a franchise and not corporately owned, there are limited suitable replacement sites within a reasonable distance from the displacement property. Research shows there are currently no comparable properties for lease or sale within 20 mi of the displacement property. Additional relocation sites could be sought farther from the displacement site, or the business owner may consider purchasing a vacant property and constructing a new facility.

Project Feature PF-REL-1, provided earlier in Section 2.3.1.3, would minimize the permanent impacts related to relocations and displacements under the Build Alternative, including design options, by conducting property acquisitions and providing relocation assistance in compliance with the Uniform Act.

Property Tax

The acquisition of privately owned properties along the alignment would result in property tax revenue losses for local taxing agencies because these parcels would be removed from the property tax assessment roll. The parcel acquisitions under the Build Alternative would result in the loss of an estimated $399.99 in annual property tax revenue to the City of Artesia, which is approximately 0.024 percent of the City of Artesia's total annual property tax revenue. The County, ABC Unified School Districts, and other local taxing agencies that receive a share of property taxes from these parcels would also be affected.

Sales Tax

The partial acquisitions associated with the Build Alternative would result in the displacement of two sales tax-generating businesses (a race car parts dealer and a gas station/auto service station) within the city of Artesia. As discussed above, these businesses may need to be relocated outside the city of Artesia due to its specialty nature and lack of comparable properties within the city limits. In the event that the displaced businesses would be relocated within the city of Artesia, there would be no net loss of sales tax revenue to the City of Artesia. However, relocation to a different city would result in a net loss of sales tax revenue to the City of Artesia. Due to privacy laws, the California State Board of Equalization does not disclose sales tax revenues generated by individual businesses; therefore, the potential loss in sales tax revenue was estimated based upon the average sales tax per business in the city of Artesia. If the businesses were to relocate outside of

the city of Artesia, the potential annual sales tax revenue loss would be approximately $10,070 for the City of Artesia. This represents approximately 0.16 percent of the City of Artesia's total annual sales tax revenue.

No Build Alternative

No improvements to SR-91 or the SR-91/I-605 interchange are proposed under the No Build Alternative. Therefore, no displacements or property acquisitions would be necessary, and the No Build Alternative would also not result in property or sales tax revenue losses.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

After construction, all TCEs would be restored to their original pre-project or better conditions per Project Feature PF-REL-2. Because the project will incorporate Project Feature PF-REL-1 as described above in Section 2.3.1.3, no substantial adverse impacts related to relocations would occur. Therefore, no avoidance, minimization, and/or mitigation measures are required.

2.3.3 Environmental Justice

2.3.3.1 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 2017, this was $24,600 for a family of four.

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 B of this document.

2.3.3.2 Affected Environment

The environmental justice study area includes portions of the cities of Artesia, Cerritos, and Norwalk including the 20 census tract block groups shown previously on Figure 2.3-1 (Census Tracts 5530.00 [Block Groups 3 and 4], 5545.12 [Block Groups 1 and 2], 5545.13 [Block Group 1], 5545.14 [Block Groups 1. 2, and 3],

5545.21 [Block Groups 1 and 3], 5546.00 [Block Groups 1 and 2], 5547.00 [Block Groups 1, 2, and 3], 5548.01 [Block Groups 1 and 2], and 5548.02 [Block Groups 1, 2, and 3]).

The Council on Environmental Quality (CEQ), an advisory body that has oversight of the federal government's compliance with EO 12898 and NEPA, has developed guidance for implementing environmental justice under NEPA.[1] The CEQ guidance recommends identifying minority populations 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. The CEQ guidance also recommends identifying low-income populations in an affected area by applying the annual statistical poverty thresholds from the U.S. Census Bureau Current Population Reports, Series P-60, Consumer Income and Poverty.

In January 2003, Caltrans published the *Desk Guide Environmental Justice in Transportation Planning and Investments* (Desk Guide), which provides information and examples of ways to promote environmental justice to those involved in making decisions about California's transportation system.[2] The Desk Guide notes that transportation agencies, particularly those in a state as diverse as California, may need to adapt the regulatory definitions of low-income and minority populations to conduct a meaningful analysis. In regions with high minority and low-income populations, for instance, use of the standard definitions to define such populations could result in the selection of most of the region. Because the study area cities contain substantial minority populations, a different standard is required to identify those census tract block groups in the study area where minority populations are present in meaningfully greater percentages than in the general population of Los Angeles County. For the analysis of the proposed project, the term "meaningfully greater" is

---

1 Council on Environmental Quality. 1997. *Environmental Justice Under the National Environmental Policy Act*. December 10, 1997. Website: https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf (accessed December 16, 2017).

2 California Department of Transportation (Caltrans). 2003. *Desk Guide, Environmental Justice in Transportation Planning and Investments.* January 2003. Website: http://www.dot.ca .gov/hq/LocalPrograms/saferoutes/EnvironmentalJusticeDeskGuideJan2003.pdf (accessed December 16, 2017).

used when the percentage of an environmental justice population or group in the project area is 5 percentage points greater than its share of the city's or Los Angeles County's population. The largest minority population in both the cities of Artesia and Cerritos is the Non-Hispanic Asian American population, which makes up 40 percent of the population in the city of Artesia and 60 percent of the population in the city of Cerritos. In the city of Norwalk, Hispanic or Latino residents make up approximately 70 percent of the total population.

As noted previously in Table 2.3.5, there are no low-income households in the study area; therefore, the discussion of environmental justice focuses only on minority populations.

This environmental justice analysis applies the following methodology to identify minority populations:

- Census tract block groups are considered to have substantial minority populations if their percentage of minority residents is more than 10 percentage points higher than Los Angeles County as a whole (i.e., 83 percent or higher).

The environmental justice analysis was conducted using demographic information from the 2011–2015 ACS. The following populations were considered in assessing whether the Build Alternative would result in disproportionate impacts to environmental justice populations and whether that alternative would result in benefits for those populations:

- **Minority Population:** Defined as individuals who identify themselves as Black/African-American, Asian, Native Hawaiian/Pacific Islander, Native American/Native Alaskan, Some Other Race, two or more races, or of Hispanic/ Latino origin (a descriptor of ethnic origin that may be applied to any race). As described in the methodology set forth above, study area census tract block groups are considered to have substantial minority populations if their aggregated percentage of minority residents is 83 percent or higher.

The percentages of the population in Los Angeles County, the study area cities, and the census tract block groups that consist of minorities are summarized in Table 2.3.15. The ***bold italicized*** percentages in Table 2.3.15 represent those study area cities and census tract block groups that contain substantial minority populations, as defined above, in comparison to Los Angeles County overall.

Table 2.3.15 Minority Populations

Area		Minorities[1]
County		
Los Angeles County		73%
Study Area Cities		
City of Artesia		80%
City of Cerritos		***84%***
Study Area Census Tracts		
Census Tract 5530.00	Block Group 3 (City of Norwalk)	78%
	Block Group 4 (City of Norwalk)	77%
Census Tract 5545.12	Block Group 1 (City of Cerritos)	82%
	Block Group 2 (City of Cerritos)	***87%***
Census Tract 5545.13	Block Group 1 (City of Cerritos)	***93%***
Census Tract 5545.14	Block Group 1 (City of Cerritos)	***88%***
	Block Group 2 (City of Cerritos)	***86%***
	Block Group 3 (City of Cerritos)	***86%***
Census Tract 5545.21	Block Group 1 (City of Cerritos)	75%
	Block Group 3 (City of Cerritos)	78%
Census Tract 5546.00	Block Group 1 (Cities of Norwalk and Artesia)	82%
	Block Group 2 (Cities of Norwalk and Artesia)	***93%***
Census Tract 5547.00	Block Group 1 (City of Artesia)	***95%***
	Block Group 2 (City of Artesia)	***96%***
	Block Group 3 (City of Artesia)	***95%***
Census Tract 5548.01	Block Group 1 (City of Artesia)	***99%***
	Block Group 2 (City of Artesia)	77%
Census Tract 5548.02	Block Group 1 (City of Artesia)	77%
	Block Group 2 (City of Artesia)	***87%***
	Block Group 3 (City of Artesia)	63%

Source: United States Census Bureau, 2011–2015 ACS. Tables B03002 and B17001.
Note: ***Bold italicized numbers*** indicate the values that are substantially higher than the percentage for Los Angeles County as a whole. For minority populations, "substantially greater" means 10 percentage points higher than the percentage for Los Angeles County (i.e., 83%). For low-income populations, "substantially greater" means 5 percentage points higher than the percentage for Los Angeles County (i.e., 17.8%).

[1] Includes all individuals who identify themselves as Black/African-American, Asian, Native Hawaiian/Pacific Islander, Native American/Native Alaskan, Some Other Race, two or more races, or of Hispanic/Latino origin (persons of Hispanic/Latino origin may be of any race).

ACS = American Community Survey

As shown in Table 2.3.15, minorities make up 73 percent of the population in Los Angeles County. Minorities are a higher percentage of the population in the city of Artesia (80 percent) and an even higher percentage of the population in the city of Cerritos (84 percent) than in Los Angeles County as a whole. Overall, substantial minority populations exist in 11 of the 20 study area census tract block groups. Census Tracts 5545.12 Block Group 2 (87 percent), 5545.13 Block Group 1 (93 percent), 5545.14 Block Group 1 (88 percent), 5545.14 Block Group 2 (86 percent), and 5545.14 Block Group 3 (86 percent) in the city of Cerritos have substantial minority populations. Census Tracts 5546.00 Block Group 2 (93 percent), 5547.00 Block Group 1 (95 percent), 5547.00 Block Group 2 (96 percent), 5547.00 Block Group 3 (95 percent), 5548.01 Block Group 1 (99 percent), and 5548.02 Block Group 2 (87 percent) in the city of Artesia also have substantial minority populations.

2.3.3.3 Environmental Consequences

Temporary Impacts

Build Alternative (includes Design Options)

Construction of the Build Alternative could have short-term effects on access and circulation, due to road closures; aesthetics, due to construction staging areas and equipment; and noise and exposure to hazardous materials, due to construction activities. As discussed in Section 2.3.1, Community Character and Cohesion, construction activities (including TCEs along the north side of SR-91 for certain areas of the project segment and at the Alondra Boulevard/I-605 interchange northbound off-ramp) associated with the Build Alternative would temporarily affect residents and businesses throughout the entire project area and would not be solely limited to minority populations in the area. The locations of the parcels that would be affected by these TCEs are shown on Figure 2.3-3.Those impacts would include temporary disruptions of local traffic patterns and access to residences and businesses during overnight mainline, ramp, and local arterial closures as well as increased traffic congestion, noise levels, and dust. Existing access to adjacent residences and businesses would resume following construction.

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities related to construction. Project Features PF-AQ-1 through PF-AQ-6, which are detailed in Section 2.12, Air Quality, would minimize the project's temporary air quality impacts. Implementation of Project Feature PF-T-1, described in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities, would minimize the project's temporary impacts related to access disruptions. Short-term construction activities during the project would result in temporary noise from construction equipment and vehicles. However, the project would be required to comply with Caltrans Standard Specifications, Section 14-8.02, Noise Control, to minimize construction noise impacts on sensitive land uses adjacent to the project site. Implementation of Project Feature N-1, which is detailed in Section 2.13, Noise, would minimize the project's construction noise impacts. With implementation of these project features and minimization measure, low-income and minority populations would not be disproportionately impacted.

As described in Section 2.3.1, Community Character and Cohesion, the project construction activities would provide direct and indirect jobs that would benefit local economies, including low-income and minority populations.

As described in further detail in Section 2.11, Hazardous Waste/Materials, five properties that are located in the vicinity of the Build Alternative were identified as having hazardous waste concerns. Due to the nature of the businesses and the proximity of these properties to the maximum disturbance limits for the Build Alternative, there is potential that contaminated groundwater originating at those parcels could be encountered during project construction. One property of hazardous concern is located within or adjacent to Census Tracts 5545.14 Block Group 1, which has a substantial minority population. The remaining properties of hazardous concern are not located within census tract block groups that have substantial minority populations.

No Build Alternative

Under the No Build Alternative, the temporary construction-related adverse effects on all populations, including low-income and minority populations, during construction of the Build Alternative would not occur. However, the low-income and minority populations also would not gain any economic benefit from the construction of the Build Alternative.

Permanent Impacts

Build Alternative

Potential long-term noise impacts associated with project operations are solely from traffic noise. Various receptor locations are adjacent to SR-91, and would be affected by the traffic noise from the project. These receptor locations would include areas that contain a meaningfully greater percentage of minority populations, including Census Tracts 5545.12 Block Group 2; 5545.14 Block Group 2; 5545.21 Block Groups 1 and 3; and 5548.01 Block Groups 1 and 2. The receptor locations would be or would continue to be exposed to noise levels that approach or exceed the Noise Abatement Criteria (NAC) under the Build Alternative and all design options. Impacts from traffic noise would affect all residents and businesses adjacent to westbound SR-91 and would not be solely limited to minority populations in the area. Therefore, the Build Alternative would not have disproportionately high and adverse noise impacts on minority populations in the project area.

The purpose of the project is to reduce congestion and improve freeway operations, improve safety, and improve local and system interchange operations. Potential traffic impacts associated with project operations would affect all residents and businesses adjacent to westbound SR-91 and would not be solely limited to minority populations

in the area. Therefore, the Build Alternative would not have disproportionately high and adverse traffic impacts on minority populations in the project area.

Under the Build Alternative, the project would require full acquisition of 18 residential properties and 1 non-residential property along 170th Street in Census Tract 5548.01 Block Group 1, in the city of Artesia. These acquisitions would be required in order to expand the existing non-standard lane widths, currently in operation along westbound SR-91, to Caltrans' standard lane widths. The census tract block group where these properties are located contains a population that is 96 percent Hispanic or Latino, which is substantially higher than the city of Artesia's and Los Angeles County's percentages of 37 percent and 48 percent, respectively. Therefore, the Hispanic or Latino population in the census tract block group is meaningfully greater than that of the city of Artesia and Los Angeles County. In addition, the project would also require the acquisition of one non-residential business in Census Tract 5548.01 Block Group 2. This area contains a substantially higher percentage of African-American residents, at 8 percent, when compared to the city of Artesia's 2 percent overall African-American population. Therefore, the African-American population in the census tract block group is meaningfully greater than those in the city of Artesia and Los Angeles County.

The permanent acquisition of the 18 residential and 2 non-residential properties would accommodate the expansion of the westbound lanes on SR-91 to develop standard lane widths in areas that currently have non-standard lane widths. Without the property acquisitions, the expansion of westbound SR-91 would require the relocation and reconstruction of the existing noise barrier along 170th Street, and the width of 170th Street would be inadequate for emergency vehicle access and unsafe for residents. Permanent acquisitions as a result of the project would be required in census tract block groups where the environmental justice population is meaningfully greater than its population in the city and Los Angeles County. According to the RIR, there are sufficient replacement properties within the cities of Artesia, Hawaiian Gardens, Norwalk, and Lakewood, and it is anticipated that a similar number and type of properties would be available within the displacement area within the time of the acquisitions. Despite the availability of replacement properties, relocations may have physical, financial, and psychological effects on displaced residents. Physical effects may include finding and moving into suitable replacement housing, as well as an increase in commute and transportation to work. Possible financial impacts could include moving expenses, increased living expenses, increased commute to work, or increased property taxes. In addition, relocation may also be difficult due to

overcrowded residences and high rents/mortgages compared to the incomes of the displacees. The median existing home value in the city of Artesia is $422,500, and the median existing home values in the census tract block groups associated with the displacement area range from $262,100 to $380,600. As discussed above in Section 2.3.1.3, Project Feature PF-REL-1 would minimize permanent impacts related to relocations and displacements under the Build Alternative for all affected populations. Therefore, the Build Alternative would not have disproportionately high and adverse relocation impacts on minority populations in the project area.

Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width)

Potential permanent impacts described above for the Build Alternative would be similar for the Build Alternative with Design Option 1 (Reduced Lane/Shoulder Widths) and would not be solely limited to minority populations in the area. However, this Design Option would eliminate the relocation impacts at 170th Street and would not require the acquisition of 18 homes and one business in Block Group 1, Census Tract 5548.01, in the City of Artesia. Therefore, this Design Option would not have disproportionately high and adverse impacts on minority populations in the project area.

Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment)

Potential permanent impacts described above for the Build Alternative would be similar under the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment) and would not be solely limited to minority populations in the area. However, this design option would require the acquisition of an additional eight properties along 168th Street, including five single-family residential units and three vacant lots within Census Tract 5584.01, Block Group 1, in the city of Artesia. As discussed above in Section 2.3.1.3, Project Feature PF-REL-1 would minimize permanent impacts related to relocations and displacements under the Build Alternative for all affected populations. Therefore, the Build Alternative would not have disproportionately high and adverse relocation impacts on minority populations in the project area.

In addition, various receptor locations adjacent to SR-91 would be affected by the traffic noise from the project, including Census Tract 5548.01, Block Group 1, which is affected by Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment). The receptor locations would be or would continue to be exposed to noise levels that approach or exceed the NAC under Design Option 3 (Pioneer

Boulevard Westbound Ramps/168th Alignment). Impacts from traffic noise would affect all residents and businesses adjacent to westbound SR-91 and would not be solely limited to minority populations in the area. Therefore, the Build Alternative would not have disproportionately high and adverse noise impacts on minority populations in the project area under Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment).

As described in Project Feature PF-EJ-1 below, relocation assistance services would be available for all affected individuals and businesses in accordance with the Caltrans RAP.

PF-EJ-1 To minimize potential impacts on environmental justice populations, the California Department of Transportation (Caltrans) Relocation Assistance Program (RAP) includes advisory services to assist individuals and businesses being displaced by a public project. Relocation assistance services would be provided to all displaced residents and would include provisions for identifying current real estate listings, payment programs for moving expenses (e.g., packing and unpacking, temporary storage, transportation, and moving insurance), purchase supplements, rental assistance, and down payments.

The Caltrans RAP includes advisory services to assist individuals and businesses being displaced by a public project. Relocation assistance services would be provided to all displaced residents and would include provisions for identifying current real estate listings, payment programs for moving expenses (e.g., packing and unpacking, temporary storage, transportation, and moving insurance), purchase supplements, rental assistance, and down payments. These services would be available to all members of the population, and environmental justice populations would not be denied benefits or receive fewer benefits than the general population. Therefore, relocation impacts on environmental justice populations would not be disproportionately high and adverse.

No Build Alternative

No improvements to SR-91 and the SR-91/I-605 interchange other than routine maintenance are proposed under the No Build Alternative. Therefore, the No Build Alternative would not result in property acquisition or permanent increases in noise levels that would impact populations in the area, including low-income and minority

populations. However, the No Build Alternative would also not provide transportation benefits to populations in the area, including to low-income and minority populations, which would occur under the Build Alternative.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Project features included in the Build Alternative would reduce temporary construction traffic, noise, and air quality impacts on all populations in the study area, including low-income and minority populations.

Temporary construction impacts on minority and low-income populations would be minimized by implementation of Project Feature PF-T-1, which is provided in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities.

Temporary air quality effects would be minimized by Project Features PF-AQ-1 through PF-AQ-6, which are detailed in Section 2.12, Air Quality. These project features and measures require the control of dust and equipment emissions during construction of the Build Alternative. These features and measures would benefit all persons in the project area, including low-income and minority populations.

Temporary noise effects would be minimized by Project Feature N-1, which is detailed in Section 2.13, Noise. Project Feature PF-N-1 includes compliance with Caltrans Standard Specifications, Section 14-8.02, Noise Control, during construction of the Build Alternative. This project feature would benefit all persons in the project area, including low-income and minority populations.

This page intentionally left blank

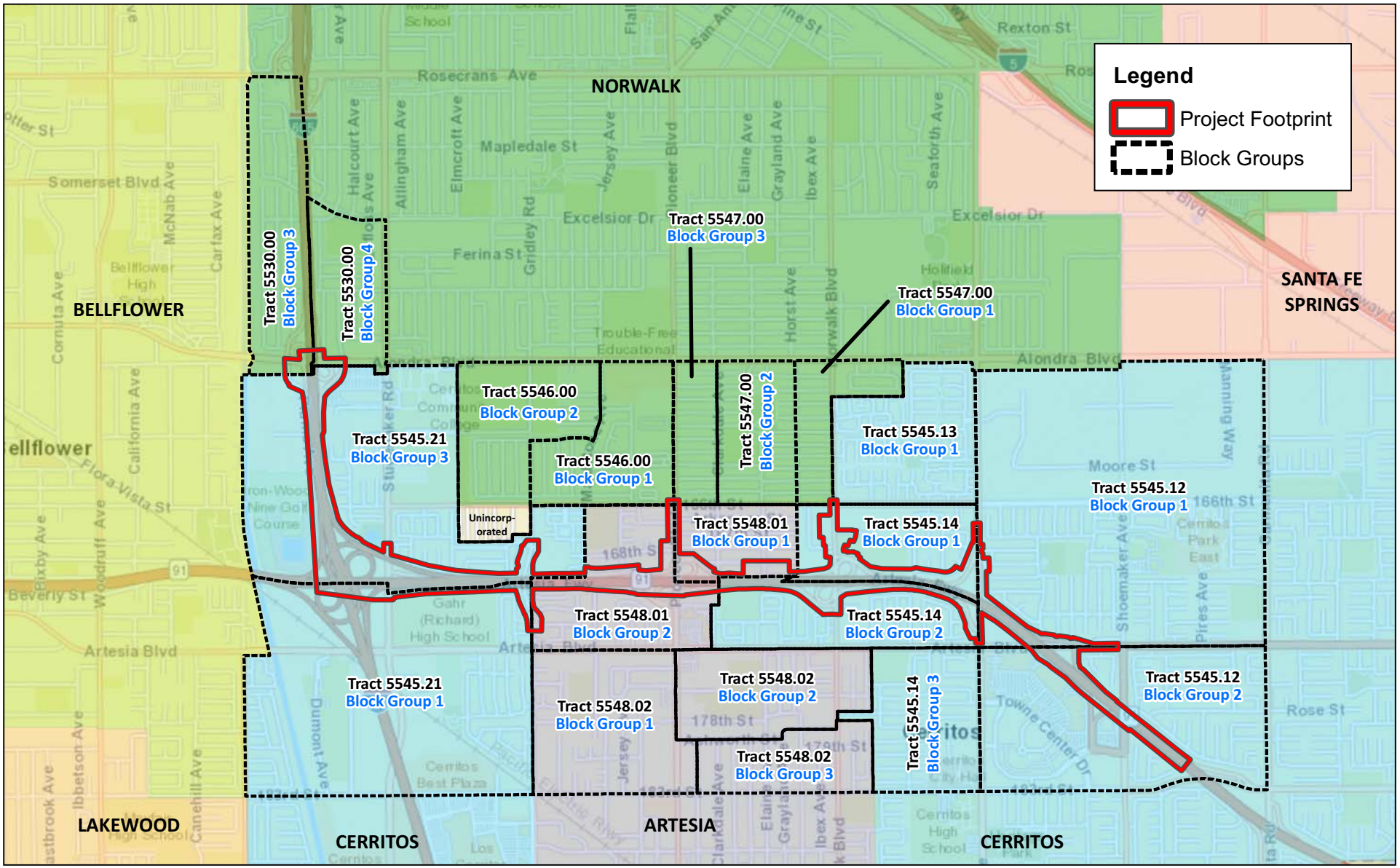


FIGURE 2.3-1

SOURCE: US Census Bureau 2010; LA County 2017; ESRI 2017.

I:\RBF1601\G\CIA\Study_Area.cdr (1/29/2018)

Westbound SR-91 Improvement Project

Study Area

R-91 PM 16.9-19.8; I-605 PM 5.0-5.8

EFIS 0716000284; EA 29811

This page intentionally left blank

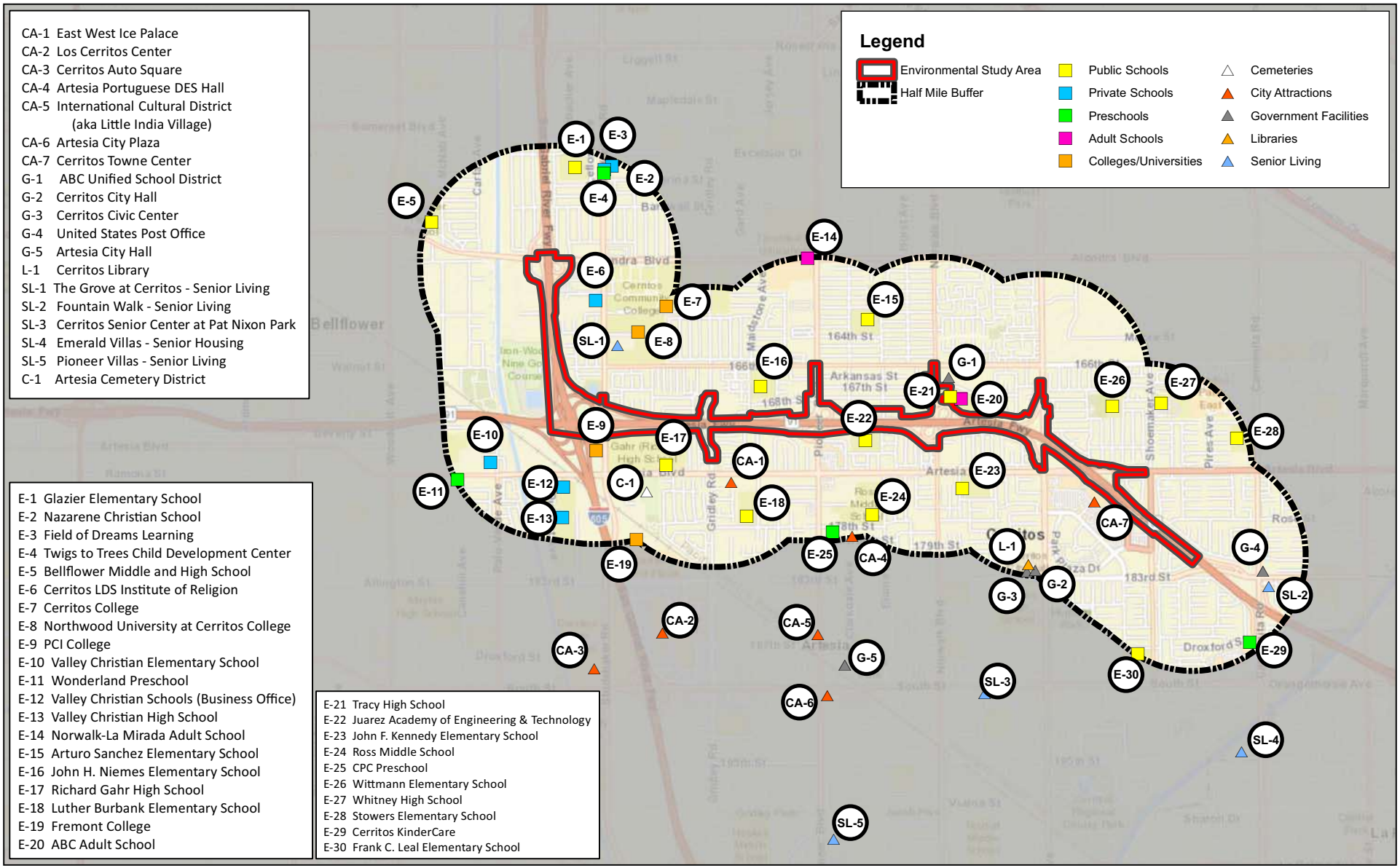


FIGURE 2.3-2

SOURCE: SCAG 2012; ESRI 2017.

I:\RBF1601\G\CIA\Community_Facilities .cdr (1/29/2018)

Westbound SR-91 Improvement Project

Community Facilities

R-91 PM 16.9-19.8; I-605 PM 5.0-5.8

EFIS 0716000284; EA 29811

This page intentionally left blank

LEGEND

Study Area Limits

Build Alternative w/Design Option 3 (Pioneer Blvd WB Ramps/168th Alignment)

- Full Acquisition
- Partial Acquisition
- Partial Acquisition/Permanent Easement (PE)/Temporary Construction Easement (TCE)
- Partial Acquisition/Temporary Construction Easement (TCE)
- Temporary Construction Easement (TCE)
- Access Impact

0 325 650
FEET

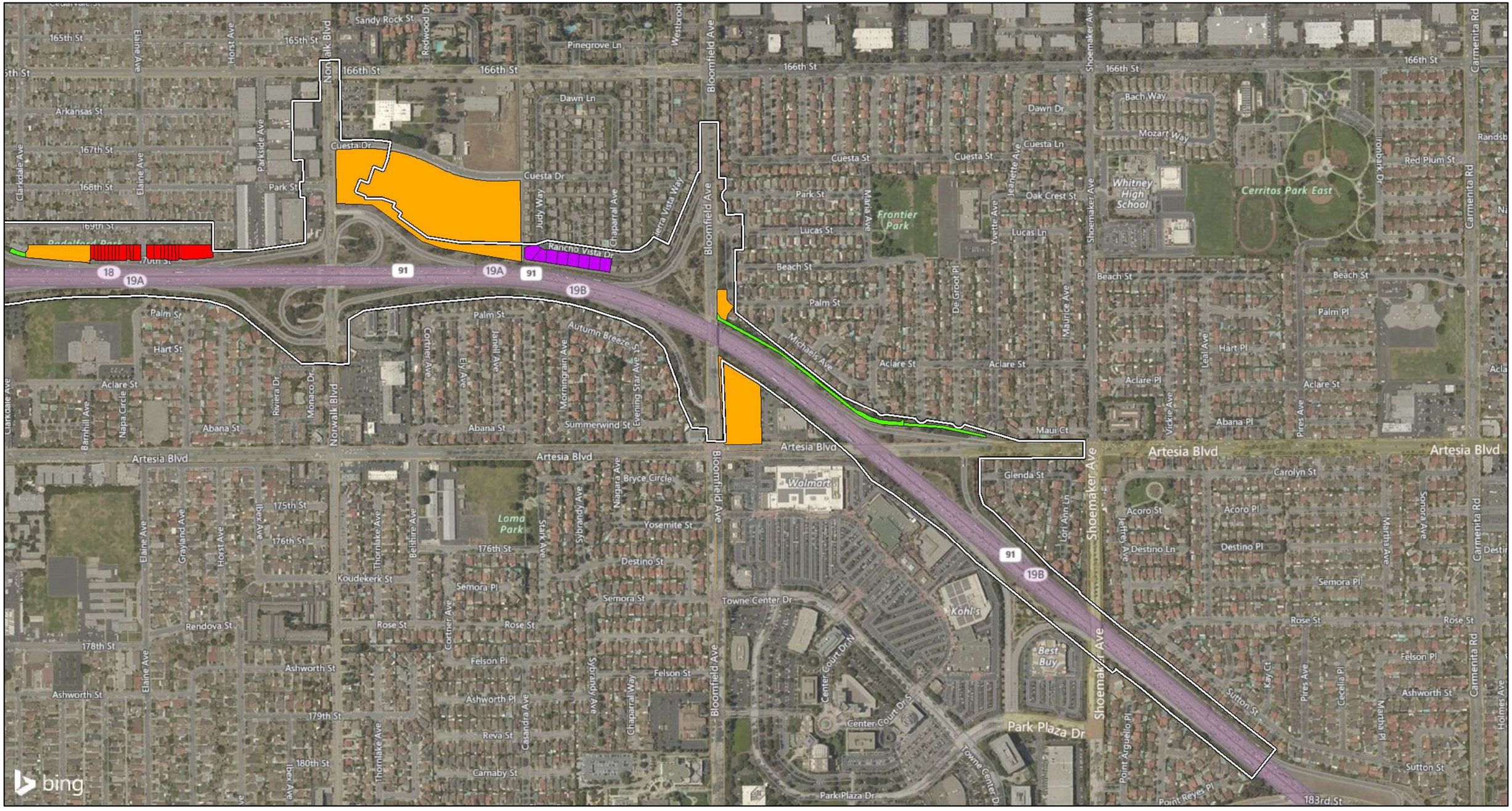
SOURCE: Bing Maps (7/2014); Michael Baker (9/2017)

I:\RBF1601\GIS\MXD\ISEA\PropertyAcquisitionsAndTCE.mxd (6/8/2018)

FIGURE 2.3-3
Sheet 1 of 2

Westbound SR-91 Improvement Project
Property Acquisitions and Temporary Construction Easements for the Build Alternative and the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment)
07-LA-91
SR-91 PM 16.9-19.8; I-605 PM 5.0-5.8
EFIS 0716000284; EA 29811

This page intentionally left blank



LEGEND

Study Area Limits

Build Alternative w/Design Option 3 (Pioneer Blvd WB Ramps/168th Alignment)

- Full Acquisition
- Partial Acquisition
- Partial Acquisition/Permanent Easement (PE)/Temporary Construction Easement (TCE)
- Partial Acquisition/Temporary Construction Easement (TCE)
- Temporary Construction Easement (TCE)
- Access Impact

N

0 325 650
FEET

SOURCE: Bing Maps (7/2014); Michael Baker (9/2017)

I:\RBF1601\GIS\MXD\ISEA\PropertyAcquisitionsAndTCE.mxd (6/8/2018)

FIGURE 2.3-3
Sheet 2 of 2

Westbound SR-91 Improvement Project

Property Acquisitions and Temporary Construction Easements for the Build Alternative and the Build Alternative with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment)

07-LA-91

SR-91 PM 16.9-19.8; I-605 PM 5.0-5.8

EFIS 0716000284; EA 29811

This page intentionally left blank

LEGEND

Study Area Limits

Design Option 1 (Reduced Lane/Shoulder Width) with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment)

- Full Acquisition
- Partial Acquisition/Temporary Construction Easement (TCE)
- Temporary Construction Easement (TCE)

0 325 650
FEET

SOURCE: Bing Maps (7/2014); Michael Baker (9/2017)

I:\RBF1601\GIS\MXD\ISEA\PropertyAcquisitionsAndTCE_NonStandardLane.mxd (6/11/2018)

FIGURE 2.3-4
Sheet 1 of 2

Westbound SR-91 Improvement Project

Property Acquisitions and Temporary Construction Easements
for the Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width)
and Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment)

07-LA-91
SR-91 PM 16.9-19.8; I-605 PM 5.0-5.8
EFIS 0716000284; EA 29811

This page intentionally left blank

LEGEND

Study Area Limits

Design Option 1 (Reduced Lane/Shoulder Width) with Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment)

- Full Acquisition
- Partial Acquisition/Temporary Construction Easement (TCE)
- Temporary Construction Easement (TCE)

0 325 650
FEET

SOURCE: Bing Maps (7/2014); Michael Baker (9/2017)

I:\RBF1601\GIS\MXD\ISEA\PropertyAcquisitionsAndTCE_NonStandardLane.mxd (6/11/2018)

FIGURE 2.3-4

Sheet 2 of 2

Westbound SR-91 Improvement Project

Property Acquisitions and Temporary Construction Easements
for the Build Alternative with Design Option 1 (Reduced Lane/Shoulder Width)
and Design Option 3 (Pioneer Boulevard Westbound Ramps/168th Alignment)

07-LA-91

SR-91 PM 16.9-19.8; I-605 PM 5.0-5.8

EFIS 0716000284; EA 29811

This page intentionally left blank

2.4 Utilities/Emergency Services

2.4.1 Affected Environment

This section is based on information from the *Utility Impacts and Relocation Report* (2018) prepared for the proposed Westbound State Route 91 (SR-91) Improvement Project (project). This section describes the existing utilities and emergency services facilities and providers in the project footprint (the maximum disturbance limits for the Build Alternative) and study area. The study area extends 0.5 mile (mi) from the limits of the project footprint.

2.4.1.1 Utilities

Existing utilities are located adjacent to and within the study area. The locations of utilities have been identified from as-built drawings and field reviews. Utility owners with facilities known to exist within the study area include the following:

- Central Basin Municipal Water District
- Chevron Pipe Line Company
- City of Norwalk
- Crown Castle
- Frontier Communications
- Kinder Morgan, Inc.
- County of Los Angeles Department of Public Works
- Shell Oil Pipeline Company
- Southern California Gas Company
- Wilshire Connection, LLC
- Charter Communications
- City of Cerritos
- City of Artesia
- City of Santa Fe Springs
- Crimson Pipeline
- Defense Fuel Support Point
- Golden State Water Company
- Liberty Utilities
- Los Angeles County Sanitation Districts
- Southern California Edison
- Time Warner Cable
- XO Communications

2.4.1.2 Fire Protection and Emergency Services

Fire protection and emergency medical/paramedic services in the study area cities (Cerritos and Artesia) are provided by the Los Angeles County Fire Department. There are no fire stations or hospitals located within 0.5 mi of the proposed project. The nearest Los Angeles County Fire Department fire stations are located 0.58 mi east of the study area in Norwalk, 0.78 mi south of the study area in Cerritos, and 1.19 mi south of the study area in Cerritos. The nearest hospital that provides 24-hour

emergency services is the La Palma Intercommunity Hospital at 7901 Walker Street in La Palma; the hospital is approximately 1.53 mi southeast of the proposed project.

2.4.1.3 Police Protection

Police protection services in the study area are provided by the police departments in the study area cities of Cerritos and Artesia, as well as the Los Angeles County Sheriff's Department. There is one police station located within 0.5 mi of the proposed project: the Cerritos Sheriff's Station/ Community Safety Center at 18135 Bloomfield Avenue in Cerritos. The other nearest police stations are located 1.5 mi southeast of the proposed project in La Palma and 2.32 mi north of the proposed project in Norwalk.

2.4.2 Environmental Consequences

2.4.2.1 Temporary Impacts

Build Alternative

Utilities (e.g., water lines, sewer laterals, electrical connections/lines/poles, natural gas service lines, street lights, fire hydrants, and cable television lines and utility boxes) in the project right-of-way (ROW) could be abandoned, removed, relocated or replaced due to the construction of the Build Alternative.

The utility facilities that could potentially be affected during construction of the Build Alternative are listed in Table 2.4.1. An updated utility search would be conducted during final design to determine all utilities that would require protection in place, removal or relocation. Completion of the utility work required for the affected utilities listed in Table 2.4.1 may result in temporary service disruptions to some utility users in the vicinity of the study area.

The following project feature has been incorporated into the Build Alternative to minimize the potential temporary adverse effects of the project construction on utilities.

PF-UES-1 During final design, utility relocation plans will be prepared in consultation with the affected utility providers/owners for those utilities that will need to be relocated, removed, or protected in place. If relocation is necessary, the final design will focus on relocating utilities within existing public rights-of-way (ROWs) and/or easements. If relocation outside of existing ROWs or additional public ROWs and/or easements required for the proposed project are necessary, the final design will focus on relocating those facilities

Table 2.4.1 Utilities Potentially Affected During Construction of the Build Alternative

Utility Providers Within Project Limits	Facility Impacted by Proposed Project
Central Basin Municipal Water District	No impacted facilities
Charter Communications	No impacted facilities
Chevron Pipe Line Company	No impacted facilities
City of Artesia	2-inch underground water
City of Cerritos	33-inch underground sewer, fire hydrant
City of Norwalk	No impacted facilities
City of Santa Fe Springs	16-inch underground sewer
County of Los Angeles Department of Public Works	Four 8-inch underground sewers
Crimson Pipeline	No impacted facilities
Crown Castle	No impacted facilities
Defense Fuel Support Point	No impacted facilities
Frontier Communications	Two telephone call boxes, underground telecom
Golden State Water Company	No impacted facilities
Kinder Morgan, Inc.	No impacted facilities
Liberty Utilities	No impacted facilities
Los Angeles County Sanitation Districts	No impacted facilities
Shell Oil Pipeline Company	No impacted facilities
Southern California Edison	Four electric power poles, two 12 kilovolt (kV) overhead electrical lines, two 12 kV underground electrical lines, overhead electrical for street lighting, underground electrical for street lighting
Southern California Gas Company	Two 2-inch underground gas, 3-inch underground gas
Time Warner Cable	Two overhead telecom, two underground telecom
Wilshire Connection, LLC	Two underground telecom
XO Communications	No impacted facilities

Source: *Utility Impacts and Relocation Report* (2018).

to minimize environmental impacts as a result of project construction and ongoing maintenance and repair activities. Utility relocations are anticipated to be completed by the various utility owners prior to or during construction.

Prior to utility relocation activities, the Construction Contractor will coordinate with affected utility providers regarding potential utility relocations and inform affected utility users in advance about the date and timing of potential service disruptions.

During construction of the Build Alternative, some impairment to the delivery of emergency services, including fire and police response times, may occur due to limited lane closures on the mainline, ramps and arterials. Detour routes would be provided to direct traffic around any mainline or ramp closures using the local arterial street network. Emergency-services providers (including the local fire and police departments and the California Highway Patrol [CHP]) could experience these travel

delays when traveling to/from emergency scenes during these mainline freeway closures.

Closures would include the partial or complete closure of local streets and ramps during night time and off-peak hours during critical construction phases. During partial local street closures, the Construction Contractor would post signs to notify the public 5 working days prior to the closure. For complete local street or ramp closures, the Construction Contractor would coordinate and obtain prior authorization from Caltrans and notify the public of the full closure 5 working days prior to the closure. The Construction Contractor would implement traffic controls per approved traffic control plans. Emergency services providers, including the local fire and police departments and the CHP, could experience travel delays when traveling to/from emergency scenes during bridge closures. During construction of the Build Alternative, some impairment to the delivery of emergency services, including fire and response times, may occur due to limited lane closures on the mainline, ramps, and arterials. Detour routes would be provided to direct traffic around any mainline or ramp closures using the local arterial street network. Emergency service providers (including the local fire and police departments and CHP) could experience these travel delays when traveling to/from emergency scenes during the mainline freeway closures.

The Construction Contractor would coordinate and obtain prior authorization from Caltrans for any lane closures on the freeway mainline, and will notify local police, fire and emergency responders regarding the planned closures. The public will also be notified of any closures through public information outreach. In addition, construction alerts would be issued to local transit operators, local radio and cable television companies, emergency services (fire and police), schools, local major employers, and traffic navigation systems groups. Detour plans would be developed during final design to finalize detour routes. Currently, it is expected that detoured traffic would use major arterials in the vicinity of the proposed project, Interstate 605 (I-605), and SR-91. Emergency services providers, including the local fire and police departments and the CHP, could experience travel delays when traveling to/from emergency scenes during freeway closures.

The following project feature has been incorporated into the Build Alternative to minimize the potential temporary adverse effects of the project construction on emergency services:

PF-UES-2 Prior to and during construction, the Construction Contractor will coordinate all temporary mainline, ramp, and arterial roadway closures and detour plans with law enforcement, fire protection, and emergency medical service providers to minimize temporary delays in emergency response times, including the identification of alternative routes for emergency vehicles and routes across the construction areas that are developed in coordination with the affected agencies.

In addition, temporary construction impacts to emergency services would be minimized by implementation of Project Feature PF-T-1 in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities. Project Feature PF-T-1 requires development and implementation of a Transportation Management Plan (TMP) during construction of the Build Alternative to address traffic delays; maintain traffic flow in the SR-91 corridor; manage detours and temporary road, lane, and ramp closures; provide ongoing information to the public regarding construction activities, closures, and detours; and maintain a safe environment for construction workers and travelers.

No Build Alternative

No improvements to SR-91 and I-605 other than routine maintenance are proposed under the No Build Alternative, and the freeway would remain as it exists today. Therefore, the No Build Alternative would not result in temporary adverse effects on utilities and emergency services.

2.4.2.2 Permanent Impacts

Build Alternative

Any relocation or other effects to utility facilities (provided in Table 1.9, Potentially Affected Utilities by Type) under the Build Alternative would occur during the construction phase. All existing utility facilities would be anticipated to be perpetuated under the Build Alternative. The Build Alternative would not result in increased demand for domestic water services, wastewater facilities, or solid waste disposal. Therefore, the Build Alternative would not result in permanent adverse effects on utility providers or their facilities.

As required by Caltrans and the respective standards of the affected cities, emergency access would be maintained or provided as part of the final design of the Build Alternative. The improvements to the SR-91 mainline, I-605 connector ramps, and SR-91 arterials would reduce traffic congestion and result in decreased travel times

on SR-91 compared to the No Build Alternative. These improvements in traffic flow are likely to improve emergency response times within the study area. Therefore, the Build Alternative would not result in adverse effects to emergency services and providers.

No Build Alternative

No improvements to SR-91 are proposed under the No Build Alternative other than routine maintenance. The freeway would remain as it exists today, with the exception of other proposed projects that are under development or currently under construction. The No Build Alternative would have no immediate impacts to emergency services. As LOS on SR-91 deteriorates in the future, response times of emergency response vehicles could increase. However, the No Build Alternative would not result in permanent direct adverse effects related to emergency services, utility services, and their facilities.

2.4.3 Avoidance, Minimization, and/or Mitigation Measures

Because the project will incorporate project features as outlined above in Section 2.4.2.1, no substantial adverse impacts to utilities and emergency services would occur. Therefore, no avoidance, minimization, and/or mitigation measures are required.

2.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.5.1 Regulatory Setting

The California Department of Transportation (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). The 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.

2.5.2 Affected Environment

This section is based on the *Traffic Operations Analysis Report* (2018) prepared for the project. The study area extends from the Shoemaker Avenue westbound on-ramp to Interstate 605 (I-605) and north on I-605 to Alondra Boulevard, although actual improvements may not be included along this entire length. The study area includes the ramp terminus intersections at key ramp locations in addition to the freeway mainline, arterial system connector ramps, and the westbound system connector ramp from State Route 91 (SR-91) to I-605. The traffic impact analysis in the *Traffic Operations Analysis Report* (2018) considered the following scenarios:

- Existing Baseline Conditions (2016)
- No Build Alternative – Opening Year (2024) and Horizon Year (2044)

- Build Alternative – Opening Year (2024) and Horizon Year (2044)
- Build Alternative with Design Options – Opening Year (2024) and Horizon Year (2044)

2.5.2.1 Existing Facility

As previously stated in Chapter 1, Proposed Project, the project limits include westbound SR-91 (Post Mile [PM] 16.9–19.8) and northbound I-605 (PM 5.0–5.8) and traverse Cerritos and Artesia. The total length of the project is approximately 4 miles (mi), with the majority of the improvements along the westbound SR-91 3 mi segment. Within the project limits, westbound SR-91 has four mixed-flow lanes that are 11 feet (ft) wide, a 1.5 ft wide left median shoulder, one 12 ft wide high occupancy vehicle (HOV) lane, and one 12 ft wide auxiliary lane between certain successive on- and off-ramps. Within the project limits, I-605 has four to five mixed-flow lanes and one HOV lane in each direction plus ramp merge and diverge lanes.

2.5.2.2 Existing Traffic Operations

Existing Levels of Service

Freeway traffic flow can be defined in terms of levels of service (LOS). For freeways, there are six defined LOS, ranging from LOS A to LOS F (based on the *Highway Capacity Manual* [HCM] methodology). LOS A represents free traffic flow with low traffic volumes and high speeds, and LOS F represents traffic volumes that exceed the facility capacity and result in forced flow operations at low speeds, as shown on Figure 1-2 in Chapter 1. As shown on Figure 1-2 in Chapter 1, traffic volumes on facilities such as SR-91 and I-605 substantially affect travel speeds and times.

Mainline and Ramps

As discussed in Section 1.2.2.1, Capacity, Transportation Demand, and Safety, and also shown in Tables 2.5.1, 2.5.2, and 2.5.3 (all tables are provided at the end of this section), the results of the HCM analysis indicate that all but two existing freeway mainline, weaving, and merge/diverge segments are currently operating at LOS D or better during the peak hours. The exceptions are the weaving segment from the Pioneer Boulevard on-ramp to the I-605 off-ramp and the weaving segment from the SR-91 westbound on-ramp to the Alondra Boulevard off-ramp, for which the HCM results indicate LOS F. However, in areas with long vehicle queues, slow speeds, and higher levels of congestion, the HCM method of analysis can report LOS that is better than what drivers actually experience on the road. This is because the downstream traffic congestion and bottlenecks reduce the vehicle throughput in the study area and the volumes are constrained by the adjacent congested portions of the freeway. In

order to report LOS that more closely reflects what drivers experience, the speed method of analysis for determining LOS was also employed for current conditions along with a microsimulation model for future No Build and Build conditions. The speed method of analysis included observing existing speed profiles in the study area and comparing those speeds to likely LOS designations. Based on the speed method, the LOS for the existing mainline segments are mostly LOS E and F during both peak periods, as shown in Table 2.5.4. Note that the speed-based method is only used for existing conditions when actual speeds can be measured. The future analysis relies on HCM as well as the microsimulation model results.

Intersections

A total of six study area intersections were evaluated and the LOS calculated using HCM 2010 methodology. As shown in Table 2.5.5, all westbound SR-91 and northbound I-605 study intersections perform at LOS C or better during the a.m. and p.m. peak hours, with the exception of the northbound I-605 off-ramp to Alondra Boulevard, which operates at LOS D during the p.m. peak hour.

2.5.2.3 Pedestrian and Bicycle Facilities

Pedestrian travel across the project limits where arterial streets cross I-605 is provided via sidewalks at the following location:

- Alondra Boulevard

Pedestrian travel across the project limits where arterial streets cross SR-91 is provided via sidewalks at the following locations:

- Studebaker Road
- Gridley Road
- Pioneer Boulevard
- Norwalk Boulevard
- Bloomfield Avenue
- Artesia Boulevard
- Shoemaker Avenue

These arterials generally include sidewalks on at least one side, and usually both sides, of the road as they cross I-605 or SR-91.

On-road bikeways within the project limits include:[1]

- A Class III[2] bikeway extends in both directions on 195th Street from the San Gabriel River Trail to Bloomfield Avenue. These bikeways then transition to a Class II bikeway before joining the Coyote Creek Bicycle Path.
- A Class II bikeway extends on Pioneer Boulevard from South Street before turning eastward onto Del Amo Boulevard.
- A Class II bikeway extends on Bloomfield Avenue starting at 183rd Street and ends at South Street before continuing east on South Street to Carmelita Avenue, where another bikeway extends southward on Shoemaker Avenue.

The study area is located between the following two major bike trails in the region:

- The San Gabriel River Bicycle Trail runs 30.2 mi along the San Gabriel River, from San Gabriel Canyon Road in Azusa to an access into El Dorado Park in Long Beach. There are numerous access points along the path. Within the study area, the Trail crosses under SR-91 just west of I-605, which it parallels for much of its length.
- The Coyote Creek Bicycle Trail is a 9.5 mi Class I bike path adjacent to the Coyote Creek flood control channel, extending from Santa Fe Springs to Long Beach, where it joins the San Gabriel River Bicycle Path. It crosses under SR-91 about 1 mi east of the study area, at Carmenita Road.

2.5.3 Environmental Consequences

The methodologies for forecasting and assessing future year with and without project traffic effects are described in detail in Chapters 3 and 4 of the *Traffic Operations Analysis Report* (2018). The methodologies of those analyses are summarized below.

Methodology

The analysis evaluation criteria used to determine acceptable traffic operation conditions are based on the LOS policies identified by Caltrans. Caltrans strives for freeway facilities to operate at either LOS C or D. Freeway LOS was shown on

1 County of Los Angeles. 2012. *Bicycle Master Plan.* Website: https://dpw.lacounty.gov/pdd/bike/docs/bmp/BMP%20CHP%203.pdf (accessed December 12, 2017).

2 Class I (separate bike path), Class II (bike lane), and Class III (signed as bike route, no striping).

Figure 1-2 in Chapter 1. Based on Caltrans policy, LOS D was used as the threshold for the freeway facilities analysis. Any future freeway facilities projected to operate at an unacceptable LOS (i.e., LOS E or F) need to be mitigated. Per Caltrans, an impact to freeway facilities would occur if the project would:

- Degrade the LOS on the freeway facility from LOS D to LOS E or F, or
- Impact (worsen) a facility that is already operating at an unacceptable LOS (i.e., LOS E or F).

The six study area intersections noted previously were taken into account in the traffic impact analysis as they may be potentially impacted due to the proposed improvements to SR-91 and I-605. Intersections would be considered impacted if they are projected to operate at an unacceptable LOS (i.e., LOS E or F) under the Build Alternative and are not projected to operate at unsatisfactory LOS under the No Build Alternative scenario.

The 2024 No Build Alternative consists of projects included in the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan (RTP); however, projects anticipated to be open to traffic after 2024 were removed from the 2024 roadway network for the traffic analysis.

The improvements included in the Build Alternative are described in more detail in Chapter 1, Proposed Project, in this environmental document. In addition to the Build Alternative, the proposed diamond ramp configurations (Diamond Ramps Design Option) at Pioneer Boulevard and Norwalk Boulevard in lieu of the proposed Type L-7 cloverleaf interchange configuration, the proposed Type L-9 westbound ramp configuration (Pioneer Boulevard L-9 Design Option), as well as the proposed alignment of SR-91 westbound ramps with 168th Street (Pioneer Westbound Ramps/168th Alignment Design Option) were analyzed.

2.5.3.2 Temporary Impacts

Build Alternative (includes Design Options)

During construction, the proposed project would result in temporary impacts to traffic circulation due to traffic diversions resulting from temporary closures to local roadways, sidewalks, bikeways, and freeway lanes. As described in the following project feature (PF-T-1), a Transportation Management Plan (TMP) will be implemented to address changes in traffic flows and pedestrian and bicycle circulation and to provide measures to minimize the adverse effects of construction activities on traffic flows and pedestrian and bicycle travel within the study area.

PF-T-1 **Transportation Management Plan.** A Final Transportation Management Plan (TMP) will be developed in detail during final design, which would be implemented by the Resident Engineer during project construction to address short-term traffic circulation and access effects during project construction. Specifically, when the TMP is prepared during final design, a Qualified Traffic Engineer will prepare the TMP, which will include, but not be limited to, the elements described below to reduce traveler delays and enhance traveler safety during project construction. The TMP would be approved by the Los Angeles County Metropolitan Transportation Authority (Metro) and the California Department of Transportation (Caltrans) District 7 during final design and would be incorporated into the plans, specifications, and estimates for implementation by the Resident Engineer.

The purpose of the TMP is to address the short-term traffic and transportation impacts during construction of the project. The objectives of the TMP are to:

- Maintain traffic safety during construction,
- Effectively maintain an acceptable level of traffic flow throughout the transportation system during construction,
- Minimize traffic delays and facilitate reduction of the overall duration of construction activities,
- Minimize detours and impacts to pedestrians and bicyclists,
- Foster public awareness of the project and related transportation and traffic impacts, and
- Achieve public acceptance of construction of the project and the TMP measures.

The TMP will contain, but not be limited to, the following elements, which are intended to reduce traveler delay and enhance traveler safety. These elements will be refined during final design and incorporated in the TMP for implementation during project construction.

- **Public Information/Public Awareness Campaign:** The primary goal of the Public Awareness Campaign (PAC) is to educate

motorists, business owners and operators, residents, elected officials, and government agencies about project construction activities and associated transportation impacts. The PAC is an important tool for reaching target audiences with important construction project information and is anticipated to include but not be limited to the following:

- Rideshare information
- Brochures and mailers
- Media releases
- Paid advertising, including radio, print, and social media
- Public meetings
- Broadcast fax and email services
- A telephone hotline
- Notification to targeted groups
- Commercial traffic reporters/feeds
- A project website
- Visual information
- Local cable television and news
- Internet postings
- Digital signage to inform commuters about closures
- Print banners and signs
- Business mitigation strategies
- Social and digital media alerts
- Parking mitigation strategies

- **Traveler Information Strategies:** The effective implementation of a traveler information system during construction is crucial for enabling motorists to make informed decisions about their travel plans and options with real-time traffic information. That real-time traffic information will include information on mainline, ramp, lane, and arterial closures and detours; travel delays; access to adjacent land uses; “businesses are open” signs; and other signs and information to assist travelers in navigating through, around, and in construction areas. Key components of the traveler information system are anticipated to include but not be limited to the following:

- Fixed and portable changeable message signs
- Ground-mounted signs
- Automated work zone information systems
- Highway advisory radio
- A lane-closure website
- The Caltrans highway information network
- Bicycle and pedestrian information
- A Commute Smart website

- **Incident Management:** Effective incident management will ensure that incidents in and near construction areas are cleared quickly and do not result in substantial delays for the traveling public in the vicinity of work zones. Incident management includes but is not limited to the following:

  - A Caltrans Construction Zone Enhanced Enforcement Program (COZEEP)
  - A Freeway Service Patrol
  - Traffic surveillance stations
  - A Caltrans Transportation Management Center
  - A traffic management team
  - Towing services

- **Construction Strategies:** The TMP will include procedures to lessen the transportation effects of project-related construction activities and will include but not be limited to consideration of the following:

  - Conflicts with other projects and special events
  - Construction staging alternatives
  - Mainline lane closures
  - Local road closures
  - Ramp and connector closures (no two consecutive on- or off-ramps in the same direction would be closed at the same time)
  - Pedestrian and bicycle detours and facility closures
  - Traffic control improvements
  - Coordination with other projects and local municipalities

- Project phasing
- Traffic screens
- Truck traffic restrictions

- **Demand Management:** Temporarily reducing the overall traffic volumes on the project segment of SR-91 and I-605 could reduce the short-term adverse effects of construction on traffic operations. The TMP will include but not be limited to the following strategies that could reduce vehicular demand in the study area during project construction:

  - Rideshare incentives
  - Transit services
  - Shuttle services
  - Variable work hours and telecommuting
  - Park-and-ride lots

- **Alternate Route Strategies:** The TMP will provide strategies for notifying motorists, pedestrians, and bicyclists of planned construction activities. This notification will allow travelers to make informed decisions about their travel plans, including the consideration of possible alternate routes. The TMP will finalize the detour and alternate routes for motorists, specifically addressing the following:

  - Mainline lane closures
  - Ramp/connector closures
  - Local road closures
  - Temporary highway or shoulder use
  - Local street improvements
  - Temporary detours and closures of bicycle and pedestrian facilities
  - Traffic signal coordination

The Construction Contractor will implement the measures in the TMP during construction.

The 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 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.

No Build Alternative

None of the improvements proposed under the Build Alternative would be constructed under the No Build Alternative. As a result, the No Build Alternative would not result in temporary impacts related to traffic and circulation or to pedestrian and bicycle facilities.

2.5.3.3 Permanent Impacts

The following tables provide detailed information on the traffic operations under the Existing (2016) conditions, 2024 Build Alternative, 2024 No Build Alternative, 2024 Diamond Ramps Design Option, 2024 Pioneer Boulevard L-9 Design Option, and 2024 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option:

- Table 2.5.6 summarizes the westbound SR-91 mainline LOS (using HCM methodology) during the a.m. and p.m. peak periods under the Existing (2016) conditions, 2024 Build Alternative, 2024 No Build Alternative, 2024 Diamond Ramps Design Option, 2024 Pioneer Boulevard L-9 Design Option, and 2024 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option.
- Table 2.5.7 summarizes the westbound SR-91 and northbound I-605 weaving LOS (using HCM methodology) during the a.m. and p.m. peak periods under the Existing (2016) conditions, 2024 Build Alternative, 2024 No Build Alternative, 2024 Diamond Ramps Design Option, 2024 Pioneer Boulevard L-9 Design Option, and 2024 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option.
- Table 2.5.8 summarizes the westbound SR-91 merge and diverge LOS (using HCM methodology) during the a.m. and p.m. peak periods under the Existing (2016) conditions, 2024 Build Alternative, 2024 No Build Alternative, 2024

Diamond Ramps Design Option, 2024 Pioneer Boulevard L-9 Design Option, and 2024 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option.

- Table 2.5.9 summarizes the westbound SR-91 and northbound I-605 intersection LOS (using HCM methodology) during the a.m. and p.m. peak periods under the Existing (2016) conditions, 2024 Build Alternative, 2024 No Build Alternative, 2024 Diamond Ramps Design Option, 2024 Pioneer Boulevard L-9 Design Option, and 2024 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option.

The following tables provide detailed information on the traffic operations under the Existing (2016) conditions, 2044 Build Alternative, 2044 No Build Alternative, 2044 Diamond Ramps Design Option, 2044 Pioneer Boulevard L-9 Design Option, and 2044 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option:

- Table 2.5.10 summarizes the westbound SR-91 mainline LOS (using HCM methodology) during the a.m. and p.m. peak periods under the Existing (2016) conditions, 2044 Build Alternative, 2044 No Build Alternative, 2044 Diamond Ramps Design Option, 2044 Pioneer Boulevard L-9 Design Option, and 2044 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option.
- Table 2.5.11 summarizes the westbound SR-91 and northbound I-605 weaving LOS (using HCM methodology) during the a.m. and p.m. peak periods under the Existing (2016) conditions, 2044 Build Alternative, 2044 No Build Alternative, 2044 Diamond Ramps Design Option, 2044 Pioneer Boulevard L-9 Design Option, and 2044 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option.
- Table 2.5.12 summarizes the westbound SR-91 merge and diverge LOS (using HCM methodology) during the a.m. and p.m. peak periods under the Existing (2016) conditions, 2044 Build Alternative, 2044 No Build Alternative, 2044 Diamond Ramps Design Option, 2044 Pioneer Boulevard L-9 Design Option, and 2044 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option.
- Table 2.5.13 summarizes the westbound SR-91 and northbound I-605 intersection LOS (using HCM methodology) during the a.m. and p.m. peak periods under the Existing (2016) conditions, 2044 Build Alternative, 2044 No Build Alternative, 2044 Diamond Ramps Design Option, 2044 Pioneer Boulevard L-9 Design Option, and 2044 Pioneer Boulevard Westbound Ramps/168th Alignment Design Option.

As indicated previously, 2024 has been identified as the opening year for the project, and 2044 has been identified as the design year. The traffic impacts and operations under the Build Alternative and No Build Alternative in 2024 and 2044 are discussed below. There are a few freeway mainline locations where the LOS based on the HCM results is forecast to worsen with the Build Alternative compared to the No Build Alternative. This is partly due to the fact that the projected future traffic volumes are higher under the Build Alternative due to the added capacity and improved operating conditions, which can cause traffic to shift from other routes. As previously mentioned, this is also partly due to the fact that in areas with long vehicle queues, slow speeds, and higher levels of congestion, the HCM method of analysis can report LOS that is better than what drivers actually experience on the road. Because the HCM methodology can be limited in its ability to assess corridors with significant congestion, such as westbound SR-91, the traffic microsimulation model was also used as a tool for assessing the corridor under future No Build and future Build conditions.

As demonstrated by the results of the microsimulation analysis, which is provided in Appendix C of the *Traffic Operations Analysis Report* (2018), the proposed Build Alternative and design options would reduce congestion and improve local and system freeway operations. The improvements are expected to result in substantially improved operating conditions throughout the study corridor, including substantial reductions in vehicle delay, reductions in travel time, and increased operating speeds on all westbound SR-91 segments. Safety and high accident locations would also be improved via the reduction in congestion and the operational improvements in traffic flow and improvements to the geometric design features in the corridor.

The purpose of the project is to reduce congestion and improve freeway operations (both mainline and ramps), improve safety, and improve local and system interchange operations, which would occur based on the results of the microsimulation model analysis. The need for the project is due to the existing congestion on westbound SR-91 approaching the connector ramp for both northbound and southbound I-605 as a result of inadequate capacity of the existing two-lane connector for westbound SR-91 to northbound and southbound I-605 as well as the closely spaced freeway entrance and exit ramps, contributing to a high concentration of accidents. The Build Alternative would meet the purpose and need of the project because the proposed geometric design features are expected to result in improved operating conditions throughout the length of the project, with reductions in vehicle delay and travel time.

Safety would be improved as a result of increased weaving distances between interchanges as well as the improved operations.

Build Alternative

Mainline and Ramps

Opening Year 2024

As identified in Table 2.5.6, all 14 of the westbound SR-91 mainline segments are projected to operate at LOS C or better during a.m. peak periods under the 2024 Build Alternative. All of the westbound SR-91 mainline segments are projected to operate at LOS D or better during p.m. peak periods under the 2024 Build Alternative. With the additional freeway mainline capacity proposed under the 2024 Build Alternative, traffic operations within the study area are proposed to improve at four freeway segments over the 2024 No Build Alternative.

As identified in Table 2.5.7, of the five existing ramps, three ramps under the 2024 Build Alternative during the a.m. and p.m. peak periods are projected to operate at the same LOS as compared to the 2024 No Build Alternative. Of the five existing ramps, two ramps under the 2024 Build Alternative during the a.m. and p.m. peak periods are projected to remain operating at LOS F. One ramp under the 2024 Build Alternative during the a.m. and p.m. peak periods is projected to operate at LOS D, as compared to LOS C under the 2024 No Build Alternative. One ramp under the 2024 Build Alternative during the a.m. peak period is projected to operate at LOS C as compared to LOS D under the 2024 No Build Alternative. As identified in Table 2.5.8, the generally consistent LOS on the existing ramps result in weaving segments and merge/diverge segments under the 2024 Build Alternative operating at similar LOS as under the 2024 No Build Alternative.

Design Year 2044

As identified in Table 2.5.10, all 14 of the westbound SR-91 freeway mainline segments are projected to operate at LOS D or better during the a.m. and p.m. peak periods under the 2044 Build Alternative. With the additional freeway mainline capacity proposed under the 2044 Build Alternative, traffic operations within the study area are proposed to improve at four freeway segments under the 2044 No Build Alternative.

As identified in Table 2.5.11, of the five existing ramps, three ramps under the 2044 Build Alternative during the a.m. and p.m. peak periods are projected to

operate at the same LOS as compared to the 2044 No Build Alternative. Of the five existing ramps, two ramps under the 2044 Build Alternative during the a.m. and p.m. peak periods are projected to remain operating at LOS F. One ramp under the 2044 Build Alternative during the a.m. and p.m. peak periods is projected to operate at LOS D, as compared to LOS C under the 2044 No Build Alternative. One ramp under the 2044 Build Alternative during the a.m. and p.m. peak periods is projected to operate at LOS C, as compared to LOS D under the 2044 No Build Alternative. As identified in Table 2.5.12, the generally consistent LOS on the existing ramps results in weaving segments and merge/diverge segments under the 2044 Build Alternative condition operating at similar LOS as under the 2044 No Build Alternative.

Intersections

Opening Year 2024

As shown in Table 2.5.9, under the 2024 Build Alternative, zero study area intersections are projected to operate at LOS E or F in the a.m. or p.m. peak period. Compared to the 2024 No Build Alternative, none of the intersections would experience an improvement in LOS in one or both peak periods under the 2024 Build Alternative; however, one intersection was identified where a minor degradation in LOS would be experienced. At the intersection of the Studebaker Road/westbound SR-91 off-ramp, the LOS in the a.m. peak period would degrade to LOS C from LOS B, and in the p.m. peak period would degrade to LOS B from LOS A under the 2024 Build Alternative condition. However, this intersection would not reach LOS E or F and, therefore, would not be considered impacted.

Design Year 2044

As shown in Table 2.5.13, under the 2044 Build Alternative, a total of two study area intersections are projected to operate at LOS E or F in one peak period. Compared to the 2044 No Build Alternative, none of the intersections would experience an improvement in LOS in one or both peak periods under the 2044 Build Alternative; however, one intersection was identified where a minor degradation in LOS would be experienced. At the intersection of the Studebaker Road/westbound SR-91 off-ramp, the LOS in the a.m. peak period would degrade to LOS C from LOS B and in the p.m. peak period would degrade to LOS B from LOS A under the 2024 Build Alternative. However, this intersection would not reach LOS E or F and therefore would not be considered impacted.

Bicycle and Pedestrian Facilities

New construction will be ADA compliant, per Caltrans standards. This includes curb ramps that will be replaced as part of the project. The Build Alternative will replace existing bicycle and pedestrian facilities and construct new bicycle and pedestrian facilities at the locations described below.

The following sidewalks are proposed where sidewalks do not currently exist:

- 1,293 ft along westbound Gridley Road between Aclare Street and Park Avenue
- 1,643 ft along westbound Bloomfield Avenue between the SR-91 eastbound off-ramp and 250 ft north of Lucas Street

The following bicycle facilities are proposed where bicycle facilities do not currently exist:

- 210 ft long bike lane in the northbound direction at the intersection of Pioneer Boulevard and the westbound SR-91 off-ramp
- 128 ft long bike lane in the northbound direction at the intersection of Norwalk Boulevard and the westbound SR-91 off-ramp
- 110 ft long bike lane in the southbound direction at the intersection of Bloomfield Avenue and the westbound SR-91 on-ramp/Lucas Street
- 100 ft long bike lane in the northbound direction at the intersection of Bloomfield Avenue and the westbound SR-91 on-ramp/Lucas Street

No Build Alternative

Mainline and Ramps

The freeway mainline segments are projected to operate at LOS D or better under the 2024 No Build Alternative based on the HCM results. Specific data for the 2024 No Build Alternative are provided in Table 2.5.6. Of the five weaving segments analyzed, two segments in the a.m. and p.m. peak periods are projected to operate at LOS F, as shown in Table 2.5.7. All five merge/diverge areas in the a.m. and p.m. peak periods would operate at LOS D or better under the 2024 No Build Alternative, as shown in Table 2.5.8.

The freeway mainline segments are projected to operate at LOS D or better under the 2044 No Build Alternative. Specific data for the 2044 No Build Alternative are provided in Table 2.5.10. Of the five weaving segments analyzed, two segments in the a.m. and p.m. peak periods are projected to operate at LOS F, as shown in Table

2.5.11. All five merge/diverge areas in the a.m. and p.m. peak periods would operate at LOS D or better under the 2024 No Build Alternative, as shown in Table 2.5.12.

Intersections

As shown in Table 2.5.9, under the 2024 No Build Alternative, zero study area intersections are projected to operate at LOS F.

As shown in Table 2.5.13, under the 2044 No Build Alternative, zero study area intersections are projected to operate at LOS F.

Bicycle and Pedestrian Facilities

None of the improvements proposed under the Build Alternative would be constructed under the No Build Alternative; therefore, no permanent impacts related to pedestrian or bicycle facilities would occur.

2.5.4 Avoidance, Minimization, and/or Mitigation Measures

Because the project will incorporate the project features outlined above in Section 2.5.3, no adverse impacts to transportation would occur. Therefore, no avoidance, minimization, and/or mitigation measures are required.

Table 2.5.1 Year 2016 Existing Conditions Freeway Mainline Level of Service Analysis – HCM Method

Segment Location	AM Peak Hour		PM Peak Hour	
	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Westbound SR-91				
Carmenita Road Off-Ramp to 183rd Street On-Ramp	23.8	C	25.1	C
Artesia Boulevard Off-Ramp to Artesia Boulevard On-Ramp	22.9	C	24.4	C
Artesia Boulevard On-Ramp to Bloomfield Avenue On-Ramp	25.3	C	27.5	D
Norwalk Boulevard Off-Ramp to Norwalk Boulevard Loop On-Ramp	25.6	C	27.9	D
Norwalk Boulevard Loop On-Ramp to Norwalk Boulevard Direct On-Ramp	27.2	D	29.3	D
Pioneer Boulevard Off-Ramp to Pioneer Boulevard Loop On-Ramp	27.6	D	30.0	D
Pioneer Boulevard Loop On-Ramp to Pioneer Boulevard Direct On-Ramp	28.6	D	31.8	D
I-605 Off-Ramp (NB & SB) to Studebaker Road Off-Ramp	22.0	C	26.4	D
Studebaker Road Off-Ramp to I-605 NB/WB SR-91 Loop On-Ramp	19.6	C	25.0	C
I-605 NB/WB SR-91 Loop On-Ramp to I-605 SB/WB SR-91 On-Ramp	18.8	C	25.4	C

Source: Intueor Consulting, Inc. (2017).
I-605 = Interstate 605 NB = northbound SR-91 = State Route 91
HCM = Highway Capacity Manual pc/mi/ln = passengers car per mile per lane WB = westbound
LOS = level of service SB = southbound

Table 2.5.2 Year 2016 Existing Conditions Freeway Weaving Analysis

Segment Location	AM Peak Hour		PM Peak Hour	
	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Westbound SR-91				
183rd Street On-Ramp to Artesia Boulevard Off-Ramp	26.7	C	27.7	C
Bloomfield Avenue On-Ramp to Norwalk Boulevard Off-Ramp	27.7	C	30.1	D
Norwalk Boulevard Direct On-Ramp to Pioneer Boulevard Off-Ramp	28.8	D	32.0	D
Pioneer Boulevard Direct On-Ramp to I-605 Off-Ramp (NB & SB)	–	**F**	–	**F**
Northbound I-605				
SR-91 WB On-Ramp to Alondra Boulevard Off-Ramp	–	**F**	–	**F**

Source: Intueor Consulting, Inc. (2017).
Note: Shaded cells indicate unsatisfactory LOS levels (i.e., LOS E or F).
I-605 = Interstate 605 pc/mi/ln = passenger cars per mile per lane WB = westbound
LOS = level of service SB = southbound
NB = northbound SR-91 = State Route 91

Table 2.5.3 Year 2016 Existing Conditions Freeway Merge and Diverge Analysis

Junction	Merge/ Diverge	AM Peak Hour		PM Peak Hour	
		Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Westbound SR-91					
Artesia Boulevard On-Ramp	Merge	21.8	C	24.4	C
Norwalk Boulevard Loop On-Ramp	Merge	22.1	C	23.2	C
Pioneer Boulevard Loop On-Ramp	Merge	22.3	C	24.7	C
Studebaker Road Off-Ramp	Diverge	25.6	C	29.0	D
I-605 NB On-Ramp	Merge	20.3	C	29.4	D

Source: Intueor Consulting, Inc. (2017).
I-605 = Interstate 605 NB = northbound SR-91 = State Route 91
LOS = level of service pc/mi/ln = passenger cars per mile per lane

Table 2.5.4 Year 2016 Existing Conditions Freeway Mainline Level of Service Analysis – Speed Method

Segment Location	AM Peak Hour		PM Peak Hour	
	Average Speed (mph)	LOS	Average Speed (mph)	LOS
Westbound SR-91				
Carmenita Road Off-Ramp to 183rd Street On-Ramp	40.0	D	30.0	**E**
183rd Street On-Ramp to Artesia Boulevard Off-Ramp	29.0	**F**	27.0	**F**
Artesia Boulevard Off-Ramp to Artesia Boulevard On-Ramp	25.0	**F**	22.0	**F**
Artesia Boulevard On-Ramp to Bloomfield Avenue On-Ramp	22.0	**F**	21.0	**F**
Bloomfield Avenue On-Ramp to Norwalk Boulevard Off-Ramp	20.0	**F**	22.0	**F**
Norwalk Boulevard Off-Ramp to Norwalk Boulevard Loop On-Ramp	28.0	**F**	32.0	**E**
Norwalk Boulevard Direct On-Ramp to Pioneer Boulevard Off-Ramp	39.0	D	41.0	D
Pioneer Boulevard Off-Ramp to Pioneer Boulevard Loop On-Ramp	33.0	**E**	37.0	D
Pioneer Boulevard Loop On-Ramp to Pioneer Boulevard Direct On-Ramp	37.0	D	46.0	C
Pioneer Boulevard Direct On-Ramp to I-605 Off-Ramp (NB & SB)	44.0	D	47.0	C
Northbound I-605				
SR-91 WB On-Ramp to Alondra Boulevard Off-Ramp	32.0	**E**	40.0	D

Source: Cambridge Systematics, Inc. (2017).
Note: Shaded cells indicate unsatisfactory LOS levels (i.e., LOS E or F).
I-605 = Interstate 605
LOS = level of service
mph = miles per hour
NB = northbound
SB = southbound
SR-91 = State Route 91
WB = westbound

Table 2.5.5 Year 2016 Existing Conditions Intersection Level of Service Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Westbound SR-91				
WB SR-91 Off-Ramp/Artesia Boulevard	22.5	C	19.0	B
Bloomfield Avenue/WB SR-91 On-Ramp	10.5	B	8.4	A
Norwalk Boulevard/WB SR-91 Off-Ramp	9.9	A	6.9	A
Pioneer Boulevard/WB SR-91 Off-Ramp	7.2	A	6.4	A
Studebaker Road/WB SR-91 Off-Ramp	16.5	B	8.3	A
Northbound I-605				
NB I-605 Off-Ramp/Alondra Boulevard	25.1	C	38.9	D

Source: Intueor Consulting, Inc. (2017).
I-605 = Interstate 605
LOS = level of service
NB = northbound
sec/veh = seconds per vehicle
SR-91 = State Route 91
WB = westbound

Table 2.5.6 Freeway Mainline Level of Service Analysis – Year 2016 Existing Conditions vs. Year 2024 Opening Year

Segment Location	AM Peak-Hour LOS						PM Peak-Hour LOS					
	2016 Existing Conditions	2024 No Build	2024 Build	2024 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option	2016 Existing Conditions	2024 No Build	2024 Build	2024 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option
Westbound SR-91												
Carmenita Road Off-Ramp to 183rd Street On-Ramp	C	C	C	C	C	C	C	C	D	D	D	D
Artesia Boulevard Off-Ramp to Artesia Boulevard On-Ramp	C	C	C	C	C	C	C	C	D	D	D	D
Artesia Boulevard On-Ramp to Bloomfield Avenue On-Ramp	C	C	C	C	C	C	D	D	C	C	C	C
Norwalk Boulevard Off-Ramp to Norwalk Boulevard Loop On-Ramp	C	C	C	C	C	C	D	D	C	–	C	C
Norwalk Boulevard Loop On-Ramp to Norwalk Boulevard Direct On-Ramp	D	D	–	–	–	–	D	D	–	–	–	–
Norwalk Boulevard Off-Ramp to Norwalk Boulevard Direct On-Ramp	–	–	–	-	–	–	–	–	–	C	–	–
Pioneer Boulevard Off-Ramp to Pioneer Boulevard Loop On-Ramp	D	D	C	C	C	C	D	D	D	–	D	D
Pioneer Boulevard Loop On-Ramp to Pioneer Boulevard Direct On-Ramp	D	D	–	–	C	–	D	D	–	–	D	–
Pioneer Boulevard Off-Ramp to Pioneer Boulevard Direct On-Ramp	–	–	–	-	–	–	–	–	–	D	–	–
I-605 Off-Ramp (NB & SB) to Studebaker Road Off-Ramp	C	C	C	C	C	C	D	D	C	C	C	C
Studebaker Road Off-Ramp to Lane Drop	–	–	B	B	B	B	–	–	C	C	C	C
Studebaker Road Off-Ramp to I-605 NB/WB SR-91 Loop On-Ramp	C	C	–	–	–	–	C	C	–	–	–	–
Lane Drop to I-605 NB On-Ramp	–	–	C	C	C	C	–	–	D	D	D	D
I-605 NB/WB SR-91 Loop On-Ramp to I-605 SB/WB SR-91 On-Ramp	C	C	C	C	C	C	C	C	D	D	D	D

Source: Intueor Consulting, Inc. (2017).
I-605 = Interstate 605 LOS = level of service NB = northbound SB = southbound SR-91 = State Route 91 WB = westbound

Table 2.5.7 Freeway Weaving Analysis – Year 2016 Existing Conditions vs. Year 2024 Opening Year

Segment Location	AM Peak-Hour LOS						PM Peak-Hour LOS					
	2016 Existing Conditions	2024 No Build	2024 Build	2024 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option	2016 Existing Conditions	2024 No Build	2024 Build	2024 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option
Westbound SR-91												
183rd Street On-Ramp to Artesia Boulevard Off-Ramp	C	C	D	D	D	D	C	C	D	D	D	D
Bloomfield Avenue On-Ramp to Norwalk Boulevard Off-Ramp	D	D	C	C	C	C	D	D	D	D	D	D
Norwalk Boulevard Direct On-Ramp to Pioneer Boulevard Off-Ramp	D	D	D	D	D	D	D	D	D	D	D	D
Pioneer Boulevard Direct On-Ramp to I-605 Off-Ramp (NB & SB)	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
Northbound I-605												
SR-91 WB On-Ramp to Alondra Boulevard Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**

Source: Intueor Consulting, Inc. (2017).
Note: Shaded cells indicate unsatisfactory LOS levels (i.e., LOS E or F).
I-605 = Interstate 605 LOS = level of service NB = northbound SB = southbound SR-91 = State Route 91 WB = westbound

Table 2.5.8 Freeway Merge and Diverge Analysis – Year 2016 Existing Conditions vs. Year 2024 Opening Year

Junction	Merge/Diverge	AM Peak-Hour LOS						PM Peak-Hour LOS					
		2016 Existing Conditions	2024 No Build	2024 Build	2024 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option	2016 Existing Conditions	2024 No Build	2024 Build	2024 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option
Westbound SR-91													
Artesia Boulevard On-Ramp	Merge	C	C	C	C	C	C	C	C	D	D	D	D
Norwalk Boulevard Loop On-Ramp	Merge	C	C	–	–	–	–	C	C	–	–	–	–
Pioneer Boulevard Loop On-Ramp	Merge	C	C	–	–	C	–	C	C	–	–	C	–
Studebaker Road Off-Ramp	Diverge	C	C	C	C	C	C	D	D	C	C	C	C
I-605 NB On-Ramp	Merge	C	C	C	C	C	C	D	D	D	D	D	D

Source: Intueor Consulting, Inc. (2017).
I-605 = Interstate 605 LOS = level of service NB = northbound SR-91 = State Route 91

Table 2.5.9 Intersection Level of Service Analysis – Year 2016 Existing Conditions vs. Year 2024 Opening Year

Junction	AM Peak-Hour LOS						PM Peak-Hour LOS					
	2016 Existing Conditions	2024 No Build	2024 Build	2024 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option	2016 Existing Conditions	2024 No Build	2024 Build	2024 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option
Westbound SR-91												
WB SR-91 Off-Ramp/Artesia Boulevard	C	B	B	B	B	B	B	B	B	B	B	B
Bloomfield Avenue/WB SR-91 On-Ramp	B	B	B	B	B	B	B	B	B	B	B	B
Norwalk Boulevard/WB SR-91 Off-Ramp	A	A	–	–	–	–	A	A	–	–	–	–
Norwalk Boulevard/WB SR-91 On-Off Ramp	–	–	C	A	C	C	–	–	B	A	B	B
Pioneer Boulevard/WB SR-91 Off-Ramp	A	A	–	–	–	–	A	A	–	–	–	–
Pioneer Boulevard/WB SR-91 On-Off Ramp	–	–	C	B	B	C	–	–	C	A	B	C
Studebaker Road/WB SR-91 Off-Ramp	B	B	C	C	C	C	A	A	B	B	B	B
Northbound I-605												
NB I-605 Off-Ramp/Alondra Boulevard	C	C	C	C	C	C	D	C	C	C	C	C

Source: Intueor Consulting, Inc. (2017).
I-605 = Interstate 605
LOS = level of service
NB = northbound
SR-91 = State Route 91
WB = westbound

Table 2.5.10 Freeway Mainline Level of Service Analysis – Year 2016 Existing Conditions vs. Year 2044 Horizon Year

Segment Location	AM Peak-Hour LOS						PM Peak-Hour LOS					
	2016 Existing Conditions	2044 No Build	2044 Build	2044 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option	2016 Existing Conditions	2044 No-Build	2044 Build	2044 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option
Westbound SR-91												
Carmenita Road Off-Ramp to 183rd Street On-Ramp	C	C	C	C	C	C	C	C	D	D	D	D
Artesia Boulevard Off-Ramp to Artesia Boulevard On-Ramp	C	C	C	C	C	C	C	C	D	D	D	D
Artesia Boulevard On-Ramp to Bloomfield Avenue On-Ramp	C	C	C	C	C	C	D	D	C	C	C	C
Norwalk Boulevard Off-Ramp to Norwalk Boulevard Loop On-Ramp	C	D	C	–	C	C	D	D	D	–	D	D
Norwalk Boulevard Loop On-Ramp to Norwalk Boulevard Direct On-Ramp	D	D	–	–	–	–	D	D	–	–	–	–
Norwalk Boulevard Off-Ramp to Norwalk Boulevard Direct On-Ramp	–	–	–	C	–	–	–	–	–	D	–	–
Pioneer Boulevard Off-Ramp to Pioneer Boulevard Loop On-Ramp	D	D	C	–	C	C	D	D		–	D	D
Pioneer Boulevard Loop On-Ramp to Pioneer Boulevard Direct On-Ramp	D	D	–	–	D	–	D	D	–	–	D	–
Pioneer Boulevard Off-Ramp to Pioneer Boulevard Direct On-Ramp	–	–	–	C	–	–	–	–	–	D	–	–
I-605 Off-Ramp (NB & SB) to Studebaker Road Off-Ramp	C	C	C	C	C	C	D	D	C	C	C	C
Studebaker Road Off-Ramp to Lane Drop	–	–	C	C	C	C	–	–	C	C	C	C
Studebaker Road Off-Ramp to I-605 NB/WB SR-91 Loop On-Ramp	C	C	–	–	–	–	C	C	–	D	–	–
Lane Drop to I-605 NB On-Ramp	–	–	C	C	C	C	–	–	D	D	D	D
I-605 NB/WB SR-91 Loop On-Ramp to I-605 SB/WB SR-91 On-Ramp	C	C	C	C	C	C	C	C	D	D	D	D

Source: Intueor Consulting, Inc. (2017).
I-605 = Interstate 605
LOS = level of service
NB = northbound
SB = southbound
SR-91 = State Route 91
WB = westbound

Table 2.5.11 Freeway Weaving Analysis – Year 2016 Existing Conditions vs. Year 2044 Horizon Year

Segment Location	AM Peak-Hour LOS						PM Peak-Hour LOS					
	2016 Existing Conditions	2044 No Build	2044 Build	2044 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option	2016 Existing Conditions	2044 No Build	2044 Build	2044 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option
Westbound SR-91												
183rd Street On-Ramp to Artesia Boulevard Off-Ramp	C	C	D	D	D	D	C	D	D	D	D	D
Bloomfield Avenue On-Ramp to Norwalk Boulevard Off-Ramp	C	D	C	C	C	C	D	D	D	D	D	D
Norwalk Boulevard Direct On-Ramp to Pioneer Boulevard Off-Ramp	D	D	D	D	D	D	D	D	D	D	D	D
Pioneer Boulevard Direct On-Ramp to I-605 Off-Ramp (NB & SB)	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
Northbound I-605												
SR-91 WB On-Ramp to Alondra Boulevard Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**

Source: Intueor Consulting, Inc. (2017).
Note: Shaded cells indicate unsatisfactory LOS levels (i.e., LOS E or F).
I-605 = Interstate 605 SB = southbound
LOS = level of service SR-91 = State Route 91
NB = northbound WB = westbound

Table 2.5.12 Freeway Merge and Diverge Analysis – Year 2016 Existing Conditions vs. Year 2044 Horizon Year

Junction	Merge/Diverge	AM Peak-Hour LOS						PM Peak-Hour LOS					
		2016 Existing Conditions	2044 No Build	2044 Build	2044 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option	2016 Existing Conditions	2044 No Build	2044 Build	2044 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option
Westbound SR-91													
Artesia Boulevard On-Ramp	Merge	C	C	C	C	C	C	C	C	D	D	D	D
Norwalk Boulevard Loop On-Ramp	Merge	C	C	–	–	–	–	C	C	–	–	–	–
Pioneer Boulevard Loop On-Ramp	Merge	C	C	–	–	C	–	C	C	–	–	C	–
Studebaker Road Off-Ramp	Diverge	C	C	C	C	C	C	D	D	C	C	C	C
I-605 NB On-Ramp	Merge	C	C	C	C	C	C	D	D	D	D	D	D

Source: Intueor Consulting, Inc. (2017).
I-605 = Interstate 605 NB = northbound
LOS = level of service SR-91 = State Route 91

Table 2.5.13 Intersection Level of Service Analysis – Year 2016 Existing Conditions vs. Year 2044 Horizon Year

Junction	AM Peak-Hour LOS						PM Peak-Hour LOS					
	2016 Existing Conditions	2044 No Build	2044 Build	2044 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option	2016 Existing Conditions	2044 No Build	2044 Build	2044 Diamond Ramps Design Option	2024 Pioneer Blvd L-9 Design Option	2024 Pioneer Blvd WB Ramps/ 168th Alignment Design Option
Westbound SR-91												
WB SR-91 Off-Ramp/Artesia Boulevard	C	B	B	B	B	B	B	B	B	B	B	B
Bloomfield Avenue/WB SR-91 On-Ramp	B	B	B	B	B	B	B	B	B	B	B	B
Norwalk Boulevard/WB SR-91 Off-Ramp	A	A	–	–	–	–	A	A	–	–	–	–
Norwalk Boulevard/WB SR-91 On-Off Ramp	–	–	C	B	C	C	–	–	B	A	B	B
Pioneer Boulevard/WB SR-91 Off-Ramp	A	A	–	–	–	–	A	A	–	–	–	–
Pioneer Boulevard/WB SR-91 On-Off Ramp	–	–	C	B	B	C	–	–	C	B	B	C
Studebaker Road/WB SR-91 Off-Ramp	B	B	C	C	C	C	A	A	B	B	B	B
Northbound I-605												
NB I-605 Off-Ramp/Alondra Boulevard	C	C	C	C	C	C	D	C	C	C	C	C

Source: Intueor Consulting, Inc. (2017).
I-605 = Interstate 605 SR-91 = State Route 91
LOS = level of service WB = westbound
NB = northbound

This page intentionally left blank

2.6 Visual/Aesthetics

2.6.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, 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 United States Code [USC] 4331[b][2]). To further emphasize this point, 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 taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

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" (CA Public Resources Code [PRC] Section 21001[b]).

2.6.2 Affected Environment

The information in this section is based on the *Visual Impact Assessment* (VIA) (2018) and the General Plans of the Cities of Artesia and Cerritos. The VIA follows the recommended methodology in the publication *Visual Impact Assessment for Highway Projects* (FHWA 2015).

2.6.2.1 Visual Setting

The proposed project is located on State Route 91 (SR-91) between Shoemaker Avenue and the Interstate 605 (I-605) interchange, and on northbound I-605 at the Alondra Boulevard off-ramp in the cities of Artesia and Cerritos, Los Angeles County, California. The project is located in the central portion of the Los Angeles Basin in Southern California, approximately 8.5 miles (mi) north of the Pacific Ocean. The landscape is characterized by developed land and an extensive transportation network. The land uses within the corridor are primarily urban residential and transportation uses, but also include areas of commercial and recreational uses.

The study area is on a lowland coastal plain which slopes gradually southward and westward toward the Pacific Ocean. It is a relatively flat alluvial plain with ground surface elevations along the corridor ranging from approximately 52 feet (ft) above mean sea level (amsl) near Shoemaker Avenue to approximately 70 ft amsl at the

SR-91 and I-605 interchange. The study area is urban in character. There are no distinct natural open spaces or natural features commonly found in designated scenic highways, such as undulating landforms or immediate open views of lakes, mountains, or preserved vegetation. As a result, existing views within and surrounding the study area are limited.

No scenic resources have been identified for this project, and no scenic corridors or designated scenic highways (specifically, SR-91) are located within the study area.

The City of Artesia General Plan (as amended in 2008) Circulation Element includes the following policies to enhance aesthetics and imagery of the city of Artesia's circulation network that are relevant to the proposed project:

Community Policy CIR 2.1: Provide landscaped medians and greenbelts along major arterials, highways, and freeways where economically feasible.

Policy Action CIR 2.1.4: Work with Caltrans to ensure that sound walls along State facilities are landscaped and maintained with plant materials.

Policy Action CIR 2.1.5: Maintain and replace street trees as needed to achieve their aesthetic purpose and avoid damage to streets and sidewalks.

The City of Cerritos General Plan's (2004) Land Use Element, Community Design Element, and Conservation Element include the following policies to protect visual resources that are relevant to the proposed project:

Policy LU-16.1: Work with Caltrans to provide and maintain an attractive freeway environment in Cerritos, including access ramps and freeway interchanges.

Policy CD-1.1: Develop a comprehensive gateway improvement program to select significant gateways along major arterials for improvements including monument-type "City of Cerritos" identification signs, special enhanced landscaping and paving, public art and unique private development standards.

Policy CD-1.2: Cooperate with Caltrans to improve freeway landscaping, especially at the on- and off-ramps and at the I-605/SR-91 interchange.

Policy CON-6.1: Enforce the City's Tree Preservation Ordinance in order to preserve the City's existing urban forest.

In addition to the policies listed above, the City of Cerritos has a tree protection ordinance as part of its municipal code. Sections 9.75.190 (City Tree Removal) and 9.75.200 (Protection of City Trees) of the Cerritos Municipal Code require all tree removal and tree protection activities to be conducted in compliance with City of Cerritos standards. Cerritos Municipal Code Sections 9.75.190 and 9.75.200 respectively prohibit the removal of City trees unless authorized by the City of Cerritos and require City tree removal activity to be conducted by City of Cerritos personnel. In addition, Cerritos Municipal Code Section 9.75.200 requires all City trees, shrubs, or plants in the construction vicinity to be properly handled and supported to prevent injury to the tree.

2.6.2.2 Visual Assessment Unit

The project corridor can be treated as a single landscape unit due to the lack of off-site views (variation in land form and land cover) and homogenous nature character of the project area at the SR-91/I-605 interchange and as SR-91 traverses through the landscape. Although there are multiple land uses within the Visual Assessment Unit (VAU), all are within similar proximity to the project limits and have similar views to the project site. Figure 2.6-1 depicts the project limits of the Build Alternative and the associated key views used to assess potential visual impacts as a result of project implementation. The characteristics of the landscape unit identified are consistent throughout the project limits, comprised primarily of a built environment, such as commercial, industrial, residential, parks, and highway components. Though the built environment is complemented with other features, such as landscaping, to soften the appearance of structures, reduce scale, and provide needed visual diversity to all general viewer groups, there are no outstanding off-site features closely oriented to the project limits of the Build Alternative. The following single VAU has been identified.

This page intentionally left blank

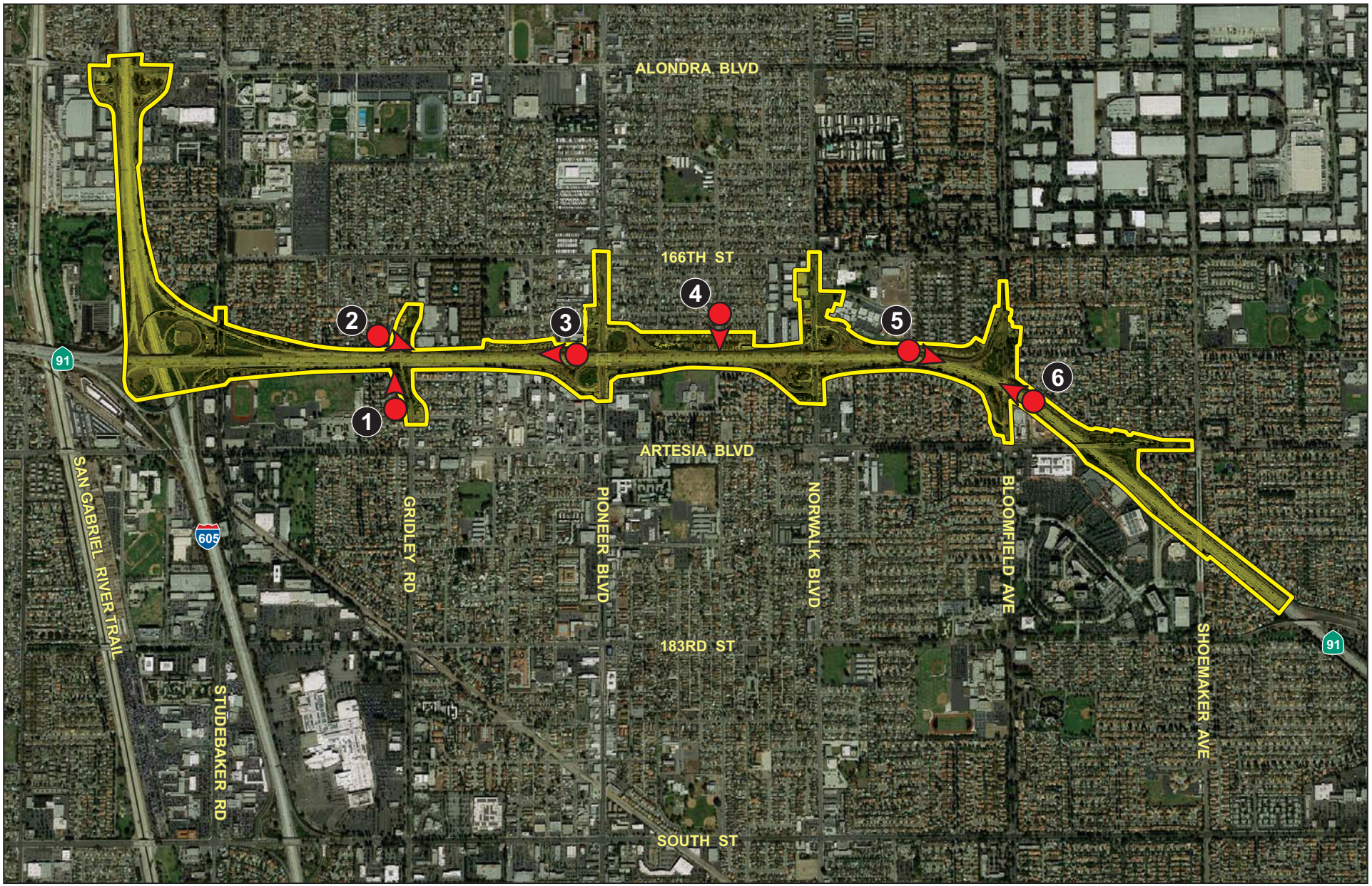


FIGURE 2.6-1

SOURCE: Google Earth

I:\RBF1601\G\VIA\Key View Locations.cdr (1/26/2018)

Westbound SR-91 Improvement Project

Project Limits and Key View Locations

This page intentionally left blank

Visual Assessment Unit 1

Visual Assessment Unit 1 (VAU1) is located in the northern portion of the city of Artesia and in the eastern and western portions of the city of Cerritos. VAU1 is located within a highly developed area and is surrounded by residential, commercial, recreational, and institutional uses to the north; residential uses to the east; residential, commercial, institutional, light industrial, and transportation (I-605) uses to the south; and residential, commercial, recreational, and light industrial uses to the west of VAU1. The landscape in VAU1 is generally characterized by surrounding urban development, transportation uses, and other man-made features. Background views of the Angeles National Forest hillsides and ridgelines to the north are afforded throughout VAU1. The relatively flat topography of VAU1 provides for visually uniform views for viewers within the study area. Vegetation within VAU1 generally consists of ornamental landscaping, consisting primarily of hottentot-fig (*Carpobrotus edulis*), as well as mature pine (*Pinus* sp.) and eucalyptus (*Eucalyptus* sp.) trees.

2.6.2.3 Key Views

Because it is not feasible to analyze all the views in which the Build Alternative would be seen, it is necessary to select a number of key views associated with VAU1 that would most clearly demonstrate the change in the project's visual resources. Key views also represent the viewer groups that have the highest potential to be affected by the Build Alternative, considering visual exposure and visual sensitivity.

The location and direction of each key view is shown on Figure 2.6-1. Descriptions of the existing key views with further details are provided below and on Figures 2.6-2 through 2.6-7.

Key View 1

Key View 1 is located in the western portion of VAU1 on the south side of SR-91 at Ecology Park in the city of Cerritos. Key View 1 represents a typical northern view as viewed by Ecology Park visitors. Key View 1 provides a view of the Gridley Road/SR-91 overcrossing structure.

This page intentionally left blank

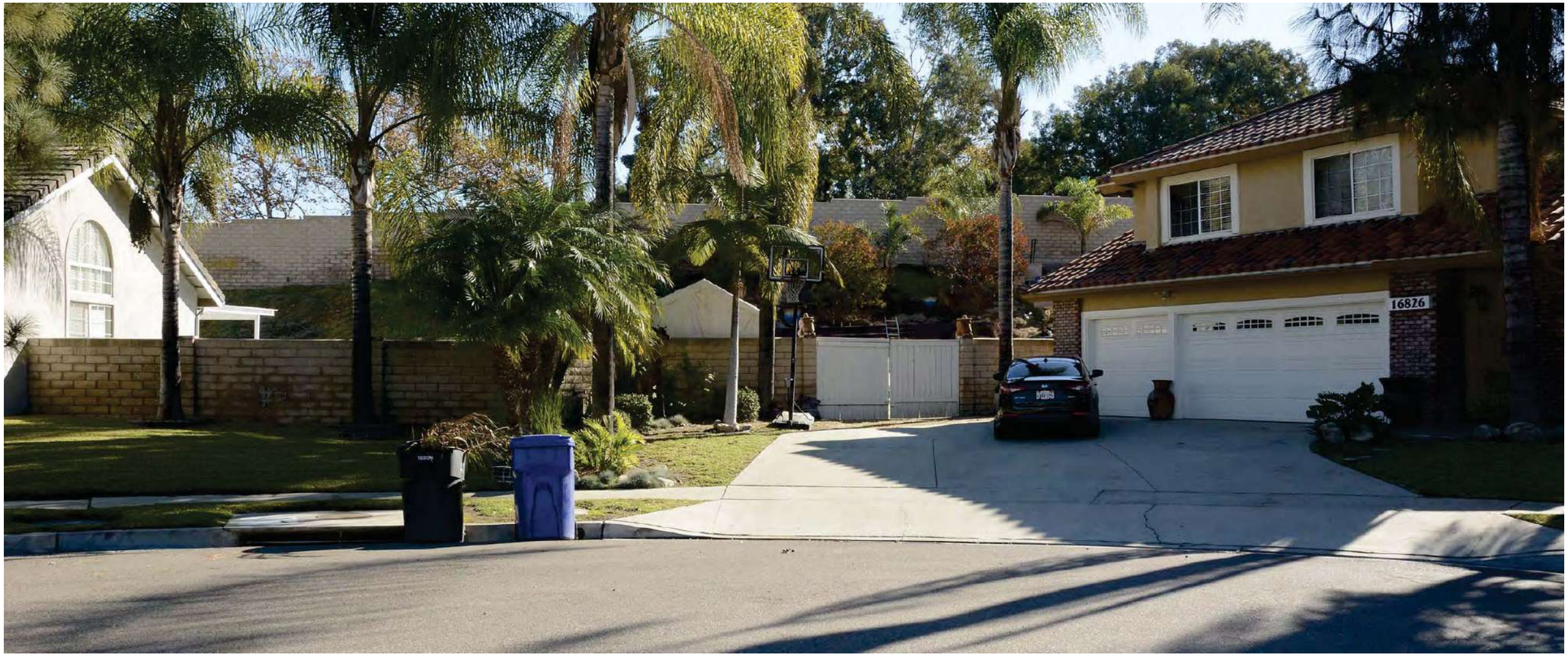
Direction of Photo
Key View Location
1 Key View Number

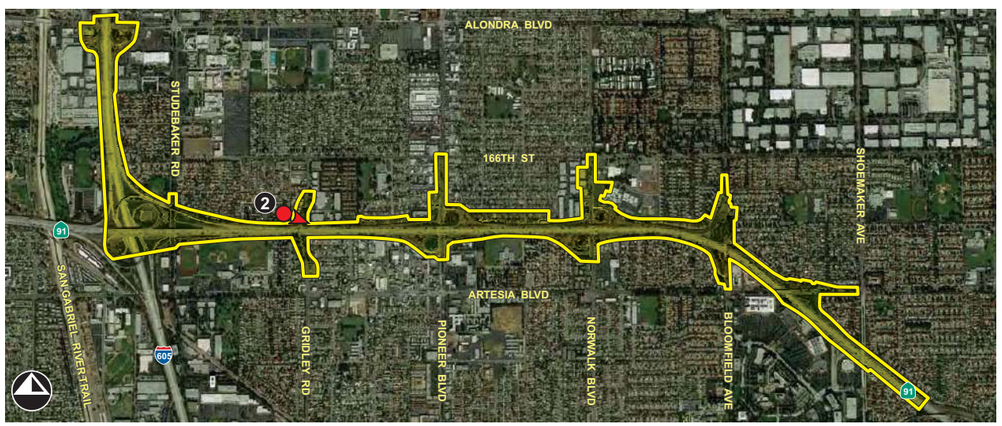
FIGURE 2.6-2

Westbound SR-91 Improvement Project
Key View 1 - Existing Condition

I:\RBF1601\G\VIA\Key View 1-Existing.cdr (1/26/2018)

This page intentionally left blank





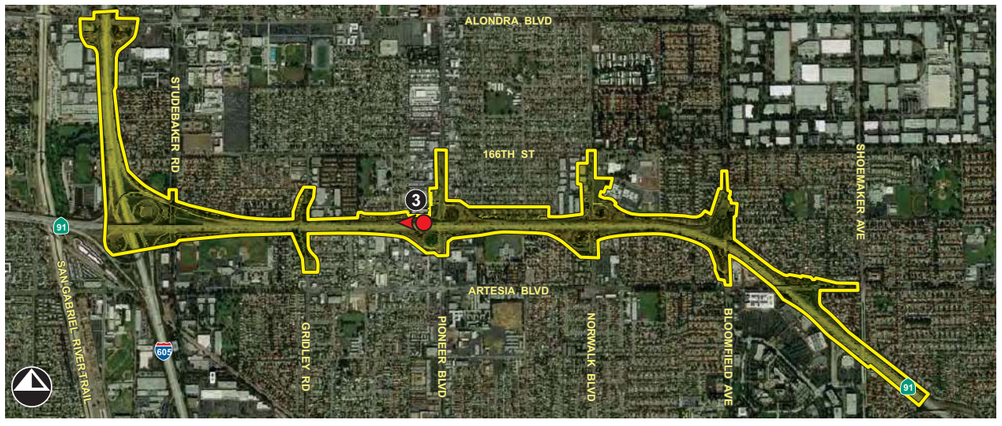
Direction of Photo
Key View Location
1 Key View Number

FIGURE 2.6-3

Westbound SR-91 Improvement Project
Key View 2 - Existing Condition

I:\RBF1601\G\VIA\Key View 2-Existing.cdr (1/26/2018)

This page intentionally left blank



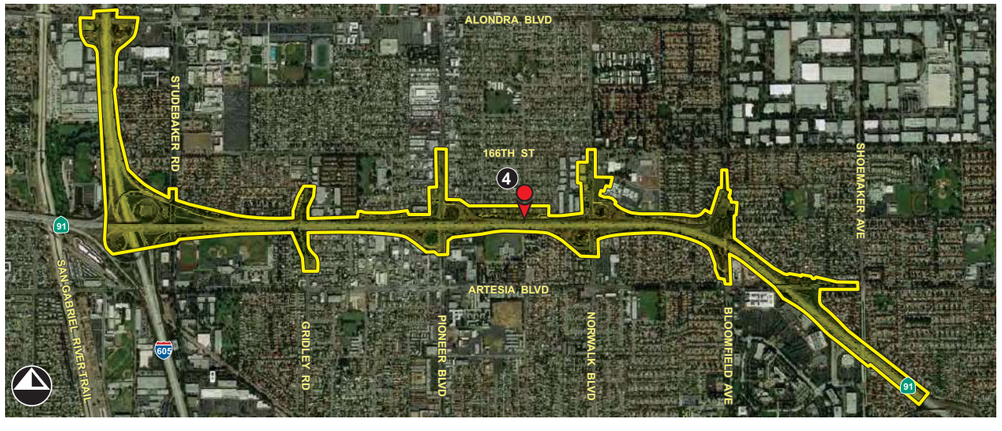
Direction of Photo
Key View Location
1 Key View Number

FIGURE 2.6-4

Westbound SR-91 Improvement Project
Key View 3 - Existing Condition

I:\RBF1601\G\VIA\Key View 3-Existing.cdr (1/26/2018)

This page intentionally left blank



▲ Direction of Photo
● Key View Location
❶ Key View Number

FIGURE 2.6-5

Westbound SR-91 Improvement Project
Key View 4 - Existing Condition

I:\RBF1601\G\VIA\Key View 4-Existing.cdr (1/26/2018)

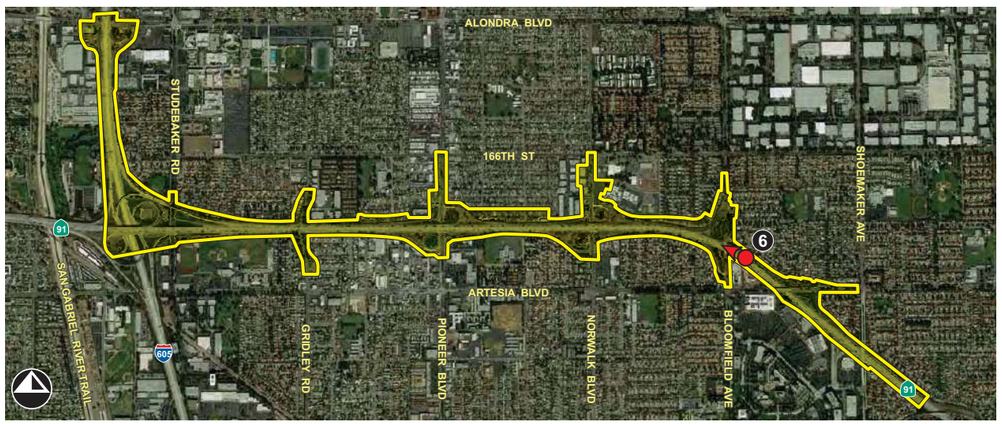
This page intentionally left blank

Direction of Photo
Key View Location
1 Key View Number

FIGURE 2.6-6

Westbound SR-91 Improvement Project
Key View 5 - Existing Condition

This page intentionally left blank



Direction of Photo
Key View Location
1 Key View Number

FIGURE 2.6-7

Westbound SR-91 Improvement Project
Key View 6 - Existing Condition

This page intentionally left blank

Key View 2

Key View 2 is located in the western portion of VAU1 on the north side of SR-91 along Sunny Ridge Court in the city of Cerritos. Key View 2 represents a typical eastern view from residential uses along Sunny Ridge Court. Key View 2 provides a view of the Gridley Road/SR-91 overcrossing structure as seen from residential uses along Sunny Ridge Court.

Key View 3

Key View 3 is located in the central portion of VAU1 along the westbound lanes of SR-91 in the city of Artesia. Key View 3 represents a typical view from westbound SR-91 motorists.

Key View 4

Key View 4 is located in the central portion of VAU1 on the north side of SR-91 along Elaine Avenue in the city of Artesia. Key View 4 represents a typical southern view from residential uses, motorists, bicyclists, and pedestrians along Elaine Avenue.

Key View 5

Key View 5 is located in the eastern portion of VAU1 near the southern boundary of the Cerritos Villas residential community in the city of Cerritos. Key View 5 represents an eastern view from residential uses bordering SR-91 at the Cerritos Villas residential community.

Key View 6

Key View 6 is located in the eastern portion of VAU1 along the westbound lanes of SR-91 in the city of Cerritos, just east of the Bloomfield Avenue/SR-91 overcrossing structure. Key View 6 represents a typical view from westbound SR-91 motorists. Key View 6 provides a view of the Bloomfield Avenue/SR-91 overcrossing structure.

2.6.2.4 Visual Character

Visual character includes attributes such as form, line, color, texture, and is used to describe, not evaluate a key view; that is, these attributes are considered neither positive nor negative. However, a change in visual character can be evaluated in the context of the viewer response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as indicators. For this project, the following attributes were considered:

- **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

The surrounding uses include residential, commercial, recreational, institutional, and light industrial. On-site uses consist of freeway (SR-91 and I-605), local roadway crossings (Gridley Road, Pioneer Boulevard, Norwalk Boulevard, and Bloomfield Avenue), and residential and commercial areas. Existing visual resources visible within the project viewshed include the hillsides and ridgelines of the Angeles National Forest to the north of the study area. Overall, the distant views toward these hills and ridgelines provide some visual diversity in form, line, and color compared to the flat topography within VAU1. Vegetation within the area generally consists of ornamental landscaping, consisting primarily of hottentot-fig (*Carpobrotus edulis*), mature pine (*Pinus* sp.), and eucalyptus (*Eucalyptus* sp.) trees. These various vegetation types generally vary in color (brown, green, and pink) and height (from grasses/shrubs to tall standing trees).

Visual mass is dominated by buildings, bridges, walls, other freeway components, and landscaping, which all contribute to the uniformity of VAU1's visual character. The existing alignment of SR-91 is very linear from a bird's eye view and the same is true from a motorist's perspective. The only occurrence in which SR-91 may slightly deviate from this linearity is at the ramps and connectors. The walls, buildings, and other freeway components that protrude perpendicularly from the ground are also linear and angular and bound the edges of the freeway.

Since VAU1 is situated in an urbanized environment, viewer groups are exposed to artificial light at night. During the day, motorists are exposed to glare from reflective surfaces, such as windows and metallic details on cars travelling on the roadway.

The existing textural pattern of VAU1 has typical characteristics of an urban environment. Concrete and vegetation are the primary visual surface treatments used throughout VAU1.

2.6.2.5 Visual Quality

Visual quality is evaluated by identifying the vividness, intactness, and unity present within VAU1. Public attitudes validate the assessed level of quality and predict how changes within VAU1 can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur as a result of the Build Alternative. The three criteria for evaluating visual quality are defined below:

- Vividness is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- Intactness is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- Unity is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

Due to the developed nature and relatively flat topography of VAU1, the vividness in VAU1 is low. The only visual resource within VAU1 is the Angeles National Forest, approximately 25 mi to the north. However, due to the developed nature of the study area and visual obstructions (noise barriers, freeway signage, power lines, etc.), the intactness of northerly views to the Angeles National Forest is low. VAU1 is fairly unified, as a combination of low-lying development (one to two stories in height) and the horizontal alignment of the freeway creates a sense of linear form. The existing visual quality of VAU1 can be considered as low.

2.6.2.6 Viewer Groups

The population affected by the Build Alternative is composed of viewers. Viewers are people whose views of the landscape may be altered by the Build Alternative—either because the landscape itself has changed or their perception of the landscape has changed.

There are two major types of viewer groups for highway projects: highway neighbors (views to the project area) and highway users (views from the project area). Highway neighbors are people who have daily or routine views of the road. For this project, the following highway neighbors were considered:

- Residential neighbors
- Commercial and light industrial neighbors
- Recreational neighbors
- Institutional neighbors

Highway users are people who have daily or routine views from the road. For this project, the following highway users were considered:

- Freeway motorist users
- Local roadway users

2.6.2.7 Viewer Response

Viewer response is a measure or prediction of the viewer's reaction to changes in the visual environment. Each viewer group has its own particular level of viewer exposure and viewer sensitivity, resulting in distinct and predictable visual concerns for each group, which, in turn, help to predict the group's responses to visual changes.

Viewer Exposure

Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration. Location relates to the position of the viewer in relationship to the object being viewed. The nearer viewers are to the object, the greater the exposure. Quantity refers to how many people see the object. The more people who can see an object or the greater frequency at which an object is seen, the greater its exposure to viewers. Duration refers to how long a viewer is able to keep an object in view. The longer an object can be kept in view, the greater the exposure. High viewer exposure helps predict viewers that could have a response to a visual change.

- **Residential Viewers:** Several residential uses to the north and south of SR-91 in the study area have direct views of the project limits. These residents would have direct, long-duration views to project changes and would likely have a high concern for the Build Alternative and its effect on views from their homes and neighborhood.
- **Commercial and Light Industrial Viewers:** Views of the project limits are afforded from light industrial uses located to the northeast of the Gridley Road overcrossing structure of SR-91 and northwest of the SR-91/Norwalk Boulevard interchange; commercial uses are positioned to the northwest of the SR-91/ Pioneer Boulevard interchange, northwest of the SR-91/Norwalk Boulevard interchange, and at the intersection of Bloomfield Avenue and Artesia Boulevard. These uses attract hundreds of visitors daily. Viewers include employees and customers walking to and from the parking lot to the commercial and light industrial buildings. These users would have direct views of the project limits. However, the duration of views from these users are considered to be short, as

commercial and light industrial patrons are not typically visually engaged in their surroundings. These users are usually more focused on getting to and from their destination.

- **Recreational Viewers:** Ecology Park, Reservoir Hill Park, and A.J. Padelford Park adjoin SR-91 to the south, north, and north, respectively. These parks serve the local communities (the cities of Cerritos and Artesia), and contain areas for barbecuing, picnic tables, children's playgrounds, basketball courts, and bathrooms. Visitors at these recreational park facilities would have direct views of the project limits. The duration of views from recreational park visitors would be short to moderate.
- **Institutional Viewers:** Gahr High School is located to the south of SR-91 (between Studebaker Road and Gridley Road), and Tracy High School is located to the northeast of the SR-91/Norwalk Boulevard interchange. Employees and students at Gahr High School and Tracy High School would have recurrent views of the project limits, as these viewers visit their respective schools on a daily basis (typically Monday through Friday). Although most of their time is spent inside, employees and students at Gahr High School and Tracy High School have recurring, long-duration views of the project limits.
- **Freeway Motorist Viewers:** As noted above, SR-91 provides commuters, haulers, and local residents several connections to the Greater Los Angeles metropolitan area. This viewer group is composed of a large quantity of viewers, as existing average daily traffic (ADT) volumes along SR-91 in the study area range between approximately 255,000 and 288,000 vehicles.[1] Daily commuters may have an increased awareness of views from the road due to the amount of time spent on the freeway (near the project area) each day. Drivers traveling in congested traffic conditions would likely perceive detailed views of the project elements for longer durations of time. Drivers traveling at normal freeway speeds usually focus attention on long-range non-peripheral views and would have short durations of views to project elements.
- **Local Roadway Viewers:** Local roadways in the study area with views of the project limits include Studebaker Road, Gridley Road, Pioneer Boulevard, Elaine Avenue, Norwalk Boulevard, Bloomfield Avenue, and Artesia Boulevard. These roadways provide direct views of the project limits from motorists, bicyclists, and pedestrians. This viewer group is composed of a low-to-medium quantity of

[1] California Department of Transportation (Caltrans). Traffic Counts. Website: http://traffic-counts.dot.ca.gov/ (accessed January 4, 2018).

viewers, as ADT volumes range from a low of 7,900 along Gridley Road to 53,000 along Bloomfield Avenue (in the study area).[1,2] Drivers traveling along these roadways would likely have detailed views of the project elements for short durations of time. As such, local roadway travelers would have an increased awareness of views to the project changes.

Viewer Sensitivity

Viewer sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes: activity, awareness, and local values. Activity relates to the preoccupation of viewers—whether they are preoccupied, thinking of something else, or truly engaged in observing their surroundings. The more viewers actually observe their surroundings, the more sensitivity they will have for changes to those visual resources. Awareness relates to the focus of the view—whether the focus is wide and the view general or whether the focus is narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change. Local values and attitudes can also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by a local, State, or national designation, it is likely that viewers will be more sensitive to visible changes to that resource. High viewer sensitivity helps predict viewers that could have a high concern for any visual change.

- **Residential Viewers:** Residential viewers are usually attentive of their surrounding visual environment. Residential viewers along Baber Avenue, Sunny Ridge Court, Elaine Avenue, 169th Street, Palm Street, Sierra Vista Way, as well as those to the southeast of the SR-91/Bloomfield Avenue interchange and to the north and south of Artesia Boulevard, are considered to be highly aware of change due to their awareness and local values. In general, the awareness of residential viewers in the study area is characterized by a narrow focus of their immediate surroundings in the project area. However, more wide-ranging views with a broad focus of the surrounding area are afforded at the upper levels of the residential uses located to the southeast of the SR-91/Bloomfield Avenue interchange. Based on the City of Artesia General Plan and City of Cerritos General Plan, community residents are concerned with the visual character and quality of their

1 City of Cerritos. 2004. *City of Cerritos General Plan.* Adopted January 2004.

2 City of Artesia. 2010. City of Artesia General Plan 2030 Environmental Impact Report. July.

neighborhoods and surroundings. Viewer sensitivity for residential viewers is considered high.

- **Commercial and Light Industrial Viewers:** Employees and customers at commercial and light industrial uses are typically preoccupied (e.g., at work, in the store, etc.), and are not engaged in the surrounding outdoor visual environment. These viewers naturally have a narrow focus and a specific viewshed. As such, commercial and light industrial viewers in the study area are considered to have a generally low concern for visual change and viewer sensitivity for commercial and light industrial users is considered low.
- **Recreational Viewers:** Park visitors at Ecology Park, Reservoir Hill Park, and A.J. Padelford Park are expected to be engaged in active (playing sports, etc.) or passive (picnicking, barbecuing, etc.) recreational activities. As such, the focus and viewshed of these viewers are considered to be narrow or wide-ranging depending on the activity. Therefore, visitors at recreational uses in the study area would be cognizant of visual changes associated with the Build Alternative. Viewer sensitivity for recreational viewers is considered moderate.
- **Institutional Viewers:** Employees and students at Gahr High School and Tracy High School spend most of their time inside of school buildings and are preoccupied with their schoolwork. However, students and teachers also engage in physical education and sports activities at their respective school sites. As such, the focus and viewshed of these viewers can be narrow or wide-ranging depending on the activity. Viewers at these institutional uses would be aware of the visual changes from the Build Alternative. Viewer sensitivity for institutional viewers is considered moderate.
- **Freeway Motorist Viewers:** Freeway motorists are generally considered to be engaged in their surrounding visual environment, depending on speed of travel and traffic conditions. The awareness of SR-91 motorists in the study area includes a narrow focus and broad view of the surroundings. SR-91 is not designated as a State Scenic Highway by the California Department of Transportation (Caltrans) and/or in the local General Plans (i.e., of the Cities of Artesia or Cerritos). In addition, there are no designated scenic vistas or other resources located in the cities of Artesia or Cerritos. However, the Cities of Artesia and Cerritos value motorists' views along freeway corridors in the project corridor, as outlined in the City of Artesia General Plan (Community Goal CIR 2 and Policy Action 2.1.4) and the City of Cerritos General Plan (Goal LU-16, Policy LU-16.1, and Policy CD-1.2). Therefore, SR-91 motorists' views are somewhat sensitive and viewer sensitivity is considered moderate.

- **Local Roadway Viewers:** Motorists along the local roadways in the study area (i.e., Studebaker Road, Gridley Road, Pioneer Boulevard, Elaine Avenue, Norwalk Boulevard, Bloomfield Avenue, and Artesia Boulevard) are usually engaged in their visual surroundings due to a slower speed of travel (25 to 40 miles per hour [mph]). In general, the focus of views along these roadways is wide and consists of a variety of objects and elements. Although there are no City-designated scenic or visual resources in the project area, the Cities of Artesia and Cerritos value local motorists', bicyclists', and pedestrians' views within the circulation network, as outlined in the City of Artesia General Plan (Community Planning Principle CIR 2, Community Goal CIR 2, Community Policy CIR 2.1, and Policy Action 2.1.5) and the City of Cerritos General Plan (Goal LU-11, Goal LU-13, Policy CD-1.1, Goal CD-2, Goal CON-6, and Policy CON-6.1). As such, local roadway travelers are expected to be aware of visual changes from the Build Alternative and viewer sensitivity is considered moderate.

Overall Viewer Response

The narrative descriptions of viewer exposure and viewer sensitivity for each viewer group were merged to establish the overall viewer response of each group.

- **Residential Viewers:** As previously noted, residential uses have long-term, direct views of the project limits, and would likely have a high concern for visual changes from the Build Alternative. In general, these viewers are engaged in their visual environment, and have narrow to wide-ranging views of the project limits and surroundings. As such, the overall viewer response for this viewer group is high.
- **Commercial and Light Industrial Viewers:** Employees and customers at the commercial and light industrial uses in the study area would have direct views of the project limits, but are typically preoccupied and not engaged in their surrounding visual environment. These viewers have a narrow focus and specific viewshed. Therefore, the overall viewer response for this viewer group is moderate-low.
- **Recreational Viewers:** Visitors at Ecology Park, Reservoir Hill Park, and A.J. Padelford Park would have direct views of the project limits. These viewers can be visually engaged in their surrounding environment during passive recreational activities, but can also have a narrow focus and viewshed during active recreational activities. Therefore, the overall viewer response for this viewer group is moderate.

- **Institutional Viewers:** Employees and students at Gahr High School and Tracy High School would have direct views of the project limits. Although these viewers spend most of their time inside and have a narrow focus (in their classes, school work, etc.), some spend time outdoors for physical activities (physical education, sports, etc.) and are exposed to the surrounding outdoor visual environment. In addition, these viewers have generally long-term views of the project limits due to their trip frequency (to and from their schools, typically Monday through Friday), and long duration of stay (several hours daily) at the schools. As such, the overall viewer response for this viewer group is moderate.
- **Freeway Motorist Viewers:** Highway motorists would have direct and frequent views of the project limits. The viewer duration for motorists is ultimately dependent on the density of traffic (especially during peak travel periods); therefore, motorists' views can range from short to long depending on traffic conditions. As noted above, there are no designated scenic or visual resources in the study area. However, freeway motorists compose a large viewing group (approximately 255,000 to 288,000 ADT), and the General Plans for the Cities of Artesia and Cerritos contain goals and policies to enhance motorists' views from SR-91. Therefore, the overall viewer response for this viewer group is moderate.
- **Local Roadway Viewers:** Motorists, bicyclists, and pedestrians traveling along Studebaker Road, Gridley Road, Pioneer Boulevard, Elaine Avenue, Norwalk Boulevard, Bloomfield Avenue, and Artesia Boulevard are generally engaged in their visual surroundings. These viewers would have would have short, direct, and rather frequent views of the project limits. As noted above, there are no designated scenic vistas or visual resources in the project area. However, local motorists, bicyclists, and pedestrians that travel these roadways frequently would be aware of visual changes from the project. Therefore, the overall viewer response for this viewer group is moderate.

2.6.3 Environmental Consequences

2.6.3.1 Temporary Impacts

Build Alternative (including Design Options)

Construction of the Build Alternative, including design options, would result in temporary visual impacts as a result of construction activities, including removing vegetation, grading, the use of night lighting, dust control, temporary structures, hauling equipment, construction staging or laydown yards, and signs indicating traffic

detours. Even though the visual impacts from construction activities may be unavoidable to some extent to highway users and highway neighbors, avoidance and minimization would not be necessary during the construction period due to the temporary nature of these impacts. Once construction is complete, permanent highway planting and replacement planting measures would be implemented to reduce the impacts of construction. Additionally, the project would be required to comply with the Caltrans Standard Specifications for Construction, which would minimize visual impacts through the use of opaque temporary construction fencing that would be situated around construction staging areas. The Build Alternative would implement the Project Features PF-VIS-1 and PF-VIS-2 to ensure all landscaping plans and architectural treatments would be designed by the Caltrans District Landscape Architect in cooperation with the Cities of Artesia and Cerritos and that all tree removal activities and roadway improvements would be conducted in compliance with the applicable City codes and policies. The Build Alternative would implement Project Feature PF-VIS-3 to ensure that construction lighting types, plans, and placement are reviewed by the Caltrans District Landscape Architect to minimize potential impacts from light and glare.

PF-VIS-1 **Landscaping.** Freeway landscape palettes and concept plans shall be implemented during the Plans, Specifications, and Estimates (PS&E) phase in consultation with the City of Cerritos and/or City of Artesia and the California Department of Transportation (Caltrans) District Landscape Architect. The freeway landscape palettes and concept plans shall be designed in correspondence with the goals, policies, and actions of the City of Artesia General Plan (Community Goal CIR 2, Community Policy CIR 2.1, Policy Action 2.1.4, and Policy Action 2.1.5), City of Cerritos General Plan (Goal LU-13, Goal LU-16, Goal CD-2, Goal CON-6, Policy LU-16.1, Policy CD-1.2, and Policy Con-6.1), and Cerritos Municipal Code (Sections 9.75.190 [City Tree Removal] and 9.75.200 [Preservation of City Trees]).

PF-VIS-2 **Architectural Treatments and Review.** All proposed Architectural Treatments proposed shall be developed during the PS&E phase in consultation with the City of Cerritos and/or City of Artesia and the Caltrans District Landscape Architect. All proposed architectural treatments shall be reviewed and approved by Caltrans prior to final design and implementation.

PF-VIS-3 **Construction Lighting.** Construction lighting types, plans, and placement shall be reviewed at the discretion of the Caltrans District Landscape Architect in order to minimize light and glare impacts on surrounding sensitive uses.

No Build Alternative

The No Build Alternative would not include the construction of any of the project improvements on SR-91, I-605, or local roadways; therefore, the visual character and quality within VAU1 will remain similar to the existing condition. The No Build Alternative would not result in temporary visual impacts within the study area.

2.6.3.2 Permanent Impacts

Build Alternative

Visual impacts associated with a project are determined by a measurement of the resource change and viewer response. The following analysis describes and illustrates visual impacts of the Build Alternative by key view, compares existing conditions to the proposed Build Alternative design options (Build Alternative, Non-Standard Lane and Shoulder Widths Design Option, and Pioneer Boulevard Type L-9 Interchange Configuration Design Option) and includes the predicted viewer responses.

Visual elements of the Build Alternative would include a new mixed-flow lane on westbound SR-91, two new overcrossing structures (replacing the existing structures along Gridley Road and Bloomfield Avenue), reconfigured interchanges (at Pioneer Boulevard and Norwalk Boulevard), full right-of-way (ROW) acquisition of 18 residences and a business along 170th Street, partial acquisition of an ARCO Gas Station, upgraded traffic signals, the construction of several noise barriers (up to 16 ft in height) and a combination noise barrier/retaining wall, and some vegetation removal. The project would result in an increase in hardscape within VAU1 that would be visible to local residents, local roadway travelers (roadway motorists, bicyclists and pedestrians), freeway motorists, recreational uses, institutional (school) uses, and commercial and light industrial uses. Permanent visual impacts under the Build Alternative are discussed below for each key view.

Key View 1

Existing views at Key View 1 mainly consist of Ecology Park, the graded slope of the Gridley Road overcrossing structure, and mature vegetation. The visual form in Key View 1 is dominated by the graded slope for the Gridley Road overcrossing structure and mature vegetation that surrounds Ecology Park. Uniform colors are visible

throughout Key View 1, including green colors associated with grass, mature trees, and the graded slope of Gridley Road; brown colors of tree trunks and branches, picnic tables, and dirt; tan colors of the sandbox; and blue colors associated with the children's swing set. Textures throughout Key View 1 consist of the granular grass and tree foliage and coarse sandbox area of the park. A mixture of mature trees, various textures, dominance of the Gridley Road overcrossing structure, and variety of colors provide some diversity in Key View 1. The unity is decreased from the visible vertical elements (i.e., mature trees, pedestrian lighting, and children's swing set), although the mature trees and vegetation increase the intactness in Key View 1. The vividness of Key View 1 is characterized by the contrasting mix of abundant mature trees and dominance of the Gridley Road overcrossing structure.

Viewer Response

Key View 1 represents a typical view from Ecology Park visitors to the southwest of the new Gridley Road overcrossing structure. Ecology Park visitors in Key View 1 would be directly exposed to the changes along Gridley Road in VAU1. Frequent visitors to Ecology Park would have long-term views of the visual changes associated with the Build Alternative. As such, overall viewer response in Key View 1 would be moderate.

Resource Change

Under the Build Alternative, the visible form of Key View 1 would be altered due to the new Gridley Road overcrossing structure. Refer to Figure 2.6-8. The proposed condition would appear similar to the existing condition with respect to colors and textures, although an increase in hardscape from the Gridley Road overcrossing retaining wall could occur. The diversity in Key View 1 would be slightly degraded, as several trees on the graded slope of the Gridley Road overcrossing structure would be removed. In addition, the scale and dominance of the Gridley Road overcrossing structure would increase in Key View 1, as the new Gridley Road overcrossing retaining wall would result in increased hardscape and additional vertical elements.

The intactness would be decreased in Key View 1 as a result of the new Gridley Road overcrossing retaining wall structure. The vividness and unity in Key View 1 would be slightly decreased, as the new Gridley Road overcrossing structure would reduce the amount of natural vegetation and green colors in the area and increase the hardscape. No visual resources or scenic views would be obstructed from implementation of the Build Alternative in Key View 1, and

▲ Direction of Photo
● Key View Location
❶ Key View Number

FIGURE 2.6-8

Westbound SR-91 Improvement Project
Key View 1 - Proposed Condition

This page intentionally left blank

tree removal activities would be required to comply with Sections 9.75.190 (City Tree Removal) and 9.75.200 (Protection of City Trees) of the Cerritos Municipal Code. The resource change in Key View 1 as a result of the Build Alternative is considered to be moderate due to a slight decrease in diversity and intactness from Ecology Park viewers. As such, the overall visual impact at Key View 1 would be moderate. With implementation of Project Features PF-VIS-1 and PF-VIS-2, the permanent visual impacts of the Build Alternative at Key View 1 would not be adverse.

Key View 2

Existing views at Key View 2 mainly consist of single-family residences on Sunny Ridge Court, mature trees/vegetation, the graded slope area of the Gridley Road overcrossing structure, and an existing combined noise barrier/retaining wall abutting the west side of Gridley Road. The visual form in Key View 2 is dominated by the single-family residence and graded slope and noise barrier/retaining wall for the Gridley Road overcrossing structure. The linear continuity in Key View 2 is characterized by horizontal fence lines and rooflines in the foreground and middle ground views, and horizontal lines created by the Gridley Road overcrossing noise barrier/retaining wall. Vertical elements such as mature palm trees are shown in Key View 2 and slightly decrease the intactness of this view. A variety of colors are visible throughout Key View 2, including green colors associated with grass and mature trees/vegetation; brown colors of palm tree stems and the graded slope of the Gridley Road overcrossing; tan colors of the Gridley Road overcrossing noise barrier/retaining wall, single-family residential structure, and perimeter wall; and white/light-gray colors associated with the residential garage door, backyard fence, and driveway area. Textures throughout Key View 2 consist of the granular grass and tree foliage; rough noise barrier/retaining wall, and residential perimeter wall and roof; coarse Gridley Road graded slope dirt area and palm trees; and smooth pavement areas. The diversity and vividness of Key View 2 is characterized by a mixture of mature trees, various textures, a variety of colors, and the scale and dominance of the Gridley Road overcrossing and single-family residence. The unity in Key View 2 is slight, as the variety of vertical elements, contrasting linear form, and scale and dominance of the Gridley Road overcrossing structure detract from the unity of the visual pattern in Key View 2.

Viewer Response

Key View 2 represents a typical view from residential uses along Sunny Ridge Court toward the new Gridley Road overcrossing structure. Residential viewers in

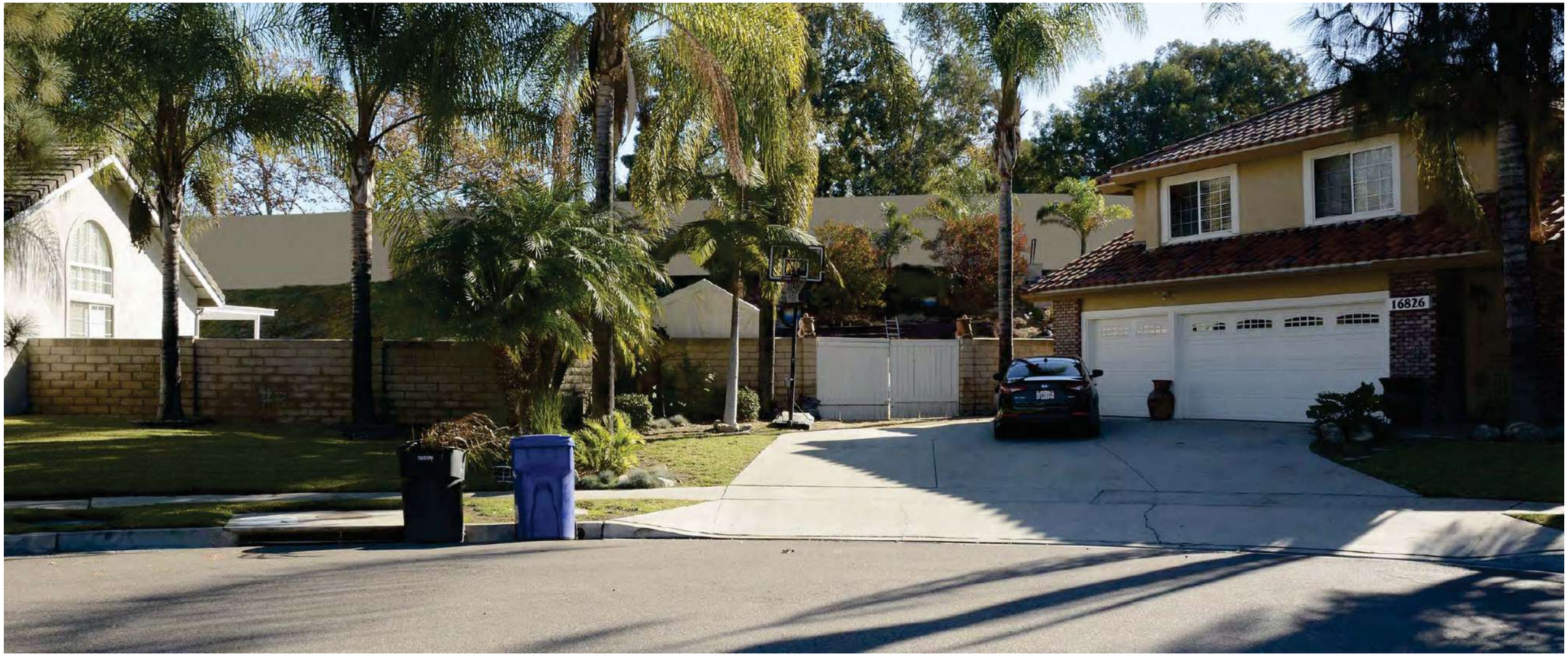
Key View 2 would be directly exposed to the changes along Gridley Road in VAU1, which include the replaced retaining wall/noise barrier. Residential uses along Sunny Ridge Court would have long-term views of the visual changes associated with the Build Alternative. As such, overall viewer response in Key View 2 would be high.

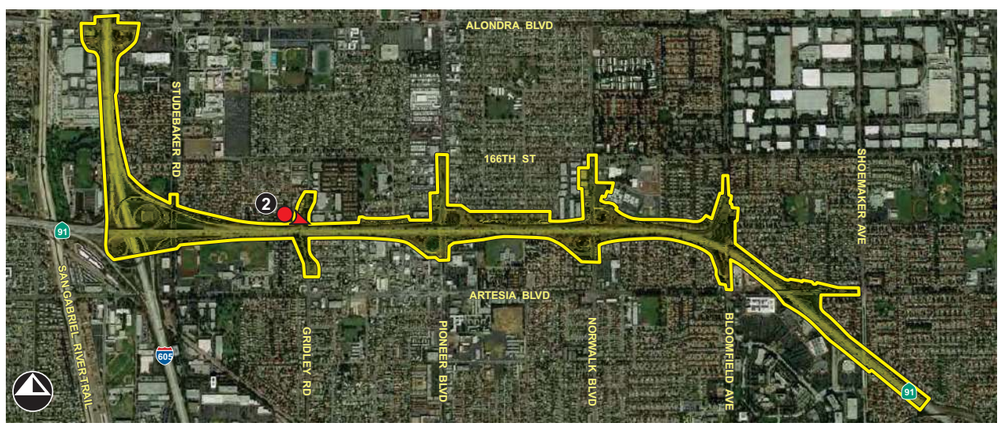
Resource Change

Under the Build Alternative, the visible form of Key View 2 would not be altered due to the new Gridley Road overcrossing structure. Refer to Figure 2.6-9. The proposed condition would appear similar to the existing condition with respect to colors and texture, although a slight increase in tan colors from the Gridley Road overcrossing retaining wall would occur. The diversity, intactness, vividness, and unity in Key View 2 would remain similar to existing conditions, as the new Gridley Road overcrossing structure would not have physical structures or impeding features that would increase the dominance or scale of Gridley Road. The resource change in Key View 2 as a result of the Build Alternative is considered to be low, as the new Gridley Road overcrossing structure would appear similar to existing conditions from Key View 2. As such, the overall visual impact at Key View 2 would be moderate. With implementation of Project Features PF-VIS-1 and PF-VIS-2, the permanent visual impacts of the Build Alternative at Key View 2 would not be adverse.

Key View 3

Existing views at Key View 3 predominantly consist of the westbound SR-91 travel lanes and ROW, roadside vegetation, freeway signage, a noise barrier, and mature trees in background views. The linear continuity in Key View 3 appears to be consistent throughout the view. The SR-91 freeway, shoulder areas, and roadside vegetation create a linear focus along westbound SR-91. Edges are defined by transitional texture and color schemes along the paved area of SR-91, roadside vegetation areas, and noise barrier along westbound SR-91. The color scheme throughout Key View 3 is dominated by light gray, brown, green, and tan colors associated with the paved SR-91 travel lanes, disturbed roadside vegetation, mature vegetation, and noise barrier located along westbound SR-91. Textures in Key View 3 are dominated by the smooth surfaces along SR-91 and the adjoining noise barrier and the granular foliage of roadside vegetation (mature and disturbed) along the SR-91 shoulders. Due to a lack of various visual patterns (other than linear patterns) in Key View 3, there is a lack of diversity. However, linear elements such as the SR-91 travel lanes, mature roadside vegetation, and adjoining noise barrier create





Direction of Photo
Key View Location
1 Key View Number

FIGURE 2.6-9

Westbound SR-91 Improvement Project
Key View 2 - Proposed Condition

I:\RBF1601\G\VIA\Key View 2-Proposed.cdr (1/26/2018)

This page intentionally left blank

some visual unity in Key View 3. Vertical elements such as roadway signage, power poles, and mature trees are visible, and nominally decrease the intactness in Key View 3. Due to a lack of prominent visual features and the flat topography in Key View 3, the visual landscape is not very vivid.

Viewer Response

Key View 3 represents a typical view from westbound SR-91 motorists to the west of Pioneer Boulevard. Westbound SR-91 motorists in Key View 3 would be directly exposed to the changes along westbound SR-91, including the construction of a new travel lane and potential noise barrier up to 16 ft in height along the westbound SR-91 shoulder. As noted above, approximately 255,000 to 288,000 vehicles travel this portion of SR-91 each day. The viewer quantity is high and the duration of views from SR-91 commuters and other motorists is ultimately dependent on the density of traffic, especially during peak travel periods. Although westbound SR-91 motorists may or may not be highly aware in Key View 3 depending on the speed of travel, the viewshed of SR-91 motorists does not include any designated visual resources, and SR-91 is not designated as a State or local scenic highway. However, the City of Artesia values motorists' views along freeway corridors in the project corridor, as outlined in the City of Artesia General Plan (Community Goal CIR 2 and Policy Action 2.1.4). As such, overall viewer response in Key View 3 would be moderate.

Resource Change

Under the Build Alternative, the visible form, diversity, texture, color, and linear continuity would be altered in Key View 3. The visible form has changed due to the scale and dominance of the new noise barrier along westbound SR-91, and the blockage of mature roadside trees has decreased the diversity in Key View 3. Refer to Figure 2.6-10. An increase in smooth texture and a decrease in middle-ground granular foliage have occurred due to the new westbound SR-91 noise barrier. In addition, a decrease in green colors and an increase in tan colors has occurred as a result of the new noise barrier. The linear continuity in this key view remains, although the new noise barrier dominates the visual pattern along westbound SR-91. The vividness and intactness has decreased in Key View 3 as a result of the new westbound SR-91 noise barrier. The noise barrier dominates this view, and has decreased middle-ground and background views of mature tree vegetation. The visual unity remains similar to existing conditions, as the linear form of the new noise barrier creates a visual pattern for westbound SR-91

This page intentionally left blank

Direction of Photo
Key View Location
1 Key View Number

FIGURE 2.6-10

Westbound SR-91 Improvement Project
Key View 3 - Proposed Condition

I:\RBF1601\G\VIA\Key View 3-Proposed.cdr (2/1/2018)

This page intentionally left blank

motorists. No visual resources or scenic views are obstructed from the Build Alternative in Key View 3. Therefore, the resource change in Key View 3 for the project is considered to be moderate due to an increase in hardscape features (i.e., the new noise barrier and westbound SR-91 lane addition) in the area. The overall visual impact in Key View 3 would be moderate. With implementation of Project Features PF-VIS-1 and PF-VIS-2, the permanent visual impacts of the Build Alternative at Key View 3 would not be adverse.

Key View 4

Existing views at Key View 4 mainly consist of Elaine Avenue, residential uses to the east and west of Elaine Avenue, and some mature vegetation. Background views of the existing westbound SR-91 noise barrier are also provided at Key View 4. The visual form in Key View 4 appears to be relatively consistent throughout this view. The Elaine Avenue ROW and sidewalks appear to be linear and continuous toward SR-91 and the westbound SR-91 noise barrier. The uniform size and height of the single-family residences create a pedestrian-friendly scale in Key View 4. The visual corridor is defined by the residences to the east and west of Elaine Avenue, and the westbound SR-91 noise barrier in background views. The color scheme throughout Key View 4 is dominated by light gray, tan/light brown, and green colors associated with the paved roadway, single-family residences and sidewalks, and mature vegetation, respectively. Textures in Key View 4 mostly consist of the smooth surfaces of roadway pavement and painted areas of exterior residences along Elaine Avenue and the granular foliage of surrounding vegetation. The vividness and intactness in Key View 4 are minute, as the visual elements (street ROW, residences, and some vegetation) fail to create a diverse viewshed.

Viewer Response

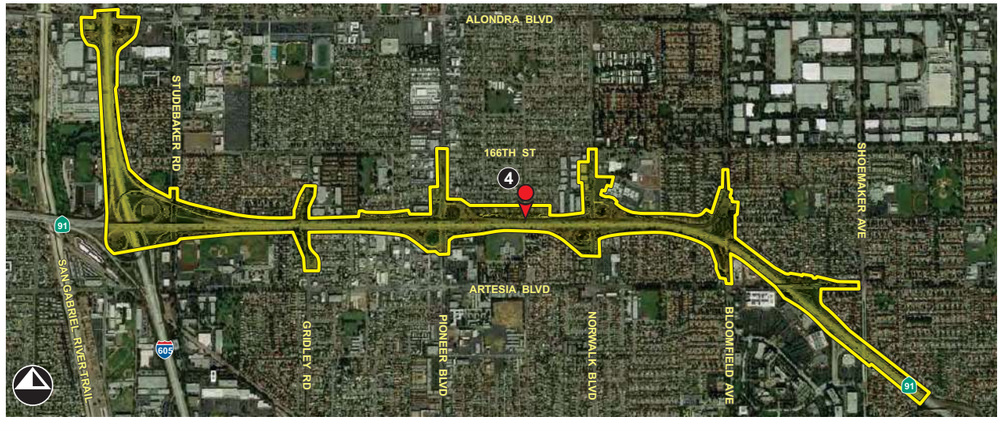
Key View 4 represents a typical view from residential uses along Elaine Avenue and southbound Elaine Avenue motorists, bicyclists, pedestrians. The southbound Elaine Avenue traveler and residential viewers in Key View 4 would be directly exposed to the changes along Elaine Avenue and 170th Street as a result of the Build Alternative, which include the acquisition and demolition of 18 residences and a business along 170th Street to accommodate standard lane and shoulder widths along westbound SR-91, a new noise barrier up to 16 ft high abutting residences along 169th Street, and relocation of the existing westbound SR-91 noise barrier to the north. Elaine Avenue is a local residential street and

experiences a low amount of daily traffic (less than 5,000 ADT),[1] but residents along Elaine Avenue, 168th Street, 169th Street, and 170th Street would have long-term (permanent) views of the Build Alternative. As such, overall viewer response in Key View 4 would be moderate.

Resource Change

Under the Build Alternative, the visible form of Key View 4 would be altered due to the demolition of 18 residences and a business along 170th Street, the construction of a new noise barrier up to 16 ft in height abutting the residences on 169th Street, and the relocation of the existing westbound SR-91 noise barrier to the north. As shown on Figure 2.6-11, the new noise barrier associated with the Build Alternative would result in an increase in hardscape features, and a slight decrease in mature vegetation. The visual form in Key View 4 would be altered, as the scale and dominance of the new noise barrier would encroach onto the residences positioned along 169th Street. This would also result in a decrease in diversity, vibrant (green) colors, and textural variety, as the new noise barrier and relocated westbound SR-91 noise barrier would remove and obstruct views of mature trees, increase the amount of light brown/tan colors, and decrease the background, granular foliage of trees in Key View 4. The linear continuity in Key View 4 remains, although the new noise barrier and residential ROW acquisition decreases the depth of views in Key View 4. The vividness and intactness has decreased in Key View 4 as a result of the new westbound SR-91 noise barrier and relocated westbound SR-91 noise barrier. The visual unity remains similar to existing conditions in Key View 4, and no visual resources or scenic views are obstructed from the Build Alternative in Key View 4. The overall visual character in Key View 4 would be similar to existing conditions. The resource change in Key View 4 for the Build Alternative is considered to be moderate, as the project would increase the hardscape features (i.e., the new noise barrier) in the area, but the overall visual character would be similar to existing conditions. Therefore, the overall visual impact in Key View 4 would be moderate. With implementation of Project Features PF-VIS-1 and PF-VIS-2, the permanent visual impacts of the Build Alternative at Key View 4 would not be adverse.

[1] City of Artesia. 2010. City of Artesia General Plan 2030 Environmental Impact Report. July.



▲ Direction of Photo
● Key View Location
❶ Key View Number

FIGURE 2.6-11

Westbound SR-91 Improvement Project
Key View 4 - Proposed Condition

I:\RBF1601\G\VIA\Key View 4-Proposed.cdr (1/26/2018)

This page intentionally left blank

Key View 5

Existing views from Key View 5 mainly consist of the existing westbound SR-91 noise barrier and retaining wall positioned in the foreground and middle-ground views. The back alley/driveway area and garage areas of the Cerritos Villas residential community are also shown in Key View 5. The visual form in Key View 5 is dominated by the height, scale, and hardscape of the existing westbound SR-91 noise barrier and retaining wall. The horizontal alignment and straight edges of the westbound SR-91 noise barrier provide linear continuity in Key View 5 looking east. The colors visible in Key View 5 are fairly uniform, as the westbound SR-91 noise barrier, Cerritos Villas residences, and back alley/driveway consist of tan and light gray colors. Landscaping between the westbound SR-91 noise barrier and retaining wall provides some green colors and softens the appearance of hardscape in Key View 5. Textures throughout Key View 5 consist of the rough and bumpy masonry on the westbound SR-91 noise barrier and retaining wall, granular foliage of landscaping, and coarse surface of the Cerritos Villas back alley/driveway. Vividness is lacking in Key View 5 due to absent diverse visual elements, natural features (landscaping, mature vegetation, etc.), and the encroachment of hardscape features (noise barrier and retaining wall). Easterly views from Key View 5 are fairly unified and intact due to the uninterrupted linear flow of the westbound SR-91 noise barrier and retaining wall, and visual obstructions are absent.

Viewer Response

Key View 5 represents a typical view from residential uses in the Cerritos Villas residential community to the north of SR-91. Residential uses in Key View 5 would be directly exposed to the changes along westbound SR-91 in VAU1 which include a new combination noise barrier/retaining wall (i.e., merging the westbound SR-91 noise barrier and retaining wall) along westbound SR-91 up to approximately 20 to 22 ft in height. Although the residences along the southern boundary of the Cerritos Villas residential community do not have backyard areas or balconies with views of the project limits, these residential viewers access the back alley/driveway area of Cerritos Villas residential community on a daily basis, and would have long-term views of the visual changes associated with the Build Alternative. As such, overall viewer response in Key View 5 would be moderate-high.

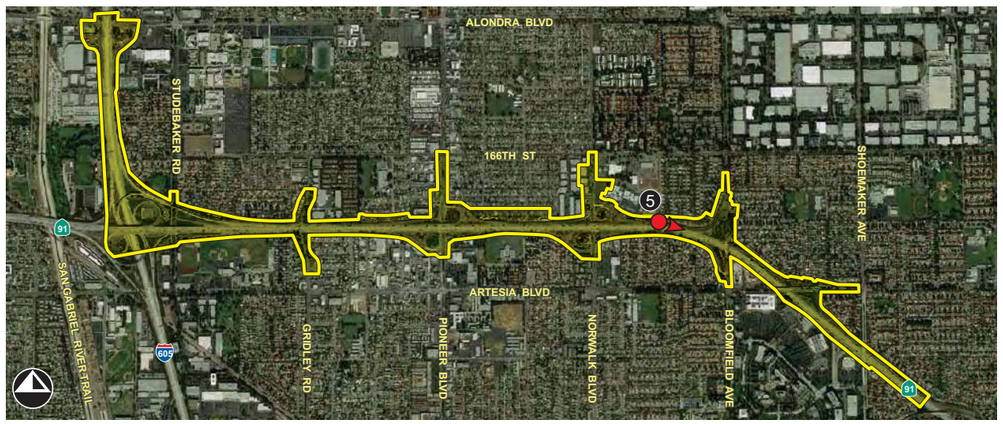
Resource Change

Under the Build Alternative, the visible form of Key View 5 would be changed due to the construction of a new combination noise barrier/retaining wall. Due to

the widening and added westbound SR-91 travel lane, the westbound SR-91 noise barrier would be relocated and combined with the existing retaining wall along the southern boundary of the Cerritos Villas property. The existing landscaping between the westbound SR-91 noise barrier and retaining wall would also be removed for construction of the new noise barrier/retaining wall. As shown on Figure 2.6-12, construction of the new noise barrier/retaining wall would decrease the color diversity and textural variety in Key View 5. Specifically, a decrease in green colors and granular foliage and an increase in tan colors and rough texture would occur. The height, scale, mass, and added hardscape of the new combination noise barrier/retaining wall portrays visual dominance over its surroundings and dominates the view, as the new wall would be approximately 20 to 22 ft in height. Encroachment of this new combination noise barrier/retaining wall would be increased. Overall, construction of the new combination noise barrier/retaining wall would reduce the visual diversity, intactness, unity, and vividness in Key View 5. The resource change in Key View 5 as a result of the Build Alternative is considered to be moderate-high, as the new noise barrier/retaining wall would increase the hardscape from Key View 5 and visually encroach onto the viewers at the Cerritos Villas. As such, the overall visual impact at Key View 5 would be moderate-high. To minimize visual impacts from the new noise barrier/retaining wall at Key View 5, the new combination noise barrier/retaining wall should be architecturally treated to lessen the increased hardscape appearance at the adjoining residential viewers to the north. With implementation of Project Features PF-VIS-1 and PF-VIS-2, the permanent visual impacts of the Build Alternative at Key View 5 would not be adverse.

Key View 6

Existing views from Key View 6 mostly consist of the westbound SR-91 travel lanes, mature roadside vegetation, freeway signage, and the Bloomfield Avenue overcrossing structure. The visual form in Key View 6 is defined by a linear focus from the SR-91 freeway and roadside vegetation toward Bloomfield Avenue. The Bloomfield Avenue overcrossing structure provides the viewer a sense of depth, although it decreases the intactness of Key View 6. The color scheme throughout Key View 6 is dominated by grey, brown, and green colors associated with the paved SR-91 travel lanes, disturbed roadside vegetation, and mature vegetation areas along SR-91. Textures in Key View 6 are dominated by the smooth pavement along SR-91 and the Bloomfield Avenue overcrossing structure and granular foliage of roadside vegetation (mature and disturbed) along the SR-91 shoulders. Due to a lack of various visual patterns (other than linear patterns), there is a lack of diversity in Key View 6.



Direction of Photo
Key View Location
1 Key View Number

FIGURE 2.6-12

Westbound SR-91 Improvement Project
Key View 5 - Proposed Condition

This page intentionally left blank

However, linear elements such as the SR-91 travel lanes and mature roadside vegetation create some visual unity in Key View 6. The views along SR-91 are fairly intact in Key View 6, although the Bloomfield Avenue overcrossing structure somewhat impedes more profound background views. Due to a lack of distinct visual features in Key View 6, westbound SR-91 motorists' views are not vivid.

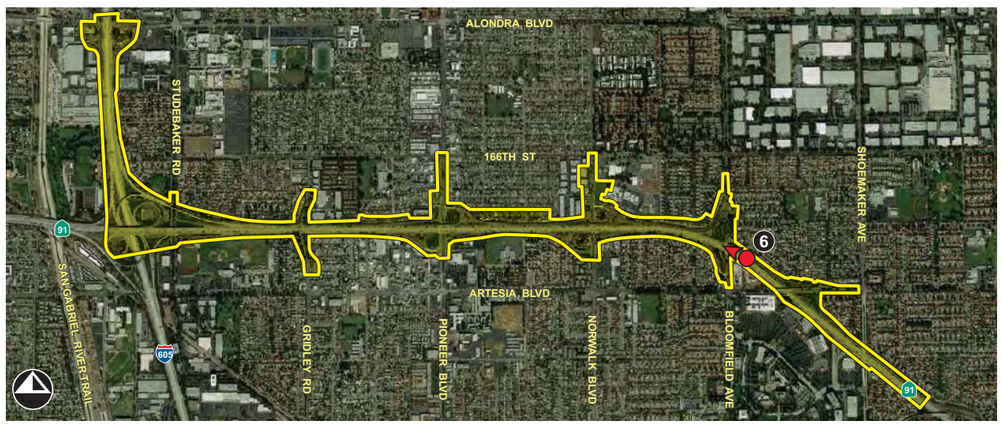
Viewer Response

Key View 6 represents a typical view from westbound SR-91 motorists. The westbound SR-91 traveler would be directly exposed to the new Bloomfield Avenue overcrossing structure in VAU1. As noted above, approximately 255,000 to 288,000 vehicles travel this portion of SR-91 each day. The viewer duration is ultimately dependent on the density of traffic, especially during peak travel periods. Although westbound SR-91 motorists may or may not be highly aware in Key View 6 depending on the speed of travel, the viewshed of SR-91 motorists does not include any designated visual resources, and SR-91 is not designated as a State or local scenic highway. However, the City of Cerritos values motorists' views along freeway corridors in the project corridor, as outlined in the City of Cerritos General Plan (Goal LU-16, Policy LU-16.1, and Policy CD-1.2). As such, it is anticipated that SR-91 freeway motorists would be aware of the visual changes associated with the Build Alternative. Overall viewer response in Key View 6 would be moderate.

Resource Change

The new Bloomfield Avenue overcrossing structure would be similar to the existing overcrossing structure, although the structure would appear to be slightly larger in terms of mass, scale, and height; refer to Figure 2.6-13. The visible form remains largely intact compared to existing conditions. However, some vegetation/tree removal would occur on the westbound SR-91 shoulder, and background views of the new westbound SR-91 noise barrier/retaining wall near the Cerritos Villas residential community would be afforded. Only a slight change in color would occur, as some brown/green colors associated with roadside vegetation would be removed, the new westbound SR-91 noise barrier/retaining wall in background views would add tan colors, and the new overcrossing structure would increase the amount of gray color in the view. The existing textures would remain relatively unchanged, although an increase in the smooth pavement of SR-91 and the larger Bloomfield Avenue overcrossing structure would occur. The linear focus of views along westbound SR-91 would not be altered in Key View 6. The visual unity would remain similar to existing

This page intentionally left blank



▲ Direction of Photo
● Key View Location
❶ Key View Number

FIGURE 2.6-13

Westbound SR-91 Improvement Project
Key View 6 - Proposed Condition

I:\RBF1601\G\VIA\Key View 6-Proposed.cdr (1/26/2018)

This page intentionally left blank

conditions, as the new Bloomfield Avenue overcrossing would not dominate westerly views from westbound SR-91 motorists. The intactness of views would remain fair, and the vividness of Key View 6 would increase as a result of the mass, height, and scale of the new Bloomfield Avenue overcrossing structure.

No visual resources or scenic views would be obstructed from the Build Alternative in Key View 6. Therefore, the resource change in Key View 6 for the Build Alternative would be low. The overall visual impact in Key View 6 would be moderate-low. With implementation of Project Features PF-VIS-1 and PF-VIS-2, the permanent visual impacts of the Build Alternative at Key View 6 would not be adverse.

Although visual impacts associated with the alteration to scale and increased pavement would remain, the project features would allow the Build Alternative to integrate well with the existing landscape and ensure visual compatibility with the surrounding environment. Even with the Build Alternative in place, the alignment and topography of the SR-91 freeway mainline would remain consistent with the existing condition and VAU1's existing urbanized setting would remain relatively unchanged. As a result, the Build Alternative would not drastically alter the existing visual character and visual quality of the project corridor, resulting in a moderate overall visual impact.

Non-Standard Lane and Shoulder Widths Design Option

Similar to the Build Alternative, the Non-Standard Lane and Shoulder Widths Design Option would result in the construction of a new mixed-flow lane on westbound SR-91, two new overcrossing structures (replacing the existing structures along Gridley Road and Bloomfield Avenue), reconfigured interchanges (at Pioneer Boulevard and Norwalk Boulevard), partial acquisition of an ARCO Gas Station, upgraded traffic signals, the construction of several noise barriers (up to 16 ft in height) and a combination noise barrier/retaining wall, and some vegetation removal. The Non-Standard Lane and Shoulder Widths Design Option varies from the Build Alternative in that the new westbound SR-91 travel lane would be constructed using non-standard lane widths. Using non-standard lane widths on westbound SR-91 would eliminate any ROW impacts on 170th Street, and the 18 residences and a business on this roadway would remain intact. There is no visible difference between the Non-Standard Lane and Shoulder Widths Design Option and the Standard Lane Widths Design Option from the vantage point in Key View 4.

The use of non-standard lane widths would result in minimal visual impacts to the residences along 169th and 170th Street, and the existing visual environment in this area would be preserved. As such, the visual character and quality of the project corridor from Key View 4 would remain similar to existing conditions (refer to Figure 2.6-5). As such, the resource change with implementation of the Non-Standard Lane and Shoulder Widths Design Option would be low, and the overall visual impact would be moderate-low. With implementation of Project Features PF-VIS-1 and PF-VIS-2, the permanent visual impacts of the Build Alternative with the Non-Standard Lane and Shoulder Widths Design Option at Key View 4 would not be adverse.

Pioneer Boulevard L-9 Design Option

Similar to the Build Alternative, the Pioneer Boulevard L-9 Design Option would result in the construction of a new mixed-flow lane on westbound SR-91, two new overcrossing structures (replacing the existing structures along Gridley Road and Bloomfield Avenue), reconfigured interchanges (at Pioneer Boulevard and Norwalk Boulevard), full ROW acquisition of 18 residences and a business along 170th Street, partial acquisition of an ARCO Gas Station, upgraded traffic signals, construction of several noise barriers (up to 16 ft in height) and a combination noise barrier/retaining wall, and some vegetation removal. The Pioneer Boulevard L-9 Design Option varies from the Build Alternative in that the westbound SR-91 direct on-ramp from Pioneer Boulevard would remain intact, and a new noise barrier along the westbound SR-91 shoulder would not be constructed. The visible difference between the Pioneer Boulevard L-9 Design Option and the Standard Lane Widths Design Option would be seen from Key View 3.

Under the Pioneer Boulevard L-9 Design Option, the visual character and quality would remain similar to existing conditions at Key View 3 (refer to Figure 2.6-14). Under this design option, the existing direct westbound SR-91 on-ramp from Pioneer Boulevard would remain, and a new noise barrier would not be constructed along the westbound SR-91 shoulder. An increase in hardscape and some textural change would occur, as some roadside vegetation would be removed to construct the new westbound SR-91 travel lane. However, this change would not alter the visual form, linear continuity, diversity, or scale, and the vividness, intactness, and unity would not be degraded. No visual resources or scenic views are obstructed from the Pioneer Boulevard L-9 Design Option in Key View 3. Therefore, the resource change in Key View 3 for the Pioneer Boulevard L-9 Design Option is considered to be low, as a nominal increase in hardscape features (i.e., the new westbound SR-91 lane addition)

Direction of Photo
Key View Location
1 Key View Number

FIGURE 2.6-14

Westbound SR-91 Improvement Project
Key View 3 - Proposed Condition
Pioneer Boulevard Type L-9 Interchange Configuration Design Option

I:\RBF1601\G\VIA\Key View 3-Proposed-L9 Option.cdr (1/26/2018)

This page intentionally left blank

would occur. The overall visual impact in this key view would be moderate-low. With implementation of Project Features PF-VIS-1 and PF-VIS-2, the permanent visual impacts of the Build Alternative Pioneer Boulevard L-9 Design Option at Key View 3 would not be adverse.

No Build Alternative

The No Build Alternative would not include the construction of any of the project improvements on SR-91, I-605, or local roadways; therefore, the visual character and quality of VAU1 will remain similar to the existing condition. The No Build Alternative would not result in permanent visual impacts within the study area.

2.6.4 Avoidance, Minimization, and/or Mitigation Measures

Because the project will incorporate the project features outlined above in Section 2.6.3.1, no substantial adverse impacts related to visual quality would occur. Therefore, no avoidance, minimization, and/or mitigation measures are required.

This page intentionally left blank

2.7 Cultural Resources

This section is based on the *Historic Property Survey Report* (HPSR) (2018).

2.7.1 Regulatory Setting

The term "cultural resources," as used in this document, refers to the "built environment" (e.g., structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including "historic properties," "historic sites," "historical resources," and "tribal cultural resources." Laws and regulations dealing with cultural resources include:

- The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the ACHP, the California State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the ACHP's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA's responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery 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 (in Section 4(f) terminology—historic sites). See Appendix A for specific information about Section 4(f).
- The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code (PRC) Section 5024.1 established the California Register of Historical Resources

(CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term "tribal cultural resources" to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.

- PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires Caltrans to inventory state-owned structures in its rights-of-way.

2.7.2 Affected Environment

2.7.2.1 Methods

Area of Potential Effects

The Area of Potential Effects (APE) for cultural resources was established to identify the geographic area within which the proposed project may directly or indirectly cause alterations in the character or use of cultural resources. The APE for the proposed project totals 190.23 acres (ac), of which the Direct APE[1] comprises 74.84 ac. Specifically, the horizontal APE[2] includes: segments of northbound Interstate 605 (I-605), westbound State Route 91 (SR-91), Pioneer Boulevard, Park Street, Norwalk Boulevard, Artesia Boulevard, Studebaker Road, Gridley Road, Gridley Place, Beach Street, Bloomfield Avenue, Alondra Boulevard, Westwinds Circle, 170th Street, and adjacent parcels where right-of-way (ROW) acquisition, construction staging, or temporary construction easements would occur. The adjacent parcels in the horizontal APE are located along Hyde Park Court, 169th Street, Cuesta Drive, Palm Street, Leeward Avenue, Eric Avenue, Harvest Avenue, College Place, and Clarkdale Avenue. In total, there are 85 private parcels within the horizontal APE. Buildings in the horizontal APE consist largely of single-family residences, but

[1] The Direct APE is the area that potentially would be directly and physically impacted by the proposed project.

[2] The horizontal APE refers to the depth of ground disturbance.

also include low-rise commercial buildings and institutional facilities. The horizontal APE also includes the Gridley Road overcrossing, Bloomfield Avenue overcrossing, Studebaker Road overcrossing, SR-91/I-605 connector, Pioneer Boulevard overcrossing, Norwalk Boulevard overcrossing, Artesia Boulevard overcrossing, and Alondra Boulevard overcrossing. The vertical APE will extend to a maximum depth of 20 feet (ft) for retaining wall and sound wall piles and 30 ft for piles for the Gridley Road overcrossing and Bloomfield Avenue overcrossing piers.

Record Search

On May 12, 2017, a record search was conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) located at California State University, Fullerton. The record search included a review of all recorded prehistoric and historic cultural resources within a 0.5-mile (mi) radius of the project APE, as well as a review of known cultural resource survey and excavation reports. Additionally, the following inventories were examined during the SCCIC record search:

- National Register of Historic Places (National Register)
- California Register of Historical Resources (California Register)
- California Historical Landmarks (CHL)
- California Points of Historical Interest (SPHI)
- California Historic Resources Inventory (HRI)

In addition to the research conducted at the SCCIC, further background research was conducted using published literature on local and regional history, online resources regarding the history and development of the study area, and historic aerial photographs and historic maps of the project vicinity. On the basis of this research, a historic context was developed in which cultural resources could be evaluated for significance. This context was used during the analysis of historic archaeological resources and the historic built environment. The general history of the study area is followed by the contexts identified as relevant to the evaluated properties: Postwar Commercial and Industrial Development in Artesia and Cerritos, School Development in Artesia and Cerritos, Hospital Development in Artesia and Cerritos, and Mid-Century Modern Architecture. For further details of the historic context of the project APE, refer to the *Historical Resources Evaluation Report* (HRER) (2018). The following repositories and resources were contacted and utilized to access historical information pertinent to the parcels within the project APE and the project vicinity:

- Cerritos Public Library
- City of Artesia Department of Building and Safety
- City of Cerritos Department of Building and Safety
- ABC Unified School District
- Los Angeles Public Library
- Historic Aerials (https://historicaerials.com)

Field Surveys

On May 31, 2017, a Qualified Archaeologist completed a pedestrian survey of portions of the Direct APE, which is described in the *Archaeological Survey Report* (ASR) (2018). Because much of the APE is within active freeway and street ROWs, access was not safely available in all areas. Areas of exposed ground that could be accessed safely, even if vegetated, were surveyed by walking linear transects separated by 22.5–33 ft over larger areas and by more intensive and narrower transects over smaller areas. Inaccessible areas were visually inspected from a distance. Special attention was given to areas that exhibited exposed sediment, cut slopes, or rodent burrow back-dirt. Areas within the Direct APE that were not surveyed include existing freeways, paved roads and sidewalks, concrete-lined drainage channels, buildings, and structures.

On July 6 and 21, 2017, a pedestrian field survey of the buildings, structures, and other architectural features located within the APE was completed by a Qualified Architectural Historian and is described in the HRER (2018). During the survey, built environment resources within the APE that appeared to be 45 years of age or older were inspected and photographed, and their locational information noted on APE maps. For detailed notations of their structural and architectural characteristics and current conditions, as well as their settings and associated features, please refer to the HRER (2018).

Native American Consultation

In conjunction with the project, consultation was conducted with the Native American Heritage Commission (NAHC) and with a number of Native American Tribes (groups and individuals) to comply with Section 106 of the NHPA and Assembly Bill (AB) 52. The NAHC was contacted on May 18, 2017, to conduct a Sacred Lands File (SLF) search of the APE. On May 22, 2017, the NAHC responded by stating that the SLF review identified no Native American cultural resources within the project APE. The NAHC also recommended that seven Native American individuals representing

the Gabrielino and Juaneño groups be contacted for information regarding cultural resources that could be affected by the project.

Chapter 4, Comments and Coordination, provides detailed information regarding Native American consultation, which is summarized below. The following Native American Tribes, groups, and individuals were contacted via letter sent by certified mail on May 24, 2017, and again by two rounds of follow-up emails or telephone calls on June 12 and 19, 2017, depending on whether the previous contact was successful:

- Gabrieleno Band of Mission Indians – Kizh Nation, Andrew Salas, Chairperson
- Gabrieleno/Tongva San Gabriel Band of Mission Indians, Anthony Morales, Chairperson
- Gabrielino/Tongva Nation, Sandonne Goad, Chairperson
- Gabrielino Tongva Indians of California Tribal Council, Robert Dorame, Chairperson
- Gabrielino-Tongva Tribe, Linda Candelaria, Co-Chairperson
- Juaneño Band of Mission Indians Acjachemen Nation – Belardes, Joyce Perry, Tribal Manager
- Juaneño Band of Mission Indians Acjachemen Nation – Belardes, Matias Belardes, Chairperson

2.7.2.2 Results

Archaeological Results

No archaeological resources were identified within the APE through archival research, Native American Consultation, or field survey. The majority of the Direct APE is within California Department of Transportation (Caltrans) ROW along the north side of westbound SR-91 from a point just east of I-605 to Artesia Boulevard, the transition from westbound SR-91 to northbound I-605, and along the east side of northbound I-605 south of Alondra Boulevard.

Pedestrian surveys for archaeological resources showed that all surveyable areas in the Direct APE exhibited high levels of disturbance from the freeway, adjacent drainages, and nearby road construction. The disturbance included bulldozed local sediment mixed with gravel, asphalt, concrete, and other debris, as well as Artificial Fill and recent trash. The entire Direct APE has been substantially altered due to previous construction activities.

Built Environment Results

Archival research and field surveys resulted in the identification of a number of built environment resources within the project APE. The entire project APE was researched and surveyed for historic-period (45 years of age or older) built environment resources. Based on a review of the Caltrans Historic Highway Bridge Inventory (2016), all bridges within the APE for this project have been previously determined ineligible for National Register listing (designated as Category 5). Further, field surveys identified six historic-period built environment resources within the APE that required evaluation under the Section 106 PA. The rest of the built environment resources in the APE were exempt from evaluation pursuant to Attachment 4 of the Section 106 PA. Pursuant to the Section 106 PA, none of the built environment resources evaluated during studies associated with the proposed project is eligible for listing in the National Register or the California Register. Under Section 106 PA Stipulation VIII.C.6, Caltrans requests the SHPO's concurrence in these eligibility determinations. Table 2.7.1 summarizes these built environment resources and eligibility determinations.

Table 2.7.1 Built Resources Within the Project APE

Name	Address/Location	National Register/California Register Eligibility[1]
College Hospital	10802 College Place APN: 7016-022-048	Determined ineligible as a historic property under Section 106 PA
N/A	16706 Pioneer Boulevard APN: 7011-005-044	Determined ineligible as a historic property under Section 106 PA
N/A	16712 Pioneer Boulevard APN: 7011-005-902	Determined ineligible as a historic property under Section 106 PA
N/A	12111 Park Street APN: 7011-001-005	Determined ineligible as a historic property under Section 106 PA
N/A	12120 Park Street APN: 7011-001-017	Determined ineligible as a historic property under Section 106 PA
Tracy High School	12222 Cuesta Drive APN: 7012-001-901	Determined ineligible as a historic property under Section 106 PA

Source 1: *Historical Resources Evaluation Report* (2018)
Source 2: *Historic Property Survey Report* (2018).
[1] These determinations are a result of studies conducted for the Westbound SR-91 Improvement Project.
APE = Area of Potential Effects
APN = Assessor's Parcel Number
California Register = California Register of Historical Resources
N/A = not applicable
National Register = National Register of Historic Places
PA = Programmatic Agreement
Section 106 = Section 106 of the National Historic Preservation Act of 1966
SR-91 = State Route 91

2.7.3 Environmental Consequences

2.7.3.1 Temporary Impacts

Build Alternative (includes Design Options)

The Build Alternative would require ground disturbance and modification to existing freeway structures. There are no historic properties within the project APE that are eligible for inclusion in the National Register; therefore, the construction of the Build Alternative would not affect historic properties.

No Build Alternative

Under the No Build Alternative, none of the proposed improvements would be constructed. The No Build Alternative would maintain the existing conditions; therefore, the No Build Alternative would not result in temporary impacts related to historic properties as a result of construction activities.

2.7.3.2 Permanent Impacts

Build Alternative (includes Design Options)

There are no historic properties within the project APE that are eligible for inclusion in the National Register. Therefore, the operation of the Build Alternative would not affect historic properties. Based on the findings of the HPSR (2018) and pursuant to the Section 106 PA, the Build Alternative would not affect historic properties per 36 CFR 800.4. Therefore, Caltrans has made a finding of No Historic Properties Affected for the project.

Previously Undocumented Cultural Materials

There is always a potential for previously undocumented cultural materials or human remains to be unearthed during site preparation, grading, or excavation for the Build Alternative. Those potential effects would be avoided or minimized through the following project features:

PF-CR-1 **Discovery of Cultural Materials.** If cultural materials are discovered during site preparation, grading, or excavation, the construction contractor will divert all earthmoving activity within and around the immediate discovery area until a qualified archaeologist can assess the nature and significance of the find. The California Department of Transportation (Caltrans) District 7 Environmental Branch Chief or the District 7 Native American Coordinator will then determine an appropriate course of action. If the discovery of cultural materials

occurs outside the Caltrans right-of-way, then coordination with the appropriate local agency will be conducted.

PF-CR-2 **Discovery of Human Remains.** If human remains are discovered during site preparation, grading, or excavation, State Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the Los Angeles County Coroner shall be contacted. If the remains are thought to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC), who pursuant to California Public Resources Code (PRC) Section 5097.98, will then notify the Most Likely Descendant (MLD). At that time, the persons who discovered the remains will contact the Caltrans District 7 Environmental Branch Chief or the District 7 Native American Coordinator so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of California PRC 5097.98 are to be followed as applicable.

Section 4(f) Resources

No National Register-listed and eligible resources were identified within the APE (HPSR 2018). Therefore, there are no cultural resources present within the APE that would trigger the requirements for protection under Section 4(f), and no further discussion of those types of resources is provided relative to the requirements of Section 4(f).

No Build Alternative

Under the No Build Alternative, none of the proposed improvements would be constructed. The No Build Alternative would maintain the existing conditions; therefore, the No Build Alternative would not result in permanent impacts related to cultural resources as a result of construction activities.

2.7.4 Avoidance, Minimization, and/or Mitigation Measures

As the Build Alternative would not result in any temporary or permanent cultural resource related impacts, no avoidance, minimization, or mitigation measures are required.

PHYSICAL ENVIRONMENT

2.8 Water Quality and Storm Water Runoff

2.8.1 Regulatory Setting

2.8.1.1 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 the act 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 (RWQCBs) 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 Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a

[1] A point source is any discrete conveyance such as a pipe or a man-made ditch.

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 Regional or Nationwide Permit may be permitted under one of the USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (U.S. EPA) Section 404 (b)(1) Guidelines (40 Code of Federal Regulations [CFR] Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. 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 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 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[1] 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.

2.8.1.2 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

[1] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

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 about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, 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 or non-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 watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and 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. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant 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 discharges, 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 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 as amended by Order WQ 2014-0006-EXEC, Order WQ 2014-0077-DWQ, and Order WQ 2015-0036-EXEC, NPDES No. CAS000003, effective April 7, 2015, 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. 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ

(effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that 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 result in soil disturbance of at least one acre must comply with the provisions of the General Construction 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 (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 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 SWPPP. In accordance with the Caltrans SWMP and Standard Specifications, a Water Pollution Control Program (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 the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the 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 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.

2.8.2 Affected Environment

The information in this section is from the Water Quality Assessment Report prepared for the project (November 2017).

The proposed project is located in the San Gabriel River watershed, which is bound by the Santa Ana River watershed to the east and the Los Angeles River watershed to the west. Land uses within the watershed are diverse and range from open space near the San Gabriel River headwaters in the San Gabriel Mountains, and become more dense and urbanized in the south, wherein impaired water quality can be seen due to pollutants from dense areas of residential and commercial activities. The watershed is covered under two municipal storm water NPDES permits.[1] The project is also within the Lower San Gabriel Hydrologic Area (CalWater watershed hydrologic sub-area 405.15). When storm water falls on the existing State Highway system within the study area, it sheet flows where it is captured by Caltrans drains, culverts, curbs, and/or gutters. Underground pipes direct this flow directly to the local city and/or county flood control drainage network. Storm water that falls onto the study area will ultimately be discharged into Artesia-Norwalk Drain, Coyote Creek, and San Gabriel River Reach 1. From those drainage facilities, eventually the flow path leads to the Pacific Ocean. Within the study area for the proposed Westbound State Route 91 (SR-91) Improvement Project (project), runoff from SR-91 is not discharged directly or indirectly to an Area of Biological Significance.

Existing beneficial uses apply to the water bodies to which the proposed project discharges. Beneficial uses are defined in the Los Angeles RWQCB's Basin Plan as those necessary for the survival or well-being of humans, plants, and wildlife. Examples of beneficial uses include the following:

[1] State Water Resources Control Board (SWRCB). San Gabriel River Watershed. Website: https://www.waterboards.ca.gov/rwqcb4/water_issues/programs/regional_program/Water_Quality_and_Watersheds/san_gabriel_river_watershed/summary.shtml (accessed November 13, 2017).

- **Municipal and Domestic Supply:** Municipal and domestic supply waters are used for community, military, municipal, or individual water supply systems. These uses may include, but are not limited to, drinking water supply.
- **Industrial Service Supply:** Industrial service supply waters are used for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.
- **Industrial Process Supply:** Industrial process supply waters are used for industrial activities that depend primarily on water quality.
- **Navigation:** Navigation waters are used for shipping, travel, or other transportation by private, military, or commercial vessels.
- **Commercial and Sport Fishing:** Commercial and sport fishing waters are used for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
- **Warm Freshwater Habitat:** Warm freshwater habitat waters support warm-water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.
- **Estuarine Habitat:** Estuarine habitat waters support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, and shorebirds).
- **Marine Habitat:** Marine habitat waters support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals and shorebirds).
- **Wildlife Habitat:** Wildlife habitat waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.
- **Rare, Threatened, or Endangered Species:** Rare, threatened, or endangered species waters include the uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or federal laws as rare, threatened, or endangered.
- **Migration of Aquatic Organisms:** Migration of aquatic organisms waters support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms (e.g., anadromous fish).

- **Spawning, Reproduction, and/or Early Development:** Spawning, reproduction, and/or early development waters support high-quality aquatic habitats suitable for the reproduction and early development of fish.
- **Shellfish Harvesting:** Shellfish harvesting waters support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption or commercial or sports purposes.
- **Water Contact Recreation:** Water contact recreation waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and using natural hot springs.
- **Non-Contact Water Recreation:** Non-contact water recreation waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.

For Coyote Creek, beneficial uses identified include municipal and domestic supply; industrial service supply; industrial process supply; warm freshwater habitat; wildlife habitat; rare, threatened, or endangered species; water contact recreation; and non-contact water recreation. For the San Gabriel River Reach 1, beneficial uses include municipal and domestic supply, warm freshwater habitat, wildlife habitat, water contact recreation, and non-contact water recreation. For the San Gabriel River estuary, existing beneficial uses include industrial service supply; navigation; commercial and sport fishing; estuarine habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development; shellfish harvesting; water contact recreation; and non-contact water recreation. No existing beneficial uses were identified for the Artesia-Norwalk Drain.

Some segments of the San Gabriel River and its tributaries within the watershed exceed water quality objectives for various pollutants and have been identified as impaired under Section 303(d) of the CWA. To address these impairments, TMDLs have been established for some pollutants. The Artesia-Norwalk Drain is a Section 303(d) list constituent and TMDL constituent for both indicator bacteria and selenium. Coyote Creek is a Section 303(d) list constituent for ammonia, dissolved copper, diazinon, indicator bacteria, lead, pH, and toxicity, and is a TMDL

constituent for lead, copper, and zinc. The San Gabriel River Reach 1 is a Section 303(d) list constituent for coliform bacteria and pH, and a TMDL constituent for copper. The San Gabriel River Estuary is a Section 303(d) list constituent for copper, dioxin, nickel, and dissolved oxygen, and is similarly a TMDL constituent for copper.

Previous corridor storm water management studies have estimated the depth to historically high groundwater in the vicinity of the study area to range from 8 feet (ft) below ground surface (bgs) to 35 ft bgs at various site locations where infiltration basins were the selected Treatment BMPs. Per the California Department of Water Resources (DWR) Water Data Library, the nearest groundwater wells with current groundwater level and quality data are located approximately 1.8 miles (mi) south of the southern boundary of the study area, adjacent to the Cerritos Regional County Park. In June 2017, depth to groundwater at various stations at the wells ranged from 24.55 ft bgs to 90.88 ft bgs. The Basin Plan also identifies beneficial uses for groundwater where the project is located, as follows:

- **Municipal and Domestic Supply:** Municipal and domestic supply waters are used for community, military, municipal, or individual water supply systems. These uses may include, but are not limited to, drinking water supply.
- **Agricultural Supply:** Agricultural supply waters are used for farming, horticulture, or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
- **Industrial Service Supply:** Industrial service supply waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well re-pressurization.
- **Industrial Process Supply:** Industrial process supply waters are used for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, all uses of water related to product manufacture or food preparation.

Groundwater in the Coastal Plain of Los Angeles Groundwater Basin, Central Sub-Basin, in which the project is located, is characterized by the DWR as having Total Dissolved Solids (TDS) content in the sub-basin that range from 200 to 2,500 milligrams per liter (mg/l), according to data from 293 public supply wells. The average of these wells is 453 mg/l. The water quality impairments include inorganic

compounds, radiological constituents, nitrates, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs).

There are no drinking water reservoirs and recharge facilities that exist within the study area; however, several flood-control reservoirs are located within the upper part of the watershed.

2.8.3 Environmental Consequences

2.8.3.1 Temporary Impacts

Build Alternative (includes Design Options)

During construction of the Build Alternative, the proposed project's total DSA is estimated to be 29.25 ac. Work in this area will include the construction of mixed flow and auxiliary lanes, reconstruction of ramps and interchange improvements, widening of overhead bridge structures, construction of drainage structures, and creation of permanent water quality Treatment BMPs. Existing drainage facilities will be protected in place where possible and extended to the widening limits. During construction, sediment and sediment exposure are likely to occur while roadways are demolished and new structures are built. Other pollutants likely to occur during construction include metals, trash, petroleum products, wet and dry concrete waste, sanitary waste, and chemicals (e.g., gasoline, oils, grease, solvents, lubricants, and soap). Each of these pollutants on its own or in combination with others can have a detrimental effect on water quality.

Based on currently available information, the proposed project is classified as a Risk Level 1 project, which is considered low risk due to the project's location in an area with moderately erosive soils, but no sediment impairments. Under the Construction General Permit (CGP), the proposed project is required to prepare a SWPPP and implement erosion and sediment control BMPs during construction. When properly designed, implemented, and maintained, these BMPs serve as a project feature and avoid or minimize any temporary impacts to water quality. In addition, implementation of non-storm-water management and material management BMPs during construction would minimize the amount of chemical pollutants, such as concrete waste, and prevent them from entering surface waters. Non-storm-water management BMPs are source-control BMPs that prevent pollution by limiting or reducing potential pollutants at their source or eliminating off-site discharges, and also include procedures and practices designed to minimize or eliminate the discharge of pollutants from vehicle and equipment cleaning, fueling, and maintenance operations to storm water drainage systems or watercourses. Furthermore, waste

management BMPs consist of implementing procedural and structural BMPs for handling, storage, and disposal of waste generated by a construction project to prevent the release of waste materials and pollutants during storm water and non-storm-water discharges.

As described in the following project features (PF-WQ-1 and PF-WQ-2), construction activities would comply with the CGP and implementation of the SWPPP, Erosion Control Plan, the BMPs described above, and performance standards from Caltrans and the County of Los Angeles storm water ordinances would avoid and minimize the potential for temporary construction-related surface water pollution and ensure that water quality in the receiving water bodies would not be adversely impacted by erosion, sedimentation, or chemical pollutants during construction.

PF-WQ-1 Prior to commencement of construction activities, the proposed project shall comply with the provisions of the California Department of Transportation (Caltrans) National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit (Order No. 2012-0011-DWQ, as amended by Order WQ 2014-0006-EXEC, Order WQ 2014- 0077-DWQ, and Order WQ 2015-0036-EXEC, NPDES No. CAS000003) and the NPDES General Permit for Storm Water Discharges of Storm Water Runoff Associated with Construction Activities (Order No. 2009-0009-DWQ, as amended by 2012-0006-DWQ), and any subsequent permits in effect at the time of construction.

PF- WQ-2 Prior to commencement of construction activities, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented to address all construction-related activities, equipment, and materials that have the potential to impact water quality. It shall be prepared per the requirements stated in the NPDES General Permit for Storm Water Discharges of Storm Water Runoff Associated with Construction Activities and any subsequent permit in effect at the time of construction. The SWPPP shall identify the sources of pollutants that may affect the quality of storm water and include the construction site Best Management Practices (BMPs) to control pollutants such as sediment control, catch basin inlet protection, construction materials management and non-storm-water BMPs. All construction site BMPs shall follow the latest edition of the *Caltrans Project Planning and*

Design Guide (PPDG) (2017) and Caltrans *Construction Manual* (2017). These include but are not limited to temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-storm water BMPs.

Dewatering is not anticipated during construction. In the event that groundwater and any other non-storm-water dewatering activities become necessary, these activities would be subject to the requirements and permitting authority of the RWQCB.

Drainage features within the study area all have low aquatic values, primarily due to their concrete linings and lack of habitat. One drainage feature is earthen-bottomed with very little vegetation and almost no structural complexity, indicating a low aquatic habitat value. Therefore, no short-term impacts to the biological aquatic environment would occur. The BMPs outlined above identified as part of the SWPPP would avoid any impacts to aquatic species that may be present in existing downstream suitable habitat, if any.

No Build Alternative

Construction-related activities would not occur under the No Build Alternative; therefore, there would be no temporary impact to water quality or storm water runoff.

2.8.3.2 Permanent Impacts

Build Alternative (includes Design Options)

The Build Alternative represents a 5.83 ac increase in impervious surface over existing conditions due to new roadway area, interchanges, and bridges, as well as an alteration of drainage patterns on roadways. This permanent increase in impervious surface area will result in a permanent increase in runoff and pollutant loading by increasing peak loads and runoff volumes, in turn increasing the potential for erosion and sedimentation in surface waters. Contaminants in the runoff from the widened roadway could include sediments, oils, grease, and metals, similar to existing contaminants within the study area. Targeted Design Constituents are defined in the Caltrans NPDES Permit as pollutants that are expected to be generated by the proposed project and may “cause a condition of pollution or nuisance due to the discharge of excessive amounts, proximity to receiving waters,” or their properties, or may cause the impairment of Section 303(d) listed receiving waters. Targeted Design Constituents anticipated to be generated by the proposed project include copper, lead, pesticides, and nutrients. As required by the Caltrans NPDES Permit, the proposed project is required to prepare a Storm Water Data Report (SWDR) and evaluate the

project for the feasibility of Treatment BMPs that will be implemented during construction to the maximum extent practicable.

As described in the following project feature (PF-WQ-3), the SWDR will document the Caltrans-approved Treatment BMPs that will treat the Targeted Design Constituents listed above. Also included as a project element is the incorporation of Design Pollution BMPs that include the preservation of existing vegetation and slope and surface protection systems (e.g., permanent soil stabilization), as well as the use of 4:1 or flatter slopes. A new substantial source of pollutants would not be introduced, as the project is proposed to accommodate existing uses. Turbidity in downstream water bodies may increase due to the increase in impervious surface area. Overall, once Treatment and Design Pollution BMPs are properly designed, implemented, and maintained, no permanent adverse water quality impacts would occur.

PF-WQ-3 Caltrans *Project Planning and Design Guide* (2017) Approved Treatment BMPs shall be implemented to the Maximum Extent Practicable (MEP) and documented in the Storm Water Data Report (SWDR), meeting requirements in the Caltrans NPDES Permit and any subsequent permits.

No Build Alternative

The No Build Alternative would not result in changes to existing drainage systems or an increase in impervious surface areas; therefore, no substantial adverse water quality-related impacts would occur.

2.8.4 Avoidance, Minimization, and/or Mitigation Measures

Because potential temporary and permanent adverse impacts to water quality would be addressed by construction and permanent BMPs included as project features, no avoidance, minimization, and/or mitigation measures are necessary.

This page intentionally left blank