07 - LA - 605 – PM 6.36/PM 15.10
07 - LA - 5 – PM 6.39/PM 9.45
07 - LA - 105 – PM 16.14/PM 17.80
EA 07-29820
Project ID# 0713000248
June 2014

Project Study Report-Project Development Support (PSR-PDS) To Request Approval of a Locally Funded Project to Proceed to Project Approval and Environmental Document Phase

On Routes Interstate 605, Interstate 5 and Interstate 105

I-605 (between Excelsior Dr UC & south of Rose Hills Rd)

I-5 (between Florence Ave & north of Paramount Blvd)

I-105 (between Columbia Wy & I-605)

APPROVAL RECOMMENDED:

Ernesto Chaves
Los Angeles Metro
Accepts Risks Identified in this PSR-PDS and Attached Risk Register

APPROVAL RECOMMENDED:

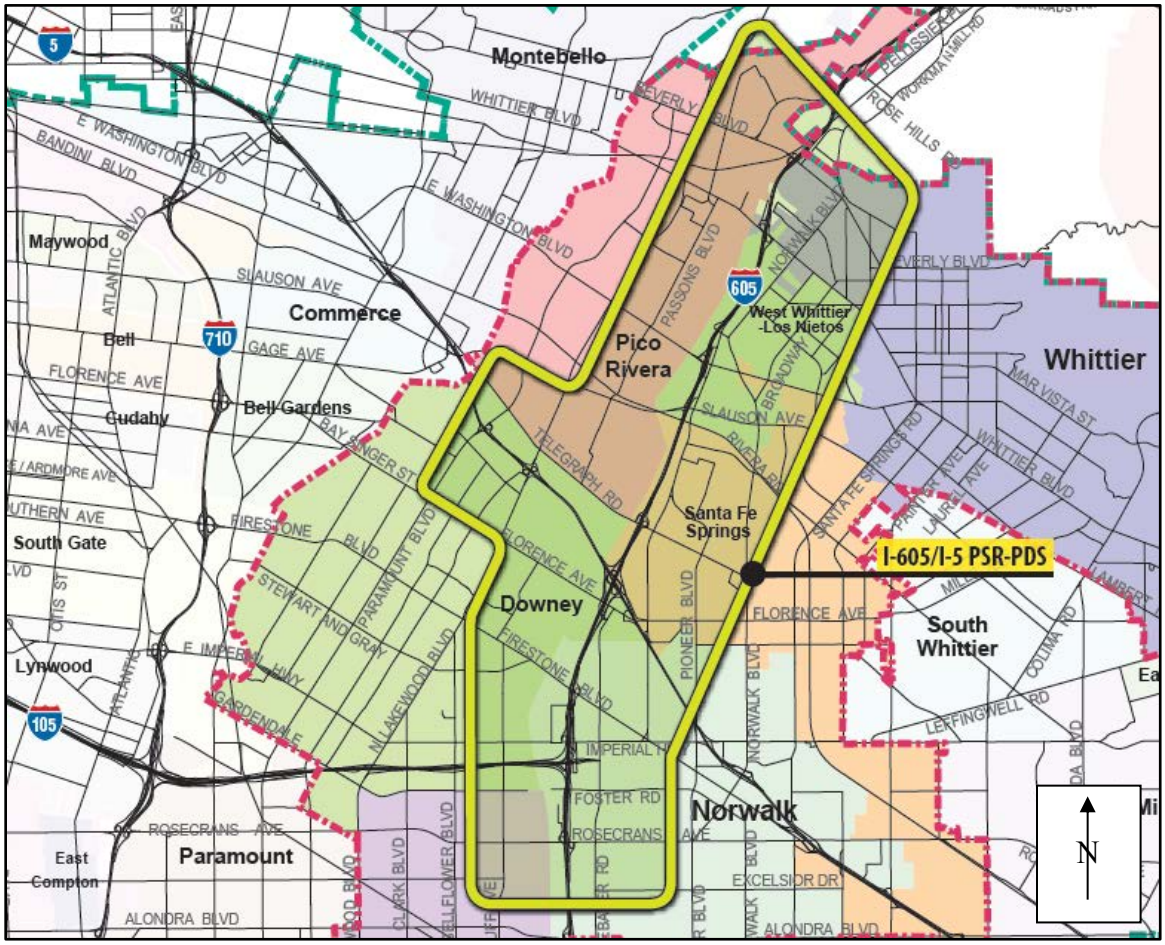
Mumbie Fredson-Cole, P.E.
CALTRANS PROJECT MANAGER

APPROVED:

for *Carrie Bowen*
DISTRICT DIRECTOR

July 2, 2014
DATE

Vicinity Map



On Routes Interstate 605 (I-605), Interstate 5 (I-5), and Interstate 105 (I-105) in Los Angeles County

I-605 between Excelsior Dr UC (PM 6.36) & south of Rose Hills Rd (PM 15.10)

I-5 between Florence Ave (PM 6.39) & north of Paramount Blvd (PM 9.45)

I-105 between Columbia Wy (PM 16.14) & I-605 (I-105 PM 17.80)

This project study report-project development support has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

JUNE 6, 2014

Adrian Anderson, P.E.
REGISTERED CIVIL ENGINEER

DATE

Table of Contents

1. INTRODUCTION

The San Gabriel River Freeway, Interstate 605 (I-605), and the Golden State Freeway, Interstate 5 (I-5) are major north-south transportation routes and the Century Freeway, Interstate 105 (I-105) is a major east-west transportation route within Los Angeles County and are integral parts of the freeway network for the Southern California metropolitan area (see Attachment A for the project vicinity map). In an effort to improve traffic flow along the freeways, the Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the Gateway Cities Council of Governments (GCCOG), the California Department of Transportation (Caltrans) District 7, and the County of Los Angeles, is proposing to construct improvements to the I-605/I-5 system interchange and potentially to I-605/I-105 as well. This PSR-PDS includes three build alternatives and a no build alternative. Each of the three build alternatives would reconfigure the improvements by reducing the occurrence of nonstandard features, adding a differing number of proposed lanes, and modifying the I-605/I-5 system interchange connectors and local interchange ramps. In addition, construction of high occupancy vehicle (HOV) direct connectors from the Century Freeway, Interstate 105 (I-105), to I-605 are included as a design option. The I-105 runs east-west from near Los Angeles International Airport (LAX) to the city of Norwalk (technically terminating at I-605). The project will be partially local-funded through Measure R funds in addition to potential Federal, State, and other funding sources. Caltrans will be the lead agency for California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) compliance.

The I-605 improvements are proposed between Excelsior Dr (PM 6.36) to the south and to just south of Rose Hills Rd (PM 15.10) to the north. The limits of the proposed improvements to I-5 are from Florence Ave (PM 6.39) to just north of Paramount Blvd (PM 9.45). The I-105/I-605 HOV direct connectors design option improvements are proposed on I-105 from Columbia Wy (PM 16.14) to I-605 (I-105 PM 17.80), and on I-605 from just south of Excelsior Dr (PM 6.36) to just north of Firestone Blvd (PM 8.62).

I-605 and I-5 are major north-south facilities between Orange and Los Angeles Counties and carry international, interstate, interregional and intraregional travel. This area is projected to experience substantial growth for goods movement. Build out of the area, as well as increased shipping traffic through the area, will generate additional traffic on the freeways and at the system interchange. Reconstruction of the system interchange and widening of the mainline facility will address existing deficiencies and accommodate projected growth. The project area includes the following cities within Los Angeles County: Bellflower, Downey, Norwalk, Pico Rivera, Santa Fe Springs, and Whittier.

Below is a summary of the project information:

Project Limits	07 - LA - 605 - PM 6.36/PM 15.10 07 - LA - 5 - PM 6.39/PM 9.45			
Number of Alternatives	4 (One No Build, Three Build Alternatives)			
Alternative	No Build Alt.	Alternative 1	Alternative 2	Alternative 3
Capital Outlay Support for PA&ED	None	$23-$29M	$32-$40M	$25-$32M
Capital Outlay Construction Cost Range	$0	$960 - $1,170M	$1,300 - $1,590M	$1,040 - $1,270M
Capital Outlay Right-of-Way Cost Range	$0	$25-$30M	$100-$130M	$30-$40M
Funding Sources	N/A	Local Funds – Measure R, STIP, Federal, and other		
Type of Facility	N/A	Freeway, Freeway Interchange		
Number of Structures	N/A	Up to 72 total: 55 on I-605 & 17 on I-5		
Structure PSR-PDS Cost Estimate (incl. in Construction Cost)	$0	$190-$250M	$270-$360M	$210-$280M
Anticipated Environmental Determination or Document	N/A	EIS/EIR		
Project Development Category	N/A	4A		

The remaining support, right of way, and construction components of the project are preliminary estimates and are not suitable for programming purposes. The Project Report will serve as the programming document for the remaining support and capital components of the project. For the cost estimate summary, see Attachment D – Cost Estimates. A Project Report (PR) will serve as the approval mechanism for the "preferred" alternative.

Project environmental studies are anticipated to begin in late 2014, and the project approval/environmental document (PA/ED) phase is expected to be completed by 2019. Construction is anticipated to begin in 2021, with a duration of three to four years. As discussed in Section 7 Alternatives, construction of improvements may be phased, which would extend the overall project delivery schedule.

2. BACKGROUND

I-605, also known as the San Gabriel River Freeway, was initially opened in 1964 and is a north-south transportation route within Los Angeles and Orange Counties and is used for international, interstate, interregional and intraregional travel. Its southerly terminus is located at Interstate 405 (I-405) and State Route 22 (SR-22) in Seal Beach (see Attachment A), and the northerly terminus is located at its junction with

Interstate 210 (I-210) in the City of Irwindale at the base of the San Gabriel Mountains. The interstate serves as a major route for access to the Los Angeles Central Business District and for Orange County trips and is approximately 27 miles in length.

I-605 is functionally classified as an Interstate, State Highway, and an Urban Principal Arterial-P3. It is also included in the Strategic Highway Network (STRAHNET) and is a Goods Movement Route. The segments within the project area are currently designated as urbanized. It is also a Surface Transportation Assistance Act (STAA) National Network Route for use by oversized trucks.

The segment of I-605 within the project limits has four to five mixed flow lanes and a High Occupancy Vehicle (HOV) lane in each direction. Based on Caltrans 2012 Traffic Data, the annual average daily traffic (AADT) volume on I-605 to the north of the I-605/I-5 interchange is 260,000 vehicles and south of the interchange is approximately 292,000 vehicles. The AADT volume on I-605 to the north of the I-605/I-105 interchange is 292,000 vehicles and south of the interchange is approximately 291,000 vehicles.

I-5 was originally constructed in 1957 and is a major north-south freeway traversing the entire west coast of the United States (approximately 1,380 miles). Within the Los Angeles County project limits it traverses the Cities of Downey, Santa Fe Springs, and Norwalk. Its northerly terminus is at the Canadian border, and its southerly terminus is at the Mexican border. I-5 is functionally classified as an Interstate and is included in the STRAHNET. It is also a High Emphasis Route and a Goods Movement Route. The segments within the project area are currently designated as urbanized. It is also a STAA National Network Route for use by oversized trucks and links the major west coast cities of San Diego, Santa Ana, Los Angeles, Sacramento, Portland, and Seattle.

The segment of I-5 within the project limits has three to four mixed flow lanes in each direction. Based on Caltrans 2012 Traffic Data, the AADT volume on I-5 to the north of the I-605/I-5 interchange is 228,000 vehicles and south of the interchange is approximately 190,000 vehicles.

Various land uses, including single-family and multiple-family dwellings, office and commercial buildings, community and public facilities, schools, utility infrastructure, and industrial buildings are located adjacent to project segments of I-605, I-5, and I-105.

Existing nonstandard features within the project area are documented in Attachment J, Non-Standard Design Features Matrix. Metro and GCCOG have identified the need for operational and capacity improvements at the I-605/I-5 interchange and approach corridors. The agencies and adjacent cities that are members of the

GCCOG Technical Advisory Committee (TAC), and the Corridor Cities Committee (CCC), which is comprised of members representing the respective city councils, and Caltrans have been involved in the development and approval of the purpose and need statement for the project.

A feasibility study was conducted for Metro and the GCCOG for this section of I-605 and SR-91 between 2011 and 2012, which became the SR-91 / I-605 / I-405 Congestion Hot Spots Feasibility Report (Feasibility Report). A number of improvements and alternatives were identified and evaluated in that study. These have been considered in the PSR-PDS along with other improvements identified as part of this work effort. In addition, this PSR-PDS is being closely coordinated with the development of the adjacent I-605/SR-91 PSR-PDS.

Opportunities to incorporate Context Sensitive Solutions and Complete Streets concepts will be studied further in the PA/ED phase of the project. In addition, the GCCOG has developed Guiding Principles which help to define balance between the needs of transportation improvement projects and the goal to minimize right-of-way (R/W) impacts in order to be sensitive to community needs. Two of the three build alternatives were developed with these R/W principles in mind. In addition, the GCCOG Strategic Transportation Plan Active Transportation Element (Draft, September 2013) provides useful information for consideration of regional and local active transportation needs in regards to Complete Streets:
http://www.gatewaycog.org/download/GCCOG%20ATP_9.6.13.pdf

3. PURPOSE AND NEED

Purpose:
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 and limit freeway improvements to within the existing State R/W to the maximum extent possible while also minimizing environmental and economic impacts.

Need:
The I-605/I-5 system interchange area currently experiences significant congestion, which is forecast to increase in the future absent physical and operational improvements to the facility. Congestion is a result of insufficient I-605 and I-5 freeway mainline capacity, closely spaced freeway entrance and exit ramps and inadequate older design features at the freeway-to-freeway interchange such as nonstandard connector ramp shoulder widths and superelevation rates. The existing freeway geometry has many features which do not meet current Caltrans Highway Design Manual Standards such as nonstandard shoulder and lane widths. There are also a number of areas within the project limits with a high concentration of

accidents. In addition, there are currently no separate HOV lanes on I-5 in the study area.

Capacity and Transportation Demand
Daily traffic in the project area is expected to increase over time. The existing interchanges have insufficient capacity for the projected traffic volumes, and will provide substandard levels of service. Existing and forecasted traffic volumes are shown in Section 4 of this report and on the geometric plans in Attachment B.

Social Demand and Economic Development
Similar to other areas in the Los Angeles Basin, population growth continues to occur. In-fill developments in the area, consisting of a mixture of residential, commercial, industrial, and office uses have been completed, are under construction, or are in the planning process. Build out of the area in accordance with City General Plans will generate additional traffic on the freeways and local streets leading to the interchange.

4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT

The Traffic Engineering Performance Assessment (TEPA) (dated November 20, 2013) prepared for this project (under separate cover) provides an assessment of readily available traffic information relevant to this project, as well as the proposed traffic analysis methodology that will be performed in the PA/ED phase of project design. The TEPA serves as a reference document for this PSR-PDS.

The TEPA provides existing and forecast traffic conditions in the project area. The basis for the TEPA background information was the SR-91 / I-605 / I-405 Congestion Hot Spots Feasibility Report (Feasibility Report) (March 2013). The Feasibility Report included traffic data and analysis for scenarios in Existing Year 2011 and Forecast Year 2035, which are applicable to this report as well. Detailed methodologies and analysis can be found in the TEPA. Key findings and recommendations are summarized herein.

The scenarios that are evaluated in the I-605/I-5 TEPA include:

No-Build – *Existing Baseline Conditions (2011).*
The No-Build alternative, or the Baseline alternative, incorporates funded and/or environmentally approved projects, as contained in the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) and regional model. The SR-91 / I-605 / I-405 Congestion Hot Spots Feasibility Report project traffic model (project model) was originally developed for application specifically for the Feasibility Report project study area, and the results have been incorporated into this report. The project model is based on the I-710 RDEIR/RDEIS model which was based on the SCAG 2008 RTP model. Specific model components

have been updated with more current information, such as the Port truck component that is based on more recent 2010 port truck survey data and resultant Port model updates for truck trip generation and distribution. Additional detail in regards to zone structure and roadway network has been added to the model to more accurately forecast project area corridor activity. Key model components include:

- Highway Network – based on I-710 DEIR/DEIS network;
- Transit Network – based on I-710 DEIR/DEIS network; and
- Mode Split – based on I-710 DEIR/DEIS trip generation and mode split.

Existing traffic volumes and traffic data was assembled from several sources as follows:

- Feasibility Report;
- I-5 Corridor Improvement Project Existing Conditions Analysis Memorandum (LSA Associates, November 2008);
- I-5 Corridor Improvement Project between I-605 and I-710 Traffic Impact Analysis (LSA Associates, March 2011);
- Caltrans Freeway Performance Measurement System (PeMS) data;
- Caltrans data; and
- Traffic counts collected for this PSR-PDS.

Forecast Year – *No-Build and With Project Conditions (2035).*
The horizon year established for the PSR/PDS is 2035. Forecasted traffic volumes and traffic conditions were obtained from the Feasibility Report for the future No-Build condition and for Alternative 1. Future volumes were forecast for the freeways, ramps, and intersections as part of the Feasibility Report. For other future conditions Alternatives (2 and 3), traffic volumes were redistributed from the Feasibility Report forecasts to reflect the proposed changes. For I-5 future No-Build conditions, volumes and levels of service were obtained from the Traffic Impact Analysis for the I-5 Corridor Improvement Project between I-605 and I-710 (LSA Associates, March 2011). Additional traffic forecast analysis can be found in the I-605/I-5 TEPA.

The following details the results of the existing and the future (horizon year 2035) with project traffic analysis as detailed within the TEPA. Freeway mainline, freeway ramp merge and diverge, weaving, and intersections / freeway ramp termini analysis are summarized below for each alternative.

The tables referenced from the TEPA that are associated with the data below show that while the three alternatives improve the overall operational conditions as compared to no-build conditions, the operational characteristics are very similar between the three alternatives. This is mainly due to the fact that the physical differences between the alternatives in terms of lane configurations, interchange and ramp geometrics, and intersection geometrics are not of the type that result in major

shifts in traffic capacity or operations. For analysis purposes, most changes were limited to different lengths of weaving, merging, and diverging areas available to the motorist. In terms of levels of service, these types of changes were found to result in little difference for levels of service.

Existing Conditions Traffic Analysis

The results of the existing conditions basic freeway segment analysis based on the Highway Capacity Manual (HCM) analysis are shown in Tables 1 and 2 below. There is one (1) mainline freeway segment along I-605 and three (3) segments along I-5 that are projected to operate at LOS E or worse during the AM and/or PM peak hour.

The results of the existing conditions freeway merge and diverge analysis based on the HCM analysis is shown in Tables 3 and 4 below. As shown, there are five (5) merge/diverge areas for I-605 that are represented as operating below LOS D during the AM and/or PM peak hour and there are eight (8) areas for I-5.

The results of the existing conditions freeway weaving analysis are shown in Tables 5 and 6 below. As shown, based on the HCM analysis, all NB I-605 segments are represented as operating at LOS D or better with the exception of the segment of I-605 from the I-5 NB on-ramp to the Telegraph Rd off-ramp (AM and PM peak hours, LOS E/F). In the SB direction, all I-605 segments are represented as operating at LOS D or better. No freeway weaving movements are present on I-5 NB or SB within the study area.

The results of the existing intersection analysis are shown in Table 8 of the TEPA (under separate cover). These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and freeway access. As shown, eight (8) locations are operating at LOS E or F in the AM and/or PM peak hour. All other locations are represented as operating at LOS D or better. It should be noted that the intersections at freeway/arterial ramp interchange locations sometimes experience poor operating conditions due to close intersection spacing and vehicle queues which back up from one location and negatively affect the operating conditions at the adjacent location. The HCM methodology fails to capture this since each location is assessed on its own. Thus, at some of these locations actual operating conditions may be worse. Intersections operating at LOS E or F for AM and/or PM peak hours include:

- Beverly Blvd & I-605 SB Ramps (unsignalized, PM peak hour, LOS F).
- I-605 NB Ramps & Pioneer Blvd/Beverly Blvd (unsignalized, AM peak hour, LOS E).
- I-605 NB off-ramp & Pioneer Blvd/ Washington Blvd (unsignalized, PM peak hour, LOS F).

- Washington Blvd & I-605 SB Ramps (unsignalized, AM and PM peak hours, LOS F/E).
- I-605 NB off-ramp & Pioneer Blvd/Slauson Ave (unsignalized, AM and PM peak hours, LOS F/F).
- Telegraph Rd & I-605 SB Ramps (signalized, PM peak hour, LOS F).
- Telegraph Rd & I-605 NB off-ramps (signalized, AM peak hour, LOS F).
- Florence Ave & I-605 SB Ramps (signalized, PM peak hour, LOS F).
- I-605 SB off-ramp & Flatbush Ave (unsignalized, AM and PM peak hours, LOS F/F).

The HCM analysis is the standard analysis required by Caltrans for TEPA documents; however, application of the HCM methodologies has inherent drawbacks when presenting corridor level congestion summaries. The primary concern with application of the Highway Capacity Software (HCS) methodologies for existing corridor conditions is that the mainline, weave and ramp merge/diverge analysis is performed independently for each specific State Highway System component without consideration of upstream or downstream activity. This spot specific analysis does not consider a system-wide approach and as such, congestion related to queuing at bottlenecks under highly congested conditions may not be represented accurately by the HCM level of service analysis. HCM analysis is very useful and has been applied for the analysis of specific segments, ramps and interchanges for geometric design purposes and other studies as described herein. Also, subsequent project phases will assess system level conditions using a variety of techniques.

Based on a review of the HCM results overlaid onto the highway network, it appears that congestion activity throughout the study area is understated in some locations based on driver perception and experience driving throughout the study area during peak periods. While the HCM analysis may not provide a system-wide summary consistent with perception, the analysis was completed accurately with existing traffic volumes culled from various sources to ensure that the base year volumes are as accurate as possible. As collection of peak hour volumes under congested conditions can result in constrained volumes and understated levels of service, peak period volumes were used in this study as the basis of generating peak hour volumes for the freeway segments and ramps to maximize confidence in the existing levels of traffic activity.

To supplement the base year HCM analysis, PeMS speed data has been extracted and reviewed along the I-605 and I-5 freeway corridors to evaluate existing hot spots and congestion activity throughout the freeway system. PeMS is the most comprehensive source of empirical speed data on the freeway system. As part of the Feasibility Report, historical PeMS data for Tuesdays, Wednesday and Thursdays during October 2010 and March 2011 were extracted and analyzed to prepare system-wide congestion figures that accurately address current peak hour levels of congestion.

The data is included on the geometric plans in Attachment B and aggregated within the TEPA in Figures 3 through 12, and in tabular format in Tables 9 through 12. The PeMS data shows the best representation of where congestion occurs, as represented by slow speeds and mainline delay. The specific areas of slow speeds indicate some type of geometric or operational issue (or both) on the system, which result in systemic speed reduction and vehicle delay at specific freeway locations. The data was used as a supplement to the volume and LOS data for the project. During the AM peak hour, the PeMS data illustrates congestion speeds on NB and SB I-605 approaching the I-5 interchange of 35 mph or less, speeds on NB I-5 through the study area are under 25 mph, and NB I-605 approaching I-105 includes speeds of under 45 mph. During the PM peak hour, the PeMS data illustrates congestion speeds on NB and SB I-605 approaching the I-5 interchange of 45 mph and 35 mph or less, respectively; and speeds on SB I-5 through the study area are generally under 35 mph north of Lakewood Blvd.

No-Build Alternative Traffic Analysis

Operational deficiencies for the freeway mainline, freeway ramps, freeway weaving, and intersections and ramp termini for Future Year 2035 No-Build conditions are described in more detail below and in the TEPA (under separate cover).

The results of the basic freeway segment analysis for No-Build conditions are shown in Tables 1 and 2 below for AM and PM peak hours, respectively. As shown, based on the HCM analysis, all NB and SB segments of I-605 are projected to operate at LOS D or better except at twelve (12) locations on I-605 and at eighteen (18) locations on I-5.

The results of the future 2035 No-Build conditions freeway merge and diverge analysis are shown in Tables 3 and 4 below. As shown, based on the HCM analysis there are eleven (11) merge/diverge areas on I-605 and fourteen (14) locations on I-5 that are projected to operate below LOS D for the AM and/or PM peak hour.

The results of the 2035 No-Build freeway weaving analysis are shown in Tables 5 and 6 below. As shown, based on the HCM analysis, all NB weaving segments of I-605 are projected to operate at LOS D or better with the exception of the segment of I-605 from the I-5 NB on-ramp to Telegraph Rd off-ramp (AM and PM peak hours, LOS F/F). In the SB direction, all weaving segments of I-605 are projected to operate at LOS E or F in both the AM and PM peak hours. There are no weaving segments on I-5 under No-Build project conditions.

The results of the 2035 No-Build intersection analysis are shown in Table 16 of the TEPA (under separate cover). These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and freeway access. For 2035 No-Build conditions, the following locations are projected

to operate at LOS E or F in the AM and/or PM peak hours, all other locations are projected to operate at LOS D or better:

- Beverly Blvd & I-605 SB Ramps (unsignalized, PM peak hour, LOS F).
- I-605 NB Ramps & Pioneer Blvd/Beverly Blvd (unsignalized, AM peak hour, LOS F).
- I-605 NB off-ramp & Pioneer Blvd/ Washington Blvd (unsignalized, PM peak hour, LOS E).
- Washington Blvd & I-605 SB Ramps (unsignalized, AM and PM peak hours, LOS F/F).
- I-605 NB off-ramp & Pioneer Blvd/Slauson Ave (unsignalized, AM and PM peak hours, LOS F/F).
- Telegraph Rd & I-605 SB Ramps (signalized, AM peak hour, LOS E).
- Telegraph Rd & I-605 NB off-ramps (unsignalized, AM and PM peak hours, LOS F/E).
- Florence Ave & I-605 SB Ramps (signalized, PM peak hour, LOS F).
- Florence Ave & Studebaker Rd (signalized, PM peak hour, LOS E).
- Florence Ave & Orr and Day Rd (signalized, AM and PM peak hours, LOS F/F).
- I-5 NB off-ramp & Orr and Day Rd/Florence Ave (unsignalized, AM and PM peak hours, LOS F/F).
- I-5 SB Ramps & Paramount Blvd (unsignalized, AM peak hour, LOS F).

It should be noted that the intersections at freeway/arterial ramp interchange locations sometimes experience poor operating conditions due to close intersection spacing and vehicle queues which back up from one location and negatively affect the operating conditions at the adjacent location. The HCM methodology fails to capture this since each location is assessed on its own. Thus, at some of these locations actual operating conditions may be worse.

Alternative 1 Traffic Analysis

Operational deficiencies for the freeway mainline, freeway ramps, freeway weaving, and intersections and ramp termini for Future Year 2035 Alternative 1 conditions are described in more detail below and in the TEPA (under separate cover).

The results of the Alternative 1 basic freeway segment analysis show that all mainline freeway segments along I-605 are projected to operate at LOS D or better except at three (3) locations as shown in Tables 1 and 2 for AM and PM peak hours, respectively. For Alternative 1 on I-5, all mainline freeway segments are projected to operate at LOS D or better except at nine (9) locations as shown in Tables 1 and 2 for AM and PM peak hours, respectively.

The results of the future Alternative 1 conditions freeway merge and diverge analysis are shown in Tables 3 and 4 below. There are seven (7) merge/diverge areas on I-605

that operate below LOS D and there are five (5) areas on I-5 that are projected to operate at LOS E or F during the AM and/or PM peak hour.

The results of the 2035 Alternative 1 freeway weaving analysis are shown in Tables 5 and 6 below. As shown, there are three (3) weaving segments on I-605 and two (2) segments on I-5 that are projected to operate at LOS E or worse in the AM and/or PM peak hours.

The results of the 2035 Alternative 1 intersection analysis are shown in Table 20 of the TEPA (under separate cover). These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and freeway access. The Washington Blvd at Pioneer Blvd (signalized) intersection is projected, under 2035 Alternative 1 conditions, to operate at LOS F in the AM peak hour, Telegraph Rd & I-605 SB Ramps (signalized) is projected to operate at LOS E in the PM peak hour, I-605 NB Ramps & Studebaker Rd (signalized) is projected to operate at LOS E in the AM peak hour, and I-5 NB Off Ramp & Orr and Day Rd/Florence Ave (unsignalized) is projected to operate at LOS F in both the AM and PM peak hours. All other locations are projected to operate at LOS D or better.

Alternative 2 Traffic Analysis

Results of the Alternative 2 analysis for 2035, including level of service assessments, are presented for the study area freeways and ramps. Intersection delay has also been calculated for arterial intersections. For 2035, Alternative 2 consists of the same improvements as Alternative 1, except that Alternative 2 is designed to adhere to Caltrans' geometric standards to the greatest extent feasible, thus requiring additional right of way as compared to Alternative 1.

Operational deficiencies for the freeway mainline, freeway ramps, freeway weaving, and intersections and ramp termini for Future Year 2035 for Alternative 2 are described in more detail below and in the TEPA (under separate cover).

The results of the Alternative 2 basic freeway segment analysis show that all segments are projected to operate at LOS D or better except at two (2) locations on I-605 and twelve (12) locations on I-5 as shown in Tables 1 and 2 below for AM and PM peak hours, respectively.

The results of the future Alternative 2 conditions freeway merge and diverge analysis are shown in Tables 3 and 4 below. As shown, there are five (5) merge and diverge areas on I-605 and four (4) locations on I-5 that are projected to operate at LOS E or F during the AM and/or PM peak hour.

The results of the 2035 Alternative 2 freeway weaving analysis are shown in Tables 5 and 6 below. As shown, there are three (3) weaving segments on I-605 and two (2)

segments on I-5 that are projected to operate at LOS E or worse in the AM and/or PM peak hour.

The results of the Alternative 2 intersection analysis are shown in Table 24 of the TEPA (under separate cover). These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and freeway access. As shown, under 2035 Alternative 2 conditions, the Washington Blvd at Pioneer Blvd (signalized) intersection is forecast to operate at LOS F in the AM peak hour, Telegraph Rd & I-605 SB Ramps (signalized) is projected to operate at LOS E in the PM peak hour, I-605 NB Ramps & Studebaker Rd (signalized) is projected to operate at LOS E in the AM peak hour, and I-5 NB Off Ramp & Orr and Day Rd/Florence Ave (unsignalized) is projected to operate at LOS F in both the AM and PM peak hours. All other locations are projected to operate at LOS D or better.

Alternative 3 Traffic Analysis

Results of the Alternative 3 analysis for 2035, including level of service assessments, are presented for the study area freeways and ramps. Intersection delay has also been calculated for arterial intersections. For 2035, Alternative 3 is a combination of Alternatives 1 and 2, providing the design standard configuration of Alternative 2 where possible while minimizing right of way acquisition. Operational deficiencies for the freeway mainline, freeway ramps, freeway weaving, and intersections and ramp termini for Future Year 2035 for Alternative 3 conditions are described in more detail below and in the TEPA (under separate cover).

The results of the Alternative 3 basic freeway segment analysis show that all segments are projected to operate at LOS D or better except at three (3) locations on I-605 and nine (9) locations on I-5 as shown in Tables 1 and 2 below for AM and PM peak hours, respectively.

The results of the future Alternative 3 conditions freeway merge and diverge analysis are shown in Tables 3 and 4 below. As shown, there are six (6) merge and diverge areas on I-605 and four (4) locations on I-5 that are projected to operate at LOS E or F during the AM and/or PM peak hour.

The results of the 2035 Alternative 3 freeway weaving analysis are shown in Tables 5 and 6 below. As shown, there are two (2) weaving segments on I-605 and two (2) segments on I-5 that are projected to operate at LOS E or worse in the AM and/or PM peak hours.

The results of the Alternative 3 intersection analysis are shown in Table 28 of the TEPA (under separate cover). These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and freeway access. As shown, the following locations are projected, under 2035

Alternative 3 conditions, to operate at LOS E or F during the peak hour(s). All other locations are projected to operate at LOS D or better:

- Beverly Blvd & I-605 SB Ramps (signalized, AM peak hour, LOS E).
- Washington Blvd at Pioneer Blvd (signalized, AM peak hour, LOS E).
- I-605 NB Ramps & Studebaker Rd (signalized, AM peak hour, LOS E).
- Washington Blvd & I-605 SB Ramps (signalized, AM and PM peak hours, LOS E/E).
- I-605 NB Ramps & Pioneer Blvd/Slauson Ave (signalized, PM peak hour, LOS E).
- Telegraph Rd & I-605 SB Ramps (signalized, PM peak hour, LOS E).
- I-5 NB Off-Ramp & Orr and Day Rd/Florence Ave (unsignalized, AM and PM peak hours, LOS F/F).

Traffic Analysis Summary

Travel demand within the I-605 and I-5 freeway corridors in the study area, including on adjacent streets, is forecast to continue to increase, leading to worsening of the already unsatisfactory conditions within the study area. Implementation of the I-605 / I-5 Improvement Project would not mitigate all of the effects of traffic growth, as some freeway segments, ramps, and intersections would continue to operate with unsatisfactory LOS. However, implementation of the project would result in fewer overall operational deficiencies and would provide additional capacity to accommodate growth in vehicles through the corridor study area.

Tables 1 through 6 below (or see Tables 29 through 34 in the TEPA, under separate cover) provide comparisons of the locations that currently operate, or are projected to operate, at LOS E or F; and were made by summarizing the LOS data by AM and PM peak hour. Since some of the alternatives change the number of mainline segments, merge and diverge locations, or weaving sections, the tables identify where these changes occur. The tables of the different analysis scenarios shows that in all cases, the future No-Build conditions have more locations at LOS E and/or F than existing conditions, and project alternatives generally improve the overall operations of the freeway mainline, merge and diverge segments, and weaving sections.

For the TEPA analysis that was completed for this PSR-PDS, the freeway segments were analyzed using the HCM methodology for mainline segments, merge and diverge segments, and weaving segments. Of the multiple mainline segments that were analyzed, only a few are shown to experience a possible worsening of LOS for the project build alternatives as compared to the future No-Build. The vast majority of the mainline segments, merge and diverge segments, and almost all weaving segments are shown to improve or maintain the same LOS with implementation of the build alternatives. The reasons that a small number of segments show a potential

worsening of LOS in the future for project build alternatives as compared to the No-Build include the following:

- With the build alternatives, in some cases the type of analysis segment changes due to the project characteristics and changes proposed as part of the alternative. For example, the project design may result in what was previously a lane addition/merge segment becoming a weaving segment, or vice-versa. The methodology and input variables for calculating LOS for merge segments differs from that for weaving segments. As an example, the available lengths (of the merge/diverge/weave areas) may have changed under a build condition, thus changing a calculation variable. Under these circumstances, even using the same traffic volumes may result in different LOS findings due to the change in density and different methodologies being applied.
- In many cases, the future build alternative model-projected traffic volumes increase from the No-Build due to forecast traffic being added to the freeway due to increased capacity (such as due to adding a mainline or HOV lane in each direction), or due to changes in ramp design or removal of ramps. The traffic model did project, as expected, traffic to increase on the segments as a direct result of added capacity due to the project, either by shifting from adjacent arterials, parallel freeways, or both. In these cases, the future build alternatives LOS could worsen if the volumes increased with the project, even with freeway capacity improvements. In a few segments, the added/shifted volumes and the proposed geometric conditions result in a worse LOS. Again in nearly all segments, even with increased model forecast volumes, the LOS improves, with the exception of a few locations.
- In some cases, the resultant difference in the analysis between build alternatives and No-Build is extremely small, but the resultant LOS becomes one grade worse due to where the LOS falls as compared to the LOS thresholds. In one location, the build alternative density is slightly over 45 pc/mi/ln whereas the No-Build was 44.7 pc/mi/ln.

In general, all of the build alternatives are shown to benefit the mainline, merge and diverge, and weaving segments for nearly all of the study locations throughout the freeway corridors, even with higher forecasted volumes due to the proposed freeway capacity enhancements. In a small number of cases and segments, the LOS is worse for one or more build alternatives due to the reasons described above, but overall operating conditions are improved. These findings are used to assess and compare the build alternatives and define a preferred alternative as part of the subsequent PA/ED phase where the alternatives will be assessed in greater detail. For the next phase of project development, during PA/ED, a more detailed analysis of traffic operations will be performed (possibly including micro-simulation) to more thoroughly assess freeway operations. The LOS results for all locations are provided in the tables below.

Table 1 - AM Peak Hour Freeway Segment Analysis Summary

Freeway/ Direction	Segment Location	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
		AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS
I-605 Northbound						
I-605 NB	Alondra Blvd Direct on-ramp to Rosecrans Ave off-ramp	C	D	D	D	D
I-605 NB	Rosecrans Ave off-ramp to I-105 WB off-ramp	C	D	D	D	D
I-605 NB	I-105 WB off-ramp to Rosecrans Ave on-ramp	C	D	D	D	D
I-605 NB	Hoxie Ave/Imperial Hwy off-ramp to Firestone Blvd off-ramp	C	C	D	D	D
I-605 NB	Firestone Blvd off-ramp to Hoxie Ave/Imperial Hwy on-ramp	C	C	C	C	C
I-605 NB	Hoxie Ave/Imperial Hwy on-ramp to I-105 EB on-ramp	C	C	C	C	C
I-605 NB	I-105 EB on-ramp to Lane Drop	C	C	C	C	C
I-605 NB	Lane Drop to Firestone Blvd on-ramp	C	D	-	-	-
I-605 NB	Studebaker Rd off-ramp/I-5 NB off-ramp/I-5 SB off-ramp to Lane Drop	C	C	C	C	D
I-605 NB	Lane Drop to Studebaker Rd on-ramp	D	D	-	-	-
I-605 NB	Studebaker Rd on-ramp to I-5 SB on-ramp	D	**E**	-	-	-
I-605 NB	Telegraph Rd off-ramp to I-5 SB/NB on-ramp	-	-	C	C	C
I-605 NB	I-5 SB/NB on-ramp to Telegraph Rd on-ramp	-	-	C	C	C
I-605 NB	I-5 SB on-ramp to I-5 NB on-ramp	D	D	-	-	-
I-605 NB	Telegraph Rd off-ramp to Telegraph Rd on-ramp	C	D	-	-	-
I-605 NB	Telegraph Rd on-ramp to Pioneer Blvd off-ramp (n/o Slauson Ave)	D	**E**	D	D	D
I-605 NB	Pioneer Blvd off-ramp (n/o Slauson Ave) to Pioneer Blvd off-ramp (n/o Washington Blvd)	C	D	D	-	D
I-605 NB	Pioneer Blvd off-ramp (n/o of Slauson Ave) to Pioneer Blvd on-ramp (n/o of Slauson Ave)	-	-	-	D	C
I-605 NB	Pioneer Blvd off-ramp (n/o Washington Blvd) to Pioneer Blvd on-ramp (s/o Washington Blvd)	C	D	-	D	-
I-605 NB	Pioneer Blvd on-ramp (n/o of Washington Blvd) to Whittier Blvd off-ramp	-	-	-	-	D
I-605 NB	Pioneer Blvd on-ramp (s/o Washington Blvd) to Saragosa St on-ramp	D	D	D	-	-
I-605 NB	Saragosa St on-ramp to Whittier Blvd off-ramp	D	**E**	-	C	-
I-605 NB	Saragosa St on-ramp to Whittier Blvd off-ramp	-	-	-	D	-
I-605 NB	Whittier Blvd off-ramp to Whittier Blvd Loop on-ramp	D	D	C	D	D
I-605 NB	Whittier Blvd Loop on-ramp to Whittier Blvd Direct on-ramp	D	D	D	D	D
I-605 NB	Whittier Blvd Direct on-ramp to Pioneer Blvd off-ramp (n/o Beverly Blvd)	D	**E**	D	D	D

Freeway/ Direction	Segment Location	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
		AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS
I-605 NB	Lane Drop to Pioneer Blvd off-ramp (n/o Beverly Blvd)	-	-	-	D	-
I-605 NB	Pioneer Blvd off-ramp (n/o Beverly Blvd) to Pioneer Blvd on-ramp (n/o Beverly Blvd)	D	D	D	D	D
I-605 NB	Pioneer Blvd on-ramp (n/o Beverly Blvd) to Rose Hills Rd off-ramp	D	**E**	D	D	D
I-605 NB	Lane Drop to Rose Hills Rd off-ramp	-	-	**E**	**E**	**E**
I-5 Northbound						
I-5 NB	Orr and Day Rd Off Ramp to I-605 NB/SB off-ramp	**F**	D	D	D	D
I-5 NB	I-605 NB/SB off-ramp to Florence Ave on-ramp	**F**	**F**	D	D	D
I-5 NB	Florence Ave on-ramp to I-605 NB on-ramp	**F**	**F**	**E**	**E**	**E**
I-5 NB	I-605 NB on-ramp to I-605 SB on-ramp	**F**	**E**	D	D	D
I-5 NB	I-605 SB on-ramp to Lakewood Blvd off-ramp	**F**	**F**	D	D	D
I-5 NB	Lakewood Blvd off-ramp to Lakewood Blvd on-ramp	**F**	**E**	D	D	D
I-5 NB	Lane Drop to Lakewood Blvd on-ramp	-	-	**F**	**F**	**F**
I-5 NB	Lakewood Blvd on-ramp to Lakewood Blvd SB on-ramp	**F**	**F**	-	-	-
I-5 NB	Lakewood Blvd on-ramp to Paramount Blvd off-ramp	**F**	**F**	-	-	-
I-5 NB	Paramount Blvd off-ramp to Paramount Blvd on-ramp	**F**	**F**	**F**	**F**	**F**
I-5 NB	Paramount Blvd on-ramp to Telegraph Rd off-ramp	**F**	**F**	**F**	**F**	**F**
I-605 Southbound						
I-605 SB	Rose Hills Rd on-ramp to Beverly Blvd off-ramp	D	**E**	**E**	**E**	**E**
I-605 SB	Beverly Blvd off-ramp to Beverly Blvd direct on-ramp	D	D	**E**	**E**	**E**
I-605 SB	Beverly Blvd Direct on-ramp to Esperanza Ave/Whittier Blvd off-ramp	D	**E**	D	D	D
I-605 SB	Esperanza Ave/Whittier Blvd off-ramp to Whittier Blvd Loop on-ramp	C	D	D	D	D
I-605 SB	Whittier Blvd Loop on-ramp to Whittier Blvd Direct on-ramp	D	D	D	D	D
I-605 SB	Whittier Blvd Direct on-ramp to Saragosa St/Bradwell Ave off-ramp	D	**E**	D	D	D
I-605 SB	Lane Drop to Washington Blvd off-ramp/Slauson Ave off-ramp	-	-	D	D	-
I-605 SB	Saragosa St/Bradwell Ave off-ramp to Washington Blvd off-ramp/Slauson Ave off-ramp	D	**E**	-	-	D
I-605 SB	Washington Blvd off-ramp/Slauson Ave off-ramp to Washington Blvd Loop on-ramp/Washington Blvd Direct on-ramp	C	D	D	D	D

Freeway/ Direction	Segment Location	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
		AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS
I-605 SB	Washington Blvd Loop on-ramp/Washington Blvd Direct on-ramp to Slauson Ave on-ramp	C	D	C	C	-
I-605 SB	Lane Drop to Slauson Ave on-ramp	-	-	D	D	-
I-605 SB	Slauson Ave on-ramp to Telegraph Rd off-ramp	D	**E**	D	D	D
I-605 SB	Telegraph Rd off-ramp to Telegraph Rd Loop on-ramp	C	**E**	D	D	D
I-605 SB	I-5 NB off-ramp/I-5 SB off-ramp/Florence Ave off-ramp to I-5 NB on-ramp	**E**	**F**	D	D	D
I-605 SB	I-5 NB on-ramp to I-5 SB on-ramp	**E**	**F**	D	D	D
I-605 SB	I-5 SB on-ramp to Florence Ave on-ramp	**E**	**F**	C	C	C
I-605 SB	Florence Ave on-ramp to Firestone Blvd off-ramp	D	**E**	C	C	D
I-605 SB	Firestone Blvd off-ramp to Imperial Hwy off-ramp/I-105 WB off-ramp	C	D	D	D	D
I-605 SB	Imperial Hwy off-ramp/I-105 WB off-ramp to Firestone Blvd on-ramp	C	C	D	D	D
I-605 SB	Firestone Blvd on-ramp to Imperial Hwy on-ramp	C	D	D	D	D
I-605 SB	Rosecrans Ave off-ramp to I-105 EB on-ramp	C	D	D	D	D
I-605 SB	I-105 EB on-ramp to Rosecrans Ave Loop on-ramp	D	**E**	D	D	D
I-605 SB	Rosecrans Ave Loop on-ramp to Rosecrans Ave Direct on-ramp	D	**E**	D	D	D
I-605 SB	Rosecrans Ave Direct on-ramp to Alondra Blvd off-ramp	C	D	D	D	D
I-5 Southbound						
I-5 SB	Gage Ave on-ramp to Paramount Blvd off-ramp	**E**	**E**	**F**	**F**	**F**
I-5 SB	Paramount Blvd off-ramp to Paramount Blvd on-ramp	**E**	**E**	**E**	**E**	**E**
I-5 SB	Paramount Blvd on-ramp to Lakewood Blvd off-ramp	**E**	**F**	-	-	-
I-5 SB	Lakewood Blvd off-ramp to Lakewood Blvd Loop on-ramp	**F**	**E**	**E**	**E**	**E**
I-5 SB	Lakewood Blvd on-ramp to Lakewood Blvd NB on-ramp	**F**	**F**	-	-	-
I-5 SB	Lakewood Blvd Loop on-ramp to I-605 SB/NB off-ramps	**F**	**F**	**F**	**F**	**F**
I-5 SB	I-605 SB/NB off-ramps to I-605 SB on-ramp	D	**E**	C	C	C
I-5 SB	I-605 SB on-ramp to I-605 NB on-ramp	D	**E**	C	C	C
I-5 SB	I-605 NB on-ramp and lane merge	D	C	D	D	D
I-5 SB	I-605 lane merge and Orr and Day Rd on-ramp	**F**	D	-	-	-

* Limited data available in I-5 Existing Conditions Analysis Memorandum.
- Definition of freeway section has changed due to proposed alternatives at this location (section end points changed or section changes from mainline to weave or merge, etc.).

Table 2 - PM Peak Hour Freeway Segment Analysis Summary

Freeway/ Direction	Segment Location	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
		PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS
I-605 Northbound						
I-605 NB	Alondra Blvd Direct on-ramp to Rosecrans Ave off-ramp	C	D	D	D	D
I-605 NB	Rosecrans Ave off-ramp to I-105 WB off-ramp	C	D	D	D	D
I-605 NB	I-105 WB off-ramp to Rosecrans Ave on-ramp	C	D	D	D	D
I-605 NB	Hoxie Ave/Imperial Hwy off-ramp to Firestone Blvd off-ramp	C	C	C	C	C
I-605 NB	Firestone Blvd off-ramp to Hoxie Ave/Imperial Hwy on-ramp	B	C	C	C	C
I-605 NB	Hoxie Ave/Imperial Hwy on-ramp to I-105 EB on-ramp	C	C	C	C	C
I-605 NB	I-105 EB on-ramp to Lane Drop	C	C	D	D	D
I-605 NB	Lane Drop to Firestone Blvd on-ramp	C	D	-	-	-
I-605 NB	Studebaker Rd off-ramp/I-5 NB off-ramp/I-5 SB off-ramp to Lane Drop	C	C	C	C	D
I-605 NB	Lane Drop to Studebaker Rd on-ramp	D	D	-	-	-
I-605 NB	Studebaker Rd on-ramp to I-5 SB on-ramp	D	**E**	-	-	-
I-605 NB	Telegraph Rd off-ramp to I-5 SB/NB on-ramp	-	-	C	C	C
I-605 NB	I-5 SB/NB on-ramp to Telegraph Rd on-ramp	-	-	D	D	D
I-605 NB	I-5 SB on-ramp to I-5 NB on-ramp	C	D	-	-	-
I-605 NB	Telegraph Rd off-ramp to Telegraph Rd on-ramp	D	**E**	-	-	-
I-605 NB	Telegraph Rd on-ramp to Pioneer Blvd off-ramp (n/o Slauson Ave)	D	**E**	D	D	D
I-605 NB	Pioneer Blvd off-ramp (n/o Slauson Ave) to Pioneer Blvd off-ramp (n/o Washington Blvd)	D	D	D	-	D
I-605 NB	Pioneer Blvd off-ramp (n/o of Slauson Ave) to Pioneer Blvd on-ramp (n/o of Slauson Ave)	-	-	-	D	D
I-605 NB	Pioneer Blvd off-ramp (n/o Washington Blvd) to Pioneer Blvd on-ramp (s/o Washington Blvd)	C	D	-	D	-
I-605 NB	Pioneer Blvd on-ramp (n/o of Washington Blvd) to Whittier Blvd off-ramp	-	-	-	-	D
I-605 NB	Pioneer Blvd on-ramp (s/o Washington Blvd) to Saragosa St on-ramp	D	D	D	-	-
I-605 NB	Saragosa St on-ramp to Whittier Blvd off-ramp	D	**E**	-	D	-
I-605 NB	Saragosa St on-ramp to Whittier Blvd off-ramp	-	-	-	D	-
I-605 NB	Whittier Blvd off-ramp to Whittier Blvd Loop on-ramp	D	D	D	D	D
I-605 NB	Whittier Blvd Loop on-ramp to Whittier Blvd Direct on-ramp	D	D	D	D	D
I-605 NB	Whittier Blvd Direct on-ramp to Pioneer Blvd off-ramp (n/o Beverly Blvd)	D	**E**	D	D	D

Freeway/ Direction	Segment Location	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
		PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS
I-605 NB	Lane Drop to Pioneer Blvd off-ramp (n/o Beverly Blvd)	-	-	-	D	-
I-605 NB	Pioneer Blvd off-ramp (n/o Beverly Blvd) to Pioneer Blvd on-ramp (n/o Beverly Blvd)	D	D	D	D	D
I-605 NB	Pioneer Blvd on-ramp (n/o Beverly Blvd) to Rose Hills Rd off-ramp	D	**E**	D	D	D
I-605 NB	Lane Drop to Rose Hills Rd off-ramp	-	-	**E**	**E**	**E**
I-5 Northbound						
I-5 NB	Orr and Day Rd Off Ramp to I-605 NB/SB off-ramp	**F**	D	D	D	D
I-5 NB	I-605 NB/SB off-ramp to Florence Ave on-ramp	**F**	**F**	**E**	**E**	**E**
I-5 NB	Florence Ave on-ramp to I-605 NB on-ramp	**F**	**F**	**E**	**E**	**E**
I-5 NB	I-605 NB on-ramp to I-605 SB on-ramp	**F**	**E**	D	D	D
I-5 NB	I-605 SB on-ramp to Lakewood Blvd off-ramp	**E**	**F**	D	D	D
I-5 NB	Lakewood Blvd off-ramp to Lakewood Blvd on-ramp	**E**	**E**	D	D	D
I-5 NB	Lane Drop to Lakewood Blvd on-ramp	-	-	**F**	**F**	**F**
I-5 NB	Lakewood Blvd on-ramp to Lakewood Blvd SB on-ramp	**E**	**E**	-	-	-
I-5 NB	Lakewood Blvd on-ramp to Paramount Blvd off-ramp	**E**	**E**	-	-	-
I-5 NB	Paramount Blvd off-ramp to Paramount Blvd on-ramp	**E**	**E**	**E**	**E**	**E**
I-5 NB	Paramount Blvd on-ramp to Telegraph Rd off-ramp	**E**	**E**	**E**	**E**	**E**
I-605 Southbound						
I-605 SB	Rose Hills Rd on-ramp to Beverly Blvd off-ramp	C	D	**E**	**E**	**E**
I-605 SB	Beverly Blvd off-ramp to Beverly Blvd direct on-ramp	C	D	D	D	D
I-605 SB	Beverly Blvd Direct on-ramp to Esperanza Ave/Whittier Blvd off-ramp	C	D	D	D	D
I-605 SB	Esperanza Ave/Whittier Blvd off-ramp to Whittier Blvd Loop on-ramp	C	D	C	C	C
I-605 SB	Whittier Blvd Loop on-ramp to Whittier Blvd Direct on-ramp	C	D	D	D	D
I-605 SB	Whittier Blvd Direct on-ramp to Saragosa St/Bradwell Ave off-ramp	C	D	D	D	D
I-605 SB	Lane Drop to Washington Blvd off-ramp/Slauson Ave off-ramp	-	-	C	C	-
I-605 SB	Saragosa St/Bradwell Ave off-ramp to Washington Blvd off-ramp/Slauson Ave off-ramp	C	D	-	-	D
I-605 SB	Washington Blvd off-ramp/Slauson Ave off-ramp to Washington Blvd Loop on-ramp/Washington Blvd Direct on-ramp	C	C	C	C	D

Freeway/ Direction	Segment Location	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
		PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS
I-605 SB	Washington Blvd Loop on-ramp/Washington Blvd Direct on-ramp to Slauson Ave on-ramp	C	D	C	C	-
I-605 SB	Lane Drop to Slauson Ave on-ramp	-	-	D	D	-
I-605 SB	Slauson Ave on-ramp to Telegraph Rd off-ramp	C	D	C	C	C
I-605 SB	Telegraph Rd off-ramp to Telegraph Rd Loop on-ramp	C	D	C	C	C
I-605 SB	I-5 NB off-ramp/I-5 SB off-ramp/Florence Ave off-ramp to I-5 NB on-ramp	D	D	D	D	D
I-605 SB	I-5 NB on-ramp to I-5 SB on-ramp	D	**E**	D	D	D
I-605 SB	I-5 SB on-ramp to Florence Ave on-ramp	**E**	**E**	C	C	C
I-605 SB	Florence Ave on-ramp to Firestone Blvd off-ramp	D	**E**	C	C	D
I-605 SB	Firestone Blvd off-ramp to Imperial Hwy off-ramp/I-105 WB off-ramp	C	D	D	D	D
I-605 SB	Imperial Hwy off-ramp/I-105 WB off-ramp to Firestone Blvd on-ramp	C	C	D	D	D
I-605 SB	Firestone Blvd on-ramp to Imperial Hwy on-ramp	C	D	D	D	D
I-605 SB	Rosecrans Ave off-ramp to I-105 EB on-ramp	C	D	D	D	D
I-605 SB	I-105 EB on-ramp to Rosecrans Ave Loop on-ramp	D	D	D	D	D
I-605 SB	Rosecrans Ave Loop on-ramp to Rosecrans Ave Direct on-ramp	D	**E**	D	D	D
I-605 SB	Rosecrans Ave Direct on-ramp to Alondra Blvd off-ramp	C	D	D	D	D
I-5 Southbound						
I-5 SB	Gage Ave on-ramp to Paramount Blvd off-ramp	**F**	**F**	**F**	**F**	**F**
I-5 SB	Paramount Blvd off-ramp to Paramount Blvd on-ramp	**F**	**F**	**F**	**F**	**F**
I-5 SB	Paramount Blvd on-ramp to Lakewood Blvd off-ramp	**F**	**F**	-	-	-
I-5 SB	Lakewood Blvd off-ramp to Lakewood Blvd Loop on-ramp	**F**	**F**	**F**	**F**	**F**
I-5 SB	Lakewood Blvd on-ramp to Lakewood Blvd NB on-ramp	**F**	**F**	-	-	-
I-5 SB	Lakewood Blvd Loop on-ramp to I-605 SB/NB off-ramps	**F**	**F**	**F**	**F**	**F**
I-5 SB	I-605 SB/NB off-ramps to I-605 SB on-ramp	D	**F**	D	D	D
I-5 SB	I-605 SB on-ramp to I-605 NB on-ramp	D	**E**	C	C	C
I-5 SB	I-605 NB on-ramp and lane merge	D	D	D	D	D
I-5 SB	I-605 lane merge and Orr and Day Rd on-ramp	**F**	**E**	-	-	-

* Limited data available in I-5 Existing Conditions Analysis Memorandum.
- Definition of freeway section has changed due to proposed alternatives at this location (section end points changed or section changes from mainline to weave or merge, etc.).

Table 3 - AM Peak Hour Freeway Merge and Diverge Analysis Summary

Freeway/ Direction	Segment Location	Merge/ Diverge	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
			AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS
I-605 Northbound							
I-605 NB	Rosecrans Ave off-ramp	Diverge	**E**	**E**	C	C	C
I-605 NB	I-105 WB off-ramp	Major Diverge	C	D	D	D	D
I-605 NB	Firestone Blvd off-ramp	Diverge	C	C	D	D	D
I-605 NB	Hoxie Ave/Imperial Hwy on-ramp	Merge	B	B	C	C	C
I-605 NB	I-105 EB on-ramp	Major Merge	B	B	B	B	B
I-605 NB	Telegraph Rd off-ramp	Lane Drop	-	-	B	B	D
I-605 NB	Studebaker Rd on-ramp	Merge	D	D	-	-	C
I-605 NB	I-5 SB on-ramp	Lane Addn	D	**F**	C	C	-
I-605 NB	Telegraph Rd on-ramp	Merge	C	C	D	D	D
I-605 NB	Pioneer Blvd off-ramp (n/o Slauson Ave)	Diverge	D	**E**	B	B	B
I-605 NB	Pioneer Blvd off-ramp (n/o Washington Blvd)	Diverge	C	D	-	-	C
I-605 NB	Pioneer Blvd on-ramp (s/o Washington Blvd)	Merge	C	C	-	-	D
I-605 NB	Saragosa St on-ramp	Merge	C	D	C	C	-
I-605 NB	Whittier Blvd off-ramp	Diverge	D	**E**	D	D	D
I-605 NB	Whittier Blvd Loop on-ramp	Merge	C	C	D	D	D
I-605 NB	Whittier Blvd Direct on-ramp	Merge	C	D	D	D	D
I-605 NB	Pioneer Blvd off-ramp (n/o Beverly Blvd)	Diverge	D	**E**	D	D	D
I-605 NB	Pioneer Blvd on-ramp (n/o Beverly Blvd)	Merge	D	D	D	D	D
I-5 Northbound							
I-5 NB	Paramount Blvd on-ramp	Merge	**F**	**F**	**F**	**F**	**F**
I-5 NB	Paramount Blvd off-ramp	Diverge	**F**	**F**	-	-	-
I-5 NB	Lakewood Blvd SB on-ramp	Merge	**F**	**F**	-	-	-
I-5 NB	Lakewood Blvd on-ramp	Merge	**F**	**F**	-	-	-
I-5 NB	Lakewood Blvd off-ramp	Diverge	**F**	**F**	B	B	B
I-5 NB	I-605 SB on-ramp	Merge	*	**F**	D	D	D
I-5 NB	I-605 NB on-ramp	Lane Addn	B	*	-	-	-
I-5 NB	Florence Ave on-ramp	Merge	D	**F**	D	D	D
I-5 NB	I-605 off-ramp	Major Diverge	*	C	-	-	-
I-605 Southbound							
I-605 SB	Beverly Blvd Off-Ramp	Diverge	D	D	**E**	**E**	**E**
I-605 SB	Beverly Blvd Direct On-Ramp	Merge	C	C	C	C	**F**
I-605 SB	Esperanza Ave/Whittier Blvd Off-Ramp	Diverge	D	D	D	D	D
I-605 SB	Whittier Blvd Loop On-Ramp	Merge	C	C	C	C	C
I-605 SB	Whittier Blvd Direct On-Ramp	Merge	C	C	C	C	C
I-605 SB	Saragosa St/Bradwell Ave Off-Ramp	Diverge	D	**E**	-	-	-

Freeway/ Direction	Segment Location	Merge/ Diverge	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
			AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS
I-605 SB	Washington Blvd Off-Ramp/Slauson Ave Off-Ramp	Diverge	**E**	**F**	C	C	D
I-605 SB	Washington Blvd Loop On-Ramp/Washington Blvd Direct On-Ramp	Merge	C	D	C	C	C
I-605 SB	Slauson Ave On-Ramp	Merge	C	C	C	C	C
I-605 SB	Telegraph Rd Off-Ramp	Diverge	D	D	C	C	C
I-605 SB	I-5 NB On-Ramp	Merge	D	**F**	C	C	C
I-605 SB	I-5 SB On-Ramp	Merge	**F**	**F**	A	A	A
I-605 SB	Florence Ave On-Ramp	Lane Addn	**F**	**F**	C	C	D
I-605 SB	Firestone Blvd Off-Ramp	Diverge	C	C	A	A	A
I-605 SB	Imperial Hwy Off-Ramp/I-105 WB Off-Ramp	Major Diverge	C	D	C	C	C
I-605 SB	Firestone Blvd On-Ramp	Merge	C	C	C	C	C
I-605 SB	I-105 EB On-Ramp	Lane Addn	**F**	**F**	B	B	B
I-605 SB	Rosecrans Ave Loop On-Ramp	Merge	C	C	D	D	D
I-605 SB	Rosecrans Ave Direct On-Ramp	Lane Addn	C	C	D	D	D
I-605 SB	Saragosa St off-ramp	Diverge	-	-	-	-	C
I-5 Southbound							
I-5 SB	Paramount Blvd off-ramp	Diverge	D	**E**	**F**	**F**	**F**
I-5 SB	Paramount Blvd on-ramp	Merge	D	**F**	-	-	-
I-5 SB	Lakewood Blvd off-ramp	Diverge	D	**F**	-	-	-
I-5 SB	Lakewood Blvd on-ramp	Merge	D	**F**	**F**	**F**	**F**
I-5 SB	NB Lakewood Blvd on-ramp	Merge	D	**F**	-	-	-
I-5 SB	I-605NB on-ramp	Merge	-	-	C	C	C
I-5 SB	Florence Ave/I-605 NB/SB off ramp	Major Diverge	*	**F**	-	-	-
I-5 SB	Florence Ave/Orr and Day Rd on-ramp	Merge	**F**	**F**	-	-	-

* Limited data available in I-5 Existing Conditions Analysis Memorandum.
- Definition of freeway section has changed due to proposed alternatives at this location (section end points changed or section changes from mainline to weave or merge, etc.).

Table 4 - PM Peak Hour Freeway Merge and Diverge Analysis Summary

Freeway/ Direction	Segment Location	Merge/ Diverge	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
			PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS
I-605 Northbound							
I-605 NB	Rosecrans Ave off-ramp	Diverge	**E**	**E**	C	C	C
I-605 NB	I-105 WB off-ramp	Major Diverge	C	D	D	D	D
I-605 NB	Firestone Blvd off-ramp	Diverge	C	C	D	D	D
I-605 NB	Hoxie Ave/Imperial Hwy on-ramp	Merge	B	B	C	C	C
I-605 NB	I-105 EB on-ramp	Major Merge	C	C	C	C	C

Freeway/ Direction	Segment Location	Merge/ Diverge	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
			PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS
I-605 NB	Telegraph Rd off-ramp	Lane Drop	-	-	B	B	D
I-605 NB	Studebaker Rd on-ramp	Merge	D	D	-	-	**E**
I-605 NB	I-5 SB on-ramp	Lane Addn	D	D	**E**	**E**	-
I-605 NB	Telegraph Rd on-ramp	Merge	C	C	D	D	D
I-605 NB	Pioneer Blvd off-ramp (n/o Slauson Ave)	Diverge	D	**E**	C	C	C
I-605 NB	Pioneer Blvd off-ramp (n/o Washington Blvd)	Diverge	D	D	-	-	D
I-605 NB	Pioneer Blvd on-ramp (s/o Washington Blvd)	Merge	C	C	-	-	D
I-605 NB	Saragosa St on-ramp	Merge	C	D	C	C	-
I-605 NB	Whittier Blvd off-ramp	Diverge	D	**E**	D	D	D
I-605 NB	Whittier Blvd Loop on-ramp	Merge	C	C	D	D	D
I-605 NB	Whittier Blvd Direct on-ramp	Merge	C	D	D	D	D
I-605 NB	Pioneer Blvd off-ramp (n/o Beverly Blvd)	Diverge	D	**E**	D	D	D
I-605 NB	Pioneer Blvd on-ramp (n/o Beverly Blvd)	Merge	C	D	D	D	D
I-5 Northbound							
I-5 NB	Paramount Blvd on-ramp	Merge	**F**	C	D	D	D
I-5 NB	Paramount Blvd off-ramp	Diverge	**F**	**E**	-	-	-
I-5 NB	Lakewood Blvd SB on-ramp	Merge	**F**	C	-	-	-
I-5 NB	Lakewood Blvd on-ramp	Merge	**F**	C	-	-	-
I-5 NB	Lakewood Blvd off-ramp	Diverge	**F**	**F**	B	B	B
I-5 NB	I-605 SB on-ramp	Merge	*	**F**	**E**	**E**	**E**
I-5 NB	I-605 NB on-ramp	Lane Addn	B	*	-	-	-
I-5 NB	Florence Ave on-ramp	Merge	D	**F**	D	D	D
I-5 NB	I-605 off-ramp	Major Diverge	*	C	-	-	-
I-605 Southbound							
I-605 SB	Beverly Blvd Off-Ramp	Diverge	C	D	**E**	**E**	**E**
I-605 SB	Beverly Blvd Direct On-Ramp	Merge	B	C	C	C	C
I-605 SB	Esperanza Ave/Whittier Blvd Off-Ramp	Diverge	C	D	D	D	D
I-605 SB	Whittier Blvd Loop On-Ramp	Merge	C	C	C	C	C
I-605 SB	Whittier Blvd Direct On-Ramp	Merge	C	C	C	C	C
I-605 SB	Saragosa St/Bradwell Ave Off-Ramp	Diverge	D	D	-	-	-
I-605 SB	Washington Blvd Off-Ramp/Slauson Ave Off-Ramp	Diverge	D	**E**	B	B	D
I-605 SB	Washington Blvd Loop On-Ramp/Washington Blvd Direct On-Ramp	Merge	C	C	D	D	D
I-605 SB	Slauson Ave On-Ramp	Merge	B	C	C	C	C
I-605 SB	Telegraph Rd Off-Ramp	Diverge	C	D	C	C	C
I-605 SB	I-5 NB On-Ramp	Merge	C	C	C	C	C

Freeway/ Direction	Segment Location	Merge/ Diverge	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
			PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS
I-605 SB	I-5 SB On-Ramp	Merge	**F**	**F**	A	A	A
I-605 SB	Florence Ave On-Ramp	Lane Addn	**F**	**F**	**E**	**E**	**E**
I-605 SB	Firestone Blvd Off-Ramp	Diverge	C	C	A	A	A
I-605 SB	Imperial Hwy Off-Ramp/I-105 WB Off-Ramp	Major Diverge	D	D	C	C	C
I-605 SB	Firestone Blvd On-Ramp	Merge	C	C	C	C	C
I-605 SB	I-105 EB On-Ramp	Lane Addn	**F**	**F**	A	A	A
I-605 SB	Rosecrans Ave Loop On-Ramp	Merge	D	D	**E**	**E**	**E**
I-605 SB	Rosecrans Ave Direct On-Ramp	Lane Addn	C	D	**E**	**E**	**E**
I-605 SB	Saragosa St off-ramp	Diverge	-	-	-	-	C
I-5 Southbound							
I-5 SB	Paramount Blvd off-ramp	Diverge	**E**	**F**	**F**	**F**	**F**
I-5 SB	Paramount Blvd on-ramp	Merge	D	**F**	-	-	-
I-5 SB	Lakewood Blvd off-ramp	Diverge	**E**	**F**	-	-	-
I-5 SB	Lakewood Blvd on-ramp	Merge	D	**F**	**F**	**F**	**F**
I-5 SB	NB Lakewood Blvd on-ramp	Merge	D	**F**	-	-	-
I-5 SB	I-605NB on-ramp	Merge	-	-	D	D	D
I-5 SB	Florence Ave/I-605 NB/SB off ramp	Major Diverge	*	**F**	-	-	-
I-5 SB	Florence Ave/Orr and Day Rd on-ramp	Merge	**F**	C	-	-	-

* Limited data available in I-5 Existing Conditions Analysis Memorandum.
- Definition of freeway section has changed due to proposed alternatives at this location (section end points changed or section changes from mainline to weave or merge, etc.).

Table 5 - AM Peak Hour Freeway Weaving Analysis Summary

Freeway/ Direction	Segment Location	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
		AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS	AM Peak Hr. LOS
I-605 Northbound						
I-605 NB	Rosecrans Ave on-ramp to Hoxie Ave/Imperial Hwy off-ramp	C	C	D	D	D
I-605 NB	Firestone Blvd on-ramp to Studebaker Rd off-ramp/I-5 NB off-ramp/I-5 SB off-ramp	D	D	C	C	D
I-605 NB	I-5 NB on-ramp to Telegraph Rd off-ramp	**E**	**F**	-	-	-
I-605 NB	Pioneer Blvd off-ramp (n/o Slauson Ave) to Pioneer Blvd off-ramp (n/o Washington Blvd)	-	-	**E**	**E**	-
I-5 Northbound						
I-5 NB	Lakewood on-ramp to Paramount Blvd off-ramp	**-**	**-**	**F**	**F**	**F**

I-605 Southbound						
I-605 SB	Washington Blvd On-Ramp to Slauson Ave Off-Ramp	-	-	-	-	D
I-605 SB	Telegraph Rd Loop on-ramp to I-5 NB off-ramp/I-5 SB off-ramp/Florence Ave off-ramp	D	**F**	**E**	**E**	**E**
I-605 SB	Imperial Hwy on-ramp to Rosecrans Ave off-ramp	D	**E**	D	D	D
I-5 Southbound						
I-5 SB	Paramount Blvd on-ramp to Lakewood Blvd off-ramp	**-**	**-**	**F**	**F**	**F**

- Definition of freeway section has changed due to proposed alternatives at this location (section end points changed or section changes from mainline to weave or merge, etc.).

Table 6 - PM Peak Hour Freeway Weaving Analysis Summary

Freeway/ Direction	Segment Location	Existing	2035 No-Build	2035 Alt. 1	2035 Alt. 2	2035 Alt. 3
		PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS	PM Peak Hr. LOS
I-605 Northbound						
I-605 NB	Rosecrans Ave on-ramp to Hoxie Ave/Imperial Hwy off-ramp	C	D	D	D	D
I-605 NB	Firestone Blvd on-ramp to Studebaker Rd off-ramp/I-5 NB off-ramp/I-5 SB off-ramp	D	D	D	D	D
I-605 NB	I-5 NB on-ramp to Telegraph Rd off-ramp	**F**	**F**	-	-	-
I-605 NB	Pioneer Blvd off-ramp (n/o Slauson Ave) to Pioneer Blvd off-ramp (n/o Washington Blvd)	-	-	**E**	**E**	-
I-5 Northbound						
I-5 NB	Lakewood Blvd on-ramp to Paramount Blvd off-ramp	**-**	**-**	**F**	**F**	**F**
I-605 Southbound						
I-605 SB	Washington Blvd On-Ramp to Slauson Ave Off-Ramp	-	-	-	-	D
I-605 SB	Telegraph Rd Loop on-ramp to I-5 NB off-ramp/I-5 SB off-ramp/Florence Ave off-ramp	D	**F**	D	D	D
I-605 SB	Imperial Hwy on-ramp to Rosecrans Ave off-ramp	D	**E**	**E**	**E**	**E**
I-5 Southbound						
I-5 SB	Paramount Blvd on-ramp to Lakewood Blvd off-ramp	**-**	**-**	**F**	**F**	**F**

- Definition of freeway section has changed due to proposed alternatives at this location (section end points changed or section changes from mainline to weave or merge, etc.).

While the interchange configurations assumed as part of Alternatives 1, 2, and 3 are similar, this project includes alternative local and system interchange configurations as well as other improvement design options which result in varied traffic operations. New traffic data and analysis specific to this project and the proposed alternatives and design options will be prepared in the PA/ED phase. The design options are not limited to the build alternatives they have been assigned to within this PSR-PDS, and they could be considered within any combination of alternatives that will be further analyzed in the PA/ED phase.

The Highway Capacity Manual (HCM) methodologies are used for all capacity analysis for the PSR-PDS. HCM is not accurate in oversaturated conditions with heavy congestion, nor does it account for queuing impacts from one freeway segment to another or from one intersection to another. For this reason, other detailed analysis techniques such as mesoscopic and microscopic traffic simulation may be considered during the PA/ED phase. As part of the GCCOG Strategic Transportation Plan (STP), a series of simulation models are being prepared which cover the study area boundaries (and beyond). These models are based on the 2012 SCAG model, which will be the best modeling tool available that can be used for traffic operations analysis and testing of design alternatives during the PA/ED phase.

Safety / Accident Data

The Traffic Accident Surveillance and Analysis System (TASAS) – Transportation System Network (TSN) data was provided by Caltrans District 7 and included accidents that occurred between April 1, 2007 and March 31, 2010 on I-605 from PM 6.36 to 15.10 and between July 1, 2008 and June 30, 2011 on I-5 from PM 6.39 to 9.45, as well as the interchange ramps. This data was analyzed for the Feasibility Report and a summary of the accident data provided in TASAS-TSN Table B is shown below in Table 7 for I-605, and in Table 8 for I-5.

Table 7: I-605 TASAS Table B Accident Rates from 4/1/2007 to 3/31/2010

Location	Actual Accident Rates			Statewide Average Accident Rates			Number of Accidents			
	Fatal	F+I	Total	Fatal	F+I	Total	Fatal	Inj	PDO	Total
Freeway Mainline Segments										
Alondra Blvd - I-105 – Northbound	0.003	0.160	0.630	0.011	0.320	1.120	1 (1%)	49 (26%)	141 (74%)	191
Alondra Blvd - I-105 – Southbound	0.007	0.200	0.520	0.011	0.320	1.120	2 (1%)	58 (37%)	98 (62%)	158
I-105 - I-5 – Northbound	0.000	**0.380**	**1.600**	0.012	0.360	1.190	0 (0%)	124 (24%)	391 (76%)	515
I-105 - I-5 – Southbound	0.006	0.200	0.690	0.012	0.360	1.190	2 (1%)	64 (29%)	157 (70%)	223
I-5 - Telegraph Rd – Northbound	**0.011**	0.290	1.130	0.011	0.350	1.140	1 (1%)	26 (25%)	77 (74%)	104
I-5 - Telegraph Rd – Southbound	0.000	**0.460**	**2.100**	0.011	0.350	1.140	0 (0%)	42 (22%)	151 (78%)	193
Telegraph Rd - Slauson Ave – Northbound	0.000	0.240	0.960	0.011	0.340	1.100	0 (0%)	43 (25%)	126 (75%)	169
Telegraph Rd - Slauson Ave – Southbound	**0.011**	**0.780**	**3.030**	0.011	0.340	1.100	2 (0%)	136 (25%)	398 (74%)	536
Slauson Ave - Washington Blvd – Northbound	**0.015**	0.230	0.930	0.012	0.370	1.160	1 (2%)	15 (24%)	47 (75%)	63
Slauson Ave - Washington Blvd – Southbound	0.000	0.310	**1.470**	0.012	0.370	1.160	0 (0%)	21 (21%)	79 (79%)	100
Washington Blvd - Whittier Blvd – Northbound	0.000	0.190	0.740	0.012	0.370	1.180	0 (0%)	41 (26%)	115 (74%)	156
Washington Blvd - Whittier Blvd – Southbound	0.000	0.330	**1.550**	0.012	0.370	1.180	0 (0%)	69 (21%)	258 (79%)	327
Whittier Blvd - Beverly Blvd – Northbound	0.000	0.310	**1.180**	0.011	0.350	1.140	0 (0%)	36 (26%)	102 (74%)	138

Location	Actual Accident Rates			Statewide Average Accident Rates			Number of Accidents			
	Fatal	F+I	Total	Fatal	F+I	Total	Fatal	Inj	PDO	Total
Whittier Blvd - Beverly Blvd – Southbound	0.000	**0.380**	**1.290**	0.011	0.350	1.140	0 (0%)	44 (29%)	106 (71%)	150
Beverly Blvd - Rose Hills Rd – Northbound	0.006	**0.350**	1.050	0.011	0.340	1.120	1 (1%)	55 (33%)	111 (66%)	167
Beverly Blvd - Rose Hills Rd – Southbound	0.000	0.270	0.880	0.011	0.340	1.120	0 (0%)	43 (31%)	97 (69%)	140
Freeway-to-Freeway Direct Connector										
I-605 NB Off Ramp to WB I-105	0.000	0.060	0.170	0.005	0.200	0.600	0 (0%)	3 (38%)	5 (63%)	8
I-605 NB On Ramp from EB I-105	0.000	0.020	0.150	0.002	0.070	0.200	0 (0%)	1 (17%)	5 (83%)	6
I-605 SB On Ramp from EB I-105	0.000	0.050	0.180	0.002	0.070	0.200	0 (0%)	2 (29%)	5 (71%)	7
I-605 SB Off Ramp to WB I-105	0.000	**0.110**	**0.310**	0.002	0.090	0.300	0 (0%)	6 (35%)	11 (65%)	17
I-605 NB Off Ramp to I-5	0.000	0.050	0.130	0.002	0.090	0.300	0 (0%)	3 (43%)	4 (57%)	7
I-605 NB On Ramp from SB I-5	0.000	**0.270**	**1.090**	0.003	0.190	0.650	0 (0%)	3 (25%)	9 (75%)	12
I-605 NB On Ramp from NB I-5	0.000	**0.190**	**0.920**	0.003	0.110	0.350	0 (0%)	4 (21%)	15 (79%)	19
I-605 SB On Ramp from SB I-5	0.000	0.030	0.230	0.003	0.110	0.350	0 (0%)	1 (13%)	7 (87%)	8
I-605 SB On Ramp from NB I-5	0.000	0.180	**0.700**	0.003	0.190	0.650	0 (0%)	1 (25%)	3 (75%)	4
I-605 SB Off Ramp to I-5/Florence Ave	**0.026**	0.080	0.180	0.002	0.090	0.300	1 (14%)	2 (29%)	4 (57%)	7
Freeway-to-Arterial Ramps										
I-605 NB Off Ramp to Rosecrans Ave	0.000	0.380	1.050	0.004	0.420	1.200	0 (0%)	4 (36%)	7 (64%)	11
I-605 NB On Ramp from Rosecrans Ave	0.000	**1.030**	**2.620**	0.002	0.260	0.750	0 (0%)	9 (39%)	14 (61%)	23
I-605 SB On Ramp from WB Rosecrans Ave	0.000	0.170	0.500	0.004	0.200	0.700	0 (0%)	1 (33%)	2 (67%)	3
I-605 SB On Ramp from EB Rosecrans Ave	0.000	**0.530**	**0.700**	0.003	0.200	0.650	0 (0%)	3 (75%)	1 (25%)	4
I-605 NB Off Ramp to Imperial Hwy	0.000	0.200	0.300	0.004	0.280	0.950	0 (0%)	2 (67%)	1 (33%)	3
I-605 NB On Ramp from Imperial Hwy	0.000	0.000	0.380	0.002	0.160	0.550	0 (0%)	0 (0%)	2 (100%)	2
I-605 SB Off Ramp to Imperial Hwy	0.000	0.190	1.140	0.004	0.420	1.200	0 (0%)	1 (17%)	5 (83%)	6
I-605 SB On Ramp from Imperial Hwy	0.000	**0.220**	**0.770**	0.002	0.070	0.200	0 (0%)	2 (29%)	5 (71%)	7
I-605 NB On Ramp from Firestone Blvd	0.000	**0.410**	**1.550**	0.002	0.260	0.750	0 (0%)	4 (27%)	11 (73%)	15
I-605 SB Off Ramp to Firestone Blvd	0.000	**0.480**	**2.090**	0.002	0.310	1.000	0 (0%)	5 (23%)	17 (77%)	22
I-605 SB On Ramp from Firestone Blvd	0.000	**0.720**	**1.970**	0.003	0.200	0.650	0 (0%)	8 (36%)	14 (64%)	22
I-605 NB Off Ramp to Florence Ave	0.000	**0.090**	0.910	0.004	0.280	0.950	0 (0%)	1 (10%)	9 (90%)	10
I-605 NB On Ramp from Florence Ave	0.000	0.000	**0.680**	0.002	0.160	0.550	0 (0%)	0 (0%)	3 (100%)	3
I-605 SB Off Ramp to Florence Ave	0.000	0.000	0.170	0.005	0.150	0.450	0 (0%)	0 (0%)	1 (100%)	1
I-605 SB On Ramp from Florence Ave	0.000	0.000	**0.460**	0.002	0.140	0.450	0 (0%)	0 (0%)	7 (100%)	7
I-605 NB Off Ramp to EB Telegraph Rd	0.000	0.080	0.340	0.004	0.260	0.850	0 (0%)	1 (25%)	3 (75%)	4
I-605 NB Off Ramp to WB Telegraph Rd	0.000	**1.040**	**3.390**	0.006	0.340	1.200	0 (0%)	4 (31%)	9 (69%)	13
I-605 NB On Ramp from Telegraph Rd	0.000	**0.370**	**0.990**	0.002	0.260	0.750	0 (0%)	3 (38%)	5 (63%)	8
I-605 SB Off Ramp to Telegraph Rd	**0.130**	0.390	0.910	0.004	0.420	1.200	1 (14%)	2 (29%)	4 (57%)	7
I-605 SB On Ramp from Telegraph Rd	0.000	0.060	0.660	0.002	0.260	0.800	0 (0%)	1 (9%)	10 (91%)	11
I-605 NB Off Ramp to Slauson Ave	0.000	0.170	**1.540**	0.004	0.280	0.950	0 (0%)	2 (11%)	16 (89%)	18
I-605 SB Off Ramp to Slauson Ave	0.000	0.400	0.890	0.004	0.420	1.200	0 (0%)	5 (45%)	6 (55%)	11
I-605 SB On Ramp from EB Slauson Ave	0.000	**0.350**	**0.700**	0.003	0.200	0.650	0 (0%)	1 (50%)	1 (50%)	2
I-605 NB Off Ramp to Washington Blvd	0.000	**0.510**	**1.410**	0.004	0.230	0.700	0 (0%)	4 (36%)	7 (64%)	11
I-605 NB On Ramp from Washington Blvd	0.000	0.180	0.360	0.004	0.230	0.700	0 (0%)	2 (50%)	2 (50%)	4
I-605 SB Off Ramp to WB Washington Blvd	0.000	**1.290**	**3.670**	0.004	0.260	0.850	0 (0%)	6 (33%)	12 (67%)	18
I-605 SB On Ramp from WB Washington Blvd	0.000	0.180	0.270	0.004	0.200	0.700	0 (0%)	2 (67%)	1 (33%)	3
I-605 SB On Ramp from EB Washington Blvd	0.000	0.000	**1.400**	0.003	0.200	0.650	0 (0%)	0 (0%)	6 (100%)	6
I-605 NB On Ramp from Saragosa St	0.000	0.000	0.220	0.002	0.260	0.750	0 (0%)	0 (0%)	2 (100%)	2
I-605 SB Off Ramp to Saragosa St	0.000	0.160	**0.640**	0.002	0.180	0.600	0 (0%)	1 (25%)	3 (75%)	4
I-605 NB Off Ramp to Whittier Blvd (SR-72)	0.000	0.190	**1.240**	0.002	0.310	1.000	0 (0%)	2 (15%)	11 (85%)	13
I-605 NB On Ramp from EB Whittier Blvd (SR-72)	0.000	0.000	**0.710**	0.003	0.190	0.650	0 (0%)	0 (0%)	3 (100%)	3
I-605 NB On Ramp from WB Whittier Blvd (SR-72)	0.000	**0.130**	**0.390**	0.003	0.110	0.350	0 (0%)	1 (33%)	2 (67%)	3
I-605 SB Off Ramp to Whittier Blvd (SR-72)	0.000	0.080	0.170	0.002	0.180	0.600	0 (0%)	1 (50%)	1 (50%)	2
I-605 SB On Ramp from WB Whittier Blvd (SR-72)	0.000	**0.340**	**0.690**	0.003	0.190	0.650	0 (0%)	2 (50%)	2 (50%)	4
I-605 SB On Ramp from EB Whittier Blvd (SR-72)	0.000	0.000	**1.030**	0.003	0.110	0.350	0 (0%)	0 (0%)	5 (100%)	5
I-605 NB Off Ramp to Pioneer/Beverly Blvd	0.000	0.000	0.700	0.004	0.280	0.950	0 (0%)	0 (0%)	6 (100%)	6
I-605 NB On Ramp from Pioneer/Beverly Blvd	0.000	0.000	0.130	0.002	0.160	0.550	0 (0%)	0 (0%)	1 (100%)	1
I-605 SB Off Ramp to EB Beverly Blvd	0.000	**0.430**	**1.280**	0.006	0.340	1.200	0 (0%)	3 (33%)	6 (67%)	9
I-605 SB On Ramp from WB Beverly Blvd	0.000	0.000	0.650	0.004	0.200	0.700	0 (0%)	0 (0%)	2 (100%)	2
I-605 SB On Ramp from EB Beverly Blvd	0.000	0.160	**1.140**	0.003	0.200	0.650	0 (0%)	1 (14%)	6 (86%)	7

Note: 1. Accident rates are expressed as # of accidents/ Million vehicle miles for mainline, and # of accidents/Million vehicles for connector and ramps.
2. F+I = fatal plus injury, PDO = Property Damage Only.
3. **Bold** accident rates above are in excess of the Statewide average.

The following includes a summary of I-605 accident data analysis from Table 7 for mainline, freeway-to-freeway direct connectors, and freeway-to-arterial interchange ramps. Note, the numbering below is not consecutive as they correlate to the accident locations within the Feasibility Report, which includes additional accident data and analysis for further reference. The numbering values below are reflected on the geometric plans for reference within Attachment B and were included to maintain a consistent cross-reference to the Feasibility Report. The build alternatives geometric plans (see Attachment B) include these high accident location callouts to help illustrate where proposed improvements may have additional utility beyond serving capacity, circulation, or other improvement needs.

I-605 Freeway Mainline Segments

1. NB I-605 from I-105 to I-5: This section of freeway is located NB on I-605 from the I-105 interchange to the I-5 interchange. The average fatality and injury rate is similar to the statewide average fatality and injury rate but the total accident rate is 1.6 times the average total rate. The predominant accident in this section is rear end (72%) followed by sideswipe (19 %). Both these types of accidents are congestion related and most of the accidents are taking place in the left and interior lanes. The most common primary factor is speeding (67%).

5. SB I-605 from Telegraph Rd to I-5: This segment is on I-605 SB from Telegraph Rd to I-5. The fatality and injury rate is slightly higher than the statewide average rate and the total accident rate is almost 1.8 times the statewide average accident rate. Trucks accounted for 17% of the vehicles involved in accidents. The predominant type of accident in this section is rear end accidents (67%) with speeding (62%) being the most common primary factor.

6. SB I-605 from Slauson Ave to Telegraph Rd: This segment is on I-605 SB from Slauson Ave to Telegraph Rd. The fatality and injury rate is more than twice the statewide average rate and the total accident rate is almost 3 times the statewide average accident rate. Trucks accounted for 9% of the vehicles involved in accidents. The predominant type of accident in this section is rear end accidents (80%) with speeding (76%) being the most common primary factor.

I-605 Freeway-to-Freeway Direct Connectors

10. NB I-605 on-ramp from NB I-5: This NB on-ramp is located at the interchange of I-605 and NB I-5. Both the fatality and injury rate and the total accident rate are higher than the statewide average rate by 1.7 and 2.6 times respectively. Trucks are involved in 39% of the accidents. The predominant type of accident is sideswipe with most being in the right lane, and other violations (37%) and improper turn (32%) the most common contributing factors.

I-605 Freeway-to-Arterial Interchange Ramps

14. NB I-605 on-ramp from Rosecrans Ave: This on-ramp is from Rosecrans Ave to I-605 NB. Both the fatality and injury rate and the total accident rate are higher than the statewide average rate by 4 and 3.5 times respectively. The largest accident type is broadside (52%) and other factors (70%) is the most common contributing factor.

15. I-605 NB/I-105 eastbound on-ramp to Firestone Blvd: This on-ramp is located at the interchange of Firestone Blvd and I-605. This section of off-ramp is joined by the on-ramp from I-105 and I-605 south of Firestone Blvd. The fatality and injury rate is 5.6 times the statewide average rate and the total accident rate is 5.0 times the statewide average total accident rate. The most predominant accident type is rear end (41%) and other violations (45%) and speeding (36%) are the most common factors.

16. NB I-605 on-ramp from Firestone Blvd: This NB on-ramp is located near the interchange of I-605 and Firestone Blvd. Both the fatality and injury rate and total accident rate are higher than the statewide average rate by 3.6 and 3.4 times respectively. The predominant accident type is sideswipe (33%) and the predominant factors are speeding (33%) and improper turn.

17. NB I-605 on-ramp to westbound Telegraph Rd: This NB on-ramp is located at the interchange of I-605 and Telegraph Rd. It is just north of the I-605 and I-5 interchange. The fatality and injury rate and the total accident rate are 3.1 and 2.8 times higher than the statewide average, respectively. The predominant type of accident is rear end (69%) with most being in the right lane, and the most common factor being speeding (69%).

18. NB I-605 on-ramp to Slauson Ave: This NB on-ramp is located at the interchange of I-605 and Slauson Ave. The total accident rate is 1.6 times higher than the statewide average. The predominant type of accident is rear end (83%) with most being in the right lane, with the most common factors being speeding (50%) and other violations (33%).

20. SB I-605 on-ramp from Imperial Highway: This SB on-ramp is located at the interchange of I-605 and Imperial Highway. Both the fatality and injury rate and the total accident rate are higher than the statewide average rate by 4.7 and 6.6 times, respectively. There does not appear to be a clear indication of the predominant type of accident type with sideswipe, rear end, and hit object each occurring the same (29%).

21. SB I-605 on-ramp from eastbound Firestone Blvd: This SB on-ramp is located at the interchange of I-605 and Firestone Blvd. The fatality and injury rate is slightly higher at 1.4 times the statewide average rate; however the total accident rate is 2.9 times the statewide average rate. The most predominant type of accident was hit object (64%) and speeding (45%) is the most common factor.

22. SB I-605 on-ramp to Firestone Blvd: This SB on-ramp is located at the interchange of I-605 and Firestone Blvd. The fatality and injury rate and total accident rate are higher than the statewide average rate by 1.5 times and 2.1 times, respectively. The predominant collision types are rear end (41%), sideswipe (23%) and broadside (23 percent). Most of the accidents occur in the right lane with the predominant collision factors being other violations (45%) and speeding (36%).

23. SB I-605 Off-Ramp to westbound Washington Blvd: This SB off-ramp is located at the interchange of I-605 and Washington Blvd. The fatality and injury rate and total accident rate are higher than the statewide average rate by 5.0 times and 4.3 times, respectively. The predominant accident type is rear end (94%). The predominant collision factors are other violations (50%) and speeding (39%).

Table 8 includes a summary of I-5 accident data analysis.

Table 8: I-5 TASAS Table B Accident Rates from 7/1/2008 to 6/30/2011

Location	Actual Accident Rates			Statewide Average Accident Rates			Number of Accidents			
	Fatal	F+I	Total	Fatal	F+I	Total	Fatal	Inj	PDO	Total
Freeway Mainline Segments										
Imperial Hwy - I-605 – Northbound	0.005	0.300	1.270	0.013	0.400	1.300	1 (0%)	58 (23%)	192 (76%)	251
Imperial Hwy - I-605 – Southbound	0.000	0.290	**1.310**	0.013	0.400	1.300	0 (0%)	57 (22%)	201 (78%)	258
I-605 - Lakewood Blvd – Northbound	0.000	0.210	0.830	0.013	0.400	1.310	0 (0%)	38 (25%)	115 (75%)	153
I-605 - Lakewood Blvd – Southbound	**0.016**	0.300	1.260	0.013	0.400	1.310	3 (1%)	53 (23%)	175 (76%)	231
Paramount Blvd - Slauson Ave – Northbound	0.000	0.12	0.77	0.004	0.33	1.07	0 (0%)	11 (15%)	62 (85%)	73
Paramount Blvd - Slauson Ave – Southbound	0.010	0.16	0.82	0.004	0.33	1.07	1 (1%)	14 (18%)	63 (81%)	78
Freeway-to-Freeway Direct Connector										
I-5 NB Off Ramp to I-605	0.000	0.080	0.240	0.002	0.090	0.300	0 (0%)	2 (33%)	4 (67%)	6
I-5 NB On Ramp from NB I-605/Studebaker Rd	0.000	0.030	0.270	0.004	0.150	0.450	0 (0%)	1 (10%)	9 (90%)	10
I-5 SB Off Ramp to I-605/Florence Ave	0.000	**0.100**	0.250	0.002	0.090	0.300	0 (0%)	5 (38%)	8 (62%)	13
I-5 SB On Ramp from SB I-605	**0.045**	**0.270**	**0.500**	0.004	0.150	0.450	1 (9%)	5 (45%)	5 (45%)	11
I-5 SB On Ramp from NB I-605/Studebaker Rd	0.000	0.000	**0.600**	0.003	0.110	0.350	0 (0%)	0 (0%)	4 (100%)	4
Freeway-to-Arterial Ramps										

Location	Actual Accident Rates			Statewide Average Accident Rates			Number of Accidents			
	Fatal	F+I	Total	Fatal	F+I	Total	Fatal	Inj	PDO	Total
I-5 NB Off Ramp to Imperial Hwy	0.000	0.000	**1.860**	0.004	0.420	1.200	0 (0%)	0 (0%)	4 (100%)	4
I-5 NB On Ramp from Imperial Hwy	0.000	**0.270**	0.400	0.003	0.200	0.650	0 (0%)	2 (67%)	1 (33%)	3
I-5 SB On Ramp from Imperial Hwy	0.000	**0.580**	**0.870**	0.002	0.260	0.750	0 (0%)	2 (67%)	1 (33%)	3
I-5 NB On Ramp from Pioneer Blvd	0.000	0.000	0.360	0.002	0.220	0.630	0 (0%)	0 (0%)	2 (100%)	2
I-5 SB Off Ramp to Pioneer	0.000	0.150	0.700	0.004	0.420	1.200	0 (0%)	2 (22%)	7 (78%)	9
I-5 NB Off Ramp to Florence Ave	0.000	**1.290**	**3.870**	0.004	0.280	0.950	0 (0%)	3 (33%)	6 (67%)	9
I-5 NB On Ramp from WB Florence Ave	0.000	0.170	0.350	0.003	0.200	0.650	0 (0%)	1 (50%)	1 (50%)	2
I-5 SB Off Ramp to Florence Ave	0.000	0.180	0.990	0.004	0.420	1.200	0 (0%)	2 (18%)	9 (82%)	11
I-5 SB On Ramp from Florence Ave	0.000	0.000	**1.120**	0.002	0.260	0.800	0 (0%)	0 (0%)	1 (100%)	1
I-5 NB Off to Lakewood Blvd/Rosemead Blvd	0.000	0.170	**1.020**	0.002	0.180	0.600	0 (0%)	1 (17%)	5 (83%)	6
I-5 NB On from NB Lakewood Blvd	0.000	**0.430**	0.650	0.003	0.190	0.650	0 (0%)	2 (40%)	3 (60%)	5
I-5 NB On from SB Lakewood Blvd	0.000	0.00	0.003	0.003	0.110	0.350	0	0	0	0
I-5 SB Off Ramp to Lakewood Blvd	0.000	0.000	0.400	0.004	0.420	1.200	0 (0%)	0 (0%)	3 (100%)	3
I-5 SB On Ramp from SB Lakewood Blvd	0.000	0.000	0.500	0.003	0.190	0.650	0 (0%)	0 (0%)	2 (100%)	2
I-5 SB On Ramp from NB Lakewood Blvd	0.000	**0.350**	**0.700**	0.003	0.110	0.350	0 (0%)	1 (50%)	1 (50%)	2
I-5 NB Off Ramp to Paramount Blvd	0.000	0.400	**2.420**	0.003	0.350	1.010	0 (0%)	3 (17%)	15 (83%)	18
I-5 NB On Ramp from Paramount Blvd	0.000	0.150	0.590	0.003	0.240	0.720	0 (0%)	1 (25%)	3 (75%)	4
I-5 SB Off Ramp to Paramount Blvd	0.000	**0.490**	0.820	0.003	0.350	1.010	0 (0%)	3 (60%)	2 (40%)	5
I-5 SB On Ramp from Paramount Blvd	0.000	0.110	0.560	0.002	0.220	0.630	0 (0%)	1 (20%)	4 (80%)	5

Note: 1. Accident rates are expressed as # of accidents/ Million vehicle miles for mainline, and # of accidents/Million vehicles for connector and ramps.
2. F+I = fatal plus injury, PDO = Property Damage Only.
3. **Bold** accident rates above are in excess of the Statewide average.

The following includes a summary of I-5 accident data analysis from Table 8 for mainline, freeway-to-freeway direct connectors, and freeway-to-arterial interchange ramps. Note, the numbering below is not consecutive as they correlate to the high accident locations within the Feasibility Report, which includes additional accident data and analysis for further reference. The numbering values below are reflected on the geometric plans within Attachment B for reference and were included to maintain a consistent cross-reference to the Feasibility Report. The build alternatives geometric plans (see Attachment B) include these high accident location callouts to help illustrate where proposed improvements may have additional utility beyond serving capacity, circulation, or other improvement needs.

I-5 Freeway Mainline Segments

47. NB I-5 from Imperial Highway to I-605: This segment of I-5 NB is just south of I-605 approaching the interchange. The fatality rate is comparable to the statewide average rate, but the total accident rate is 2.1 times the total statewide average accident rate. The majority of the accidents in this section of freeway are rear end (83%) and the most common primary factor is speeding (80%).

I-5 Freeway-to-Arterial Interchange Ramps

48. NB I-5 off-ramp to Florence Ave: This is an off-ramp from I-5 NB to Florence Ave. The fatality and injury rate and the total accident rate are 4.6 and 4.1 times

the statewide average accident rate, respectively. The largest accident types are sideswipe (36%), broadside (27%) and rear end (27%), and other violations (55%) is the most common contributing factor.

The proposed I-605/I-5 interchange and other corridor improvements would provide exit and connector ramps with standard superelevation rates and transitions, which would provide drivers a better opportunity to negotiate turns. Proposed mainline weaving lengths between ramps would be longer for some Alternatives, which should improve drivers' ability to weave more safely across lanes. Lane and shoulder widths are being made standard for some build Alternatives, and as a result accidents attributed to these existing nonstandard geometric configurations should be reduced. On I-605 and I-5 mainlines, auxiliary lanes have been included or direct on-ramps have been eliminated for closely spaced interchanges to increase the effective spacing between interchanges and reduce the number of conflict points, which would improve weaving conditions between ramp junctions to enhance safety and reduce the accident potential.

A subsequent accident analysis will be conducted during PA/ED using the latest TASAS report data available. Coordination with the Caltrans Traffic Studies/Safety branch will be carried out to obtain the necessary information. Based on the review and assessment of the reports, and evaluation of existing and proposed (future) infrastructure and operating conditions, the District Safety Engineer will estimate the scope and magnitude of the formal future safety analysis (i.e., safety audit, safety analysis, safety review). The safety study will be performed by, or under the direction of the District Traffic Safety Engineer and will focus on the evaluation of off-peak and peak period conditions.

Recommended Design Features

The following features are recommended for consideration during design in PA/ED to improve operations and safety within the I-605/I-5 corridor study area:

- Acceleration/Deceleration lanes
- ADA Compliant Pedestrian Facilities
- Bicyclist and Transit Facilities
- Context Sensitive Solutions
- Traffic signals
- Metal beam guard rails
- Lighting
- Overhead sign placement
- Clear recovery zones
- Ramp metering and detection systems
- CHP enforcement areas
- Retaining and/or sound walls
- On- and off-ramp location analysis

Traffic Engineering Studies

The traffic analysis that will be prepared for the project during PA/ED will study existing (2013), opening year (2020), and long-range (2040 or 2045) conditions. The following analyses will be included:

- Capacity
- Delay
- Queue
- Level of service
- Signal warrants
- Ramp merge/diverge
- Weave analysis
- Special truck studies
- Ramp metering analysis
- Safety analysis

Other Traffic Considerations and Coordination

In addition to the traffic analyses listed above, traffic-related efforts during PA/ED should include the following:

- Electrical systems, including traffic signals, safety lighting, and overhead sign structures
- Coordination with California Department of Transportation District 7 and the City regarding signal coordination and connection to the Los Angeles Regional Transportation Management Center (LARTMC)
- Transportation Management Plan data sheets
- Stage construction

5. DEFICIENCIES

Based on traffic analysis in the TEPA as summarized herein (Section 4) and within the Feasibility Report, the existing I-605/I-5 interchange, mainline segments, system interchange connectors, and local interchange ramps do not have adequate capacity to support the growth in traffic volumes anticipated by the forecast year 2035 due to future traffic growth and economic development. In addition, improvements to I-605 and I-5 are needed to provide additional capacity (both for HOV and/or mixed flow lanes) as well as for continuity of the I-5 improvement project to the south of Florence Ave (by others).

Without this project, the operation and efficiency of the I-605/I-5 interchange and project corridors would continue to deteriorate over time, resulting in increased congestion, delays, and consequently decreased LOS at the system interchange, local

interchanges, and adjacent intersections. Further, without safety improvements to provide improved geometric design features for mainline segments, system interchange connectors, and local interchange ramps and intersections, high accident trends may continue. For deficiencies in regards to the high accident rates, see high accident rate locations which are described in greater detail in Section 4 (Safety / Accident Data) and also on the geometric plans, see Attachment B.

Current operational deficiencies for the freeway mainline, freeway ramps, freeway weaving, and intersections and ramp termini are described in more detail below. For a summary of the deficiency analysis, see Tables 6 through 9 in Section 4 (Traffic Analysis Summary).

In summary on I-605 under existing conditions, based on the HCM analysis, the basic freeway segments are generally represented as operating at LOS D or better during the peak hours except the areas near I-5. Most of the merge and diverge areas on I-605 operate at LOS D or better except for the areas near I-5 and I-105. As previously discussed, the HCM analysis was supplemented with PeMS data analysis obtained from the Feasibility Report. During the AM peak hour, the PeMS data illustrates congestion speeds on NB and SB I-605 approaching the I-5 interchange of 35 mph or less, and NB I-605 approaching I-105 includes speeds of under 45 mph. During the PM peak hour, the PeMS data illustrates congestion speeds on NB and SB I-605 approaching the I-5 interchange of 45 mph and 35 mph or less, respectively.

On I-5 under existing conditions, based on the HCM analysis, the basic freeway segments are generally represented as operating in the NB direction at LOS E or F and many SB segments are generally represented as operating at LOS E or F during the peak hours. Most of the merge and diverge areas of I-5 operate at LOS E or F. There are no weaving segments on I-5. During the AM peak hour, the PeMS data illustrates congestion speeds on NB I-5 through the study area are under 25 mph. During the PM peak hour, the PeMS data illustrates congestion speeds on SB I-5 through the study area are generally under 35 mph north of Lakewood Blvd.

6. CORRIDOR AND SYSTEM COORDINATION

I-605 and I-5 are STAA routes on the National Network, Priority Global Gateway trade corridors as part of the Global Gateways Development Program, and Transportation Gateways of Major Statewide Significance per the Caltrans Interregional Transportation Strategic Plan (ITSP).

The 2012 Regional Transportation Plan (RTP), titled “2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future”, adopted by SCAG in April 2012, and the 2013 Federal Transportation Improvement Program (FTIP) adopted by SCAG’s

Executive/Administration Committee in September 2012 include improvements to I-5, I-605, and I-105 in the following projects:

(1) FTIP Project ID# LA0D73, RTP Project ID# LA0D73
Description: Route 5: La Mirada, Norwalk & Santa Fe Springs-Orange Co Line to Route 605 Junction. Widen for HOV & mixed flow lanes, reconstruct Valley View (EA 2159A0 = 21591, 21592, 21593, 21594, 21595, PPNO 2808 = 4153, 2808, 4154, 4155, 4156). TCRP#42.2&42.1

(2) FTIP Project ID# LAE2577, RTP Project ID# LAE2577
Description: Route 5: Study Norwalk, Santa Fe Springs, Downey, Montebello, and Commerce: On I-5, conduct planning, environmental studies for widening w/HOV & mixed flow lanes from I-605 to I-710. (EA2159E, 2159F, PPNO 2808C, 2808D) PA/ED only

(3) FTIP Project ID# LA0D73B, RTP Project ID# LA0D73B
Description: Route 5: In Norwalk: From Orange County Line to Route 605: Carmenita interchange improvement (EA 2159C0, PPNO 2808A) (TCRP 42.3, & 43).

(4) FTIP Project ID# LA0B952, RTP Project ID# LA0B952
Description: Route 710: Reconstruct I-710 Interchanges at I-5, at I-405, at SR 91, and at I-105. As part of the I-710 Corridor Program proposing 4 truck lanes (ports-rail yards), 10 mixed flow lanes (port-SR-60) (ISTEA ID # 37) (SAFTEA-LU 3773)

The I-710 Corridor Program project, LA0B952, is roughly 2 miles from the project limits on I-105 and should be considered in the overall system coordination due to potential overlap, or gaps, in improvements between the two projects.

The Draft I-605 Transportation Concept Report (TCR) (Caltrans, June 2013) shows that 6 lanes (in each direction) are required on I-605 from SR-91 to I-105 to attain the minimum acceptable LOS F0 and 8 lanes in each direction are required to attain LOS D. Between I-105 and I-5, 6 lanes in each direction will achieve the minimum acceptable LOS F0 and 17 total lanes are required to attain LOS D. North of I-5, 11 total lanes are required for LOS F0 and 8 lanes in each direction are required for LOS D. Existing I-605 includes 5 mixed flow lanes and 1 HOV lane south of I-105, 4 mixed flow lanes and 1 HOV lane between I-105 and I-5, and 4 mixed flow lanes and 1 HOV lane north of I-5 in each direction.

The Draft I-5 TCR (Caltrans, June 2013) shows that South of I-605, 5 lanes in each direction are required for LOS F0 and 7 lanes in each direction are required for LOS D. North of I-605, 9 total lanes are required on I-5 to attain LOS F0 and 6 lanes in

each direction are required for LOS D. Existing I-5 includes 3 mixed flow lanes in each direction south of I-605 and 4 mixed flow lanes in each direction north of I-605.

Caltrans published the California High-Occupancy Vehicle Lane Degradation Action Plan (July 31, 2013) (HOV Action Plan) in response to the findings within the 2011 California High-Occupancy Vehicle Lane Degradation Determination Report (July 31, 2013). The HOV Action Plan includes recommendations for HOV improvements within the project study area. The HOV Action Plan calls for increased enforcement by the California Highway Patrol (CHP) since the degraded segments have violation rates in excess of 10%. The project team has included a 10' median shoulder which provides adequate R/W for CHP enforcement areas per the Caltrans HOV Design Guidelines (see the geometric plans in Attachment B and cross-sections in Attachment C). Degradation in other locations has been determined to be caused by bottlenecks on adjacent mixed flow lanes, which affects the HOV lanes and should be improved due to the addition of mixed flow lanes and removal of lane drops throughout the study area. Caltrans mentions active traffic management strategies to manage freeway demand and includes on-ramp and connector ramp metering, which may require further improvements to alternatives during PA/ED upon further coordination with Caltrans. Degraded HOV study area segments include NB I-605 from SR-91 to Beverly Blvd and SB I-605 from SR-60 to I-105. Various a.m. and p.m. peak hour remediation strategies are identified including restriping through the I-605/I-5 interchange to remove the NB and SB lane drops. Widening through the I-605/I-5 interchange is proposed by the project, along with extension of HOV lanes on I-5 through the interchange to Paramount Blvd.

In addition to the Caltrans HOV Degradation Report and Action Plan, SCAG has been conducting traffic modeling and analysis for an "Express Travel Choices Study" throughout the Los Angeles metropolitan region. Possible future implementation of the study findings needs to be monitored during the PA/ED phase to determine how the I-605/I-5 study area may be impacted by, or benefit from, the SCAG study in regards to variable tolls, a network of toll express lanes, and other potential pricing scenarios.

Opportunities to incorporate Context Sensitive Solutions and Complete Streets concepts will be studied further in the PA/ED phase of the project. In addition, the GCCOG has developed Guiding Principles which help to define a balance between the needs of the transportation system and the goal to minimize right-of-way (R/W) impacts. Two of the three build alternatives were developed with these R/W principles in mind. In addition, the GCCOG Strategic Transportation Plan Active Transportation Element (Draft, September 2013) provides useful information for consideration of regional and local active transportation needs:
http://www.gatewaycog.org/download/GCCOG%20ATP_9.6.13.pdf

7. ALTERNATIVES

Project Alternatives

Four alternatives were analyzed for the project: a no build alternative and three new improvement alternatives, including additional design option configurations. Each of the three new improvement alternatives includes the addition of travel lanes, removal of some non-standard features, and other operational improvements. In addition, multiple alternatives were analyzed and discarded during the PSR-PDS process in addition to improvements and alternatives that were reviewed during the Feasibility Report phase, some of which were revisited.

There also remains a need to further refine local interchange geometry during PA/ED for potential interchange configurations based on further Project Development Team (PDT) and GCCOG TAC input. In addition, during PA/ED all signs will be considered for upgrades to current standards.

Proposed improvements at the project limits will be designed for compatibility with future freeway widening projects to minimize future reconstruction. Additional details of each alternative are provided below:

No Build Alternative: Under this alternative, no reconstruction or improvements would be made to the existing I-605 / I-5 interchange or highway corridors other than routine roadway maintenance and currently approved improvements. See Attachment B for the No Build Alternative via recent aerial images within Alternatives 1, 2, or 3 plans. The I-5 widening project (by others) is considered as a background project that would become part of the future no build scenario, and the I-5 improvement project by others is shown in white CAD linework for all build Alternatives within Attachment B. The No Build Alternative does not address the Purpose and Need for the project.

Alternative 1: This alternative would reconstruct the existing I-605/I-5 interchange and provide mixed flow lanes and auxiliary (aux) lane improvements throughout the I-5 and I-605 corridors. This alternative would reconstruct the existing I-605/I-5 interchange, with the addition of a NB three-lane exit on I-5 to the I-605 connector including one option lane and a dedicated connector lane from NB I-5 to SB I-605. SB I-605 to SB I-5 will be widened to a two-lane connector and the SB I-5 to SB I-605 connector exit will be widened to three lanes, including an option lane. Proposed I-5 improvements for Alternative 1 include the addition of High Occupancy Vehicle (HOV) lanes in each direction from Florence Ave to Paramount Blvd, a SB mixed flow lane from Lakewood Blvd to Florence Ave, and a NB aux lane from I-605/I-5 to Lakewood Blvd. Additional I-5 mainline and I-605 connector improvements are proposed at Florence Ave to tie into proposed I-5 improvements by others. The I-605 proposed improvements generally include a SB mixed flow lane from Beverly Blvd to Rosecrans Ave, and a NB mixed flow lane from the existing lane drop at Firestone

Blvd to just north of Beverly Blvd. Also proposed is a two- to four-lane NB Collector-Distributor (C-D) road from Florence Ave to Telegraph Rd, various I-605/I-5 system interchange improvements, local interchange modifications, additional aux lanes (for SB I-605 from I-5 to I-105, for NB I-605 from southerly project limits to Rosecrans Ave, and for NB I-605 from Slauson Ave to Washington Blvd), and arterial improvements. Alternative 1 includes SB I-605 braided ramps for Washington Blvd and Slauson Ave.

I-605 also consists of a mixture of 11' & 12' mixed flow lanes between Rosecrans Ave and Beverly Blvd. Any new ramp realignments, and ramp ormainline widening maintains standard shoulders and 12' lanes. The existing I-605 HOV median is unchanged from existing with non-standard widths varying from 0' to 4'. I-5 consists of a mixture of 11' & 12' mixed flow lanes between Paramount Blvd and Florence Ave to minimize Right-of-Way impacts. The I-5 HOV median maintains non-standard shoulder and lane widths. See Attachment B for the proposed geometric layout sheets and Attachment C for the cross-sections, and see the Alternatives Descriptions Table 9 below for additional detail. Existing nonstandard freeway mainline left median shoulders varying from 0' to 4' and existing nonstandard mainline lane widths varying from 11' to 12' are proposed to be maintained under this alternative.

Alternative 1 addresses the Purpose and Need for the project by reducing congestion and improving freeway operations (both mainline and ramps), improving safety, improving local and system interchange operations, by providing separate I-5 HOV lanes, and minimizes adjacent right-of-way, environmental and economic impacts.

Alternative 2: Alternative 2 improvements are largely the same as for Alternative 1, however, the intent was to maximize the application of Caltrans Highway Design Manual standards related to lane and shoulder widths for the mainline freeway, connectors, and ramps. In doing so, additional R/W impacts were incurred due to the wider geometric cross-section, thus, the highway centerline was shifted in some locations where reasonable to consolidate impacts to one side of the highway.

Alternative 2 adds a NB I-5 mixed flow lane from the NB I-605/NB I-5 connector to Lakewood Blvd. The Alternative includes I-5 HOV lanes in both directions from Florence Ave to Paramount Blvd. Also proposed are a two- to four-lane NB I-605 C-D road from Florence Ave to Telegraph Rd, various I-605/I-5 system interchange improvements, local interchange modifications, additional aux lanes (for SB I-605 from I-5 to I-105, for NB I-605 from southerly project limits to Rosecrans Ave, and for NB I-605 from Slauson Ave to Washington Blvd), and arterial improvements. Alternative 2 also includes SB I-605 braided ramps for Washington Blvd and Slauson Ave. I-605 consists of standard shoulders and 12' mixed flow lanes between Rosecrans Ave. and Beverly Blvd. Any new ramp realignment or widening maintains standard shoulders and standard 12' lanes. The I-605 HOV median consists of the

standard 4' buffer, 12' HOV lane with a 10' inside shoulder. I-5 consists of standard shoulders and 12' mixed flow lanes between Paramount Blvd and Florence Ave. The I-5 HOV median consists of the standard 4' buffer and 12' HOV lane with a 10' inside shoulder. See Attachment B for the proposed geometric layout sheets and see the Alternatives Descriptions Table 9 below for additional details.

There has also been discussion about the potential need to include enough distance between rows of columns under the I-605/I-5 interchange structure to accommodate 6 lanes in each direction on I-5 versus 5 lanes in each direction as currently proposed. The additional mixed flow lane in each direction would require redesign of the I-605/I-5 interchange in order to accommodate the widening. At this time, it is assumed that any need to further widen I-5 to 6 lanes in each direction would be analyzed during PA/ED in order to take advantage of updated traffic modeling to determine if the need for further widening is justified.

Alternative 2 addresses the majority of the Purpose and Need for the project by reducing congestion and improving freeway operations (both mainline and ramps), improving safety, improving local and system interchange operations, and by providing separate I-5 HOV lanes. However, by meeting Caltrans' geometric design standards related to lane and shoulder widths, the Alternative does not minimize adjacent right-of-way, environmental and economic impacts as highlighted in Table 10, Number of Affected Properties by Land Use Type.

Alternative 2 – HOV Connector Design Options: Construction of HOV direct connectors from the I-105 to I-605 are included as a design option within Alternative 2. The I-105/I-605 HOV direct connectors design option improvements shown in Alternative 2 (see Attachment B for geometric layout plans of Option 3) are proposed on I-105 from Columbia Wy (PM 16.14) to I-605 (I-105 PM 17.80), and on I-605 from just south of Excelsior Dr (PM 6.36) to just north of Firestone Blvd (PM 8.62). The HOV direct connectors include a significant R/W encroachment into the adjacent properties due to the outside mainline widening in order to accommodate the median merging and diverging of the HOV flyover connectors.

The HOV Connector Option 1 links SR-91 to I-605 to I-105 with direct connectors. A key conclusion from the travel demand model data utilized from the Feasibility Report is that the HOV peak period volumes projected between I-605/I-105 are approximately two times higher than HOV peak period volumes for I-605/SR-91 (between 600 and 1,200 HOV per hour at I-605/I-105 versus between 200 and 600 HOV per hour at I-605/SR-91).

HOV Connector Option 2 scales back the number of HOV direct connection options to just those with the highest volumes (to and from the south on I-605 at I-105). HOV Option 3 includes HOV direct connectors for all movements at I-605/I-105 and

is represented in Attachment B (geometric layout plans) and Attachment C (typical cross sections).

Based on the preliminary traffic analysis and HOV vehicle volumes, a geometric analysis was completed for the following HOV direct connector movements:

HOV Connector Option 1 (as described above):

- SR-91 WB to I-605 NB
- I-605 NB to I-105 WB
- I-105 EB to I-605 SB
- I-605 SB to SR-91 EB

HOV Connector Option 2 (as described above, but deleting the SR-91/I-605 HOV Connector):

- I-605 NB to I-105 WB
- I-105 EB to I-605 SB

HOV Connector Option 3 (same as HOV Connector Option 2, but with the addition of the I-605 SB to I-105 WB HOV Connector, and the reverse direction):

- I-605 NB to I-105 WB
- I-105 EB to I-605 NB
- I-605 SB to I-105 WB
- I-105 EB to I-605 SB

Due to the wider geometric footprint required for HOV Connector Option 1 (a SR-91/I-605/I-105 HOV direct connector movement) there is a significant R/W encroachment into the adjacent properties along SR-91. Due to the much lower volume of vehicles anticipated to use the HOV connector movement to/from SR-91 and I-605, compared to the I-605/I-105 HOV connector movement, Option 1 does not provide a significant HOV operational improvement relative to its R/W impact and cost.

Relative to HOV Connector Option 2, there are several parcels with significant R/W encroachment along I-605 due to the widened geometric footprint, particularly with implementation of standard lane and shoulder widths under Alternative 2. These encroachment areas could be reduced by implementation of nonstandard lane and shoulder widths. This HOV Connector Option provides regional HOV connectivity relative to the I-605/I-405 HOV direct connectors currently under construction and the existing I-105/I-110 HOV direct connectors. This particular I-605 NB to I-105 WB HOV connector also provides flexibility related to on-going planning efforts by SCAG and Metro related to potential Express Lanes implementation.

Relative to HOV Connector Option 3, there are a few isolated parcels that would have R/W encroachment with implementation of an I-605 SB to I-105 WB (and reverse movement) HOV direct connector due to the widening on I-605 for the connector. Similar to HOV Connector Option 1, there is a lower volume of vehicles anticipated to use the HOV connector movement from I-605 SB to I-105 WB (and the reverse movement) than would use the I-605 NB to I-105 WB (and the reverse movement). Unlike the I-605 NB to I-105 WB (and the reverse movement), the forecasted HOV volumes for the I-605 SB to I-105 WB (and the reverse movement) do not approach a full lane of travel demand on either connector (with a maximum projected hourly demand of 870 vehicles, well below the direct connector capacity). In addition, providing for the I-605 SB to I-105 WB (and reverse movement) HOV connector coupled with the I-605 NB to I-105 WB (and reverse movement) HOV connector, dramatically widens the geometric footprint along I-105 to accept both HOV connectors (see Attachments B and C) and also significantly increases the cost.

Consideration must be given to the fact that if such an HOV system were implemented connecting I-605 and I-105, additional traffic demand would be attracted to the facility due to the regional connectivity provided by a comprehensive HOV system connecting Orange County with Downtown Los Angeles. In addition, as congestion increases region-wide, additional carpools are likely to be formed, and with continued job growth in Downtown Los Angeles, demand will continue to increase. An HOV system that provides a more reliable commute travel time should attract additional users. This HOV analysis is based on a general assessment utilizing available data from the Feasibility Report travel demand model. More precise modeling techniques utilizing select link analysis would be required in a subsequent project development phase to better assess the HOV volumes that may be realized, along with appropriate HOV connector movements.

Alternative 3: The goal of Alternative 3 is to implement, to the maximum extent reasonable, the standard mainline freeway, connector, and ramp lane widths and shoulder widths for the geometric improvements from Alternative 2 within the existing R/W and to transition to Alternative 1 improvements (maintaining nonstandard existing median shoulder and mainline lane widths) within constrained R/W corridors. Therefore, I-5 improvements mostly reflect the Alternative 1 cross-section, and I-605 improvements mostly reflect Alternative 2, with some exceptions.

The SB I-605 ramp braid at Washington Blvd and Slauson Ave was eliminated in favor of an auxiliary lane. Similar to Alternative 2, a two- to four-lane NB I-605 C-D road from Florence Ave to Telegraph Rd, various I-605/I-5 system interchange improvements, local interchange modifications, additional aux lanes (for SB I-605 from I-5 to I-105 and for NB I-605 from southerly project limits to Rosecrans Ave), and arterial improvements are proposed. Other local ramp intersections and arterial improvements have been modified from Alternatives 1 and 2. I-605 consists of standard shoulders and 12’ mixed flow lanes between Rosecrans Ave. and Beverly

Blvd. Any new ramp realignments or widening maintains standard shoulders and 12' lanes. The I-605 HOV median consists of the standard 4' buffer, 12' HOV lane with a 10' inside shoulder, with the exception at the I-105 interchange. In order to avoid replacement of the I-105 connectors, the 4' buffer was eliminated and the inside shoulder reduced to 5'. I-5 consists of a mixture of 11' & 12' mixed flow lanes between Paramount Blvd and Florence Ave. The I-5 HOV median consists of a non-standard 11' HOV lane, no buffer and 3' inside shoulder. See Attachment B for the proposed geometric plans and Attachment C for the cross-sections, and see the Alternatives Descriptions Table 9 below for additional improvement details.

Alternative 3 addresses the Purpose and Need for the project by reducing congestion and improving freeway operations (both mainline and ramps), improving safety, improving local and system interchange operations, and by providing separate I-5 HOV lanes, and minimizes adjacent right-of-way, environmental and economic impacts compared to Alternative 2.

The flexibility to include variations of the improvements within the alternatives during the PA/ED phase has been considered in the development of the current set of alternatives, and the variations will be analyzed and derived from the use of the GCCOG STP traffic simulation model in that phase.

For all build alternatives, FHWA involvement will be required. Any proposed modifications to the highway access control (such as at arterial interchanges) will necessitate California Transportation Commission (CTC) action. Each of the build alternatives includes nonstandard design features, a summary matrix of which is provided in Attachment J. Various lane and ramp closures will be required during construction of the build alternatives and potential agency limitations on allowing said closures could impact the project schedule and cost (cost estimate ranges for all alternatives are provided in Section 11).

Table 9: I-605/I-5 PSR-PDS Alternatives Descriptions

Location	No Build	Alternative 1	Alternative 2	Alternative 3
I-605: Excelsior Dr to Rosecrans Ave	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane SB and 1 aux lane NB. Ramps: Rosecrans Ave SB on-ramp merges with aux lane and realigned due to mainline widening. Rosecrans Ave NB off-ramp modified to 2 lane exit (including optional exit), and widened to 3 lanes at the ramp terminus.	Mainline: Adds 1 mixed flow lane SB and 1 aux lane NB at standard widths for all lanes and shoulders (typical). Ramps: Rosecrans Ave SB on-ramp merges with aux lane and realigned due to mainline widening. Rosecrans Ave NB off-ramp modified to 2 lane exit (including optional exit), and widened to 3 lanes at the ramp terminus.	Mainline: Adds 1 mixed flow lane SB and 1 aux lane NB. Ramps: Rosecrans Ave SB on-ramp merges with aux lane and realigned due to mainline widening. Rosecrans Ave NB off-ramp modified to 2 lane exit (including optional exit), and widened to 3 lanes at the ramp terminus.
I-605: Rosecrans Ave to I-105	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 SB mixed flow lane to remove lane drop. SB aux lane from Imperial Hwy SB on-ramp moved to separate structure through I-105 interchange area. Begin centerline adjustment at Rosecrans Ave and end at I-105. Ramps: Rosecrans Ave SB on- and off-ramp reconfigured to hook-ramps. Eliminates Rosecrans Ave WB loop on-ramp and awkward skewed intersection with Flatbush Ave. Alternative 1a reconfigures Rosecrans Ave SB ramps to a tight-diamond.	Mainline: Adds 1 SB mixed flow lane to remove lane drop. SB aux lane from Imperial Hwy SB on-ramp moved to separate structure through I-105 interchange area. Begin centerline adjustment at Rosecrans Ave and end at I-105. Ramps: Rosecrans Ave SB on- and off-ramp reconfigured to hook-ramps. Eliminates Rosecrans Ave WB loop on-ramp and awkward skewed intersection with Flatbush Ave. Replace NB I-605 to WB I-105 connector bridge.	Mainline: Adds 1 SB mixed flow lane to remove lane drop. SB aux lane from Imperial Hwy SB on-ramp moved to separate structure through I-105 interchange area. Begin centerline adjustment at Rosecrans Ave and end at I-105. Ramps: Rosecrans Ave SB on- and off-ramp reconfigured to hook-ramps. Eliminates Rosecrans Ave WB loop on-ramp and awkward skewed intersection with Flatbush Ave.
I-605: I-105 to Imperial Hwy	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 SB mixed flow lane from Firestone Blvd braided connector. Ramps: SB Imperial Hwy on-ramp realigned to separate structure through I-105 interchange area.	Mainline: Adds 1 SB mixed flow lane from Firestone Blvd braided connector. Ramps: SB Imperial Hwy on-ramp realigned to separate structure through I-105 interchange area. Replace EB I-105 to NB I-605 connector bridge.	Mainline: Adds 1 SB mixed flow lane from Firestone Blvd braided connector. Ramps: SB Imperial Hwy on-ramp realigned to separate structure through I-105 interchange area.
I-605: Imperial Hwy to Firestone Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 SB aux lane. Ramps: SB Imperial Hwy off-ramp reconfigured to aux lane exit from optional exit.	Mainline: Adds 1 SB aux lane and 1 NB mixed flow lane by extending the lane drop. Ramps: SB Imperial Hwy off-ramp reconfigured to aux lane exit from optional exit. Firestone Blvd NB off-ramp and Imperial Hwy NB on-ramp realigned.	Mainline: Adds 1 SB aux lane and 1 NB mixed flow lane by extending the lane drop. Ramps: SB Imperial Hwy off-ramp reconfigured to aux lane exit from optional exit. Firestone Blvd NB off-ramp and Imperial Hwy NB on-ramp realigned.
I-605: Firestone Blvd to Florence Ave	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 2-3 SB mixed flow lanes (3rd mixed flow added by extending existing bump-out lane addition). Adds 1 NB mixed flow lane by removing lane drop and extending lane to proposed collector-distributor (C-D) road for Telegraph Rd NB exit. Ramps: Firestone Blvd SB off-ramp modified to 2-lane exit (including optional exit). Realign Firestone Blvd NB on-ramp. Realign I-5/Florence Ave NB connector. Florence Ave SB on-ramp reconfigured to D-type by eliminating direct SB on-ramp at Little Lake Rd.	Mainline: Adds 2-3 SB mixed flow lanes (3rd mixed flow added by extending existing bump-out lane addition). Adds 1 NB mixed flow lane by removing lane drop and extending lane to proposed collector-distributor (C-D) road for Telegraph Rd NB exit. Ramps: Firestone Blvd SB off-ramp modified to 2-lane exit (including optional exit). Realign Firestone Blvd NB on-ramp. Realign I-5/Florence Ave NB connector. Florence Ave SB on-ramp reconfigured to D-type by eliminating direct SB on-ramp at Little Lake Rd.	Mainline: Adds 2 SB mixed flow lanes. Adds 1 NB mixed flow lane by removing lane drop and extending lane to proposed collector-distributor (C-D) road for Telegraph Rd NB exit. Ramps: Firestone Blvd SB off-ramp and NB on-ramp realigned. Florence Ave SB on-ramp realigned and merges with mainline. Realign I-5/Florence Ave NB connector.
I-605: Florence Ave to I-5	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 3 SB mixed flow lanes (2 lane addition from SB I-5 connector) and 2-lane NB C-D road. Florence Ave widened 1 lane in each direction. Ramps: SB I-605 and SB I-5 ramps to Florence Ave off-ramp reconfigured. Terminus at Florence Ave reconfigured to dedicated right-turn, shared left-through, and dedicated left-turn lanes. Florence Ave NB I-605 on-ramp joins NB C-D road as a lane addition.	Mainline: Adds 3 SB mixed flow lanes (2 lane addition from SB I-5 connector) and 2-lane NB C-D road. Florence Ave widened 1 lane in each direction. Ramps: SB I-605 and SB I-5 ramps to Florence Ave off-ramp reconfigured. Terminus at Florence Ave reconfigured to dedicated right-turn, shared left-through, and dedicated left-turn lanes. Florence Ave NB I-605 on-ramp joins NB C-D road as a lane addition.	Mainline: Adds 3 SB mixed flow lanes (2 lane addition from SB I-5 connector) and 2-lane NB C-D road. Ramps: SB I-605 and SB I-5 ramps to Florence Ave off-ramp realigned. Terminus at Florence Ave reconfigured to dedicated right-turn, shared left-through-right, and dedicated left-turn lanes. Florence Ave NB I-605 on-ramp joins NB C-D road as a lane addition.
I-605: I-5 interchange	Mainline: No improvements. Ramps: No Improvements.	Mainline: Reconstruct I-605 bridge over I-5. Adds 1 SB mixed flow lane and 2 to 4 lane NB C-D road. Ramps: NB I-5 to NB I-605 connector adds 2 lanes to NB C-D road. SB I-605 to SB I-5 connector widened to 2-lanes. SB I-605 to NB I-5 includes aux lane exit. NB I-5 to SB I-605 adds mainline lane instead of merging.	Mainline: Reconstruct I-605 bridge over I-5. Adds 1 SB mixed flow lane and 2 to 4 lane NB C-D road. Ramps: NB I-5 to NB I-605 connector adds 2 lanes to NB C-D road. SB I-605 to SB I-5 connector widened to 2-lanes. SB I-605 to NB I-5 includes aux lane exit. NB I-5 to SB I-605 adds mainline lane instead of merging.	Mainline: Reconstruct I-605 bridge over I-5. Adds 1 SB mixed flow lane and 2 to 4 lane NB C-D road. Ramps: NB I-5 to NB I-605 connector adds 2 lanes to NB C-D road. SB I-605 to SB I-5 connector widened to 2-lanes. SB I-605 to NB I-5 includes aux lane exit. NB I-5 to SB I-605 adds mainline lane instead of merging.
I-605: I-5 to Telegraph Rd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 2 SB mixed flow lanes to I-5 Connector and adds 1 mixed flow lane by extending drop lane. Adds 4 lane NB C-D road. Ramps: Telegraph Rd SB loop-on ramp realigned, NB off-ramp reconfigured to modified D-type ramp with 2-lane exit and widened to 3-lanes at ramp terminus. Eliminates NB direct off-ramp to EB Telegraph Rd.	Mainline: Adds 2 SB mixed flow lanes to I-5 Connector and adds 1 mixed flow lane by extending drop lane. Adds 4 lane NB C-D road. Ramps: Telegraph Rd SB loop-on ramp realigned, NB off-ramp reconfigured to modified D-type ramp with 2-lane exit and widened to 3-lanes at ramp terminus. Eliminates NB direct off-ramp to EB Telegraph Rd.	Mainline: Adds 2 SB mixed flow lanes to I-5 Connector and adds 1 mixed flow lane by extending drop lane. Adds 4 lane NB C-D road. Ramps: Telegraph Rd SB loop-on ramp realigned, NB off-ramp reconfigured to modified D-type ramp with 2-lane exit and widened to 3-lanes at ramp terminus. Eliminates NB direct off-ramp to EB Telegraph Rd.

I-605: Telegraph Rd to Slauson Ave	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 2 mixed flow lanes SB and NB. Telegraph Rd widened 1 lane in each direction over San Gabriel River. Includes mainline centerline adjustment. Ramps: SB off-ramp and NB on-ramp at Telegraph Rd realigned. Slauson Ave SB on-ramp is a lane add and NB off-ramp modified to 2 lane exit (aux lane and optional exit) and widened to 3-lanes at ramp terminus.	Mainline: Adds 2 mixed flow lanes SB and NB. Telegraph Rd widened 1 lane in each direction over San Gabriel River. Includes mainline centerline adjustment. Ramps: SB off-ramp and NB on-ramp at Telegraph Rd realigned. Telegraph Rd off-ramp terminus widened to 3 lanes. Slauson Ave SB on-ramp is a lane add and NB off-ramp modified to 2 lane exit (aux lane and optional exit) and widened to 3-lanes at ramp terminus.	Mainline: Adds 2 mixed flow lanes SB and NB. Telegraph Rd widened 1 lane in each direction over San Gabriel River. Includes mainline centerline adjustment. Ramps: SB off-ramp and NB on-ramp at Telegraph Rd realigned. Telegraph Rd off-ramp terminus widened to 3 lanes. Slauson Ave SB on-ramp is a lane add and NB off-ramp modified to 2 lane exit (aux lane and optional exit) and widened to 3-lanes at ramp terminus.
Location	**No Build**	**Alternative 1**	**Alternative 2**	**Alternative 3**
I-605: Slauson Ave to Washington Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 2 mixed flow lanes SB and NB. NB C-D road eliminated and SB C-D road realigned. Includes mainline lane drop at Slauson Av interchange. Widens Washington Blvd by 1 lane in each direction. Ramps: SB off-ramp to Slauson Ave realigned and widened to 3-lanes at ramp terminus. Slauson Ave NB hook on-ramp added adjacent to existing NB off-ramp (eliminates isolated NB on-ramp). Includes braided 2-lane SB C-D road with Slauson Av exit north of Washington Blvd. NB off-ramp to Washington Blvd realigned and widened to 3-lanes at ramp terminus.	Mainline: Adds 2 mixed flow lanes SB and NB. NB C-D road eliminated and SB C-D road realigned. Includes mainline lane drop at Slauson Av interchange. Ramps: SB off-ramp to Slauson Ave realigned and widened to 3-lanes at ramp terminus. Slauson Ave NB hook on-ramp added adjacent to existing NB off-ramp (eliminates isolated NB on-ramp). Includes braided 2-lane SB C-D road with Slauson Av exit north of Washington Blvd. NB off-ramp to Washington Blvd realigned and widened to 3-lanes at ramp terminus.	Mainline: Adds 1 mixed flow lane and 1 aux lane SB and 2 NB mixed flow lanes. NB and SB C-D roads eliminated. Widens EB Washington Blvd by 1 lane. Ramps: SB off-ramp to Slauson Ave realigned and widened to 3-lanes at ramp terminus. NB off-ramp to Washington Blvd realigned and coupled with proposed NB on-ramp. Eliminates NB hook on-ramp just south of Washington Blvd. Eliminates SB direct on-ramp from Washington Blvd and reconfigures loop on-ramp to D-type.
I-605: Washington Blvd to Saragosa St	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane SB and NB. SB also adds 1 aux lane. Ramps: SB off-ramp to Washington Blvd T-ed up at intersection and widened to 3-lanes at ramp terminus. SB Washington Blvd ramp exists from realigned C-D road to Slauson Ave.	Mainline: Adds 1 mixed flow lane SB and NB. SB also adds 1 aux lane. Ramps: SB off-ramp to Washington Blvd T-ed up at intersection and widened to 3-lanes at ramp terminus. SB Washington Blvd ramp exists from realigned C-D road to Slauson Ave.	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: SB off-ramp to Washington Blvd realigned and widened to 3-lanes at ramp terminus. Washington Blvd NB hook on-ramp added adjacent to NB off-ramp.
I-605: Saragosa St to Whittier Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: SB off-ramp eliminated to Saragosa St. NB on-ramp from Saragosa St as well as Whittier Blvd SB on-ramp and NB off-ramp are realigned.	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: SB off-ramp eliminated to Saragosa St. NB on-ramp from Saragosa St as well as Whittier Blvd SB on-ramp and NB off-ramp are realigned.	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: Eliminates NB direct on-ramp at Pioneer Blvd/Saragosa St. Realigns SB off-ramp to Saragosa St as well as Whittier Blvd SB on-ramp and NB off-ramp.
I-605: Whittier Blvd to Beverly Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: Whittier Blvd SB off-ramp reconfigured to a hook-ramp at Esperanza Ave and widened to 3-lanes at ramp terminus. Beverly Blvd SB on-ramp adds mainline lane, and existing SB loop on- and off-ramps are eliminated and replaced with diamond ramps. NB hook ramps for Beverly Blvd are moved to align with Lundene Dr (from Deveron Dr) and the NB off-ramp is extended.	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: Whittier Blvd SB off-ramp reconfigured to a hook-ramp at Esperanza Ave and widened to 3-lanes at ramp terminus. Beverly Blvd SB on-ramp adds mainline lane, and existing SB loop on- and off-ramps are eliminated and replaced with diamond ramps. NB hook ramps for Beverly Blvd are moved to align with Lundene Dr (from Deveron Dr) and the NB off-ramp is extended.	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: Whittier Blvd SB off-ramp reconfigured to a hook-ramp at Esperanza Ave and widened to 3-lanes at ramp terminus. Beverly Blvd NB off-ramp realigned and extended. Beverly Blvd SB on-ramp adds mainline lane, and existing SB loop on-ramp and SB direct on-ramp are eliminated and replaced with a D-type ramp.
I-605: Beverly Blvd to Rose Hills Rd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane NB that drops just north of Beverly Blvd NB on-ramp. Ramps: Existing SB loop off-ramp is eliminated and replaced with diamond ramp and widened to 3-lanes at ramp terminus. Beverly Blvd NB hook on-ramp is moved to align with Lundene Dr (from Deveron Dr).	Mainline: Adds 1 mixed flow lane NB that drops just north of Beverly Blvd NB on-ramp. Ramps: Existing SB loop off-ramp is eliminated and replaced with diamond ramp and widened to 3-lanes at ramp terminus. Beverly Blvd NB hook on-ramp is moved to align with Lundene Dr (from Deveron Dr).	Mainline: Adds 1 mixed flow lane NB that drops just north of Beverly Blvd NB on-ramp. Ramps: Beverly Blvd SB off-ramp realigned and reconfigured with D-type SB on-ramp. Beverly Blvd NB on-ramp realigned.
I-5: Florence Ave to I-5	Mainline: No improvements. Ramps: No Improvements.	Mainline: Mainline improvements align at Florence Ave with I-5 improvement project by others. Adds 1 mixed flow lane and 1 HOV lane SB and NB. Ramps: I-5 NB on-ramp reconfigured to a diamond.	Mainline: Mainline improvements align at Florence Ave with I-5 improvement project by others. Adds 1 mixed flow lane and 1 HOV lane SB and NB. Ramps: I-5 NB on-ramp reconfigured to a diamond.	Mainline: Mainline improvements align at Florence Ave with I-5 improvement project by others. Adds 1 mixed flow lane and 1 HOV lane SB and NB. Ramps: I-5 NB on-ramp reconfigured to a diamond.
I-5: I-605 Interchange	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane and 1 HOV lane SB and 1 HOV lane NB. Ramps: Adds NB 3-lane exit to I-605 connector including 1 option lane. Adds dedicated connector lane from NB I-5 to SB I-605. SB I-605 to SB I-5 widened to a 2-lane connector. SB I-5 to SB I-605 connector exit widenened from 2-lanes to 3-lanes including option lane.	Mainline: Adds 1 mixed flow lane and 1 HOV lane SB and 1 HOV lane NB. Ramps: Adds NB 3-lane exit to I-605 connector including 1 option lane. Adds dedicated connector lane from NB I-5 to SB I-605. SB I-605 to SB I-5 widened to a 2-lane connector. SB I-5 to SB I-605 connector exit widened from 2-lanes to 3-lanes incl. option lane. Adds 2 lanes to NB I-5 from NB I-605 connector.	Mainline: Adds 1 mixed flow lane and 1 HOV lane SB and 1 HOV lane NB. Ramps: Adds NB 3-lane exit to I-605 connector including 1 option lane. Adds dedicated connector lane from NB I-5 to SB I-605. SB I-605 to SB I-5 widened to a 2-lane connector. SB I-5 to SB I-605 connector exit widenened from 2-lanes to 3-lanes including option lane.
I-5: I-605 to Lakewood Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane and 1 HOV lane SB and NB. Ramps: NB I-5 off-ramp at Lakewood Blvd widened to 2-lane exit (includes option lane) and is widened to 3-lanes at ramp terminus. Lakewood Blvd direct on-ramp to SB I-5 eliminated and SB loop on-ramp reconfigured to D-type and adds mainline lane instead of merging.	Mainline: Adds 1-2 mixed flow lanes and 1 HOV lane SB and 2 mixed flow lanes and 1 HOV lane NB. NB mixed flow lane drop at Lakewood Blvd interchange. Ramps: NB I-5 off-ramp at Lakewood Blvd widened to 2-lane exit including 1 option lane and is widened to 3-lanes at ramp terminus. Lakewood Blvd direct on-ramp to SB I-5 is eliminated and SB loop on-ramp reconfigured to D-type and adds mainline lane instead of merging.	Mainline: Adds 1 mixed flow lane and 1 HOV lane SB and NB. Ramps: NB I-5 off-ramp at Lakewood Blvd widened to 2-lane exit (includes option lane) and is widened to 3-lanes at ramp terminus. Lakewood Blvd direct on-ramp to SB I-5 eliminated and SB loop on-ramp reconfigured to D-type and adds mainline lane instead of merging.

I-5: Lakewood Blvd to Paramount Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 HOV lane SB and NB. Ramps: I-605 NB on-ramp at Lakewood Blvd reconfigured to D-type, and eliminates direct NB on-ramp. Vista Del Rosa St removed from Lakewood Blvd ramp intersection and revised to right-in/right-out only.	Mainline: Adds 1 HOV lane SB and NB. Ramps: I-605 NB on-ramp at Lakewood Blvd reconfigured to D-type, and eliminates direct NB on-ramp. Vista Del Rosa St removed from Lakewood Blvd ramp intersection and revised to right-in/right-out only. Paramount Blvd SB on-ramp reconfigured to diamond.	Mainline: Adds 1 HOV lane SB and NB. Ramps: I-605 NB on-ramp at Lakewood Blvd reconfigured to D-type, and eliminates direct NB on-ramp. Vista Del Rosa St removed from Lakewood Blvd ramp intersection and revised to right-in/right-out only. Paramount Blvd SB on-ramp reconfigured to diamond.
I-5: Paramount Blvd to Slauson Ave	Mainline: No improvements. Ramps: No Improvements.	Mainline: Shift centerline to accommodate widening. Begin/end 1 HOV lane SB and NB. Ramps: Paramount Blvd NB on-ramp reconfigured to D-type.	Mainline: Shift centerline to accommodate widening. Begin/end 1 HOV lane SB and NB. Ramps: Paramount Blvd NB on-ramp reconfigured to D-type. Paramount Blvd SB off-ramp reconfigured to diamond with free right-turn option (existing).	Mainline: Shift centerline to accommodate widening. Begin/end 1 HOV lane SB and NB. Ramps: Paramount Blvd NB on-ramp reconfigured to D-type, and the SB off-ramp reconfigured to diamond with two left-turn lanes and maintains the existing free-right turn.

The following engineering technical reports are anticipated for Build Alternatives 1, 2, and 3 during the PA/ED phase of the project:

- Advanced Planning Studies.
- Preliminary Drainage Reports to address existing and proposed hydrology and hydraulic designs.
- Preliminary materials and geotechnical design reports.
- Life-Cycle Cost Analysis for pavement design.
- Storm Water Data Report (update to PA/ED level).
- Right of Way Data Sheets.
- Traffic Forecasting and Methodology.
- Traffic Analyses (see Section 4. Traffic Engineering Performance Assessment).
- Transportation Management Plan Data Sheets.
- Value Analysis.

Project Phasing

Preliminary analysis conducted as part of the PEAR for the I-605/I-5 PSR-PDS indicates that an EIR-EIS would be required for the overall project assuming that all alternatives (Alternatives 1, 2, and 3) are carried forward into the PA/ED phase of project development. Further review and analysis has identified that the project can be feasibly divided into three (3) separate construction phases (See Attachment L) based on proposed improvements as follows:

- Construction Phase 1: I-605/I-5 interchange area. On I-605 this phase would extend from I-105 to Slauson Ave or Washington Blvd, and on I-5 from Florence Ave to Paramount Blvd or Slauson Ave.
- Construction Phase 2: I-605 corridor segment from Slauson Ave or Washington Blvd to just south of Rose Hills Rd.
- Construction Phase 3: I-605 corridor segment from I-105 to Excelsior Dr UC (just south of Rosecrans Ave).

A preliminary assessment of logical termini and independent utility of I-605 north of I-5 suggests that there is a point somewhere in the vicinity of Slauson Ave or Washington Blvd where lane improvements can be initiated or terminated in an effective manner. Thus, it is anticipated that Construction Phase 2 improvements would be repackaged into the future project development documentation for the separate State Route 60 (SR-60)/I-605 improvement project by others. A preliminary assessment of logical termini and independent utility suggests that the I-605/I-105 interchange area is a logical break where improvements from the north and south sides of the system interchange area tie-in effectively. Thus, Construction Phase 3 of the I-605/I-5 project from Excelsior Dr UC (just south of Rosecrans Ave) to I-105

could be combined with I-605 improvements for the I-605/SR-91 project (EA 07-29810K) and included as part of the I-605/SR-91 Phase 2 Project.

Based on this assessment it is anticipated that Construction Phase 1 would be defined as a potential stand-alone project (Phase 1 Project). It is anticipated that this Phase 1 Project would require an EIS/EIR for environmental clearance. Summary information for this Phase 1 Project is as follows:

Project Limits (Phase 1 Project)	07-LA-605-PM 7.63/PM 12.30 07-LA-5-PM 6.39 / PM 9.45		
Alternatives	1	2	3
Capital Outlay Support for PA/ED	$19-$24M	$26-$32M	$20-$25M
Capital Outlay Construction Cost Range	$770-$950M	$1,050-$1,300M	$815-$1,000M
Capital Outlay Right of Way Cost Range	$25-$30M	$90-$115M	$30-$35M

Nonstandard Features

There are nonstandard features that have been identified in the No Build and proposed build Alternatives based on post May 7th, 2012 Caltrans Highway Design Manual (HDM) 6th Edition standards. Further analysis will be performed in the PA/ED phase. Fact sheets for exceptions to design standards will be prepared to document nonstandard features prior to completion of the PA/ED phase of the project. See Attachment J for the Nonstandard Design Features Matrix that has been developed for the No Build and the three build Alternatives.

The segment of I-605 and I-5 within the project limits are currently designated urban.

Mandatory Design Exception Features

A. See Attachment J – Nonstandard Design Features Matrix for mandatory design exception locations.

Advisory Design Exception Features

A. See Attachment J – Nonstandard Design Features Matrix for advisory design exception locations.

Common Features for Alternatives

Aesthetics

Design of the proposed improvements during the PA/ED and Plans, Specification, and Estimate (PS&E) phases will include aesthetics consistent with Caltrans and the local agencies master plans for aesthetics and landscaping, if applicable. The corridor theme will be applied to project elements including bridge aesthetics, slope paving, walls, lighting, landscaping, and hardscaping.

Transportation Management Plan

Based on the initial examination of items related to the Transportation Management Plan (TMP) Data Sheet, lane closure impacts will be required, and lane closure charts will be included in Caltrans Standard Special Provisions (SSP). It may be necessary to temporarily provide long-term closures of on/off ramps during the course of the project. Detour plans shall be prepared as a part of the PS&E package identifying alternate routes for surface traffic onto the nearby alternative routes. Supporting traffic counts and analysis shall also be prepared. TMP data sheets will be further developed during the PA/ED phase in order to recommend specific methods of reducing construction and circulation impacts. Preliminary TMP data sheets have been prepared and are included as Attachment F.

Construction Staging

It is anticipated that the project will be phased as well as staged to minimize impacts to existing traffic. Construction of the I-605/I-5 overcrossing in Alternatives 1, 2 and 3 will be staged to allow the same number of existing freeway lanes to remain open during construction. A preliminary stage construction concept was prepared and independently reviewed for the I-605/I-5 interchange to ensure there were no fatal flaws and that the improvements are constructible (see Attachment K). The phasing is assumed to begin with construction of the NB I-605 C-D road while maintaining through traffic on existing I-605 lanes. Phase two (2) would shift NB I-605 traffic to the newly constructed C-D road and shift SB traffic into the existing NB lanes while the new SB I-605 portion is constructed. The final phase would shift SB I-605 traffic onto the newly constructed SB structure during demolition of the original NB I-605 structure. The C-D road and standard width lanes, shoulders, and HOV facility are then distributed across the completed structure. Refer to Attachment K for the preliminary stage construction concept for the I-605/I-5 interchange. More detailed staging plans will be developed in the PA/ED phase. Detailed staging plans and traffic handling plans will be developed in the final design phase. In addition, the project may be implemented in phases to match availability of construction funding as well as system needs and priorities.

Storm Water BMPs

A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for this project during PA/ED to address construction Best Management Practices (BMPs). Consideration for permanent treatment BMPs will also be required. It is anticipated that post-project State right of way will provide adequate area for BMPs. This will be confirmed during the PA/ED and PS&E phases. A Storm Water Data Report (SWDR) has been prepared for the project. However, BMPs have been evaluated from a corridor scoping level and locations have been indicated on the project geometric plans (see Attachment B) as referenced from the Caltrans Corridor Stormwater Management Study for I-605 north of I-5, I-605 south of I-5, and for I-5 (dated February 2010, October 2009, and March 2009, respectively). Of note, the

I-105 study had no recommended BMP locations within the project area. The available Caltrans BMP Corridor Study exhibits are included in Attachment I. These are applicable excerpts from the Caltrans BMP studies published between March 2009 and February 2010 and are provided as background information for the BMP notes referenced on the geometric plans in Attachment B.

Downstream receiving water bodies for the project are generally the San Gabriel River Reach 2 (Carson to Figueroa Street) and ultimately the Pacific Ocean. The San Gabriel River generally flows from the north to south collecting water from the San Gabriel Mountains down through the Los Angeles Basin and across the San Gabriel Valley. However, the western portion of the I-105 (HOV direct connector design option) indirectly drains to the Rio Hondo Reach 1 (Confluence Los Angeles River to Santa Ana Freeway) then confluences with the Los Angeles River Reach 2 (Carson to Figueroa Street) and ultimately into the Pacific Ocean. The anticipated storm water project risk level is Level 2. The total impervious area treated by the proposed Treatment BMPs is approximately 133.03 acres. The new impervious area based on the most conservative footprint of Alternative 2 including the limits of the I-105 HOV direct connectors design option is approximately 133 acres; therefore, the Treatment BMPs are expected to provide 100% treatment of the impervious areas.

Additional storm water quality analysis has been developed and documented in strip maps and an associated Technical Memorandum titled, *Gateway Cities Council of Governments Stormwater Treatment Strip Maps for I-605/SR-91 and I-605/I-5*, dated December 12, 2013 and included as an attachment to the SWDR. To aid in the identification and evaluation of sites for alternative BMP placement, Strip Maps were developed to show detailed information about BMP size and placement relative to the I-605/I-5 Alternative 2 geometric plans. Alternative 2, as well as possible HOV connectors at I-605/I-105, represents the greatest possible mainline freeway footprint impact under which to compare the planned BMP facilities identified in the Caltrans corridor studies (as noted above). This additional level of storm water analysis and BMP planning is not required for the Storm Water Data Report at the PSR-PDS phase, but has been provided to better inform the on-going planning efforts for storm water treatment throughout the entire Gateway Cities boundaries as part of the GCCOG Strategic Transportation Plan, as well as the Caltrans Corridor Stormwater Management Studies.

Permits

It is anticipated that the following permits and approvals will be required for the project:

- Clean Water Act (CWA) Section 404 Permit (U.S. Army Corps of Engineers).
- Section 1602 Agreement (California Dept. of Fish and Wildlife).
- National Pollutant Discharge Elimination System (NPDES) Permit Notice of Intent (NOI), Caltrans Statewide Permit and Construction General Permit.

- CWA Section 401 Water Quality Certification and/or Waste Discharge Requirement (WDR) (Regional Water Quality Control Board).
- South Coast Air Quality Management District (SCAQMD) Rules 403, 1403, and 1166.
- Clean Air Act, Transportation Conformity Determination (FHWA; Caltrans).
- Section 106 Compliance with National Historic Preservation Act.
- Section 7 Consultation with U.S. Fish and Wildlife Service in the event Waters of the U.S. or Federally-listed species are affected.
- State Right-of-Way Encroachment Permit.
- Various City Encroachment Permits.
- Permits to Enter.
- Well installation permit or groundwater sampling and dewatering permit (if applicable).

8. RIGHT-OF-WAY

While the plans for the proposed project are preliminary, the majority of improvements will occur within existing Caltrans R/W. Alternative 2 will require the most substantial R/W needs and will result in the greatest partial and full property acquisitions. However, each build alternative will require additional R/W and will result in the displacement of residential and commercial properties. Below is a summary of the right of way required for each project Alternative. Attachment G provides the Conceptual Cost Estimate - Right of Way Component. Table 10 below includes the number of affected properties (full or partial acquisitions as shown) by land use type and also by individual freeway corridor (I-605 and I-5).

Table 10: Number of Affected Properties by Land Use Type

Land Use	No Build		Alternative 1				Alternative 2				Alternative 3			
	Partial/Full		Partial		Full		Partial		Full		Partial		Full	
	Corridor		Corridor		Corridor		Corridor		Corridor		Corridor		Corridor	
	I-605	I-5	I-605	I-5	I-605	I-5	I-605	I-5	I-605	I-5	I-605	I-5	I-605	I-5
Residential	0	0	3	2	3	15	38	13	53	102	24	15	7	25
Commercial/Industrial	0	0	1	0	1	0	6	0	0	0	4	0	0	0
Agency/Other	0	0	16	7	0	0	29	10	0	0	20	10	0	0
SUBTOTAL	**0**	**0**	**20**	**9**	**4**	**15**	**73**	**23**	**53**	**102**	**48**	**25**	**7**	**25**
TOTAL	**0**	**0**	**29**		**19**		**96**		**155**		**73**		**32**	

Under Alternative 1, it is expected that 18 residential properties will be subject to full acquisitions and 5 will be subject to partial acquisitions. There will be 1 commercial/industrial property subject to full acquisition and 1 partial acquisition along with 23 partial acquisitions of agency/public properties. Alternative 2 includes 155 full acquisitions and 51 partial acquisitions of residential properties, 6 partial

acquisitions of commercial/industrial properties, and 39 partial acquisitions of agency/public properties. For Alternative 3, it is expected that there will be 32 full acquisitions and 39 partial acquisitions of residential properties, 4 partial acquisitions of commercial/industrial properties, and 30 partial acquisitions of agency/public properties. In addition, it is expected that all build alternatives will result in other partial property acquisitions, temporary construction easements, and various public property and utility parcel impacts (see Attachment G). Due to the urbanized nature of the communities adjacent to the project area and the local vacancy rates, it is assumed that replacement housing or office space is available for displaced families or businesses. The ISA prepared during PA/ED will identify any high risk contaminated sites that require site investigation and recommended abatement along with any anticipated entry permits for commercial, residential, railroad, and other properties.

Utilities

Based on initial utility information, the proposed project may impact the following utilities:

Utility	Owner
Cable	Time Warner Cable
Electrical	Southern California Edison
Gas	Southern California Gas Company
Oil (Mobil)	Exxon Mobil Corporation
Telecommunications	GTE
Water	Metropolitan Water District, Local water districts
Wireless	Verizon Wireless

Information provided by the Dig Alert web site and utility As-Built plans was used to prepare this list. Coordination with the identified utility companies will be carried out during the PA/ED, PS&E, and construction phases. It is anticipated that all proposed build alternatives will impact existing facilities. The need for relocation of these lines will be confirmed and coordinated during PA/ED.

Railroad

Metro Rail operates commuter rail lines (Green Line) within the median of I-105 within the project limits. It is anticipated that work will be required within the railroad R/W to form falsework, construct columns, etc. for Alternatives 1, 2, and 3. Alternative 2 will require work within railroad R/W to form falsework, construct columns, etc. for the widening of various I-605 bridges just south of Firestone Blvd. Alternatives 1 and 2 will require work within railroad R/W to form falsework, construct columns, etc. for the widening of two (2) separate I-605 bridges just south

of Slauson Ave, one of which is the BNSF Railroad that includes Metrolink service. Washington Blvd just west of I-605 will be widened over a single rail line along the east bank of the San Gabriel River for Alternatives 1 and 3, which will require construction activities within the railroad R/W. An inactive railroad bridge over I-605 is intended to be reconstructed (it may serve railroad or other access needs in the future) for Alternatives 1, 2, and 3 in its existing location between the Obregon St bridge and the Beverly Blvd bridge unless coordination with the railroad determines otherwise.

9. STAKEHOLDER INVOLVEMENT

The Cities of Downey, Norwalk, Pico Rivera, Santa Fe Springs, and Whittier; County of Los Angeles; Metro (the project sponsor); GCCOG; and Caltrans have attended PDT and/or TAC meetings and geometric workshops to develop the purpose and need in addition to reviewing the alternatives and design options. The stakeholders' input has been reviewed and incorporated as applicable and, to their knowledge, there is no known opposition to the proposed project. In addition, the TAC meetings with the cities and County of Los Angeles have been the process by which community input and involvement has occurred in order to balance transportation needs with community values. Further concurrence has been provided at a GCCOG public meeting by the Corridor Cities Committee (CCC), which is composed of a City Council representative for each city within the project vicinity. Again, 2 of the 3 build alternatives were also developed with the GCCOG SR-91/I-605/I-405 Guiding Principles of balancing transportation needs with community concerns regarding R/W impacts in order to preserve and enhance local economies and environments.

The draft environmental document prepared for this project will be publicly noticed and circulated as applicable. A series of public workshops and/or potential interviews with stakeholders and property owners are anticipated to gain input prior to completion of the draft environmental document during the next phase of project development. In addition, a public workshop is anticipated to be held during the public circulation of the environmental document.

10. ENVIRONMENTAL DETERMINATION/DOCUMENTATION

A Preliminary Environmental Analysis Report (PEAR) has been prepared for this project, and is attached herewith as Attachment E. At this time, it is anticipated that this project will be funded through Measure R funds. However, with a possibility of securing Federal funds during project development, the PEAR has been developed to comply with both CEQA and NEPA. Based on the preliminary evaluation conducted as part of the PEAR, the proposed environmental document type pursuant to the California Environmental Quality Act (CEQA) is an Environmental Impact Report (EIR). This determination is based on review of Appendix G of the CEQA

Guidelines in conjunction with preliminary geometric plans and other available information.

Pursuant to the National Environmental Policy Act (NEPA), an Environmental Impact Statement (EIS) is expected. This determination is based on the potential for public controversy associated with land acquisitions required for project alternatives and the required Section 4(f) Evaluation for impacts associated with several of the project alternatives.

Based on the technical summaries described in the PEAR, it is unknown at this time if all potential impacts associated with all build alternatives could be reduced to a less than significant level. The total cost estimates for potential mitigation measures and permits associated with all build alternatives are premature and speculative at this time, as one or more of these measures may not be required. The schedule associated with the EIR/EIS is expected to have a duration of approximately 3 to 4 years.

The preliminary assessment of the project's build alternatives has identified there will be potential impacts within the following resource areas: air quality, community, hazardous waste/materials, noise, water quality and stormwater runoff, transportation and traffic, utilities and services, and visual/aesthetics. Alternative 2 will likely include more impacts to environmental resources based on property acquisition needs to accommodate Caltrans Highway Design Manual standards for lane and shoulder widths as identified in the preliminary geometric plans. These potential impacts will be further evaluated and studied during the PA/ED phase of project development. Hazardous Waste, including aerially deposited lead (ADL), petroleum products, and other hazardous substances may occur within the project R/W. Applicable testing will be completed to identify and quantify the presence of hazardous materials, as well as identify any special handling and disposal requirements during the PA/ED phase of the project.

All build Alternatives would likely require the below permits, reports and studies, with significant effort needed for reports analyzing Alternative 2. If additional technical studies are necessary, the completion of these studies could affect schedule and cost. Construction monitoring for biological and cultural resources, if deemed necessary, could also complicate, slow, or lengthen the schedule and increase costs.

- Air Quality Report.
- Air Quality Conformity Analysis (AQCA).
- Historic Resource Evaluation Report.
- Preliminary Site Investigation.
- Initial Site Assessment (Phase I and Phase II).
- Natural Environment Study.
- Paleontological Identification Report/Paleontological Evaluation Report.
- Community Impact Assessment.

- Relocation Impact Statement.
- Section 4(f) Evaluation.
- Traffic Impact/Circulation Study.
- Noise Study Report.
- Visual Impact Assessment.
- Water Quality Assessment Report.

Recommended Engineering Technical Studies include the following:
- Storm Water Data Report.
- Noise Abatement Decision Report.
- Location Hydraulic Study.
- Geotechnical Study.
- Transportation Management Plan and Ramp Closure Study.
- Modified Access Report.

Environmental Commitments have been identified for all build Alternatives as identified below. Those associated with Alternative 2 will likely require a greater level of effort to assess, identify, and address project design needs to accommodate Caltrans Highway Design Manual standards for lane and shoulder widths.

- R/W relocations.
- Replacement of existing sound walls in addition to the construction of new sound walls.
- Temporary closures on local streets, as well as on freeway lanes, ramps and bridges.
- Landscaping and aesthetic treatments adjacent to sensitive receptors along the I-5 in the Cities of Downey and I-605.

11. FUNDING

At this time, no federal or state funding has been identified for this project. The project will be partially funded through local Measure R funds.

Capital Outlay Project Estimate

	Range of Estimate		Measure R Funds	
	Construction	Right-of-Way	Construction	Right-of-Way
No Build Alternative	$0	$0	$0	$0
Alternative 1	$960 -$1,170M	$25-$30M	TBD	TBD
Alternative 2	$1,300 -$1,590M	$100-$130M	TBD	TBD
Alternative 3	$1,040 -$1,270M	$30-$40M	TBD	TBD

The level of detail available to develop these capital outlay project estimates is only accurate to within the above ranges and is useful for long-range planning purposes only. The capital outlay project estimates should not be used to program or commit State-programmed capital outlay funds. The Project Report (PR) will serve as the appropriate document from which the remaining support and capital components of the project will be programmed. For the cost estimate summary, see Attachment D – Cost Estimates.

Capital Outlay Support Estimate

Capital outlay support estimate for programming PA/ED in the 2014 State Transportation Improvement Program (STIP) for this project: $25-$40M.

12. SCHEDULE

Project Milestones		Scheduled Delivery Date (Month/Year)
PROGRAM PROJECT	M015	7/2014
BEGIN ENVIRONMENTAL	M020	12/2014
CIRCULATE DRAFT PROJECT REPORT & DRAFT ENVIRONMENTAL DOCUMENT EXTERNALLY	M120	6/2018
PA & ED	M200	6/2019

The anticipated funding fiscal year for construction is 2020/21. Pending availability of project construction phase funding, the project may be implemented in Construction Phases. This phasing approach would extend the overall project schedule accordingly.

13. RISKS

The Project Risk Management Team has identified 23 potential risks, all threats. While probability and impact varies with each one, these risks require close attention throughout the project. These risks should be monitored and updated at least once during the PA/ED phase and quarterly during the construction phase. See Attachment H for the Risk Register and Attachment J for assumed probability for approval of each build alternative nonstandard design feature.

14. FHWA COORDINATION

This PSR-PDS has been discussed with the Caltrans Federal Highway Administration (FHWA) Liaison, Josue Yambo on April 2, 2014 and is eligible for federal aid funding. Interstates 5, 105, and 605 are on the federal interstate system and will require federal approval for design. The project is anticipated to be a High Profile

Project (HPP) due to the anticipated Major Project cost being in excess of $500M. This status may change due to the final phasing of improvements that may fall under the Major Project threshold.

15. PROJECT CONTACTS

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16. PROJECT REVIEWS

District Maintenance	Larry Wiering	Date: 4/16/14
District Traffic Safety Engineer	Kenneth Young	Date: 4/16/14
HQ Design Coordinator	Peter Vacura	Date: 4/16/14
Project Manager	Mumbie Fredson-Cole	Date: 4/16/14
District Quality Review	District, LA Metro, Consultants	Date: 5/29/14

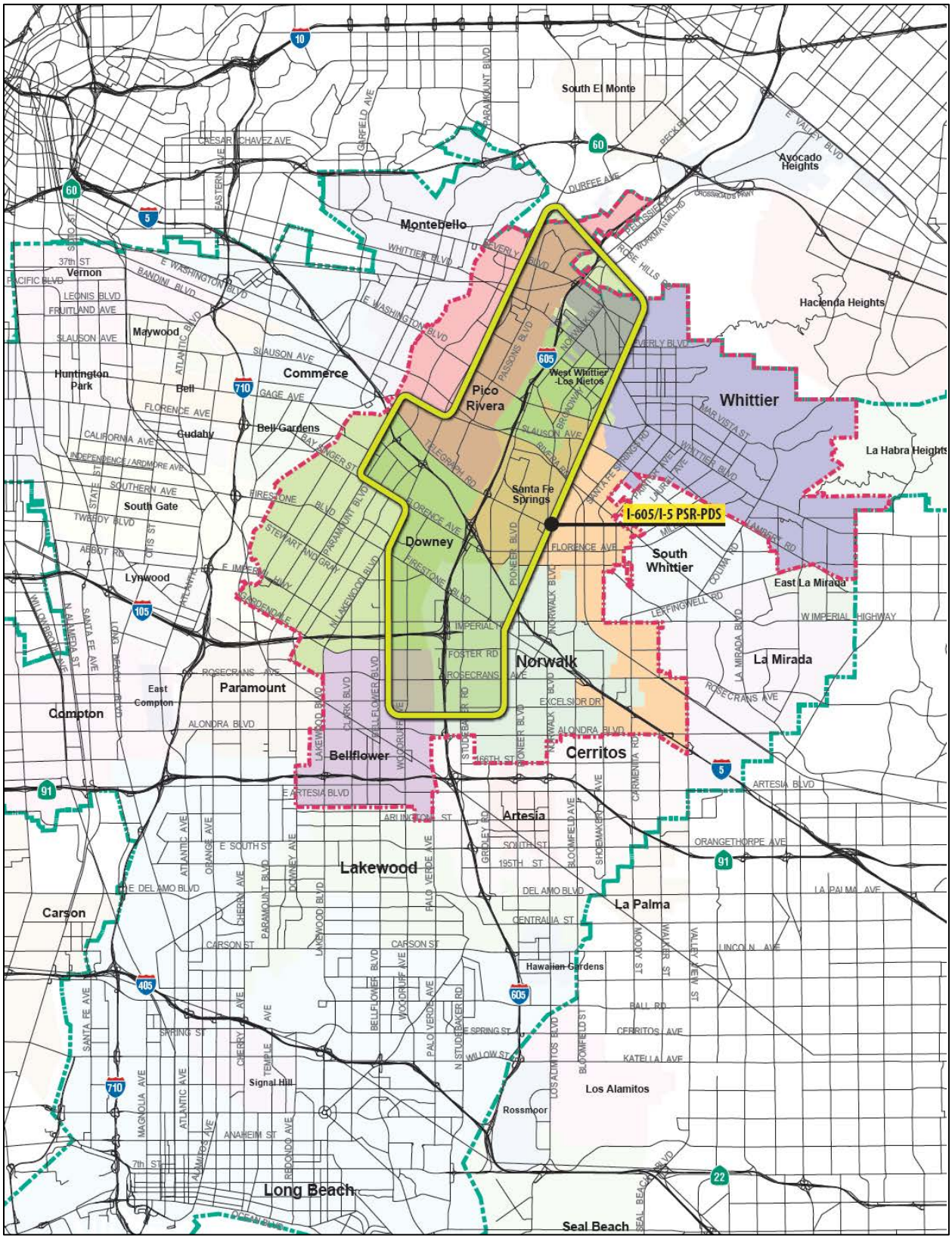
ATTACHMENTS (Number of Pages)

Attachment A – Regional Vicinity Map (1)
Attachment B – Project Area and Alternatives Plans (70) *(bound separately)*
Attachment C – Typical Cross Sections (16) *(bound separately)*
Attachment D – Cost Estimates (1)
Attachment E – Preliminary Environmental Analysis Report (PEAR) (30)
Attachment F – Transportation Planning Scoping Information Sheet, TMP Data Sheets (24)
Attachment G – Conceptual Cost Estimate – Right-of-Way Component (3)
Attachment H – Risk Register (4)
Attachment I – Storm Water Data Report, Cover Page (1)
Attachment J – Nonstandard Design Features Matrix (60) *(bound separately)*
Attachment K – Preliminary Stage Construction Concept for I-605/I-5 (8) *(bound separately)*
Attachment L – Potential Construction Phasing/Project Phasing Concept

Attachment A

Regional Vicinity Map

Attachment A – I-605/I-5 Regional Vicinity Map



Attachment B

Project Area and Alternatives Plans (bound separately)

Attachment C

Typical Cross Sections (bound separately)

Attachment D

Cost Estimates

Cost Summary
I-605/I-5 PSR-PDS
June 5, 2014

Alternative	Estimated Const. Cost (with 30% contingency) ($M)	Estimated Capital Cost for R/W (with 30% contingency) ($M)	Estimated Project Support Costs (Including R/W support) ($M)	Total Estimated Cost ($M)
Alt 1	$1,058.7	$27.0	$406.5	$1,492
Alt 2	$1,440.1	$113.8	$579.9	$2,134
Alt 3	$1,151.1	$33.7	$443.5	$1,628

Total Estimated Const. Cost Range ($M)		Total Estimated R/W Capital Cost Range ($M)		Total Estimated Project Support Costs Range ($M)		Total Estimated Cost Range ($M)	
$955	$1,170	$25	$30	$370	$450	$1,345	$1,645
$1,300	$1,585	$103	$126	$525	$640	$1,925	$2,350
$1,040	$1,270	$31	$38	$400	$490	$1,470	$1,795

Cost Summary By Corridor Alternative 1

Corridor	Northbound					Southbound					Total Estimated Construction Cost - without 30% contingency ($M)	Total Estimated Construction Cost - with 30% contingency ($M)	Total Capital Cost for Fee R/W - includes 30% contingency ($M)	Total Estimated Project Support Cost - includes R/W Support ($M)	Total Estimated Cost ($M)
	Mainline/ Connector Ramp Construction	Capital Cost for Fee R/W ($M)	Bridge Construction	Major Utilities Construction	Total Estimated Construction Cost (w/o 30% Contingency)	Mainline/ Connector Ramp Construction	Capital Cost for Fee R/W ($M)	Bridge Construction	Major Utilities Construction	Total Estimated Construction Cost (w/o 30% Contingency)					
I-605	$213.8	$6.4	$108.9	$3.1	$325.8	$303.0	$5.3	$58.2	$6.8	$367.9	$693.7	$901.8	$15.2	$343.5	$1,260.5
I-5	$37.0	$7.7	$26.1	$2.6	$65.7	$29.8	$1.3	$24.5	$0.8	$55.0	$120.7	$156.9	$11.8	$63.0	$231.7
I-605/I-5 PSR-PDS Total	**$250.8**	**$14.1**	**$135.0**	**$5.7**	**$391.5**	**$332.8**	**$6.6**	**$82.7**	**$7.6**	**$422.9**	**$814.4**	**$1,058.7**	**$27.0**	**$406.5**	**$1,492.2**

Cost Summary By Corridor Alternative 2

Corridor	Northbound					Southbound					Total Estimated Construction Cost - without 30% contingency ($M)	Total Estimated Construction Cost - with 30% contingency ($M)	Total Capital Cost for Fee R/W - includes 30% contingency ($M)	Total Estimated Project Support Cost - includes R/W Support ($M)	Total Estimated Cost ($M)
	Mainline/ Connector Ramp Construction	Capital Cost for Fee R/W ($M)	Bridge Construction	Major Utilities Construction	Total Estimated Construction Cost (w/o 30% Contingency)	Mainline/ Connector Ramp Construction	Capital Cost for Fee R/W ($M)	Bridge Construction	Major Utilities Construction	Total Estimated Construction Cost (w/o 30% Contingency)					
I-605	$262.2	$16.4	$170.6	$4.4	$437.2	$360.0	$21.0	$78.7	$7.1	$445.8	$883.1	$1,148.0	$48.5	$447.5	$1,644.0
I-5	$90.2	$43.3	$27.4	$5.0	$122.5	$67.5	$7.0	$32.7	$2.0	$102.2	$224.7	$292.1	$65.3	$132.4	$489.8
I-605/I-5 PSR-PDS Total	**$352.4**	**$59.7**	**$198.0**	**$9.4**	**$559.7**	**$427.5**	**$28.0**	**$111.4**	**$9.1**	**$548.0**	**$1,107.8**	**$1,440.1**	**$113.8**	**$579.9**	**$2,133.8**

Cost Summary By Corridor Alternative 3

Corridor	Northbound					Southbound					Total Estimated Construction Cost - without 30% contingency ($M)	Total Estimated Construction Cost - with 30% contingency ($M)	Total Capital Cost for Fee R/W - includes 30% contingency ($M)	Total Estimated Project Support Cost - includes R/W Support ($M)	Total Estimated Cost ($M)
	Mainline/ Connector Ramp Construction	Capital Cost for Fee R/W ($M)	Bridge Construction	Major Utilities Construction	Total Estimated Construction Cost (w/o 30% Contingency)	Mainline/ Connector Ramp Construction	Capital Cost for Fee R/W ($M)	Bridge Construction	Major Utilities Construction	Total Estimated Construction Cost (w/o 30% Contingency)					
I-605	$258.1	$4.5	$119.5	$4.0	$381.7	$302.1	$7.0	$69.7	$7.0	$378.9	$760.5	$988.7	$15.0	$376.0	$1,379.7
I-5	$40.0	$8.6	$26.6	$2.7	$69.3	$29.8	$5.8	$24.5	$1.4	$55.6	$124.9	$162.4	$18.7	$67.5	$248.6
I-605/I-5 PSR-PDS Total	**$298.1**	**$13.1**	**$146.1**	**$6.7**	**$451.0**	**$331.9**	**$12.8**	**$94.2**	**$8.4**	**$434.5**	**$885.4**	**$1,151.1**	**$33.7**	**$443.5**	**$1,628.3**

Note: Storm water BMP costs ($28.5M for temporary construction site BMPs and $20.9M for permanent treatment BMPs) are included within the lane mile cost assumptions for all alternatives. Hazardous waste remediation costs are included in the contingencies.

Attachment E

Preliminary Environmental Analysis Report (PEAR)

I-605/I-5

Project Study Report-Project Development Support

Preliminary Environmental Analysis Report

Prepared for

GATEWAY CITIES
COUNCIL OF GOVERNMENTS

Metro

Caltrans

Prepared by

I-605 CONGESTION HOT SPOTS
RBF | URS
WKE | ITERIS

June 4, 2014

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PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

1. Project Information

District 7	County Los Angeles	Route Interstate 605 Interstate 5	PM 6.36 to 15.10 14.10 to 19.34	EA 07-29820
Project Title: I-605/I-5				
Project Manager Mumbie Fredson-Cole			Phone # 213-897-9355	
Project Engineer Steve Huff, P.E., RBF Consulting			Phone # 949-855-3624	
Environmental Office Chief/Manager Garrett Damrath			Phone # 213-897-9016	
PEAR Preparer Virginia Viado, URS Corporation			Phone # (909) 980-4000	

2. Project Description

Metro, Gateway Cities Council of Governments (GCCOG) and Caltrans District 7 are preparing the Project Study Report – Project Development Support (PSR- PDS) for improvements to the I-605/I-5 interchange and adjacent areas. Improvements are consistent with the recommendations identified in the March 2013 "SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report" prepared for Los Angeles County Metro (Metro) and GCCOG.

The I-605 improvements are proposed between Excelsior Drive (PM 6.36) to the south and to just south of Rose Hills Road (PM 15.10) to the north. The limits of the proposed improvements to I-5 are from Florence Avenue (PM 6.39) to the south and Paramount Boulevard (PM 9.45) to the north. The I-105/I-605 HOV direct connectors design option improvements are proposed on I-105 from Clark Avenue (PM 16.14) to I-605 (I-105 PM 17.80), and on I-605 from just south of Excelsior Drive (PM 6.36) to just north of Firestone Boulevard (PM 8.62). The project is predominantly located within the Cities of Downey, Norwalk, Pico Rivera, Santa Fe Springs, Whittier and Unincorporated Los Angeles County.

Purpose and Need

The I-605/I-5 system interchange area currently experiences significant congestion which is forecast to increase in the future absent physical and operational improvements to the facility. Congestion is a result of insufficient I-605 and I-5 freeway mainline capacity, closely spaced freeway entrance and exit ramps and inadequate older design features at the freeway-to-freeway interchange. The existing freeway geometry has many features which do not meet current Caltrans Highway Design Manual Standards and there are a

number of areas within the project limits with a high concentration of accidents. There are currently no separate HOV lanes on I-5 in the study area. The purpose of the project is to reduce congestion and improve freeway operations (both mainline and ramps), improve safety, improve local interchange operations and limit freeway improvements to within the existing state right-of-way to the maximum extent possible while also minimizing environmental and economic impacts.

The project is needed in order to improve existing and future mainline I-605 and I-5 capacity deficiencies, improve system interchange ramp connectors where volumes exceed available capacity, and improve inadequate merging and weaving distances between freeway entrance and exit ramps.

Description of work
The project consists of identifying the proposed scope, schedule, support costs and resources necessary to move the project forward to the Project Approval and Environmental Documentation (PA/ED) phase. Four project alternatives are under consideration and are detailed below. It is anticipated that construction of the improvements will be phased, with individual construction segments with logical termini and independent utility implemented under two project phases.

Alternatives

- No Build Alternative.

  The 'No Build' alternative assumes the proposed project will not be constructed and allows decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. This alternative will discuss the existing (baseline) conditions at the time the Notice of Preparation (NOP) is published as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved.

- Alternative 1.

  Alternative 1 includes freeway mainline widening, including the addition of general purpose and auxiliary lanes on both the southbound (SB) and northbound (NB) I-605 and I-5.

  Proposed improvements to I-5 includes the addition of High Occupancy Vehicle (HOV) lanes in each direction from Florence Avenue to Paramount Boulevard, a SB general purpose (GP) lane from Lakewood Boulevard to Florence Avenue, and a NB auxiliary (aux) lane from I-605/I-5 to Lakewood Boulevard. Additional I-5 mainline and I-605 connector improvements are proposed at Florence Avenue to tie into proposed I-5 improvements by others. Interchange improvements along I-5 include on-ramp reconfigurations at Florence Avenue, on/off-ramp widening and realignments at Lakewood Boulevard and Paramount Boulevard.

Proposed improvements to I-605 include a SB GP lane from Beverly Boulevard to Rosecrans Avenue, and a NB GP lane from the lane drop at Firestone Boulevard to just north of Beverly Boulevard. Also proposed is two- to four-lane NB Collector-Distributor (C-D) road from Florence Avenue to Telegraph Road. Interchange improvements along I-605 include on/off-ramp realignments and modifications at Rosecrans Avenue, Imperial Highway, Telegraph Road, Firestone Boulevard, Florence Avenue, Slauson Avenue, Washington Boulevard, Saragosa Street, Whittier Boulevard and Beverly Boulevard.

Alternative 1 includes SB I-605 braided ramps for Washington Boulevard and Slauson Avenue. I-605 consists of a mixture of 11' & 12' general purpose lanes between Rosecrans Avenue and Beverly Boulevard. Any new ramp realignments or widening maintains standard shoulders and 12' lanes. The existing I-605 HOV median is unchanged from existing with non-standard widths.

This alternative would reconstruct the existing I-605 / I-5 interchange, including the addition of a NB three-lane exit on I-5 to the I-605 connector including one option lane, a dedicated connector lane from NB I-5 to SB I-605. SB I-605 to SB I-5 will be widened to a two-lane connector and SB I-5 to SB I-605 connector exit will be widened to three lanes, including an option lane.

- Alternative 2.

  Under Alternative 2, similar improvements described in Alternative 1 are proposed, except the project design implements Caltrans Highway Design Manual standards for lane and shoulder widths. Additional ROW impacts will be necessary to accommodate proposed improvements to meet Caltrans standards.

  A design option under this alternative includes the addition of HOV direct connectors to/from I-105 and I-605. The westerly limit of the I-105 HOV improvements is Clark Avenue (PM 16.14), and the easterly limit of the I-105 improvements terminate at I-605 (I-105 PM 17.80). Widening to accommodate the additional HOV lane direct connector improvements within the I-605 median would extend from just south of Excelsior Drive (PM 6.36) to just north of Firestone Boulevard (PM 8.62). Additional local circulation improvements at the I-605/I-105 interchange would be required in order to accommodate the addition of single-lane HOV direct connection flyover structures.

- Alternative 3.

  Alternative 3 includes many of the design elements identified in Alternative 2, with the incorporation of Caltrans standards for lane and shoulder widths in select locations along the I-605 and I-5, and keeping construction of improvements within the existing ROW to the maximum extent possible.

Project Phasing

Current financial resources will not accommodate funding for the entire project in the near-term, therefore the proposed improvements can be designed and constructed in phases under all three alternatives. An assessment of the proposed improvements under the three alternatives has identified up to three project construction segments as follows:

- Construction Segment 1: I-605/I-5 interchange area. On I-605 this phase would extend from I-105 to Slauson Avenue or Washington Boulevard, and on I-5 from Florence Avenue to Paramount Boulevard or Slauson Avenue
- Construction Segment 2: I-605 corridor segment from Slauson Avenue or Washington Boulevard to just south of Rose Hills Road
- Construction Segment 3: I-605 corridor segment from I-105 to the Excelsior Drive undercrossing (just south of Rosecrans Avenue)

The above noted segments can be accommodated under two project phases. The phases were determined based on logical termini and independent utility criteria, highest benefit for traffic relief, and available funding.

The first phase of the project will include the project improvements identified in Construction Segment 1 above. Logical termini and independent utility criteria can be met under this project phase. Improvements include the reconstruction of the I-605 bridge over I-5 with two- to four-lane NB Collector-Distributor (C-D) roads. It is anticipated that this phase can be identified as a stand-alone project with environmental clearance possible through preparation of an Environmental Impact Report (EIR) under CEQA, and an Environmental Impact Statement (EIS) under NEPA.

The second phase of the project will include the project improvements identified in Construction Segment 3 above. A preliminary assessment of logical termini and independent utility suggests that the I-605/I-105 interchange area is a logical break where improvements from the north and south sides of the system interchange area tie-in effectively. This segment, from the Excelsior Drive undercrossing (just south of Rosecrans Avenue) to I-105 could be combined with I-605 improvements for the I-605/SR-91 project (EA 07-29810K). It is anticipated that environmental clearance can be accommodated through inclusion under the second phase for the I-605/SR-91 project (EA 07-29810K), which will be an Environmental Impact Report (EIR) under CEQA, and an Environmental Impact Statement (EIS) under NEPA.

A preliminary assessment of logical termini and independent utility of I-605 north of I-5 suggests that there is a point somewhere in the vicinity of Slauson Avenue or Washington Boulevard where lane improvements can be initiated or terminated in an effective manner. Thus, it is anticipated that Construction Segment 2 improvements can be repackaged into the future project development documentation, including the required environmental clearance, for the separate State Route 60 (SR-60)/I-605 improvement project by others.

3. Anticipated Environmental Approval

CEQA		NEPA	
Environmental Determination			
Statutory Exemption	☐		
Categorical Exemption	☐	Categorical Exclusion	☐
Environmental Document			
Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND	☐	Routine Environmental Assessment with proposed Finding of No Significant Impact Complex Environmental Assessment with proposed Finding of No Significant Impact	☐ ☐
Environmental Impact Report	☒	Environmental Impact Statement	☒
CEQA Lead Agency (if determined):		Caltrans, District 7	
Estimated length of time (months) to obtain environmental approval:		36-60 months	
Estimated person hours to complete identified tasks:		N/A Oversight Project	

The proposed environmental document type pursuant to the California Environmental Quality Act (CEQA) is an Environmental Impact Report (EIR). This determination is based on review of Appendix G of the CEQA Guidelines in conjunction with preliminary project plans and available information.

Pursuant to the National Environmental Policy Act (NEPA), an Environmental Impact Statement (EIS) is expected. This determination is based on the potential for public controversy associated with land acquisitions required for project alternatives and the required Section 4(f) Evaluation for impacts associated with several of the project alternatives. Details are listed below in subsequent sections.

4. Special Environmental Considerations

Preliminary assessment of the three build alternatives has identified a number of environmental concerns which may require special considerations that can extend typical time frames associated with the environmental review process. The following environmental resource areas and relevant concerns have been identified:

Relocations and Real Property Acquisition. While the plans for the proposed project are preliminary, the majority of improvements will occur within existing Caltrans Right-of-Way (ROW). Alternative 2 will require the most substantial ROW and will result in the greatest partial and full property acquisitions. However, each build alternative will require additional ROW and will result in the displacement of residential and commercial properties. Acquisitions have been documented in Section 8.2.1 of this report. The

number of acquisitions associated with all the build Alternatives could potentially result in public controversy or may result in litigation over market values which would potentially create project delays. There is more property acquisition associated with Alternative 2. Special public outreach efforts may be warranted to identify concerns from potentially impacted residents and property owners.

Section 4(f) Resources. Resources subject to Section 4(f) consideration include publicly owned lands consisting of a public park/recreational area; public wildlife and waterfowl refuges of national, state, or local significance; or historic sites of national, state, or local significance, whether publicly or privately owned. Minor disruptions to Section 4(f) facilities, specifically recreational trail facilities, are expected for all alternatives as a result of construction activities. In addition, ROW impacts to Friendship Park in the City of Santa Fe Springs at the northbound I-605 on-and off-ramps at Telegraph Road, under all alternatives, may impair the use of such facility, and would require a Section 4(f) Evaluation. Cities with resources adjacent to the project will be consulted and any findings and recommendations will be included in the Section 4(f) Evaluation.

Visual/Aesthetics. Proposed project improvements include elevated roadway and bridge profiles, as well as the reconstruction and replacement of soundwalls along project segments, and the removal of mature vegetation. Additional design considerations may be needed at locations where improvements will impact sensitive receptors. Public outreach efforts consistent with the Department's Context Sensitive Solutions objectives may be warranted to identify concerns from potentially impacted residents and property owners.

Noise and Vibration. Based on the scope of work, this project is considered to be a Type I project as defined by the Caltrans Noise Analysis Protocol and requires a detailed noise analysis during the PA/ED phase. Improvements proposed adjacent to sensitive receptors, particularly residential uses and schools, will require noise measurements and modeling to determine appropriate abatement measures.

Hazardous Waste. Project delays may occur as a result of special design considerations and related project delays associated with site assessment and site investigation within project Right-of-Way parcels as well as parcels to be acquired for the project.

Hydrology and Floodplain/ Water Quality and Storm Water Runoff. Project improvements for all alternatives will result in the widening of existing bridges over the San Gabriel River. Proposed activities within the river will require coordination and permits from other agencies, which will result in an extended environmental process. The expected review/permits associated with improvements over the river expected are as follows:

- 401 Certification (Regional Water Quality Control Board)
- 404 Permit (U.S. Army Corps)
- Section 1602 Agreement (California Fish and Wildlife)

5. Anticipated Environmental Commitments

The following environmental commitment measures are based on the typical requirements to minimize or mitigate project-related impacts for similar types of transportation projects.

- ROW Relocations – Right-of-Way impacts and relocations will be subject to the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and Title 49 Code of Federal Regulations, Part 24. Acquisitions and Relocations will be processed through the Department's Relocation Assistance program, and costs associated with property acquisitions and assistance will be included in the project cost estimates.

- Noise – The replacement of existing sound walls in addition to the construction of new sound walls will be required and are considered high-cost abatement measures. In several instances, sound walls will be located directly adjacent to sensitive receptors such as residences. All reasonable and feasible sound walls identified in the project's Noise Technical Report will be evaluated in a Noise Abatement Decision Report, and recommendations will be included in the final environmental document and project cost estimates.

- Traffic/Transportation – Temporary closures will be needed during project construction on local streets, as well as on freeway lanes, ramps and bridges. In addition, all project alternatives will result in changes to highway ramp design and placement, and in some locations, ramps may be completely removed. Studies will be needed during the environmental process to identify related cost estimates and scheduling, and to allow flexibility in the construction staging design.

- Visual/Aesthetics – Modification of existing interchanges, bridges, structures, as well as the construction of new interchanges, bridges, and structures will require landscaping and aesthetic treatments for the final design. Simulations from key viewing locations will need to be included in the Visual Impact Assessment prepared during the PA/ED phase and will outline landscaping and other visual enhancements needed to address project related impacts.

- Hazardous Waste – Aerially deposited lead (ADL), petroleum products, and other hazardous substances may occur within the project Right-of-Way. Applicable testing will be completed to identify and quantify the presence of hazardous materials, as well as identify any special handling and disposal requirements during the PA/ED phase of the project.

6. Permits and Approvals

In addition to the necessary NEPA and CEQA environmental documents, anticipated environmental permits and approvals for the three build alternatives include the following:

Permit/Statute	Agency	Purpose	Approval Time Frame	Alternatives Impacted
Federal				
Clean Water Act (CWA) Section 404 Permit	Army Corps of Engineers	Necessary if project requires dredge or fill within wetlands or other waters of the US under Corps jurisdictions. (San Gabriel River at SR-91)	3-6 months for Nationwide Permit; 9-14 months for an Individual Permit	1, 2 & 3
Clean Air Act, Transportation Conformity Determination	Federal Highway Administration (FHWA); Caltrans	Federally funded projects may require a Conformity Determination under Clean Air Act regulations	3-6 months	1, 2 & 3
State				
Section 1602 Agreement	California Department of Fish and Wildlife (CDFW)	A streambed alteration agreement may be needed for work in the San Gabriel River	3-6 months	1, 2 & 3
Section 106 compliance with National Historic Preservation Act	State Office of Historic Preservation (SHPO)	Necessary if project will have an effect on properties listed on or eligible for listing in the National Register of Historic Places (NRHP)	6-12 months	1, 2 & 3

Permit/Statute	Agency	Purpose	Approval Time Frame	Alternatives Impacted
National Pollutant Discharge Elimination System (NPDES) Caltrans Statewide Permit and Construction General Permit	State Water Resources Control Board (SWRCB)	Compliance with the Construction General Permit is necessary for projects impacting greater than 1-acre of land and require preparation of a Stormwater Pollution Prevention Plan (SWPPP) Compliance with the Caltrans Statewide Permit is needed to conform with Caltrans MS4 Waste Discharge Requirements	3-6 months	1, 2 & 3
CWA Section 401 Water Quality Certification and/or Waste Discharge Requirement (WDR)	Regional Water Quality Control Board (RWQCB) – Los Angeles Region	Section 401 certification is required for discharges to US Army Corps jurisdictional waters. WDR required to discharge in waters of the State.	8-12 months	1, 2 & 3
South Coast Air Quality Management District (SCAQMD) Rules 403, 1403 and 1166.	SCAQMD	Compliance with air quality rules and regulations for project construction and operation.	3-6 months	1, 2 & 3

7. Level of Effort: Risks and Assumptions

The discussion and information provided for the PEAR technical summaries listed in Section 8 are based on windshield surveys of the project area and existing public data, which includes local general plans and environmental documents. As a result, the information presented relies on several assumptions about project improvements, the potential project area, and the accuracy of information at the time of collection. Risk management for the PEAR is the process of identifying and planning for issues, which should they occur, could have an effect on the project design as well as the project timeline and budget. These project assumptions, and potentials risks and project impacts are as follows:

- The project scope is defined from the three current build alternatives. Changes to the project scope would require additional analysis to determine if new impacts may occur. Given the urbanized nature of the current project area, it is not expected that any additional or substantial environmental concerns would occur. However, given the limited ROW available, it is expected that a revised project may require additional acquisitions, which could increase project costs and increase community impacts.
- Parcels subject to partial ROW impacts will still meet all regulatory requirements associated with their local jurisdiction, including lot size and setback requirements. Additional acquisitions may occur if ROW impacts are greater than indicated on project plans, which would increase project costs and increase community impacts.
- Additional acquisitions may occur if temporary ROW impacts are needed for construction activities, which would increase project costs and increase community impacts.
- The project is subject to federal action and analysis pursuant to NEPA is required.
- It is not expected that cultural, such as historic or Native American, and paleontological resources will be substantially impacted by the project. If it is determined that there is a high potential for resources within the project area, or if there any discovery of resources, additional studies and coordination will be required to determine project impacts. Such an event would extend the project schedule, and increase project costs.
- No unusual or substantial hazardous wastes, which would require regulatory agency involvement, will be impacted by the project. If such hazards are discovered, additional mitigation and remediation efforts would be required, which could extend the project timeline and project cost.
- No Federally Listed Species will be impacted by the project. Discovery of species would trigger FESA Section 7 consultation and extend the project timeline.
- It is unknown at this time if all potential impacts can be reduced to a less than significant level. Given the project alternatives and environmental concerns, it is expected that that an environmental impact report (EIR) and an environmental impact statement (EIS) with findings and a statement of overriding considerations may need to be prepared. A final determination of the appropriate environmental

document will be made during the PA/ED phase based upon the findings of the recommended technical studies.

8. PEAR Technical Summaries

8.1 Land Use:

8.1.1 Existing Land Use:

Various land uses, including single-family and multiple-family dwellings, office and commercial buildings, community and public facilities, schools, utility infrastructure, and industrial buildings are located adjacent to project segments of I-605, I-5, and I-105. The project is located within the Cities of Norwalk, Downey, Santa Fe Springs, Pico Rivera, Whittier, and Industry, and the unincorporated communities of West Whittier-Los Nietos and North Whittier. Existing land uses are described below.

- **NB I-5 –West of Paramount Boulevard (Downey):** Uses adjacent to the freeway are designated as low density residential.

- **SB I-5 –West of Paramount Boulevard (Downey):** Uses adjacent to the freeway are designated as low density residential.

- **NB I-5 – Paramount Boulevard to Lakewood Boulevard (Downey):** Low density residential and neighborhood commercial is located adjacent to the freeway.

- **SB I-5 – Paramount Boulevard to Lakewood Boulevard (Downey):** Low and medium density residential is located along the freeway.

- **NB I-5 – Lakewood Boulevard to I-605 (Downey and Santa Fe Springs):** Uses adjacent to the freeway includes neighborhood commercial, low density residential, open space for the San Gabriel River and Santa Fe Springs Park, and Unsworth Elementary School.

- **SB I-5 – Lakewood Boulevard to I-605 (Downey and Santa Fe Springs):** Low density residential and open space, which includes Dennis the Menace Park and the San Gabriel River, are located within this segment.

- **NB I-605 – South of Rosecrans Avenue to Imperial Highway (Norwalk):** Low density residential and the park-and-ride lot for Metro are located within this segment.

- **SB I-605 – South of Rosecrans Avenue to Imperial Highway (Norwalk):** Uses adjacent to the freeway includes low and medium density residential, commercial, and a Metro station.

- **NB I-605 – Imperial Highway to Firestone Boulevard (Norwalk):** Uses within this segment include commercial, medium density residential, and open space for Westside Park.

- **SB I-605 – Imperial Highway to Firestone Boulevard (Norwalk):** Commercial and low density residential is located adjacent to the freeway.

- **NB I-605 – Firestone Boulevard to Florence Avenue Norwalk and Downey):** Commercial and low density residential is located adjacent to the freeway.

- **SB I-605 – Firestone Boulevard to Florence Avenue Norwalk and Downey):** A local theme park (commercial), an electricity power plant (industrial), low density residential, and open space for Wilderness Park is located adjacent to the freeway.

- **NB I-605 – Florence Avenue to Telegraph Road (Downey and Santa Fe Springs):** Uses adjacent to the freeway includes low and medium density residential as well as commercial.

- **SB I-605 – Florence Avenue to Telegraph Road (Downey and Santa Fe Springs):** A Caltrans facility and low density residential are located within this segment.

- **NB I-605 – Telegraph Road to Slauson Avenue Santa Fe Springs and West Whittier-Los Nietos):** Friendship Park, low and medium density residential, industrial, commercial, and public uses are located adjacent to the freeway.

- **SB I-605 – Telegraph Road to Slauson Avenue Santa Fe Springs and West Whittier-Los Nietos):** Adjacent to SB I-605 is typically open space for the San Gabriel River and a utility easement. However, near the SB I-605/Slauson Avenue on-ramp is industrial and low density residential.

- **NB I-605 – Slauson Avenue to Washington Boulevard (West Whittier-Los Neitos):** Commercial uses and low density residential are located adjacent to the freeway, and Pioneer High School is within the immediate vicinity.

- **SB I-605 – Slauson Avenue to Washington Boulevard (West Whittier-Los Neitos):** Low density residential is located adjacent to SB I-605.

- **NB I-605 – Washington Boulevard to Whittier Avenue (West Whittier-Los Nietos & Whittier):** Uses adjacent to the freeway includes low and medium density residential, a church, and the Plaza De La Raza School.

- **SB I-605 – Washington Boulevard to Whittier Avenue (West Whittier-Los Nietos & Whittier):** This segment features low and medium density residential, a mobile home park, and Pio Pico, which is a cultural and historic resource in the City of Whittier.

- **NB I-605 – Whittier Avenue to Beverly Boulevard (West Whittier-Los Neitos & Whittier):** Adjacent to the freeway are commercial uses, low and medium density residential, and open space, which includes Benjamin Franklin Elementary School/Guirado Park.

- **SB I-605 – Whittier Avenue to Beverly Boulevard (West Whittier-Los Neitos & Whittier):** Uses adjacent to the freeway include low and medium density residential, commercial, open space for Amigo Park, and industrial, which is currently vacant.

- **NB I-605 – Beverly Boulevard to Rose Hills Road (Pico Rivera, Industry, & North Whittier):** Low density residential, industrial, and a mortuary are located adjacent to the freeway.

- **SB I-605 – Beverly Boulevard to Rose Hills Road (Pico Rivera, Industry, & North Whittier):** This segment features low density residential and industrial uses.

8.1.2 Potential ROW Acquisition and Relocation Impacts:

Temporary easements will be required from various properties along the I-605 and I-5 to accommodate construction of the proposed improvements under all three Alternatives. These improvements include construction of new mainline lanes, auxiliary lanes, revised ramp geometry, and the construction of soundwalls and retaining walls or modification of existing walls.

Under Alternative 1, it is expected that 18 residential properties will be subject to full acquisitions and 5 will be subject to partial acquisitions. There will be 1 commercial/industrial property subject to full acquisition and 1 partial acquisition along with 23 partial acquisitions of agency/public properties. Alternative 2 includes 155 full acquisitions and 51 partial acquisitions of residential properties, 6 partial acquisitions of commercial/industrial properties, and 39 partial acquisitions of agency/public properties. For Alternative 3, it is expected that there will be 32 full acquisitions and 39 partial acquisitions of residential properties, 4 partial acquisitions of commercial/industrial properties, and 30 partial acquisitions of agency/public properties. In addition, it is expected that all build alternatives will result in temporary construction easements, and various public property and utility parcel impacts. The total number of properties affected along each freeway corridor is listed in Table 8-1.

Table 8-1 – Summary of Property Acquisitions by Corridor

Land Use	Alternative 1		Alternative 2		Alternative 3	
	Full	Partial	Full	Partial	Full	Partial
I-605						
Residential	3	3	53	38	7	24
Commercial	1	1	0	6	0	4
Agency/Other	0	16	0	29	0	20
Subtotal	*4*	*20*	*53*	*73*	*7*	*48*
I-5						
Residential	15	2	102	13	25	15
Commercial	0	0	0	0	0	0
Agency/Other	0	7	0	10	0	10
Subtotal	15	9	102	23	25	25
Total acquisitions by type	Full	Partial	Full	Partial	Full	Partial
	19	***29***	***155***	***96***	***32***	***73***
TOTAL	**48**		**251**		**105**	

Additional details related to property acquisition will be assessed and addressed in the Community Impact Assessment (CIA) and Relocation Impact Report (RIR) prepared during the PA/ED phase of the project. ROW acquisitions for the proposed project will be implemented in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970.

Due to the urbanized nature of the communities adjacent to the project and the vacancy rates for the area, it is assumed that replacement housing or commercial/office space is available for displaced families or businesses. The RIR will assess replacement housing and comparable sites as well as discuss additional details needed to find a suitable replacement, such as housing affordability.

8.2 Growth:

Caltrans, in conjunction with the FHWA and the U.S. EPA, developed a guidance document for transportation projects entitled *Guidance for Preparers of Growth-Related, Indirect Impact Analyses* which focuses on the influence transportation projects may have on growth and development. A growth inducement discussion is required pursuant to CEQA in order to determine is a project would indirectly or directly impact growth, and if such impacts would affect the ability of agencies to provide a needed public service or if the growth could impact the environment in another way. Transportation and other infrastructure projects influence growth in different ways, and as a result, the guidance provides a two-phase approach to evaluate growth-related impacts. The first phase is a "first cut screening" which determines if there is potential for growth-related impacts and if phase two, which provides further analysis through a six-step evaluation process, is required.

It is expected that the Department's First Cut Screening Analysis during the PA/ED phase of the project will conclude that no impacts would occur and the second phase of evaluation, a Growth Impact Study, will not be necessary. The project objectives are to reduce congestion along the existing highways. The project does not provide new opportunities for residential development, nor would it bring additional infrastructure to allow new development and it will not provide new access to urban or underdeveloped areas, nor provide a new highway alignment. In addition, jobs would be created to complete construction for the project that could be filled by workers in the surrounding communities.

Communities adjacent to the project are urbanized and feature limited remaining development capacity; a review of SCAG projections as well as Housing Elements for local jurisdictions concluded that growth rates for adjacent communities will be less than the County of Los Angeles total. In addition, jobs created by the project would likely be fulfilled by those already within the region, and large migration to the region is not expected to occur. Further analysis will be provided by the Department's First Cut Screening Analysis.

8.3 Farmlands/Timberlands:

The project is located within highly urbanized areas of Los Angeles County; according to information available from the State Department of Conservation and the General Plans reviewed from the surrounding communities, no farm or agricultural uses were identified within the vicinity of the project. The project area limits do not feature any farmlands (including lands protected under the Williamson Act or lands designed under the Farmland Mapping and Monitoring Program (FMMP) or timberlands. No impacts would occur to these resources. Detailed analysis of farmland impacts would not be required during the PA/ED phase of the project.

8.4 Community Impacts:

8.4.1 Existing Social and Economic Conditions:

The project is predominantly located within the Cities of Norwalk, Downey, Santa Fe Springs, Pico Rivera, Whittier, and Industry, as well as the unincorporated community of West Whittier-Los Nietos and North Whittier. For purposes of this study, demographics discussed in this section will be limited to the affected Census Tracts of the Cities of Artesia, Bellflower, Cerritos and Norwalk that would be directly impacted by the project. A total of thirteen Census Tracts were assessed (5003, 5004.01, 5010, 5012, 5022, 5023.01, 5027, 5028, 5503, 5504, 5519, 5530, 5505). Information was obtained predominantly from 2010 Census data and the 2005-2007 American Community Survey.

As shown in Table 8-2, the largest racial/ethnic group for both the project area and Los Angeles County is Hispanic or Latino, comprising 75.4 and 44.6 percent, respectively. The project also features a substantial population that identifies themselves as "Some Other Race."

According to U.S. Census data, the approximate average household size in Los Angeles County is three persons; the average for the project area is four persons. The Federal poverty threshold for Los Angeles County is $21,954 for a family of four.

Table 8-2 Demographic Information

Race/Ethnicity	Project Area		Los Angeles County	
	Number	Percent	Number	Percent
White	42,831	53.6	3,053,586	31.1
Black or African American	2,475	3.1	952,405	9.7
American Indian & Alaska Native	679	0.9	49,093	0.5
Asian	4,609	5.8	1,237,144	12.6
Other	29,264	36.6	147,279	1.5
Hispanic or Latino[1]	60,201	75.4	4,379,098	44.6
Total Population	79,858	N/A[1]	9,818,605	N/A[1]

8.4.2 Potential Community Impacts:

Community Character and Cohesion:

The I-605 and I-5 freeways serve as a physical barrier dividing portions of the Cities within the project area. The mainline widening, ramp modifications and other proposed improvements on both freeways would not create a new barrier or further impede community cohesion. Based on preliminary plans provided for all three project Alternatives, significant issues with respect to community character or cohesion are not anticipated to occur. Potential impacts will be further analyzed and addressed in the environmental document and/or Community Impact Assessment (CIA) prepared during the PA/ED phase of the project.

Relocations:

As previously discussed in Section 8.1.2, ROW acquisition will be required for the project in all three Alternative designs. All alternatives will require acquisitions that may be limited to minor partial acquisitions or full property acquisitions. Additional details related to property acquisition will be assessed and addressed in the Community Impact Assessment (CIA) and Relocation Impact Report (RIR) prepared during the PA/ED phase of the project. ROW

[1] Hispanic or Latino is considered as an ethnicity, rather than a race, in accordance to the guidelines adopted by the Office of Management and Budget. As a result, the sum of all categories will exceed 100%.

acquisitions for the proposed project will be implemented in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970.

Environmental Justice:

Potential for environmental justice populations to occur within the 13 project area Census Tracts is relatively high based on the populations characteristics discussed in Section 8.4.1. Populations within the project area are characterized as having typically higher minority populations and features lower income populations. Further analysis of environmental justice populations and related project effects will be discussed in the environmental justice section of the environmental document and/or within the CIA.

Public Facilities and Services:

The proposed project is located adjacent to various public facilities, which include public parks/recreational facilities, schools, drainage channels and utility structures.

Public parks and recreational facilities include the following:

- San Gabriel River Trail (several cities)
- Dennis the Menace Park (Downey)
- Santa Fe Springs Park (Santa Fe Springs)
- Westside Park (Norwalk)
- Wilderness Park (Downey)
- Friendship Park (Santa Fe Springs)
- Amigo Park (Whittier)
- Guirado Park (Whittier)
- Pio Pico (Whittier)

Schools located adjacent to the proposed project include the following:

- Unsworth Elementary School (Downey)
- Pioneer High School (Whittier)
- Benjamin Franklin Elementary (Whittier)

Utilities and service systems traversing or adjacent to the I-605 and I-5 project segments include underground and overhead power transmission lines, gas, water, sewer, telephone and fiber-optic lines. A power plant facility and the San Gabriel River are also located adjacent to the project. Potential impacts will be identified during the PA/ED and PS&E phases of the project, and appropriate mitigation or minimization measures will be defined at that time. Relocations, if necessary, will also be assessed during the PA/ED and PS&E phases.

Temporary impacts to public services may occur during construction by way of delayed service response times. Coordination and communication with each affected service would reduce potential impacts.

8.5 Visual/Aesthetics:

The project is not located along or adjacent to any designated or eligible scenic highway. In addition, a windshield survey of the project did not note any scenic resources within the vicinity of the project. Freeway widening efforts and the expansion or relocation of on-ramps and off-ramps would result in a number of visual changes. These changes includes the removal of mature trees, the relocation or introduction of sound walls adjacent to sensitive receptors, new overpass locations for on-ramps and off-ramps, new lighting, and redesigned off-ramp, on-ramp, and highway interchanges. However, elements of the highway are a part of the existing conditions and many of the same elements would remain. The introduction of new landscaping and appropriate landscaped buffers could potentially mitigate visual impacts. A Visual Impact Assessment (VIA) would be completed during the PA/ED phase of the project to further analyze impacts and provide specific measures.

8.6 Cultural Resources:

A search of the California Historical Resources Information System (CHRIS) and coordination with the Native American Heritage Commission is needed to determine potential historical, archaeological, and Native American sites within the project area. Because of the urbanized nature of the project area, the potential for impacts to archaeological and Native American resources is limited. The project location and adjacent lands have been significantly graded and covered with impervious surfaces. It is therefore expected that any resources have been likely disturbed. However; historical sites and features are likely to be present within the project area. Information collected from the search of CHRIS will be included in the preparation of a Historic Resources Evaluation Report (HRER), which will provide detailed analysis of known resources within the Area of Potential Effects (APE). The APE will delineate the geographic extent of the project. Consideration must be given to the project's potential effects on historic properties as a whole, and as such, if a part of the property may be affected, the APE should include the entire boundary of the property. Should elements of the project, which includes property acquisitions, impact resources, a Finding of Effect will be completed.

8.7 Hydrology and Floodplain:

The project is located within Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) numbers 06037C1835F, 06037C1668F, 06037C1664F, 06037C1830F, 06037C1829F, 06037C1837F, and 06037C1840F. Based on the latest maps, the project alignment is typically located within Base Floodplain Zone X, which is an area with a .2% chance of flooding. However, the

San Gabriel River is identified as a Special Flood Hazard Area, and is delineated as Zone A. According to FEMA, this zone features areas subject to inundation by the 1-percent-annual-chance flood event. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are provided for the River.

Floodplain impacts and an increased risk in flooding as a result of the project are not expected to occur within improvements within the Base Floodplain Zone X. However, the project includes improvements over the San Gabriel River, and work would occur within the associated floodway. A Location Hydraulic Study will be prepared to evaluate the base (100 year) flood along the river and the project's impact to the base floodplain. This study involves the use of Flood Insurance Study data and NFIP maps for baseline, and a hydraulic computer model to determine the new BFE. If the study concludes that there is no encroachment and or no impact, a Summary Floodplain Evaluation Report will be prepared. If there is a substantial encroachment, a Floodplain Evaluation Report will be necessary. A Water Quality Assessment Report is recommended to document potential project impacts related to floodplains and hydrology, and to recommend any avoidance, minimization, and/or mitigation measures.

8.8 Water Quality and Storm Water Runoff:

Project improvements would include upgrading the storm drain system facilities, storm drain controls, and development of Best Management Practices (BMPs) to meet Regional Water Quality Control Board (RWQCB) and National Pollutant Elimination Discharge System (NPDES) requirements. A general water quality analysis would be performed to support an evaluation of the general effects of proposed project improvements, BMPs, and NPDES requirements to reduce surface water quality impacts.

A review of groundwater hydrogeology and groundwater quality in the vicinity of the project site that may be impacted by construction will be completed during the PA/ED phase of the project. The applicability of BMPs should be considered to ensure construction of the project would not result in negative impacts to groundwater quality and any nearby water supply wells. During construction, special precautions would be necessary to reduce the potential for water quality impacts. The project must conform to the requirements of Caltrans' Statewide NPDES Storm Water Permit (Order No. 99-06-DWQ, NPDES No. CAS000003) and the NPDES General Permit, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity" (Order 2009-0009-DWQ, NPDES No. CAS000002), in addition to the Statewide Storm Water Management Plan (SSWMP).

8.9 Geology, Soils, Seismic and Topography:

The project limits are within the Whittier 7.5 minute Quadrangle map, which identifies that the project area is within an area where there has been a historic occurrence of liquefaction, or local geological conditions indicate the potential for permanent ground displacements. Further investigation during the PA/ED phase of the project may be necessary to guide final engineering drawings in order to ensure less than significant impacts. Furthermore, there is a potential for ground shaking events to occur from distant earthquakes. No faults, including those identified under Alquist-Priolo, were identified within project limits. However, Southern California contains numerous faults and earthquakes are a common natural hazard for the entire region.

8.10 Paleontology:

The immediate project area is assumed to have a low sensitivity for paleontological resources. The project and adjacent lands are located within areas of Los Angeles County that have been significantly graded and covered with impervious surfaces and any resources have been likely disturbed. An evaluation of the General Plans governing the local jurisdictions surrounding the project provided similar conclusions regarding cultural/paleontological resources. A Paleontological Identification Report (PIR) and/or Paleontological Evaluation Report (PER) will be prepared during the PA/ED phase to document identified resources.

8.11 Hazardous Waste/Materials:

Available information from the California Department of Toxic Substances Control's (DTSC) Hazardous Waste and Substances Sites (Cortese) List was reviewed to identify the locations of hazardous materials release sites within the project area. Preliminary plans for each of the three build Alternatives (dated December 2013) were assessed to identify the proximity of proposed improvements to identified active clean-up or leaking underground storage tanks (LUST) sites. None were identified that would be directly impacted by proposed project improvements, however a preliminary Initial Site Assessment (ISA) will be prepared during the PA/ED phase, utilizing the most current available project design plans, to further identify and assess hazardous waste sites and prepare a list of Recognized Environmental Conditions (RECs) within the project area.

It is assumed that hazardous and potentially hazardous materials used in or encountered during construction, and the transport and disposal of such materials, would be conducted in accordance with applicable federal, state, and local requirements so that potential risks are reduces or avoided. Mitigation and minimization measures could be developed, as needed, in consultation with regulatory agencies.

8.12 Traffic/Transportation

The project proposes improvements such as the addition of lanes to the freeway mainline and interchange improvements, to reduce existing and forecast congestion as identified and discussed in the March 2013 "SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report" prepared for Los Angeles County Metro (Metro) and the Gateway Cities Council of Governments (GCCOG). Long-term benefits would be provided by the project that would serve to address regional and local traffic. Adverse effects to traffic and local circulation is anticipated during project construction as a result of temporary lane and ramp closures to accommodate construction activities. The preparation of technical reports and studies, such as a Traffic Impact/Circulation Study, Modified Access Report (MAR), Traffic Management Plan (TMP) and Ramp Closure Study, will be prepared during the PA/ED phase to further identify and assess temporary and long-term impacts associated with the project.

8.13 Air Quality:

The project area is located in the South Coast Air Basin (SCAB) and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The proposed project is a capacity-increasing project within an area designated as non-attainment and would be designed to reduce congestion and improve traffic flow during project operation; therefore improvements could yield beneficial impacts to air quality. An Air Quality Technical Study will be prepared during the PA/ED phase, utilizing the project traffic report and identification of anticipated construction activities and phasing, to document the potential construction and operational effect on air quality associated with the proposed project Alternatives. The study will also utilize information available in the June 2013 "Gateway Cities Air Quality Action Plan Final Report" to identify and implement appropriate measures to improve air quality during construction and operation associated with the proposed project Alternatives. An Air Quality Conformity Analysis (AQCA) will also be prepared during the PA/ED phase of the project to request a project-level conformity determination from FHWA.

8.14 Noise and Vibration:

Based on the scope of work, this project is considered to be a Type I project as defined by the Caltrans Noise Analysis Protocol. Construction of the project would result in portions of the highway located closer to sensitive receptors, and in many cases, travel lanes would be located beyond the current public ROW of the highway. In a variety of neighborhoods, sound walls would be located less than 50 feet from residential structures. In addition, expansion of the highway would increase the capacity of the highway, further increasing the ambient noise. Local jurisdictions currently have sound contour lines and related noise thresholds based

upon the existing conditions. As a result, there may be potentially significant impacts from the generation of noise in excess of these standards.

A Noise Study Report and Noise Abatement Decision Report (NADR) will be prepared during the PA/ED phase of the project, and will include recommendations for sound wall placement and other abatement measures, consistent with Caltrans/FHWA Noise Abatement Criteria. Recommendations will be included the draft environmental document and the project cost estimates.

8.15 Energy and Climate Change:

Construction of the project will require a large amount of energy through the use of construction equipment, materials delivery, and additional travel as a result of detours associated with lane and ramp closures. It is anticipated, as is with most transportation projects, that balancing energy used during construction and operation against energy saved by relieving congestion and reducing out of direction travel, would not have substantial energy impacts. The project is not likely to have substantial impacts on energy consumption; therefore a generalized procedure is anticipated to conduct the analysis during the PA/ED phase of the project. Only general construction and operational energy requirements and conservation potential of the various alternatives will be discussed in the environmental document. A quantitative analysis of the greenhouse gas (CO_2) produced from the project should be performed using the current Caltrans practice during the PA/ED phase to document and assess potential climate change impacts.

8.16 Biological Environment:

The project's limits are located within developed areas of Los Angeles County, either adjacent to the highway corridor or directly adjacent to the highway. However, bridge widening will occur over the San Gabriel River, which is a Jurisdictional Feature, to accommodate the I-605/I-5 interchange improvements as well as roadway improvements for Telegraph Road, Washington Boulevard, and Florence Avenue. As a result, bridge construction activities will likely require a nationwide Section 404 permit from the United State Army Corps of Engineers and a Section 1602 permit from the California Department of Fish and Wildlife. Associated consultation with United States Fish and Wildlife Service may also be necessary.

A Natural Environment Study (NES) report would be prepared during the PA/ED phase to identify if any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service that are within the project's Biological Study Area. However, the urbanized nature of the project area would not be typically be conducive to sensitive biological resources. Preliminary evaluation of the General Plans for those jurisdictions surrounding the project has identified that resources are characterized as altered biotic habitats that do not

typically feature sensitive species. The potential resource identified within the project area is the San Gabriel River. Project improvements will generally occur within the Upper Coastal Plain of the River, where the channel is currently unlined. The San Gabriel River Corridor Master Plan Final Environmental Impact Report notes that this plain contains ruderal, riparian scrub and woodland habitats, which may contain special status wildlife.

8.17 Cumulative Impacts:

A list of projects for consideration and analysis for the project's cumulative impacts analysis would be created during the PA/ED phase of the project. This list should include major development projects and transportation projects that will occur within the vicinity of the project limits. Potential transportation projects may include the other congestion area PSR segments identified and discussed in the March 2013 "SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report" prepared for Metro and GCCOG, the I-710 Corridor Project, as well as other local projects identified within the 2012-2035 Regional Transportation Plan (RTIP) prepared for the Southern California Association of Governments (SCAG). Coordination with local jurisdictions may provide details on local development projects that should be considered in the analysis.

8.18 Context Sensitive Solutions:

Caltrans uses Context Sensitive Solutions (CSS) as its approach to plan, design, construct, maintain, and operate its transportation system. CSS uses innovative and inclusive approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals and is reached through a collaborative, interdisciplinary approach involving all stakeholders. In order to ensure that CSS is fully integrated into the project development process, careful, imaginative, and early planning is required along with continuous community involvement. Early agency coordination for each resource area as well as early outreach to the community will help to ensure a successful CSS outcome.

9. Summary Statement for PSR or PSR-PDS

The preliminary assessment of the project's build alternatives has identified there will be potential impacts within the following resources areas: air quality, community, hazardous waste/materials, noise, water quality and stormwater runoff, transportation and traffic, utilities and services, and visual/aesthetics. Alternative 2 will likely include more impacts to environmental resources based on property acquisition needs to accommodate Caltrans Highway Design Manual standards for lane and shoulder widths as identified in preliminary design plans.

All build Alternatives would likely require the following permits and approvals:

- Clean Water Act (CWA) Section 404 Permit
- Clean Air Act, Transportation Conformity Determination
- Section 1602 Agreement
- National Pollutant Discharge Elimination System (NPDES) Caltrans Statewide Permit and Construction General Permit
- CWA Section 401 Water Quality Certification and/or Waste Discharge Requirement (WDR)

All build Alternatives will require the following reports and studies, with significant efforts needed for reports analyzing Alternative 2:

- Air Quality Report
- Air Quality Conformity Analysis
- Historic Resource Evaluation Report
- Preliminary Site Investigation
- Initial Site Assessment (Phase I and Phase II)
- Natural Environment Study
- Paleontological Identification Report/Paleontological Evaluation Report
- Community Impact Assessment
- Relocation Impact Statement
- Section 4(f) Evaluation
- Traffic Impact/Circulation Study
- Noise Study Report
- Visual Impact Assessment
- Water Quality Assessment Report

Recommended Engineering Technical Studies include the following:

- Storm Water Data Report
- Noise Abatement Decision Report
- Location Hydraulic Study
- Geotechnical Study
- Traffic Management Plan and Ramp Closure Study
- Modified Access Report

Environmental Commitments have been identified for all build Alternatives as identified below. Those associated with Alternative 2 will likely require a greater level of effort to assess and identify to address project design needs to accommodate Caltrans Highway Design Manual standards for lane and shoulder widths.

- ROW relocations
- Replacement of existing sound walls in addition to the construction of new sound walls

- Temporary closures on local streets, as well as on freeway lanes, ramps and bridges.
- Landscaping and aesthetic treatments adjacent to sensitive receptors along the I-5 in the City of Downey and I-605.

10. Disclaimer

This Preliminary Environmental Analysis Report (PEAR) provides information to support programming of the proposed project. It is not an environmental determination or document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in the Project Study Report-Project Development Support (PSR-PDS). The estimates and conclusions in the PEAR are approximate and are based on cursory analyses of probable effects. A reevaluation of the PEAR will be needed for changes in project scope or alternatives, or in environmental laws, regulations, or guidelines.

11. List of Preparers

Cultural Resources specialist Jeremy Hollins	Date: 11/7/13
Biologist Greg Hoisington	Date: 11/7/13
Community Impacts specialist Benjamin Matlock, Kevin Cunningham	Date: 11/7/13
Noise and Vibration specialist Ted Lindberg	Date: 11/7/13
Air Quality specialist Tin Cheung	Date: 11/7/13
Paleontology specialist/liaison Dustin Kay	Date: 11/7/13
Water Quality specialist Cynthia Gabaldon	Date: 11/7/13
Hydrology and Floodplain specialist Cynthia Gabaldon	Date: 11/7/13
Hazardous Waste/Materials specialist Paul Peterson	Date: 11/7/13
Visual/Aesthetics specialist Corinne Lytle-Bonine	Date: 11/7/13
Energy and Climate Change specialist Tin Cheung	Date: 11/7/13
Other: N/A	Date: N/A
PEAR Preparer (Name and Title) Virginia Viado, Project Manager/Sr. Planner	Date: 6/4/14

12. Review and Approval

I confirm that environmental cost, scope, and schedule have been satisfactorily completed and that the PEAR meets all Caltrans requirements. Also, if the project is scoped as a routine EA, complex EA, or EIS, I verify that the HQ DEA Coordinator has concurred in the Class of Action.

_____ Date: _____

Environmental Branch Chief

_____ Date: _____

Project Manager

REQUIRED ATTACHMENTS:

Attachment A: PEAR Environmental Studies Checklist

Attachment A: PEAR Environmental Studies Checklist

Rev. 11/08

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Land Use	☐	☐	☒	**M**	
Growth	☐	☒	☐	**L**	
Farmlands/Timberlands	☒	☐	☐	**L**	
Community Impacts	☐	☐	☒	**M**	
Community Character and Cohesion	☐	☐	☒	**L**	
Relocations	☐	☐	☒	**H**	
Environmental Justice	☐	☐	☒	**M**	
Utilities/Emergency Services	☐	☐	☒	**M**	
Visual/Aesthetics	☐	☐	☒	**M**	
Cultural Resources:	☐	☐	☒	**L**	
Archaeological Survey Report	☐	☐	☒	**L**	
Historic Resources Evaluation Report	☐	☐	☒	**L**	
Historic Property Survey Report	☐	☐	☒	**L**	
Historic Resource Compliance Report	☐	☐	☒	**L**	
Section 106 / PRC 5024 & 5024.5	☐	☐	☒	**L**	
Native American Coordination	☐	☒	☐	**L**	
Finding of Effect	☒	☐	☐	**L**	
Data Recovery Plan	☒	☐	☐	**L**	
Memorandum of Agreement	☒	☐	☐	**L**	
Other: N/A	☒	☐	☐	**L**	
Hydrology and Floodplain	☐	☐	☒	**M**	
Water Quality and Stormwater Runoff	☐	☐	☒	**H**	
Geology, Soils, Seismic and Topography	☐	☐	☒	**L**	
Paleontology	☐	☒	☐	**L**	
PER	☒	☐	☐	**L**	
PMP	☒	☐	☐	**L**	
Hazardous Waste/Materials:	☐	☐	☒	**H**	
ISA (Additional)	☐	☐	☒	**H**	
PSI	☐	☐	☒	**M**	
Other:	☒	☐	☐	**L**	
Air Quality	☐	☐	☒	**M**	
Noise and Vibration	☐	☐	☒	**M**	
Energy and Climate Change	☐	☒	☐	**L**	
Biological Environment	☐	☐	☒	**L**	
Natural Environment Study	☐	☐	☒	**M**	
Section 7:	☒	☐	☐	**L**	
Formal	☒	☐	☐	**L**	
Informal	☒	☐	☐	**L**	
No effect	☐	☒	☐	**L**	
Section 10	☒	☐	☐	**L**	
USFWS Consultation	☐	☒	☐	**L**	
NMFS Consultation	☒	☐	☐	**L**	

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Species of Concern (CNPS, USFS, BLM, S, F)	☒	☐	☐	**L**	
Wetlands & Other Waters/Delineation	☐	☐	☒	**M**	
404(b)(1) Alternatives Analysis	☒	☐	☐	**L**	
Invasive Species	☒	☐	☐	**L**	
Wild & Scenic River Consistency	☒	☐	☐	**L**	
Coastal Management Plan	☒	☐	☐	**L**	
HMMP	☒	☐	☐	**L**	
DFG Consistency Determination	☒	☐	☐	**L**	
2081	☒	☐	☐	**L**	
Other:	☒	☐	☐	**L**	
Cumulative Impacts	☐	☒	☐	**M**	
Context Sensitive Solutions	☐	☐	☒	**L**	
Section 4(f) Evaluation	☐	☐	☒	**L**	
Permits:					
401 Certification Coordination	☐	☐	☐	**M**	
404 Permit Coordination, IP, NWP, or LOP	☐	☐	☒	**M**	
1602 Agreement Coordination	☐	☐	☐	**M**	
Local Coastal Development Permit Coordination	☒	☐	☐	**L**	
State Coastal Development Permit Coordination	☒	☐	☐	**L**	
NPDES Coordination	☐	☐	☒	**L**	
US Coast Guard (Section 10)	☒	☐	☐	**L**	
TRPA	☒	☐	☐	**L**	
BCDC	☒	☐	☐	**L**	

Attachment F

Transportation Planning Scoping Information Sheet, TMP Data Sheets

ARTICLE 4
Transportation Planning Scoping Information Sheet

Transportation planning provides the framework for selecting, scoping and constructing projects on the State Highway System. The intent of federal and State laws, policies and regulations are to fund and construct projects that are consistent with State, regional, and community planning decisions. Transportation planning processes are iterative; therefore, project teams rely on the Transportation Planner to provide the team with transportation planning information that affects the scope, cost, and schedule of the proposed project.

The Transportation Planner has the expertise to compile, analyze and present pre-planning efforts and decisions that must be considered when scoping the project. The Transportation Planner must identify community concerns and ensure they are adequately addressed early enough in the project development process to facilitate efficient project delivery. This information enables the team to properly define and scope the project in concert with the affected community and the alternatives previously considered.

It is important to use resources to gather and compile information that will:

- Assist project development teams in developing projects that are consistent with the purpose and need identified in the long-range transportation planning process for the statewide integrated multimodal transportation system.
- Ensure that the project development teams consider the following:
    - Consistent with planning concepts and statewide goals
    - Transportation system throughput and efficiencies for all modes.
    - Community values, context sensitive solutions, and complete streets.
    - Consistency with State, regional and community planning decisions.
- Improve cost estimating.
- Reduce scope creep.

Transportation Planners can use the planning scoping information sheet as a communication document to present the planning level purpose and need to the Project Development Team (PDT) early in the project initiation phase. The PDT should use the planning scoping information sheet to verify that the project remains consistent with the planning level purpose and need and is consistent with planning concepts, statewide goals, and planning decisions. Guidance to assist the Transportation Planner in completing the Information Sheet is located at: http://www.dot.ca.gov/hq/tpp/offices/opsc/project_scoping.html.

The majority of the data requested for the information sheet is compiled at two separate time periods. The initial information is collected by the Transportation Planning PDT representative at the start of Project Initiation Document (PID) development to ensure appropriate stakeholders are included in the process and all pre-planning efforts and commitments are reviewed before any project decisions are made. The remaining information will be addressed during the project development process. Explanations of how the requirements were met will need to be finalized by the end of the PID. Initial information required for each section of the planning information sheet beginning on page two is identified as **INITIAL PID INFORMATION** and the concluding information is identified as **FINAL PID INFORMATION.**

ARTICLE 4 Transportation Planning Scoping Information Sheet

PROJECT INFORMATION

District	County	Route	Post Miles	Project ID No/ Expenditure Authorization No.
07	LA	I-605/I-5 /I-105	6.36 – 15.10 / 6.39 – 9.45 /16.14 – 17.80	ID 0713000248 / EA 07-29820
Project Name and Description: I-605/I-5/I-105 highway improvement project. Involves widening, improving non-standard features, local and system interchange reconfiguration, and safety enhancements.				

Prepared by:

District Information Sheet Point of Contact*:	Name: Mohamed A. Ahmed	Functional Unit:	Office of Project and Special Studies

* The District Information Sheet Point of Contact is responsible for completing Project Information, PDT Team and Stakeholder Information, and coordinating the completion of project-related information with the Transportation Planning Stakeholders. Upon completion, provides the Transportation Planning PDT Representative and Project Manager with a copy of the Information Sheet.

Project Development Team (PDT) Information		
Title	**Name**	**Phone Number**
Project Manager	Mumbie Fredson-Cole	213.897.9355
Project Engineer	Mohamed A. Ahmed	213.897.5975
Transportation Planning PDT Representative**		

Transportation Planning Stakeholder Information		
Title	**Name**	**Phone Number**
Regional Planner		
System Planner	Shefa Bhuiyan	213.897.0649
Local Development-Intergovernmental Review (LD-IGR) Planner	Rick Holland	213.897.4230
Community Planner		
Goods Movement Planner		
Transit Planner		
Bicycle and Pedestrian Coordinator		
Park and Ride Coordinator		
Native American Liaison		
Other Coordinators:		

Project Purpose and Need –**

Purpose: The purpose of the project is to reduce congestion and improve freeway operations (both mainline and ramps), improve safety, improve local and system interchange operations and provide for separate I-5 HOV lanes while minimizing adjacent right-of-way, environmental and economic impacts.

Need: The I-605/I-5 system interchange area currently experiences significant congestion, which is forecast to increase in the future absent physical and operational improvements to the facility. Congestion is a result of insufficient I-605 and I-5 freeway mainline capacity, closely spaced freeway entrance and exit ramps and

inadequate older design features at the freeway-to-freeway interchange such as nonstandard connector ramp shoulder widths and superelevation rates. The existing freeway geometry has many features which do not meet current Caltrans Highway Design Manual Standards such as nonstandard shoulder and lane widths. There are also a number of areas within the project limits with a high concentration of accidents. In addition, there are currently no separate HOV lanes on I-5 in the study area.

** The Transportation Planning PDT Representative is responsible for providing the PDT with the system-wide and corridor level deficiencies identified by Transportation Planning. The PDT uses the information provided by Transportation Planning to develop the purpose and need with contributions from other Caltrans functional units and external stakeholders at the initiation of the PID and is refined throughout the PID process. As the project moves past the project initiation stage and more data becomes available, the purpose and need is refined. For additional information on purpose and need see: www.dot.ca.gov/hq/env/emo/purpose_need.htm

1. Project Funding:

a	List all known and potential funding sources and percent splits: (ie. State Transportation Improvement Program (STIP)/State Highway Operations and Protection Program (SHOPP)/Transportation Enhancement (TE)/Environmental Enhancement and Mitigation (EEM)/Safe Routes to School (SR2S)/etc.).
	Measure R, STIP, SHOPP, Federal funding sources.
b	Is this a measure project? Yes_✓_/No__. If yes, name and describe the measure.
	Measure R (Los Angeles)

2. Regional Planning:

a	Name of and contact information for Metropolitan Planning Organization (MPO) or Regional Transportation Planning Agency (RTPA).
	Ernesto Chaves, LA Metro, 213.922.7343, chavese@metro.net
b	Name of and contact information for local jurisdiction (City or County)
	Los Angeles County, James Yang, jyang@dpw.lacounty.gov or Bella Hernandez, bhernan@dpw.lacounty.gov
c	Provide the page number and project description as identified in the Regional Transportation Plan (RTP) and the date of adoption, or provide an explanation if not in RTP.
	RTP 2012 Financially constrained projects list - I-605 corridor HOT SPOT INTERCHANGES IN GATEWAY CITIES (Project Completion By 2025) (RTP ID 1M 1004). RTP Strategic projects: RTP ID S1120078 - Additional SR-91/I-605/I-405 Solutions (beyond identified hot spots).
d	Provide nexus between the RTP objectives and the project to establish the basis for the project purpose and need.
	Project provides for congestion hot spot relief by proposing standard geometric design improvements, capacity enhancements, and HOV lanes on I-5.
e	Is the project located in an area susceptible to sea-level rise?
	No
f	Name of Air Quality Management District (AQMD)
	South Coast AQMD
g	If the project is located in a federal non-attainment or attainment-maintenance area is the project:
	• Regionally Significant? (per 40 (Code of Federal Regulations (CFR) 93.101) Y_✓_/N__
	• Exempt from conformity? (per 40 CFR 93.126 and 93.128) Y__/N__
	• Exempt from regional analysis? (per 40 CFR 93.127) Y__/N__
	• Not exempt from conformity (must meet all requirements)? Y__/N__

3. Native American Consultation and Coordination:

a	If project is within or near an Indian Reservation or Rancheria? If so, provide the name of Tribe.

	N/A
b	Has/have the Tribal Government(s) been consulted? Y___/N_✓_. If no, why not?
	N/A
c	If the project requires Caltrans to use right-of-way on trust or allotted lands, this information needs to be included as soon as possible as a key topic in the consultation with the Tribe(s). Has the Tribe been consulted on this topic? Y___/N_✓_. If no, why not?
	No tribes are identified in the TCR for I-5 or I-605 within the project limits.
d	Has the Bureau of Indian Affairs (BIA) been notified? Y__/N_✓_
	No tribes are identified in the TCR for I-5 or I-605 within the project limits.
e	Have all applicable Tribal laws, ordinances and regulations [Tribal Employment Rights Ordinances (TERO), etc.] been reviewed for required contract language and coordination?
	N/A
f	If the Tribe has a TERO, is there a related Memorandum of Understanding between the District and the Tribe?
	N/A
g	Has the area surrounding the project been checked for prehistoric, archeological, cultural, spiritual, or ceremonial sites, or areas of potentially high sensitivity? If such areas exist, has the Tribe, Native American Heritage Commission or other applicable persons or entities been consulted?
	No. This will be conducted during the PA/ED phase.
h	If a Native American monitor is required for this project, will this cost be reflected in cost estimates?
	Yes.
i	In the event of project redesign, will the changes impact a Native American community as described above in d, e, or h?
	This will be determined during the PA/ED phase. No tribes are identified in the TCR for I-5 or I-605.

4. System Planning:

a	Is the project consistent with the DSMP? Y__/N_✓_. If yes document approval date. If no, explain.
	The District System Development Plan was "In Progress" as of October 2013 per the District 7 website http://www.dot.ca.gov/hq/tpp/corridor-mobility/d7-page.html
b	Is the project identified in the TSDP? Y__/N__? If yes, document approval date____. If no, explain.
	The Transportation System Management Plan was "In Progress" as of October 2013 per the District 7 website http://www.dot.ca.gov/hq/tpp/corridor-mobility/d7-page.html
c	Is the project identified in the TCR/RCR or CSMP? Y_✓_/N__. If yes, document approval date 7/15/2013. If no, explain. Is the project consistent with the future route concept? Y__/N__. If no, explain.
	From I-605 TCR: RTP 2012 Financially constrained projects list - I-605 corridor HOTSPOT INTERCHANGES IN GATEWAY CITIES (Project Completion By 2025) (RTP ID 1M 1004). RTP Strategic projects: RTP ID S1120078 - Additional SR-91/I-605/I-405 Solutions (beyond identified hot spots).
d	Provide the Concept Level of Service (LOS) through project area.
	Per the TCR, LOS F0 is the minimum acceptable for I-605 and I-5, though the desired LOS is D
e	Provide the Concept Facility – include the number of lanes. Does the Concept Facility include High Occupancy Vehicle lanes? Y__/N__. N/A
	I-605: 4 general purpose lanes Freeway and 1 HOV lane (each direction). I-5: 4 mixed flow lanes Freeway (each direction).
f	Provide the Ultimate Transportation Corridor (UTC) – include the number of lanes. Does the UTC include High Occupancy Vehicle Lanes? Y__/N__. N/A
	I-605: SR-91 to I-105 segment UTC is 16 lanes for LOS D, or 12 lanes for LOS F0. I-105 to I-5 segment is 17 lanes for LOS D, or 12 lanes for LOS F0. I-5 to SR-60 segment UTC is 16 lanes for LOS D, or 11 lanes for LOS F0 (per I-605 TCR). 4-Lane Freeway and 2 HOV (per District 7 CCP Fact Sheet, and Caltrans I-605 TCR - July 2013). I-5: OC Line to I-605 segment UTC is 14 lanes for LOS D, or 10 lanes for LOS F0. I-605 to I-710 segment UTC is 12 lanes for LOS D, or 9 lanes for LOS F0 (Caltrans I-5 TCR - June 2013).
g	Describe the physical characteristics of the corridor through the project area (i.e. flat, rolling or

	mountainous terrain...).
	Flat terrain.
h	Is the highway in an urban or rural area? Urban _✓_/Rural__. Provide Functional Classification.
	I-605 and I-5: Urban Interstate, NHS.
i	Is facility a freeway, expressway or conventional highway?
	I-605 and I-5 are freeway facilities.
j	Provide Route Designations: (i.e. Interregional Transportation Strategic Plan (ITSP) High Emphasis or Focus Route, Surface Transportation Assistance Act (STAA) Route, Scenic Route…).
	I-605 and I-5: NHS, STAA, STRAHNET (I-5 only), Interregional Road System Route, High Emphasis Route, Goods Movement Route, National Network
k	Describe the land uses adjacent to project limits (i.e. agricultural, industrial…).
	Urban principal arterial. Industrial, commercial, and residential land uses.
l	Describe any park and ride facility needs identified in the TCR/CSMP, local plans, and RTP.
	None listed.
m	Describe the Forecasted 10 and 20-year Vehicle Miles Traveled (VMT), Annual Average Daily Traffic (AADT), and Peak Hour truck data in the TCR. Include the source and year of Forecast, and names and types of traffic and travel demand analysis tools used.
	I-605: Segment SR-91 to I-105 – 2008 AADT 286,100; 2035 ADT 295,400; directional split 51.8%; Peak Hour 23,900; Truck Peak Hour 1,100; 2008 VMT 635,200 and 2035 VMT 635,000. Sources 2012-2035 RTP/SCS (2008 for existing) and I-605 TCR, July 2013. I-605: Segment I-105 to I-5 – 2008 AADT 291,800; 2035 ADT 335,500; directional split 53.2%; Peak Hour 23,900; Truck Peak Hour 1,100; 2008 VMT 387,700 and 2035 VMT 439,100. Sources 2012-2035 RTP/SCS (2008 for existing) and I-605 TCR, July 2013. I-605: Segment I-5 to SR-60 – 2008 AADT 291,800; 2035 ADT 301,400; directional split 51.8%; Peak Hour 23,900; Truck Peak Hour 1,100; 2008 VMT 2,144,500 and 2035 VMT 2,217,200. Sources 2012-2035 RTP/SCS (2008 for existing) and I-605 TCR, July 2013. I-5: Segment OC Line to I-605 – 315,000 ADT; directional split 54.2%; Peak Hour 19,900; Truck Peak Hour 730; source 2012-2035 RTP/SCS, 2008 for existing and I-5 TCR, June 2013. I-5: Segment I-605 to I-710 – 311,900 ADT; directional split 50.4%; Peak Hour 18,900; Truck Peak Hour 600; source 2012-2035 RTP/SCS, 2008 for existing and I-5 TCR, June 2013.
n	Has analysis on Daily Vehicle Hours of Delay (DVHD) from the Highway Congestion Monitoring Program (HICOMP) been completed and included? Y__/N_✓_.

5. Local Development – Intergovernmental Review (LD-IGR):

List LD-IGR projects that may directly or indirectly impact the proposed Caltrans project or that the proposed Caltrans project may impact. (Attach additional project information if needed.)

LD-IGR Project Information		Project
a	County-Route-Postmile & Distance to Development.	Project 1: LA:005/ 4.910-8.310 Project 2: N/A
b	Development name, type, and size.	Project 1: Tierra Luna Mixed Use development: 1,500 residential units, 675,000 sf retail/commercial, and 375,000 sf hotel. Project 2: Downey Civic Center Plan
c	Local agency and/or private sponsor, and contact information.	Project 1: Downey Studios/City of Downey Project 2: ND

d	California Environmental Quality Act (CEQA) status and Implementation Date.	Project 1: 1/06/2012 - FEIR Project 2: ND
e	If project includes federal funding, National Environmental Policy Act (NEPA) status.	
f	All vehicular and non-vehicular unmitigated impacts and planned mitigation measures including Transportation Demand Management (TDM) and Transportation System Management (TSM) that would affect Caltrans facilities.	
g	Approved mitigation measures and implementing party.	
h	Value of constructed mitigation and/or amount of funds provided.	
i	Encroachment Permit, Transportation Permit, Traffic Management Plan, or California Transportation Commission (CTC) Access approvals needed.	
j	Describe relationship to Regional Blueprint, General Plans, or County Congestion Management Plans.	
k	Inclusion in a Regional Transportation Plan Sustainable Community Strategy or Alternative Planning Strategy?	
l	Regional or local mitigation fee program in place?	

6. Community Planning:

	INITIAL PID INFORMATION
a	Has lead agency staff worked with any neighborhood/community groups in the area of the proposed improvements? Y__/N_✓_. If yes, summarize the process and its results including any commitments made to the community. If no, why not?
	Multiple GCCOG Technical Advisory Committee (TAC) (made up of cities and LA County staff) and Corridor Cities Committee (CCC) (composed of City Council delegates, public meeting) meetings have been held to date. Input from all cities and County has been incorporated or responded to. The TAC and CCC have both concurred with the current set of Alternatives to move forward to PA/ED. Community outreach will occur in subsequent phases of project development.
b	Are any active/completed/proposed Environmental Justice (EJ) or Community-Based Transportation (CBTP) Planning Grants in the project area? Y_✓_/N__. If yes, summarize the project, its location, and whether/how it may interact with the proposed project.
	City of Downey Bicycle Master Plan (CBTP Grant) may impact ramp intersection design and the cross-section of local arterials by inclusion of bicycle lanes or other treatments.
c	Describe any community participation plans for this PID including how recommendations will be incorporated and/or addressed. Has a context sensitive solutions (CSS) approach been applied? Y✓_/N_
	Community participation has been conducted through the TAC and CCC. Project development has included the local cities and County of Los Angeles in addition to GCCOG and Metro. The GCCOG CCC meetings included geometric plans review and information available for public review and comment by the community. Community outreach will occur in subsequent phases of project development.
	FINAL PID INFORMATION
d	How will the proposed transportation improvements impact the local community? Is the project likely to create or exacerbate existing environmental or other issues, including public health and safety, air quality, water quality, noise, environmental justice or social equity? Y__/N__. Describe issues, concerns, and

	recommendations (from sources including neighborhood/community groups) and what measures will be taken to reduce existing or potential negative effects.
	See PEAR in Attachment E of the PSR-PDS.
e	Does this highway serve as a main street? Y__/N_✓_. If yes, what main street functions and features need to be protected or preserved?

7. Freight Planning:

	INITIAL PID INFORMATION
a	Identify all modal and intermodal facilities that may affect or be affected by the project.
	Ports of Los Angeles and Long Beach, and local/regional intermodal facilities.
	FINAL PID INFORMATION
b	Describe how the design of this project could facilitate or impede Goods Movement and relieve choke points both locally and statewide through grade separations, lane separations, or other measures (e.g., special features to accommodate truck traffic and at-grade railroad crossings).
	The project will add general purpose lanes and correct existing non-standard conditions for most system and local interchanges, helping to enhance safety and relieve traffic congestion which will improve Goods Movement throughout the project area.
c	Describe how the project integrates and interconnects with other modes (rail, maritime, air, etc.). Do possibilities exist for an intermodal facility or other features to improve long-distance hauling, farm-to-market transportation and/or accessibility between warehouses, storage facilities, and terminals?
	The project does not propose revised integration with other modes. Existing modal integration will be maintained.
d	Is the project located in a high priority goods movement area, included in the Goods Movement Action Plan (GMAP) or on a Global Gateways Development Program (GGDP) route? Y_✓_/N__. If yes, describe.
	I-5 is a High Emphasis Route for Goods Movement. I-5, I-605 and I-105 are all considered Major Int'l Trade Highway Routes within the GMAP.
e	Is the project on a current and/or projected high truck volume route [e.g., Average Annual Daily Truck Traffic (AADTT) of 5 axle trucks is greater than 3000]? Yes_✓_/N__. If yes, describe how the project addresses this demand.
	Providing additional general purpose lanes to reduce congestion and reducing mainline lane drops to decrease merging movements address the high truck volumes within each of the build Alternatives.
f	If the project is located near an airport, seaport, or railroad depot, describe how circulation (including truck parking) needs are addressed.
	N/A.
g	Describe any other freight issues.
	Ongoing coordination with I-710 truck corridor and other regional studies is warranted.

8. Transit (bus, light rail, commuter rail, intercity rail, high speed rail):

	INITIAL PID INFORMATION
a	List all local transit providers that operate within the corridor.
	LA Metro and various local city bus routes.
b	Have transit agencies been contacted for possible project coordination? Y__/N_✓_. If no, why not?
	Impacts to transit will be determined in greater detail during the PA/ED phase.
c	Describe existing transit services and transit features (bus stops, train crossings, and transit lines) within the corridor.

	There are multiple bus lines and rail lines crossing the corridors.
d	Describe transit facility needs identified in short- and long-range transit plans and RTP. Describe how these future plans affect the corridor.
	Transit facility needs will be determined in greater detail during the PA/ED phase.
	FINAL PID INFORMATION
e	Describe how the proposed project integrates transit and addresses impacts to transit services and transit facilities.
	The proposed project continues to accommodate transit services, and impacts to transit services will be temporary and addressed during PA/ED.
f	Have transit alternatives and improvement features been considered in this project? Y__/N_✓_ If yes, describe. If no, why not?
	Transit alternatives and improvement features needs will be determined in greater detail during the PA/ED phase.

9. Bicycle:

	INITIAL PID INFORMATION
a	Does the facility provide for bicyclist safety and mobility needs? If no, please explain.
	Yes. Local interchange interface with local streets will be reconfigured where improvements are planned to accommodate bicyclists.
b	Are any improvements for bicyclist safety and mobility proposed for this facility by any local agencies or included in bicycle master plans? If yes, describe (including location, time frame, funding, etc.).
	Unknown. Interface with local agency plans will be conducted in the PA/ED phase.
c	Are there any external bicycle advocacy groups and bicycle advisory committees that should be included in the project stakeholder list? If so, provide contact information.
	Unknown. This will be studied in the PA/ED phase.
	FINAL PID INFORMATION
d	Will bicycle travel deficiencies be corrected? How or why not?
	Unknown. This will be studied in the PA/ED phase.
e	How will this project affect local agency plans for bicycle safety and mobility improvements?
	This project will not affect local agency plans for bicycle safety and mobility.
f	If the project is the construction of a new freeway or modification to an existing freeway, will it sever or destroy existing provisions for bicycle travel? If yes, describe how bicycle travel provisions will be included in this project.
	This project does not propose to sever or destroy any existing provisions for bicycle travel.

10. Pedestrian including Americans with Disabilities Act (ADA):

	INITIAL PID INFORMATION
a	Does this facility provide for pedestrian safety and mobility needs? If so, describe pedestrian facilities. Do continuous and well-maintained sidewalks exist? Are pedestrians forced to walk in the roadway at any locations due to lack of adequate pedestrian facilities? Please explain.
	There are locations with non ADA compliant pedestrian facilities. Improving said facilities will be further analyzed in the PA/ED phase.
b	Are pedestrian crossings located at reasonable intervals?
	Yes. However, additional opportunities can be investigated during the PA/ED phase.
c	Are all pedestrian facilities within the corridor ADA accessible and in compliance with Federal and State ADA laws and regulations?
	Existing facilities are not all in compliance with ADA, Federal and State laws and regulations.
	FINAL PID INFORMATION
d	Will pedestrian travel deficiencies be corrected? How or why not?
	Where feasible, pedestrian travel deficiencies will be corrected by providing ADA compliant ramps and sidewalks, roadway signs, ADA compliant traffic signal hardware (PPBs, ped heads, etc.).
e	How will this project affect local agency plans for pedestrian safety and mobility improvements?
	This project will not affect local agency plans for pedestrian safety and mobility.

f	If the project is the construction of a new freeway or modification to an existing freeway, will it sever or destroy existing provisions for pedestrian travel? If yes, describe how pedestrian travel provisions will be included in this project.
	This project does not propose to sever or destroy any existing provisions for pedestrian travel.
g	Are there any external pedestrian advocacy groups and advisory committees that should be included in the project stakeholder list? If so, provide contact information.
	Unknown. This will be studied in the PA/ED phase.
h	Have ADA barriers as noted in the District's ADA Transition Plan been identified within the project limits? If not included in the project, provide justification and indicate whether District Design coordinator approval was obtained.
	No. ADA barriers will be studied in the PA/ED phase.

11. Equestrian:

	INITIAL PID INFORMATION
a	If this corridor accommodates equestrian traffic, describe any project features that are being considered to improve safety for equestrian and vehicular traffic?
	N/A
	FINAL PID INFORMATION
b	Have features that accommodate equestrian traffic been identified? If so, are they included a part of this project? Describe. If no, why not?
	N/A

12. Intelligent Transportation Systems (ITS):

	INITIAL PID INFORMATION
a	Have ITS features such as closed-circuit television cameras, signal timing, multi-jurisdictional or multimodal system coordination been considered in the project? Y_✓_/N__. If yes, describe. If no, explain.
	CCTV and signal timing coordination will be considered to enhance highway and adjacent arterial operations/emergency response.
	FINAL PID INFORMATION
b	Have ITS features been identified? If so, are they included a part of this project? Describe. If no, why not?
	No. ITS features will be studied in the PA/ED phase.

TRANSPORTATION MANAGEMENT PLAN DATA SHEET
(Preliminary TMP Elements and Costs)

Co/Rte/PM: LA-605-PM 6.36/15.10; LA-5-PM 6.39/9.45 EA/ EFIS: 07-29820K/ 0713000248 Alternative No.: 1 (PSR-PDS)

Project Limit: Between Excelsior Drive (on I-605) and Florence Avenue (on I-5) and North of Beverly Boulevard (on I-605) and the Rio Hondo Channel (on I-5)

Project Description: I-5 and I-605 Interchange Improvements

1) Public Information	
☒ a. Brochures and Mailers	$ 1,300,000
☒ b. Press Release	
☐ c. Paid Advertising	$
☐ d. Public Information Center/Kiosk	$
☒ e. Public Meeting/Speakers Bureau	$ 250,000
☐ f. Telephone Hotline	
☒ g. Internet	
☒ h. Others Website Design and Maintenance	$ 100,000
2) Motorists Information Strategies	
☐ a. Changeable Message Signs (Fixed)	$
☒ b. Changeable Message Signs (Portable)	$ 3,000,000
☒ c. Ground Mounted Signs	$ 600,000
☐ d. Highway Advisory Radio	$
☐ e. Caltrans Highway Information Network (CHIN)	
☐ f. Others	$
3) Incident Management	
☒ a. Construction Zone Enhanced Enforcement Program (COZEEP)	$ 1,904,000
☒ b. Freeway Service Patrol	$ 2,500,000
☐ c. Traffic Management Team	
☐ d. Helicopter Surveillance	$
☐ e. Traffic Surveillance Stations (Loop Detector and CCTV)	$
☐ f. Others	$

4) Construction Strategies

- [x] a. Lane Closure Chart
- [ ] b. Reversible Lanes
- [ ] c. Total Facility Closure
- [ ] d. Contra Flow
- [ ] e. Truck Traffic Restrictions $ _____
- [ ] f. Reduced Speed Zone $ _____
- [x] g. Connector and Ramp Closures
- [ ] h. Incentive and Disincentive $ _____
- [ ] i. Moveable Barrier $ _____
- [ ] j. Others _____ $ _____

5) Demand Management

- [ ] a. HOV Lanes/Ramps (New or Convert) $ _____
- [ ] b. Park and Ride Lots $ _____
- [ ] c. Rideshare Incentives $ _____
- [ ] d. Variable Work Hours
- [ ] e. Telecommute
- [ ] f. Ramp Metering (Temporary Installation) $ _____
- [ ] g. Ramp Metering (Modify Existing) $ _____
- [ ] h. Others _____ $ _____

6) Alternative Route Strategies

- [ ] a. Add Capacity to Freeway Connector $ _____
- [ ] b. Street Improvement (widening, traffic signal... etc) $ _____
- [ ] c. Traffic Control Officers $ _____
- [ ] d. Parking Restrictions
- [ ] e. Others _____ $ _____

7) Other Strategies

- [ ] a. Application of New Technology $ _____
- [ ] e. Others _____ $ _____

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 9,654,000

Project Notes:

The project will modify the I-5/I-605 interchange which will include the addition of lanes, connector ramps and bridges.

BROCHURES AND MAILERS:

Send courtesy notices by direct mail to the project neighborhood to inform them of construction and work zone information. The information provided will include the project's start date, schedules and alternative routes.

PRESS RELEASE:

Provide press release whenever any facilities are closed for construction. During any ramp closures necessitated for the construction of a new ramp, Caltrans will implement the press release upon receiving ramp closure information from the Project Resident Engineer.

PUBLIC MEETING:

It is anticipated that public meetings will be held at the project start and at the beginning of each stage to present the project information to the community.

INTERNET:

A project website will be designed to provide real-time interactive information on project plans and progress.

PORTABLE CHANGEABLE MESSAGE SIGN:

PCMS will be placed at key locations to notify motorists of construction activities, ramp closures, road closures and detours. It is assumed that a total of 200 PCMS, at a cost of $15,000 each, would be used as a TMP measure to be implemented in Stages 1 through 3. The total cost would be $3,000,000. Additional PCMSs may be specified as part of the project signing.

GROUND MOUNTED SIGNS:

Temporary ground mounted signs will provide traveler information to guide motorists through the work zone.

STAGE CONSTRUCTION:

Construction is to be completed in 3 stages with multitude of sub-stages within each major stage. The following highlights the major activities to be undertaken in each stage:

Stage 1:

- Construct temporary I-5 pavement to provide for median column construction
- Construct NB I-605/NB I-5 connector bridge
- Construct NB/SB I-605 Florence bridge widening
- Construct SB I-605 off ramp bridges to Florence
- Construct NB/SB I-605 Telegraph & Davenrich bridge widening
- Construct NB I-605 E'ly portion of new bridge & NB I-605 loop ramp
- Construct portion of SB I-605 /NB I-5 connector
- Construct portion of SB -605/ Florence off ramp
- Construct NB/SB I-5 bridge widening over San Gabriel River
- Construct portion of SB I-605/Florence off ramp

Stage 2:

- Construct portion of Florence/NB I-5 on ramp
- Construct stage 2 of I-605 SB Bridge

Stage 3:

- Construct stage 3 of I-605 bridge
- Construct portion of SB I-5/NB I-605 loop connector

TRAFFIC HANDLING PLANS:

As part of the PS&E package, construction staging plans shall be prepared that show the sequence of construction activities. The order of work specification will identify the portions of the project to be completed in a specific sequence to minimize impacts to the traveling public.

In addition to the construction staging plans, traffic handling plans shall be included. The traffic handling plans shall contain sufficient alignment detail, profiles and typical cross-sections to guide traffic through the work zone in the sequence shown in the stage construction plans.

LANE CLOSURE CHART:

Lane closure charts will identify the number of lanes that must be open for traffic each hour of the day. Short term lane closures may be needed to perform some of the tasks identified in the construction documents. The lane closure chart will be included in the Caltrans Standard Special Provision (SSP) for this project.

RAMP CLOSURE:

It may be necessary to temporarily provide long-term closures of on/off ramps during the course of the project. Detour plans shall be prepared as a part of the PS&E package identifying alternate routes for surface traffic onto the nearby alternative routes. Supporting traffic counts and analysis shall also be prepared.

COZEEP:

It is assumed that CHP enforcement will be used during setting of K-rail and construction of on and off-ramps, retaining walls and bridges for a total of 1,400 days at 8 hours per shift including travel time to and from the project site. Generally, this activity occurs during hours of darkness, thus requiring 2 officers per unit.

$85/Officer/Hour (for 1 officer): $85 x 2 x 11,200 hours = $1,904,000

Freeway Service Patrols (FSP) are required at closure events. To estimate the FSP budget, it is also assumed there will be a total of 250 closure events at a cost of $10,000 per event during the course of the project for a total of $2,500,000.

TRANSPORTATION MANAGEMENT PLAN DATA SHEET
(Preliminary TMP Elements and Costs)

Co/Rte/PM: LA-605-PM 6.36/15.10; LA-5-PM 6.39/9.45 EA/ EFIS: 07-29820K/ 0713000248 Alternative No.: 2 (PSR-PDS)

Project Limit: Between Excelsior Drive (on I-605) and Florence Avenue (on I-5) and North of Beverly Boulevard (on I-605) and the Rio Hondo Channel (on I-5)

Project Description: I-5 and I-605 Interchange Improvements

1) Public Information	
☒ a. Brochures and Mailers	$ 1,500,000
☒ b. Press Release	
☐ c. Paid Advertising	$
☐ d. Public Information Center/Kiosk	$
☒ e. Public Meeting/Speakers Bureau	$ 350,000
☐ f. Telephone Hotline	
☒ g. Internet	
☒ h. Others Website Design and Maintenance	$ 150,000
2) Motorists Information Strategies	
☐ a. Changeable Message Signs (Fixed)	$
☒ b. Changeable Message Signs (Portable)	$ 3,750,000
☒ c. Ground Mounted Signs	$ 800,000
☐ d. Highway Advisory Radio	$
☐ e. Caltrans Highway Information Network (CHIN)	
☐ f. Others _____	$
3) Incident Management	
☒ a. Construction Zone Enhanced Enforcement Program (COZEEP)	$ 2,176,000
☒ b. Freeway Service Patrol	$ 3,500,000
☐ c. Traffic Management Team	
☐ d. Helicopter Surveillance	$
☐ e. Traffic Surveillance Stations (Loop Detector and CCTV)	$
☐ f. Others _____	$

4) Construction Strategies

- [x] a. Lane Closure Chart
- [ ] b. Reversible Lanes
- [ ] c. Total Facility Closure
- [ ] d. Contra Flow
- [ ] e. Truck Traffic Restrictions $ _____
- [ ] f. Reduced Speed Zone $ _____
- [x] g. Connector and Ramp Closures
- [ ] h. Incentive and Disincentive $ _____
- [ ] i. Moveable Barrier $ _____
- [ ] j. Others _____ $ _____

5) Demand Management

- [ ] a. HOV Lanes/Ramps (New or Convert) $ _____
- [ ] b. Park and Ride Lots $ _____
- [ ] c. Rideshare Incentives $ _____
- [ ] d. Variable Work Hours
- [ ] e. Telecommute
- [ ] f. Ramp Metering (Temporary Installation) $ _____
- [ ] g. Ramp Metering (Modify Existing) $ _____
- [ ] h. Others _____ $ _____

6) Alternative Route Strategies

- [ ] a. Add Capacity to Freeway Connector $ _____
- [ ] b. Street Improvement (widening, traffic signal... etc) $ _____
- [ ] c. Traffic Control Officers $ _____
- [ ] d. Parking Restrictions
- [ ] e. Others _____ $ _____

7) Other Strategies

- [ ] a. Application of New Technology $ _____
- [ ] e. Others _____ $ _____

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 12,226,000

Project Notes:

The project will modify the I-5/I-605 interchange which will include the addition of lanes, connector ramps and bridges.

BROCHURES AND MAILERS:

Send courtesy notices by direct mail to the project neighborhood to inform them of construction and work zone information. The information provided will include the project's start date, schedules and alternative routes.

PRESS RELEASE:

Provide press release whenever any facilities are closed for construction. During any ramp closures necessitated for the construction of a new ramp, Caltrans will implement the press release upon receiving ramp closure information from the Project Resident Engineer.

PUBLIC MEETING:

It is anticipated that public meetings will be held at the project start and at the beginning of each stage to present the project information to the community.

INTERNET:

A project website will be designed to provide real-time interactive information on project plans and progress.

PORTABLE CHANGEABLE MESSAGE SIGN:

PCMS will be placed at key locations to notify motorists of construction activities, ramp closures, road closures and detours. It is assumed that a total of 250 PCMS, at a cost of $15,000 each, would be used as a TMP measure to be implemented in Stages 1 through 5. The total cost would be $3,750,000. Additional PCMSs may be specified as part of the project signing.

GROUND MOUNTED SIGNS:

Temporary ground mounted signs will provide traveler information to guide motorists through the work zone.

STAGE CONSTRUCTION:

Construction is to be completed in 5 stages with multitude of sub-stages within each major stage. The following highlights the major activities to be undertaken in each stage:

Stage 1:

- Construct temporary I-5 pavement to provide for median column construction
- Construct NB I-605/NB I-5 connector bridge
- Construct NB/SB I-605 Florence bridge widening
- Construct SB I-605 off ramp bridges to Florence
- Construct NB/SB I-605 Telegraph & Davenrich bridge widening
- Construct NB I-605 E'ly portion of new bridge & NB I-605 loop ramp
- Construct portion of SB I-605 /NB I-5 connector
- Construct portion of SB -605/ Florence off ramp
- Construct NB/SB I-5 bridge widening over San Gabriel River
- Construct portion of SB I-605/Florence off ramp

Stage 2:

- Construct portion of Florence/NB I-5 on ramp
- Construct stage 2 of I-605 SB Bridge

Stage 3:

- Construct stage 3 of I-605 bridge
- Construct portion of SB I-5/NB I-605 loop connector

Stage 4:

- Reconstruct the NB I-605 to WB I-105 connector ramp at the I-105/I-605 interchange

Stage 5:

- Reconstruct the EB I-105 to NB I-605 connector ramp at the I-105/I-605 interchange

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TRAFFIC HANDLING PLANS:

As part of the PS&E package, construction staging plans shall be prepared that show the sequence of construction activities. The order of work specification will identify the portions of the project to be completed in a specific sequence to minimize impacts to the traveling public.

In addition to the construction staging plans, traffic handling plans shall be included. The traffic handling plans shall contain sufficient alignment detail, profiles and typical cross-sections to guide traffic through the work zone in the sequence shown in the stage construction plans.

LANE CLOSURE CHART:

Lane closure charts will identify the number of lanes that must be open for traffic each hour of the day. Short term lane closures may be needed to perform some of the tasks identified in the construction documents. The lane closure chart will be included in the Caltrans Standard Special Provision (SSP) for this project.

RAMP CLOSURE:

It may be necessary to temporarily provide long-term closures of on/off ramps during the course of the project. Detour plans shall be prepared as a part of the PS&E package identifying alternate routes for surface traffic onto the nearby alternative routes. Supporting traffic counts and analysis shall also be prepared.

COZEEP:

It is assumed that CHP enforcement will be used during setting of K-rail and construction of on and off-ramps, retaining walls and bridges for a total of 1,600 days at 8 hours per shift including travel time to and from the project site. Generally, this activity occurs during hours of darkness, thus requiring 2 officers per unit.

$85/Officer/Hour (for 1 officer): $85 x 2 x 12,800 hours = $2,176,000

Freeway Service Patrols (FSP) are required at closure events. To estimate the FSP budget, it is also assumed there will be a total of 350 closure events at a cost of $10,000 per event during the course of the project for a total of $3,500,000.

TRANSPORTATION MANAGEMENT PLAN DATA SHEET
(Preliminary TMP Elements and Costs)

Co/Rte/PM: LA-605-PM 6.36/15.10; LA-5-PM 6.39/9.45 EA/ EFIS: 07-29820K/ 0713000248 Alternative No.: 3 (PSR-PDS)

Project Limit: Between Excelsior Drive (on I-605) and Florence Avenue (on I-5) and North of Beverly Boulevard (on I-605) and the Rio Hondo Channel (on I-5)

Project Description: I-5 and I-605 Interchange Improvements

1) Public Information	
☒ a. Brochures and Mailers	$ 1,300,000
☒ b. Press Release	
☐ c. Paid Advertising	$
☐ d. Public Information Center/Kiosk	$
☒ e. Public Meeting/Speakers Bureau	$ 250,000
☐ f. Telephone Hotline	
☒ g. Internet	
☒ h. Others Website Design and Maintenance	$ 100,000
2) Motorists Information Strategies	
☐ a. Changeable Message Signs (Fixed)	$
☒ b. Changeable Message Signs (Portable)	$ 3,000,000
☒ c. Ground Mounted Signs	$ 600,000
☐ d. Highway Advisory Radio	$
☐ e. Caltrans Highway Information Network (CHIN)	
☐ f. Others _____	$
3) Incident Management	
☒ a. Construction Zone Enhanced Enforcement Program (COZEEP)	$ 1,904,000
☒ b. Freeway Service Patrol	$ 2,500,000
☐ c. Traffic Management Team	
☐ d. Helicopter Surveillance	$
☐ e. Traffic Surveillance Stations (Loop Detector and CCTV)	$
☐ f. Others _____	$

4) Construction Strategies

- [x] a. Lane Closure Chart
- [ ] b. Reversible Lanes
- [ ] c. Total Facility Closure
- [ ] d. Contra Flow
- [ ] e. Truck Traffic Restrictions $ _____
- [ ] f. Reduced Speed Zone $ _____
- [x] g. Connector and Ramp Closures
- [ ] h. Incentive and Disincentive $ _____
- [ ] i. Moveable Barrier $ _____
- [ ] j. Others _____ $ _____

5) Demand Management

- [ ] a. HOV Lanes/Ramps (New or Convert) $ _____
- [ ] b. Park and Ride Lots $ _____
- [ ] c. Rideshare Incentives $ _____
- [ ] d. Variable Work Hours
- [ ] e. Telecommute
- [ ] f. Ramp Metering (Temporary Installation) $ _____
- [ ] g. Ramp Metering (Modify Existing) $ _____
- [ ] h. Others _____ $ _____

6) Alternative Route Strategies

- [ ] a. Add Capacity to Freeway Connector $ _____
- [ ] b. Street Improvement (widening, traffic signal... etc) $ _____
- [ ] c. Traffic Control Officers $ _____
- [ ] d. Parking Restrictions
- [ ] e. Others _____ $ _____

7) Other Strategies

- [ ] a. Application of New Technology $ _____
- [ ] e. Others _____ $ _____

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 9,654,000

Project Notes:

The project will modify the I-5/I-605 interchange which will include the addition of lanes, connector ramps and bridges.

BROCHURES AND MAILERS:

Send courtesy notices by direct mail to the project neighborhood to inform them of construction and work zone information. The information provided will include the project's start date, schedules and alternative routes.

PRESS RELEASE:

Provide press release whenever any facilities are closed for construction. During any ramp closures necessitated for the construction of a new ramp, Caltrans will implement the press release upon receiving ramp closure information from the Project Resident Engineer.

PUBLIC MEETING:

It is anticipated that public meetings will be held at the project start and at the beginning of each stage to present the project information to the community.

INTERNET:

A project website will be designed to provide real-time interactive information on project plans and progress.

PORTABLE CHANGEABLE MESSAGE SIGN:

PCMS will be placed at key locations to notify motorists of construction activities, ramp closures, road closures and detours. It is assumed that a total of 200 PCMS, at a cost of $15,000 each, would be used as a TMP measure to be implemented in Stages 1 through 3. The total cost would be $3,000,000. Additional PCMSs may be specified as part of the project signing.

GROUND MOUNTED SIGNS:

Temporary ground mounted signs will provide traveler information to guide motorists through the work zone.

STAGE CONSTRUCTION:

Construction is to be completed in 3 stages with multitude of sub-stages within each major stage. The following highlights the major activities to be undertaken in each stage:

Stage 1:

- Construct temporary I-5 pavement to provide for median column construction
- Construct NB I-605/NB I-5 connector bridge
- Construct NB/SB I-605 Florence bridge widening
- Construct SB I-605 off ramp bridges to Florence
- Construct NB/SB I-605 Telegraph & Davenrich bridge widening
- Construct NB I-605 E'ly portion of new bridge & NB I-605 loop ramp
- Construct portion of SB I-605 /NB I-5 connector
- Construct portion of SB -605/ Florence off ramp
- Construct NB/SB I-5 bridge widening over San Gabriel River
- Construct portion of SB I-605/Florence off ramp

Stage 2:

- Construct portion of Florence/NB I-5 on ramp
- Construct stage 2 of I-605 SB Bridge

Stage 3:

- Construct stage 3 of I-605 bridge
- Construct portion of SB I-5/NB I-605 loop connector

TRAFFIC HANDLING PLANS:

As part of the PS&E package, construction staging plans shall be prepared that show the sequence of construction activities. The order of work specification will identify the portions of the project to be completed in a specific sequence to minimize impacts to the traveling public.

In addition to the construction staging plans, traffic handling plans shall be included. The traffic handling plans shall contain sufficient alignment detail, profiles and typical cross-sections to guide traffic through the work zone in the sequence shown in the stage construction plans.

LANE CLOSURE CHART:

Lane closure charts will identify the number of lanes that must be open for traffic each hour of the day. Short term lane closures may be needed to perform some of the tasks identified in the construction documents. The lane closure chart will be included in the Caltrans Standard Special Provision (SSP) for this project.

RAMP CLOSURE:

It may be necessary to temporarily provide long-term closures of on/off ramps during the course of the project. Detour plans shall be prepared as a part of the PS&E package identifying alternate routes for surface traffic onto the nearby alternative routes. Supporting traffic counts and analysis shall also be prepared.

COZEEP:

It is assumed that CHP enforcement will be used during setting of K-rail and construction of on and off-ramps, retaining walls and bridges for a total of 1,400 days at 8 hours per shift including travel time to and from the project site. Generally, this activity occurs during hours of darkness, thus requiring 2 officers per unit.

$85/Officer/Hour (for 1 officer): $85 x 2 x 11,200 hours = $1,904,000

Freeway Service Patrols (FSP) are required at closure events. To estimate the FSP budget, it is also assumed there will be a total of 250 closure events at a cost of $10,000 per event during the course of the project for a total of $2,500,000.

Attachment G

Conceptual Cost Estimate – Right-of-Way Component

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Mohamed Ahmed

Date: May 12, 2014

From: Adrian Anderson
RBF Consulting

LA-605-6.36/15.10, LA-5-6.39/9.45
Project ID - 0713000248
EA 07-29820
Project Description: I-605/I-5
PSR-PDS Alternative 1

A Field Review was conducted ___ YES _X_ NO

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.
Right of Way Required _X_ YES ___ NO
Number of Fee Parcels ___1-10 ___11-25 _X_ 26-50 ___51-100 ___ >100 ___>200
Number of Easement Parcels ___1-10 ___11-25 ___26-50 ___51-100 _X_ >100 ___>200

_X_ Urban ___Rural
Land Area: Fee 321,000 SF Easement 150,500 SF
Displaced Persons/Businesses _X_ YES ___NO
Demolition/Clearance _X_ YES ___NO
Railroad Involvement _X_ YES ___NO
Utility Involvements _X_ YES ___NO _100-125_ Number of utilities in area (Anticipated Utility Facility Impacts)

Cost Estimates

Support Costs
___$0 - $25,000
___$25,001 – $100,000
___$100,001 - $250,000
___$250,001 - $5,000,000
___$500,001 - $1,000,000
___$1,000,001 - $5,000,000
_X_ $5,000,001 - $10,000,000
___>$10,000,000

Capital Costs
___$0 - $100,000
___$100,001 - $500,000
___$500,001 - $1,000,000
___$1,000,001 - $5,000,000
___$5,000,001 - $15,000,000
_X_ $15,000,001 - $50,000,000
___$50,000,001 - $100,000,000
___>$100,000,000

Schedule

Right of Way will require _____ months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of _____.

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Mohamed Ahmed

Date: May 12, 2014

From: Adrian Anderson
RBF Consulting

LA-605-6.36/15.10, LA-5-6.39/9.45
Project ID - 0713000248
EA 07-29820
Project Description: I-605/I-5
PSR-PDS Alternative 2

A Field Review was conducted ___ YES _X_ NO

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.
Right of Way Required _X_ YES ___ NO
Number of Fee Parcels ___1-10 ___11-25 __26-50 __51-100 ___>100 _X_ >200
Number of Easement Parcels ___1-10 ___11-25 __26-50 __51-100 _X_ >100 ___>200

_X_Urban ___Rural
Land Area: Fee__1,410,000 SF_ Easement___246,500 SF____
Displaced Persons/Businesses _X_ YES ___NO
Demolition/Clearance _X_YES ___NO
Railroad Involvement _X_YES ___NO
Utility Involvements _X_YES ___NO _100-125__Number of utilities in area (Anticipated Utility Facility Impacts)

Cost Estimates

Support Costs
___$0 - $25,000
___$25,001 – $100,000
___$100,001 - $250,000
___$250,001 - $5,000,000
___$500,001 - $1,000,000
___$1,000,001 - $5,000,000
___$5,000,001 - $10,000,000
_X_>$10,000,000

Capital Costs
___$0 - $100,000
___$100,001 - $500,000
___$500,001 - $1,000,000
___$1,000,001 - $5,000,000
___$5,000,001 - $15,000,000
___$15,000,001 - $50,000,000
___$50,000,001 - $100,000,000
_X_>$100,000,000

Schedule

Right of Way will require _____ months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of _____.

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Mohamed Ahmed

Date: May 12, 2014

From: Adrian Anderson
RBF Consulting

LA-605-6.36/15.10, LA-5-6.39/9.45
Project ID - 0713000248
EA 07-29820
Project Description: I-605/I-5
PSR-PDS Alternative 3

A Field Review was conducted ___ YES _X_ NO

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.
Right of Way Required _X_ YES ___ NO
Number of Fee Parcels ___1-10 ___11-25 __26-50 __51-100 _X_>100 __>200
Number of Easement Parcels ___1-10 ___11-25 __26-50 __51-100 _X_>100 ___>200

_X_Urban ___Rural
Land Area: Fee 419,000 SF Easement 225,000 SF
Displaced Persons/Businesses _X_ YES ___NO
Demolition/Clearance _X_YES ___NO
Railroad Involvement _X_YES ___NO
Utility Involvements _X_YES ___NO _100-125_ Number of utilities in area (Anticipated Utility Facility Impacts)

Cost Estimates

Support Costs
___$0 - $25,000
___$25,001 – $100,000
___$100,001 - $250,000
___$250,001 - $5,000,000
___$500,001 - $1,000,000
___$1,000,001 - $5,000,000
_X_$5,000,001 - $10,000,000
__>$10,000,000

Capital Costs
___$0 - $100,000
___$100,001 - $500,000
___$500,001 - $1,000,000
___$1,000,001 - $5,000,000
___$5,000,001 - $15,000,000
_X_$15,000,001 - $50,000,000
___$50,000,001 - $100,000,000
__>$100,000,000

Schedule

Right of Way will require _____ months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of _____.

Attachment H

Risk Register

Project Risk Register

	DIST- EA 07-29820					Project Name: I-605 / I-5 PSR-PDS			Project Manager: Mumbie Cole						Date Created: 11/11/2013	Last Updated: 5/13/2014
						Co - Rte - PM: LA-605-6.36/15.10, LA-5-14.10/19.34			Telephone: (213) 897-9355							
ITEM	ID #	Status	Threat / Opport-unity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Cost/Time Impact Value	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	Adjusted Cost/Time Impact Value	WBS Item	Status Date and Review Comments
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
1	07-29820-01	Active	**Threat**	DESIGN	11/11/13	Adjacent interchanges traffic analysis may affect interchange designs	Design Requirement	TIME	Probability 3=Med (20-39%) **Med** Impact 4 =Med		Adrian Anderson (949) 855-5780 atanderson@rbf.com	FHWA requires operational analysis of the adjacent interchanges	MITIGATE	Prepare technical memorandum to obtain approval to only perform mainline analysis to adjacent interchanges		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
2	07-29820-02	Active	**Threat**	ENV	11/11/13	Approval of 2014 Regional Transportation Plan	Environmental Requirement	TIME	Probability 3=Med (20-39%) **Med** Impact 4 =Med		Ernesto Chaves (213) 922-7343 chavese@metro.net	Reviews and approvals are delayed on the 2014 RTP and would delay the approval of the AQ Conformity and FED	TRANSFER	Track approval of the 2014 RTP		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
3	07-29820-03	Active	**Threat**	DESIGN	11/11/13	Approval of Mandatory Design Exceptions	Design Requirement	TIME	Probability 2=Low (10-19%) **High** Impact 8 =High		Adrian Anderson (949) 855-5780 atanderson@rbf.com	Caltrans requires approval of Mandatory Design Exceptions from Caltrans HQ	MITIGATE	Determine if any Mandatory Design Exceptions can be delegated to Caltrans District 8		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
4	07-29820-04	Active	**Threat**	DESIGN	11/11/13	Approval of Advisory Design Exceptions	Design Requirement	TIME	Probability 2=Low (10-19%) **Med** Impact 4 =Med		Adrian Anderson (949) 855-5780 atanderson@rbf.com	Caltrans requires updating the current approved Advisory Design Exceptions	MITIGATE	Prepare and approved updated Advisory Design Exceptions		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
5	07-29820-05	Active	**Threat**	DESIGN	11/11/13	Changes in Design Criteria	Design Requirement	SCOPE	Probability 3=Med (20-39%) **Low** Impact 4 =Med		Adrian Anderson (949) 855-5780 atanderson@rbf.com	Caltrans releases 2014 (or subsequent) Standard Plans / Standard Specifications during design	ACCEPT	Update PS&E as appropriate		230 PREPARE DRAFT PS&E	
6	07-29820-06	Active	**Threat**	ENV	11/11/13	Approval of Air Quality Conformity	Environmental Requirement	TIME	Probability 3=Med (20-39%) **Med** Impact 3 =Med		Virginia Viado (909) 980-4000 virginia.viado@urs.com	2014 RTP is not approved as scheduled	TRANSFER	Track approval of the 2014 RTP		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
7	07-29820-07	Active	**Threat**	ENV	11/11/13	Update of Biological Assessment	Environmental Requirement	TIME	Probability 2=Low (10-19%) **Low** Impact 4 =Med		Virginia Viado (909) 980-4000 virginia.viado@urs.com	Caltrans requires preparation and approval of Biological Assessment, including update to environmental requirements or new listing/identification of protected species	MITIGATE	Prepare and approve Biological Assessment		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	

Approved by:_____
date

Project Risk Register

	DIST- EA 07-29820					Project Name: I-605 / I-5 PSR-PDS			Project Manager: Mumbie Cole						Date Created: 11/11/2013	Last Updated: 5/13/2014
						Co - Rte - PM: LA-605-6.36/15.10, LA-5-14.10/19.34			Telephone: (213) 897-9355							
ITEM	ID #	Status	Threat / Opport-unity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Cost/Time Impact Value	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	Adjusted Cost/Time Impact Value	WBS Item	Status Date and Review Comments
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
8	07-29820-08	Active	**Threat**	DESIGN	11/11/13	Mainline Pavement Rehabilitation	Design Performance and Reliability	SCOPE	Probability 3=Med (20-39%) **Med** Impact 4 =Med		Adrian Anderson (949) 855-5780 atanderson@rbf.com	Caltrans requires rehabiliation of the freeway mainline along the proposed widening and/or auxiliary lanes	MITIGATE	Determine cost and benefit of the mainline rehabilitation. Determine schedule of any rehabilitation or widening projects		230 PREPARE DRAFT PS&E	
9	07-29820-09	Active	**Threat**	DESIGN	11/11/13	Special Aesthetic Design	Design / Environmental Requirement	TIME	Probability 3=Med (20-39%) **Med** Impact 4 =Med		Adrian Anderson (949) 855-5780 atanderson@rbf.com	Cities request special / unique aesthetics	ACCEPT	Determine feasibility, cost, availability of special aesthetic features and incorporate into design. Include description in Environmental Document.		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
10	07-29820-10	Active	**Threat**	ENV	11/11/13	Regulatory Permitting	Environmental Requirement	SCOPE	Probability 3=Med (20-39%) **Med** Impact 4 =Med		Virginia Viado (909) 980-4000 virginia.viado@urs.com	RWQCB, US ACOE, CA Dept of Fish & Game jurisdictions	ACCEPT	Initiate formal application process with each agency		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
11	07-29820-11	Active	**Threat**	ENV	11/11/13	Right of Entry for Cultural Resources Data Recovery	Environmental Requirement	TIME	Probability 2=Low (10-19%) **Med** Impact 4 =Med		Virginia Viado (909) 980-4000 virginia.viado@urs.com	Property owners do not allow rights of entry for data recovery	MITIGATE	Negotiate with property owners		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
12	07-29820-12	Active	**Threat**	ENV	11/11/13	Unanticipated discoveries during Cultrual Resources data Recovery	Environmental Requirement	TIME	Probability 3=Med (20-39%) **Med** Impact 4 =Med		Virginia Viado (909) 980-4000 virginia.viado@urs.com	Find any unanticipated cultural resources	ACCEPT	Treat unanticipated discoveries and adjust schedule		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
13	07-29820-13	Active	**Threat**	CON	11/11/13	Traffic Staging / Circulation Impacts from nearby project construction	Construction Requirement	TIME	Probability 2=Low (10-19%) **High** Impact 8 =High		Adrian Anderson 9498555780 atanderson@rbf.com	Construction schedules and/or detour routes for other nearby projects create conflict(s)	MITIGATE	Coordinate TMP development and special provisions requirements for nearby Cities, County, Caltrans projects		230 PREPARE DRAFT PS&E	
14	07-29820-14	Active	**Threat**	CON	11/11/13	Project Funding	Construction Requirement	TIME	Probability 2=Low (10-19%) **High** Impact 16 =Very High		Ernesto Chaves (213) 922-7343 chavese@metro.net	Funding is limited or becomes unavailable for the project	MITIGATE	Agressively seek funding for the project		265 AWARDED AND APPROVED CONSTRUCTION CONTRACT	

Approved by:_____
date

Project Risk Register

	DIST- EA 07-29820					Project Name: I-605 / I-5 PSR-PDS			Project Manager: Mumbie Cole							Date Created: 11/11/2013	Last Updated: 5/13/2014
						Co - Rte - PM: LA-605-6.36/15.10, LA-5-14.10/19.34			Telephone: (213) 897-9355								
ITEM	ID #	Status	Threat / Opport-unity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Cost/Time Impact Value	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	Adjusted Cost/Time Impact Value	WBS Item	Status Date and Review Comments
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
15	07-29820-15	Active	**Threat**	DESIGN	11/11/13	Southern California Edison (SCE) Utility Relocation	Design Requirement	TIME	Probability 3=Med (20-39%) **High** Impact 8 =High		Adrian Anderson 9498555780 atanderson@rbf.com	Design team is made aware of utility agency requirements during utility coordination meetngs	ACCEPT	Hold utility focus meeting to develop consensus on utility relocation requirements (i.e. technical design features, schedule, construction windows, lead times)		255 CIRCULATE, REVIEW AND PREPARE FINAL DISTRICT PS&E PACKAGE	
16	07-29820-16	Active	**Threat**	DESIGN	11/11/13	Advertise, Award, Administer Authority	Design Requirement	TIME	Probability 5=Very High (60-99%) **High** Impact 8 =High		Ernesto Chaves (213) 922-7343 chavese@metro.net	Metro is not approved to AAA project	ACCEPT	Adjust schedule to incorporate Caltrans HQ OE reviews and bid process		255 CIRCULATE, REVIEW AND PREPARE FINAL DISTRICT PS&E PACKAGE	AAA Request will be submitted to Caltrans
17	07-29820-17	Active	**Threat**	R/W	11/11/13	Right of Way Acquisitions	R/W Requirement	TIME	Probability 2=Low (10-19%) **High** Impact 8 =High		Adrian Anderson (949) 855-5780 atanderson@rbf.com	Property acquistion would require condemnation	ACCEPT	Negotiate with property owners and adjust schedule		225 OBTAIN RIGHT OF WAY INTERESTS FOR PROJECT RIGHT OF WAY CERTIFICATION	
18	07-29820-18	Active	**Threat**	ENV	11/11/13	Cultural Discovery during Geotechnical Investigations	Environmental Requirement	TIME	Probability 2=Low (10-19%) **High** Impact 8 =High		Virginia Viado (909) 980-4000 virginia.viado@urs.com	Unanticipated cultural discoveries during geotechnical investigations	MITIGATE	Follow guidelines within approved data recovery plan for unanticipated discoveries. Describe in Environmental Document		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
19	07-29820-19	Active	**Threat**	DESIGN	11/11/13	Discovery of hazardous Aerially Deposited Lead (ADL)	Design Requirement	TIME	Probability 3=Med (20-39%) **High** Impact 8 =High		Virginia Viado 9099804000 virginia.viado@urs.com	ADL Type Y and Z material is discovered	MITIGATE	Identify locations within State R/W for burial sites		230 PREPARE DRAFT PS&E	
20	07-29820-20	Active	**Threat**	DESIGN	11/11/13	Discovery of hazardous materials	Construction Requirement	TIME	Probability 3=Med (20-39%) **Med** Impact 8 =High		Ernesto Chaves (213) 922-7343 chavese@metro.net	Hazardous material is discovered	MITIGATE	Identify and implement hazardous materials removal plan		235 MITIGATE ENVIRONMENTAL IMPACTS AND CLEAN UP HAZARDOUS WASTE	
21	07-29820-21	Active	**Threat**	DESIGN	11/11/13	Disagreement of application of CSS in regards to GCCOG Guiding Principles and potential design standard exceptions	Design Requirement	TIME	Probability 3=Med (20-39%) **High** Impact 8 =High		Adrian Anderson (949) 855-5780 atanderson@rbf.com	Design is not accepted with nonstandard features in order to preserve R/W	MITIGATE	Initial PA/ED project scoping workshop and Geometric design workshops with GCCOG and Caltrans, provide adequate and thorough documentation		165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
									Probability 3=Med (20-39%)		Adrian Anderson			Monitor on-going bid			

Approved by:_____
date

Project Risk Register

	DIST- EA 07-29820					Project Name: I-605 / I-5 PSR-PDS			Project Manager: Mumbie Cole							Date Created: 11/11/2013	Last Updated: 5/13/2014
						Co - Rte - PM: LA-605-6.36/15.10, LA-5-14.10/19.34			Telephone: (213) 897-9355								
ITEM	ID #	Status	Threat / Opport-unity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Cost/Time Impact Value	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	Adjusted Cost/Time Impact Value	WBS Item	Status Date and Review Comments
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
22	07-29820-22	Active	**Threat**	DESIGN	11/11/13	Increase in Material Costs	Design Requirement	COST	**High** Impact 8 =High		(949) 855-5780 atanderson@rbf.com	Economic rebound increases demand for building materials. Milestone submittal cost estimates identify an increasing cost trend	MITIGATE	acitivity on similar projects in the region. Monitor any policy decision(s) affecting project costs (i.e. MAP-21)		230 PREPARE DRAFT PS&E	
23	07-29820-23	Active	**Threat**	DESIGN	11/11/13	Bridge Type Selection Denial	Design Requirement	TIME	Probability 1=Very Low (1-9%) **High** Impact 16 =Very High		Brad Mielke (949) 855-5767 BMIELKE@rbf.com	Bridge Type Selection is not approved	MITIGATE	Follow up with alternative design to bridge(s)		215 STRUCTURES GENERAL PLANS AND PRELIMINARY DESIGN DATA	

Approved by:_____
date

Attachment I

Storm Water Data Report – Cover Page

Dist-County-Route: 07-LA-605; 07-LA-05; 07-LA-105
Post Mile Limits: PM 6.36/15.10; PM 6.39/9.45; PM 16.14/17.8
Project Type: Interchange Improvements
Project ID (or EA): 0713000248; 07-29820
Program Identification:

Phase:		
	☒	PID-PSR-PDS
	☐	PA/ED
	☐	PS&E

Regional Water Quality Control Board(s): Los Angeles Region 4

Is the Project required to consider Treatment BMPs?	Yes ☒	No ☐
If yes, can Treatment BMPs be incorporated into the project?	Yes ☒	No ☐

If No, a Technical Data Report must be submitted to the RWQCB at least 60 days prior to the projects RTL date. List RTL Date: September 11, 2020

Total Disturbed Soil Area: 186 Risk Level: 2
Estimated: Construction Start Date: November 11, 2020 Construction Completion Date: November 11, 2025
Notification of Intent (NOI) Date to be submitted: October 11, 2020

Notification of ADL reuse (if Yes, provide date)	Yes ☐	Date: TBD	No ☐
Separate Dewatering Permit (if yes, permit number)	Yes ☐	Permit #	No ☐

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

6/2/14		6/20/14	
Kevin Evarts, Registered Project Engineer	Date	Mohamed Ahmed, Caltrans Designated Oversight Representative	Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

Mumbie Cole, Project Manager	6/23/14 *Date*
Roger Castillo, Designated Maintenance Representative	06-23-14 *Date*
Ron Russak, Designated Landscape Architect Representative	06-24-14 *Date*
Shirley Pak, District/Regional Design SW Coordinator or Designee	6/24/2014 *Date*

[Stamp Required for PS&E only)

Attachment J

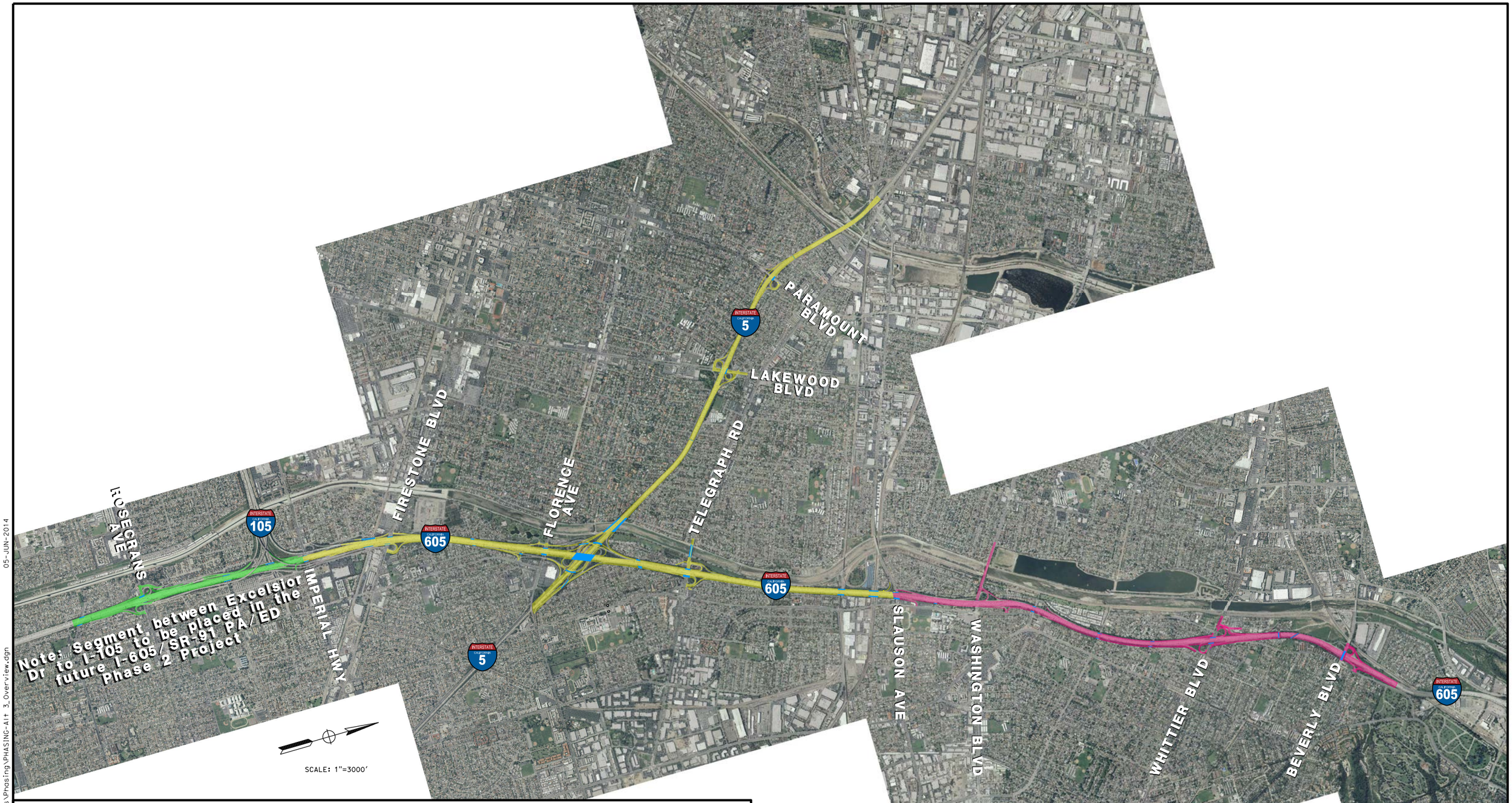
Nonstandard Design Features Matrix (bound separately)

Attachment K

Preliminary Stage Construction Concept for I-605/I-5 (bound separately)

Attachment L

Potential Construction Phasing/Project Phasing Concept



LEGEND

- CONSTRUCTION PHASE 1 (PHASE 1 PROJECT)
- CONSTRUCTION PHASE 2 (PHASE 2 PROJECT)
- CONSTRUCTION PHASE 3 (SEE NOTE HEREIN)

I-605/I-5 PSR-PDS POTENTIAL CONSTRUCTION PHASING AND PROJECT PHASING CONCEPT

05-JUN-2014

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