

**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 and State Route 91
I-605 (between Excelsior Dr UC & Carson St/Del
Amo Blvd)
SR-91 (between Downey Ave & Shoemaker Ave)

APPROVAL RECOMMENDED:



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

APPROVAL RECOMMENDED:



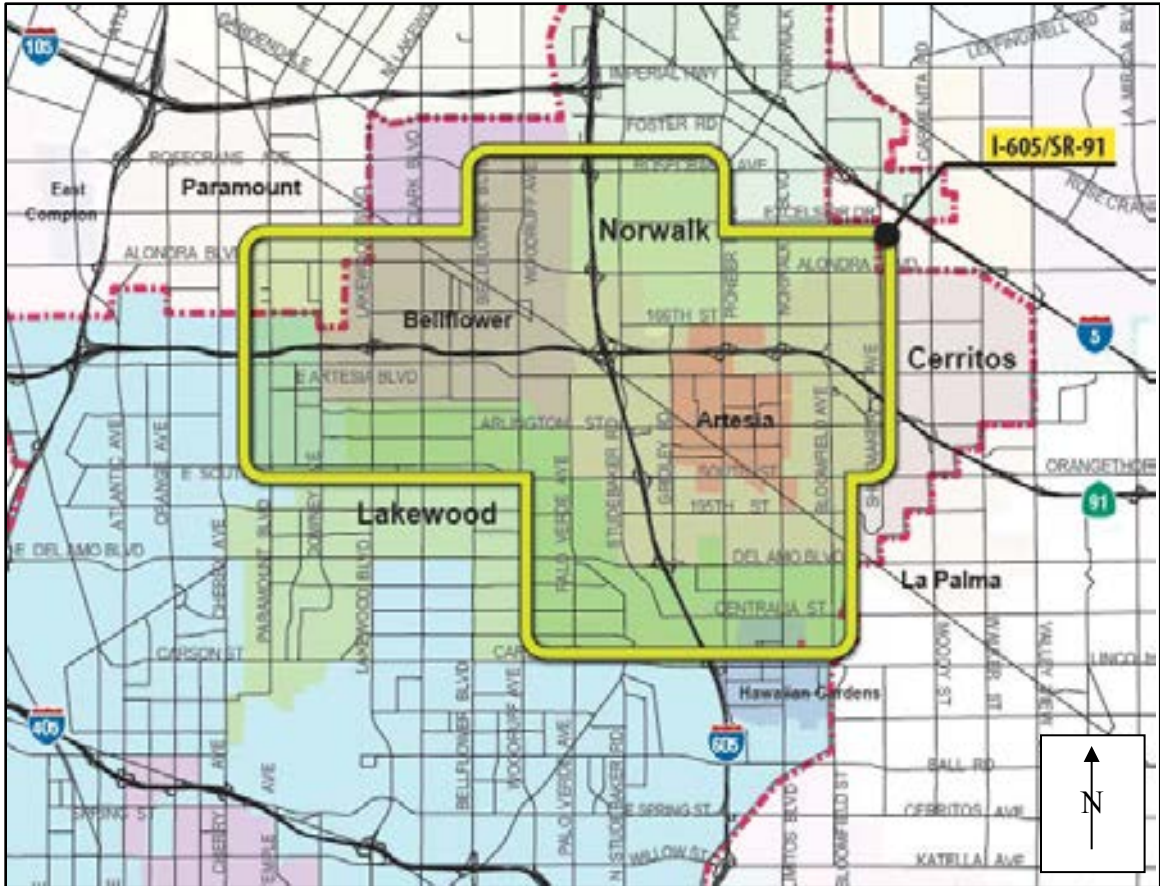
*Mumbie Fredson-Cole, P.E.
CALTRANS PROJECT MANAGER*

APPROVED:


*for Carrie Bowen
DISTRICT DIRECTOR*

July 2, 2014
DATE

Vicinity Map



On Routes Interstate 605 (I-605) and State Route 91 (SR-91) in Los Angeles County

I-605 between Excelsior Dr UC (PM 6.36) & Carson St/Del Amo Blvd (PM 2.87)

SR-91 between Downey Ave (PM 19.81) & Shoemaker Ave (PM 14.10)

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.



Adrian Anderson, P.E.
REGISTERED CIVIL ENGINEER

JUNE 6, 2014
DATE

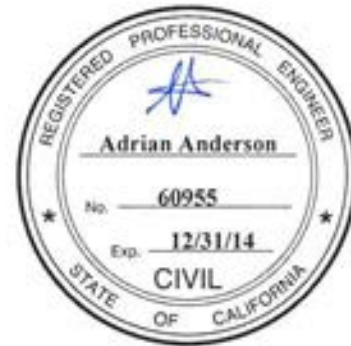


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1. INTRODUCTION

The San Gabriel River Freeway, Interstate 605 (I-605), is a major north-south transportation route and the Artesia Freeway, State Route 91 (SR-91) 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 system interchange at I-605 and SR-91 and corridors approaching the interchange. 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/SR-91 system interchange connectors and local interchange ramps. 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 Carson Street/Del Amo Boulevard (PM 2.87) to the south and Excelsior Drive (PM 6.36, just south of Rosecrans Avenue) to the north. The limits of the proposed improvements to SR-91 are from Downey Avenue (PM 14.10) to the west and Shoemaker Avenue (PM 19.81) to the east. See Table 9 for detailed descriptions of the proposed build alternative improvements. SR-91 serves as a major east-west corridor for traffic coming from the Ports of Los Angeles and Long Beach into the Inland Empire and beyond. I-605 is a major north-south facility between Orange and Los Angeles Counties and carries 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 interchanges 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: Artesia, Bellflower, Cerritos, Hawaiian Gardens, Lakewood, Long Beach, and Norwalk.

Below is a summary of the project information:

Project Limits	07 - LA - 605 - PM 2.87/PM 6.36 07 - LA - 91 - PM 14.10/PM 19.81			
Number of Alternatives	4 (1 - No-Build, 3 - Build Alternatives)			
Alternative	No-Build Alt.	Alternative 1	Alternative 2	Alternative 3
Capital Outlay Support for PA&ED	None	\$12-\$14M	\$21-\$25M	\$15-\$18M

Capital Outlay Construction Cost Range	\$0	\$395–480M	\$680–830M	\$490-600M
Capital Outlay Right-of-Way Cost Range	\$0	\$6 - 7M	\$71 - 87M	\$26 - 32M
Funding Source	N/A	Local Funds – Measure R, STIP, Federal, and other		
Type of Facility	N/A	Freeway, Freeway Interchange		
Number of Structures	N/A	44 total: 23 on I-605 & 21 on SR-91		
Structure PSR-PDS Cost Estimate (incl. in Construction Cost)	\$0	\$55 - 70M	\$110-150M	\$70 - 90M
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 could extend the overall project delivery schedule, but also allows for a smaller, stand-alone project phase to be delivered sooner that meets the test of logical termini and independent utility.

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 to the north of the I-605/SR-91 interchange is 294,000 vehicles and south of the interchange is approximately 239,000 vehicles.

The Artesia Freeway, State Route 91 (SR-91), was initially opened in 1965 and is an east-west freeway traversing the Cities of Long Beach, Bellflower, Artesia, and Cerritos within Los Angeles County and is used for interstate, interregional and intraregional travel. Its westerly terminus is located at Interstate 110 (I-110) in the City of Gardena, and its easterly terminus is in the City of Riverside at the junction with State Route 60 (SR-60). SR-91 is part of the California Freeway and Expressway System and is the only freeway that links Los Angeles, Orange, and Riverside Counties.

SR-91 is functionally classified as a freeway and an urban principal arterial, and it is included in the California Freeway and Expressway System. SR-91 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 Surface Transportation Assistance Act (STAA) National Network Route for use by oversized trucks and is approximately 59 miles in length.

The segment of SR-91 within the project limits has three to five mixed flow lanes and a High Occupancy Vehicle (HOV) lane in each direction. Based on Caltrans 2011 Traffic Data, the annual average daily traffic (AADT) volume to the west of the I-605/SR-91 interchange is 260,000 vehicles and east of the interchange is approximately 269,000 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 and SR-91.

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/SR-91 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/I-5 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 while minimizing adjacent right-of-way, environmental and economic impacts.

Need:

The I-605/SR-91 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 SR-91 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 a number of areas within the project limits with a high concentration of accidents.

Capacity and Transportation Demand

Daily traffic in the project area is expected to increase over time. The existing interchange has 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 (see 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 19, 2013, under separate cover) prepared for this project 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 Feasibility Report. 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/SR-91 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 project travel demand model was originally developed for application specifically for the SR-91/I-605/I-405 Congestion Hot Spots Feasibility Study project (which was a Metro/GCCOG project) study area, and the results have been incorporated into this report. The project model is based on the I-710 Major Corridor Study RDEIR/RDEIS project, 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;
- 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. Additional traffic forecast analysis can be found in the I-605/SR-91 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.

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 Table 5 of the TEPA (under separate cover) and in Tables 1 and 2 below. All of the detailed traffic analysis information can also be found in the TEPA (under separate cover). All mainline freeway segments along I-605 and SR-91 are currently operating at LOS D or better except at six (6) SR-91 locations that operate at LOS E or F during the AM and/or PM peak hour.

The results of the existing conditions freeway merge and diverge analysis based on the HCM analysis are shown in Tables 3 and 4 below. There are five (5) merge and diverge areas on SR-91 and four (4) areas on I-605 that currently are represented as operating at LOS E or F during the AM and/or PM peak hour based on the HCM analysis.

The results of the existing conditions freeway weaving analysis are shown in Tables 5 and 6 below. There are seven (7) SR-91 segments and one (1) I-605 segment represented as operating at LOS E or F for the AM and/or PM peak hour based on the HCM analysis.

The results of the intersection analysis are shown in Table 8 of the TEPA. These intersections include freeway ramp termini, along with other nearby locations that may be affected by changes to the freeway and to freeway access. As shown, two (2) locations (Del Amo Blvd & I-605 SB Ramps, and Del Amo Blvd & I-605 NB Ramps) are operating at LOS E or F in the AM and/or PM peak hour, and all other locations are represented as operating at LOS D or better based on the HCM analysis. 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.

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 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 SR-91 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. The data is collected using in-pavement electromagnetic loop detectors at stations located in various locations throughout the study area freeways. 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 SR-91 interchange of 40-55 mph, speeds on WB SR-91 through the study area are under 30 mph, and EB SR-91 speeds are generally over 45 mph. During the PM peak hour, the PeMS data illustrates congestion speeds on NB and SB I-605 approaching the SR-91 interchange of 54 mph or more (though a recent PeMS data review shows significantly lower speeds, which will be further evaluated during PA/ED), EB SR-91 speeds are generally under 35 mph approaching the I-605 interchange, and WB SR-91 congestion speeds approaching I-605 interchange are between 32 mph and 55 mph.

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. Based on the HCM analysis, all NB and SB segments of I-605, and EB and WB segments of SR-91 are projected to operate at LOS D or better for the AM and/or PM peak hour, except at five (5) locations on I-605 and at nineteen (19) locations on SR-91.

The results of the future 2035 No-Build conditions freeway merge and diverge analysis are shown in Tables 3 and 4 below. As shown, there are eight (8) I-605 merge/diverge areas and ten (10) areas on SR-91 that are projected to operate at LOS E or F during the AM and/or PM peak hour.

The results of the 2035 No-Build freeway weaving analysis are shown in Tables 3 and 4 below. As shown, only one weaving segment on I-605 NB is projected to operate at LOS D or better, and there are three (3) I-605 and twelve (12) SR-91 locations that are projected to operate at LOS E or F in and AM and/or PM peak hours.

The results of the 2035 No-Build intersection analysis are shown in Table 16 of the TEPA. 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:

- SR-91 EB on-ramp & Studebaker Rd (Unsignalized, PM peak hour, LOS F).
- Artesia Blvd & Bloomfield Ave (Signalized, PM peak hour, LOS F).
- Del Amo Blvd & I-605 SB Ramps (Signalized, PM peak hour, LOS F).
- Del Amo Blvd & I-605 NB Ramps (Signalized, PM peak hour, LOS E).

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 Forecast Year 2035 Alternative 1 conditions are described in more detail below and in the TEPA (under separate cover).

The results of the basic freeway segment analysis are shown in Tables 1 and 2 below. As shown, all segments along I-605 NB and SB are projected to operate at LOS D or better. On SR-91, seven (7) segments are projected to operate at LOS E during the AM and/or PM peak hour except at the following locations:

The results of the 2035 Alternative 1 conditions freeway merge and diverge analysis are shown in Tables 3 and 4 below. As shown, there are five (5) I-605 merge/diverge areas and four (4) SR-91 merge and diverge areas that are projected to operate at LOS E or F in the AM and/or PM peak hours.

The results of the 2035 Alternative 1 freeway weaving analysis are shown in Tables 5 and 6 below. As shown, there is one (1) I-605 NB weaving segment and six (6) SR-91 segments that are projected to operate at LOS E during the AM and/or PM peak hour.

The results of the 2035 Alternative 1 intersection analysis are shown in Table 20 of the TEPA. 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, none of the study locations are projected, under 2035 Alternative 1 conditions, to operate at LOS F in AM and PM peak hours; none of the study locations are projected to operate at LOS E or F in the AM peak hour; and one location is projected to operate at LOS E in the PM peak hour (Artesia Blvd & Bloomfield Ave). All remaining locations are projected to operate 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.

Alternative 2 Traffic Analysis

Results of the analysis for 2035 Alternative 2, including level of service assessments, are presented below for the study area freeways and ramps. Intersection delay has been calculated for arterial intersections.

Alternative 2 consists of the same improvements as Alternative 1, except the Alternative 2 project design implements Caltrans Highway Design Manual standards for lane and shoulder widths, thus requiring additional right of way as compared to Alternative 1. Additional ROW impacts will be necessary to accommodate proposed improvements to meet Caltrans standards. This alternative also proposes improvements to the freeway mainline including the addition of mixed flow lanes on both the southbound (SB) and northbound (NB) I-605, as well as auxiliary lanes on the NB I-605. Additional mainline improvements include mixed flow and auxiliary lanes on westbound (WB) and eastbound (EB) SR-91.

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

The results of the basic freeway segment analysis are shown in Tables 1 and 2 below. As shown, all segments are projected to operate at LOS D or better during the AM and PM peak hour except at six (6) locations along SR-91.

The results of the forecast 2035 conditions for Alternative 2 freeway merge and diverge analysis are shown in Tables 3 and 4 below. As shown, there are five (5) I-605 and six (6) EB SR-91 merge/diverge areas that are projected to operate at LOS E or F during the PM peak hour.

The results of the 2035 Alternative 2 freeway weaving analysis are shown in Tables 5 and 6 below. As shown, there is one (1) I-605 NB weaving segment and five (5) SR-91 segments that are projected to operate at LOS E in either the AM and/or PM peak hour.

The results of the 2035 Alternative 2 intersection analysis are shown in Table 24 of the TEPA. 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, none of the study locations are projected, under 2035 Alternative 2 conditions, to operate at LOS F in AM and PM peak hours; none of the study locations are projected to operate at LOS E in the AM peak hour; and only Artesia Blvd & Bloomfield Ave (signalized) is projected to operate at LOS E in the PM peak hour. All remaining locations are projected to operate 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.

Alternative 3 Traffic Analysis

Results of the analysis for forecast year 2035 of Alternative 3, including level of service assessments, are presented for the study area freeways and ramps. Intersection delay has been calculated for arterial intersections. Alternative 3 is a combination of Alternatives 1 and 2, providing the design standard configuration of Alternative 2 where possible while keeping construction of improvements within the existing State R/W to the maximum extent feasible. 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 basic freeway segment analysis are shown in Tables 1 and 2 below. As shown, all segments are projected to operate at LOS D or better except at two (2) I-605 SB locations and at ten (10) SR-91 locations during the AM and/or PM peak hour.

The results of the Future Year 2035 Alternative 3 conditions freeway merge and diverge analysis are shown in Tables 3 and 4 below, and in Table 26 of the TEPA. As shown, there are six (6) I-605 and eight (8) SR-91 merge and diverge areas that are projected to operate at LOS E or F in the AM and/or PM peak hour.

The results of the Future Year 2035 Alternative 3 freeway weaving analysis are shown in Tables 5 and 6 below. As shown, one (1) weaving segments for I-605 NB and five (5) SR-91 segments 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 intersection analysis are shown in Table 28 of the TEPA. 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 3 conditions none of the study locations are projected to operate at LOS F in AM and PM peak hours, none of the study locations are projected to operate at LOS E or F in the AM peak hour, and only Artesia Blvd & Bloomfield Ave (signalized) is projected to operate at LOS E in the PM peak hour. All remaining locations are projected to operate 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 the actual operating conditions may be worse.

Traffic Analysis Summary

Travel demand within the I-605 and SR-91 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 / SR-91 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. 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.

The tables 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 in levels of service.

Tables 1 through 6 below (or see Tables 29 through 34 in the TEPA) 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 show 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	Del Amo Blvd off-ramp to Del Amo Blvd Loop on-ramp	C	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	Del Amo Blvd Loop on-ramp to Del Amo Blvd Direct on-ramp	C	D	D	D	D
I-605 NB	Del Amo Blvd Direct on-ramp to South St off-ramp	D	D	C	C	D
I-605 NB	South St off-ramp to South St Loop on-ramp	C	D	D	D	D
I-605 NB	South St Loop on-ramp to South St Direct on-ramp	C	C	D	D	D
I-605 NB	South St Direct on-ramp to SR-91 EB off-ramp/SR-91 WB off-ramp	C	D	C	C	C
I-605 NB	SR-91 EB off-ramp/SR-91 WB off-ramp to SR-91 EB on-ramp	C	D	D	D	D
I-605 NB	SR-91 EB on-ramp to SR-91 WB on-ramp	D	D	C	C	C
I-605 NB	Alondra Blvd off-ramp to Alondra Blvd Loop on-ramp	D	D	D	D	D
I-605 NB	Alondra Blvd Loop on-ramp to Alondra Direct on-ramp	D	D	D	D	D
I-605 NB	Alondra 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 Southbound						
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	D	D
I-605 SB	Rosecrans Ave Direct on-ramp to Alondra Blvd off-Ramp	C	E	D	D	D
I-605 SB	Alondra Blvd off-Ramp to Alondra Blvd Loop on-ramp	D	D	D	D	D
I-605 SB	Alondra Blvd Loop on-ramp to SR-91 EB off-ramp/SR-91 WB off-ramp	-	-	D	D	D
I-605 SB	Alondra Blvd Loop on-ramp to Alondra Blvd Direct on-ramp	D	D	-	-	-
I-605 SB	SR-91 EB off-ramp/SR-91 WB off-ramp to SR-91 WB on-ramp	C	D	C	C	D
I-605 SB	SR-91 WB on-ramp to SR-91 EB on-ramp	C	C	C	C	C
I-605 SB	SR-91 EB on-ramp to South St off-ramp	C	D	C	C	C
I-605 SB	South St off-ramp to South St Loop on-ramp	C	D	C	C	D
I-605 SB	South St Loop on-ramp to South St Direct on-ramp	D	D	D	D	D
I-605 SB	South St Direct on-ramp to Del Amo Blvd off-ramp	D	D	D	D	D
I-605 SB	Del Amo Blvd off-ramp to Del Amo Blvd Loop on-ramp	C	E	D	D	E
I-605 SB	Del Amo Blvd Loop on-ramp to Del Amo Blvd Direct on-ramp	D	D	-	-	-
SR-91 Eastbound						
SR-91 EB	Downey Ave off-ramp to Downey Ave on-ramp	C	D	D	D	D
SR-91 EB	Lakewood Blvd off-ramp to Lane Drop	C	D	D	-	D
SR-91 EB	Lakewood Blvd off-Ramp to Downey Ave on-ramp	-	-	-	D	-
SR-91 EB	Lane Drop to Lakewood Blvd Loon on-ramp	D	E	-	-	-
SR-91 EB	Downey Ave on-ramp to Lakewood Blvd Loop on-ramp	-	-	-	D	-
SR-91 EB	Lakewood Blvd Loop on-ramp to Lakewood Blvd Direct on-ramp	D	D	D	D	D
SR-91 EB	Lakewood Blvd Direct on-ramp to Clark Ave on-ramp	C	D	-	-	-
SR-91 EB	Bellflower Blvd off-ramp to Bellflower Blvd on-ramp	C	D	D	D	D
SR-91 EB	Bellflower Blvd on-ramp to Lane Addition	-	-	-	-	E
SR-91 EB	Bellflower Blvd on-ramp to I-605 SB off-ramp/I-605 NB off-ramp	D	E	D	D	-
SR-91 EB	Lane Addition I-605 SB off-ramp /I-605 NB off-ramp	-	-	-	-	D
SR-91 EB	I-605 SB off-ramp/I-605 NB off-ramp to I-605 SB on-ramp	C	C	D	D	D
SR-91 EB	I-605 SB on-ramp to I-605 NB on-ramp	D	D	C	C	C
SR-91 EB	I-605 NB on-ramp to Studebaker Rd on-ramp	D	D	C	C	D
SR-91 EB	Studebaker Rd on-ramp to Pioneer Blvd off-Ramp	-	-	-	-	D
SR-91 EB	Pioneer Blvd off-ramp to Pioneer Blvd Loop on-ramp	D	E	D	D	D
SR-91 EB	Pioneer Blvd Loop on-ramp to Pioneer Blvd Direct on-ramp	E	E	-	-	-

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
SR-91 EB	Pioneer Blvd Loop on-ramp to Norwalk Blvd off-ramp	-	-	-	-	D
SR-91 EB	Norwalk Blvd off-ramp to Norwalk Blvd Loop on-ramp	D	E	D	D	D
SR-91 EB	Norwalk Blvd Loop on-ramp to Norwalk Blvd Direct on-ramp	E	E	-	-	-
SR-91 EB	Norwalk Blvd Loop on-ramp to Bloomfield Ave off-ramp	-	-	-	-	D
SR-91 EB	Bloomfield Ave off-ramp to Shoemaker Ave off-ramp	D	E	D	C	C
SR-91 EB	lane drop to Shoemaker Ave off-ramp	-	-	E	D	D
SR-91 EB	Shoemaker Ave off-ramp to Shoemaker Ave/Park Plaza Dr on-ramp	D	D	D	D	D
SR-91 Westbound						
SR-91 WB	Artesia Blvd off-ramp to Artesia Blvd on-ramp	-	-	D	D	D
SR-91 WB	Artesia Blvd on-ramp to Bloomfield Ave on-ramp	-	-	D	-	D
SR-91 WB	Norwalk Blvd off-ramp to Norwalk Blvd Loop on-ramp	D	D	D	-	D
SR-91 WB	Norwalk Blvd Loop on-ramp to Norwalk Blvd Direct on-ramp	D	D	-	-	-
SR-91 WB	Norwalk Blvd off-ramp to Bloomfield Ave on-ramp	-	-	-	C	-
SR-91 WB	Bloomfield Ave on-ramp to Norwalk Blvd Loop on-ramp	-	-	-	D	-
SR-91 WB	Pioneer Blvd off-ramp to Pioneer Blvd Loop on-ramp	D	D	D	D	D
SR-91 WB	Pioneer Blvd Loop on-ramp to Pioneer Blvd Direct on-ramp	D	D	-	-	-
SR-91 WB	I-605 NB off-ramp to Studebaker Rd off-ramp	C	D	C	C	C
SR-91 WB	Studebaker Rd off-ramp to I-605 NB on-ramp	C	C	C	C	C
SR-91 WB	I-605 NB on-ramp to I-605 SB on-ramp	C	D	D	D	D
SR-91 WB	I-605 SB on-ramp to Bellflower Blvd off-ramp	C	D	D	D	D
SR-91 WB	Bellflower Blvd off-ramp to Bellflower Blvd on-ramp	C	D	D	D	D
SR-91 WB	Clark Ave off-ramp to Lakewood Blvd off-ramp	D	E	-	-	-
SR-91 WB	Lakewood Blvd off-ramp to Lakewood Blvd Loop on-ramp	D	D	D	-	D
SR-91 WB	Lakewood Blvd off-ramp to Downey Ave off-ramp	-	-	-	D	-
SR-91 WB	Downey Ave off-ramp to Downey Ave on-ramp	D	E	D	-	D
SR-91 WB	Downey Ave off-ramp to Lakewood Blvd on-ramp	-	-	-	D	-

- 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	Del Amo Blvd off-ramp to Del Amo Blvd Loop on-ramp	D	D	-	-	-
I-605 NB	Del Amo Blvd Loop on-ramp to Del Amo Blvd Direct on-ramp	D	E	D	D	D
I-605 NB	Del Amo Blvd Direct on-ramp to South St off-ramp	D	D	D	D	D
I-605 NB	South St off-ramp to South St Loop on-ramp	C	D	D	D	D
I-605 NB	South St Loop on-ramp to South St Direct on-ramp	D	D	D	D	D
I-605 NB	South St Direct on-ramp to SR-91 EB off-ramp/SR-91 WB off-ramp	C	D	D	D	D
I-605 NB	SR-91 EB off-ramp/SR-91 WB off-ramp to SR-91 EB on-ramp	C	D	D	D	D
I-605 NB	SR-91 EB on-ramp to SR-91 WB on-ramp	D	D	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	Alondra Blvd off-ramp to Alondra Blvd Loop on-ramp	D	D	D	D	D
I-605 NB	Alondra Blvd Loop on-ramp to Alondra Blvd Direct on-ramp	D	D	D	D	D
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 Southbound						
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	D	D
I-605 SB	Rosecrans Ave Direct on-ramp to Alondra Blvd off-Ramp	C	E	D	D	D
I-605 SB	Alondra Blvd off-Ramp to Alondra Blvd Loop on-ramp	D	D	D	D	D
I-605 SB	Alondra Blvd Loop on-ramp to SR-91 EB off-ramp/SR-91 WB off-ramp	-	-	D	D	D
I-605 SB	Alondra Blvd Loop on-ramp to Alondra Blvd Direct on-ramp	D	D	-	-	-
I-605 SB	SR-91 EB off-ramp/SR-91 WB off-ramp to SR-91 WB on-ramp	C	D	C	C	D
I-605 SB	SR-91 WB on-ramp to SR-91 EB on-ramp	C	C	D	D	D
I-605 SB	SR-91 EB on-ramp to South St off-ramp	C	D	D	D	D
I-605 SB	South St off-ramp to South St Loop on-ramp	C	D	D	D	D
I-605 SB	South St Loop on-ramp to South St Direct on-ramp	D	D	D	D	D
I-605 SB	South St Direct on-ramp to Del Amo Blvd off-ramp	D	E	D	D	E
I-605 SB	Del Amo Blvd off-ramp to Del Amo Blvd Loop on-ramp	C	E	D	D	E
I-605 SB	Del Amo Blvd Loop on-ramp to Del Amo Blvd Direct on-ramp	D	D	-	-	-
SR-91 Eastbound						
SR-91 EB	Downey Ave off-ramp to Downey Ave on-ramp	D	D	E	E	E
SR-91 EB	Lakewood Blvd off-ramp to Lane Drop	C	D	E	-	E
SR-91 EB	Lakewood Blvd off-Ramp to Downey Ave on-ramp	-	-	-	D	-
SR-91 EB	Lane Drop to Lakewood Blvd Loop on-ramp	D	F	-	-	-
SR-91 EB	Downey Ave on-ramp to Lakewood Blvd Loop on-ramp	-	-	-	E	-
SR-91 EB	Lakewood Blvd Loop on-ramp to Lakewood Blvd Direct on-ramp	E	D	E	E	E
SR-91 EB	Lakewood Blvd Direct on-ramp to Clark Ave on-ramp	D	E	-	-	-
SR-91 EB	Bellflower Blvd off-ramp to Bellflower Blvd on-ramp	D	E	E	E	E
SR-91 EB	Bellflower Blvd on-ramp to Lane Addition	-	-	-	-	F
SR-91 EB	Bellflower Blvd on-ramp to I-605 SB off-ramp/I-605 NB off-ramp	D	E	D	D	-
SR-91 EB	Lane Addition I-605 SB off-ramp /I-605 NB off-ramp	-	-	-	-	D
SR-91 EB	I-605 SB off-ramp/I-605 NB off-ramp to I-605 SB on-ramp	D	D	D	D	D
SR-91 EB	I-605 SB on-ramp to I-605 NB on-ramp	E	E	D	D	D
SR-91 EB	I-605 NB on-ramp to Studebaker Rd on-ramp	D	E	D	D	E
SR-91 EB	Studebaker Rd on-ramp to Pioneer Blvd off-Ramp	-	-	-	-	E
SR-91 EB	Pioneer Blvd off-ramp to Pioneer Blvd Loop on-ramp	F	F	D	D	D
SR-91 EB	Pioneer Blvd Loop on-ramp to Pioneer Blvd Direct on-ramp	F	F	-	-	-
SR-91 EB	Pioneer Blvd Loop on-ramp to Norwalk Blvd off-ramp	-	-	-	-	D
SR-91 EB	Norwalk Blvd off-ramp to Norwalk Blvd Loop on-ramp	F	F	D	D	D
SR-91 EB	Norwalk Blvd Loop on-ramp to Norwalk Blvd Direct on-ramp	F	F	-	-	-
SR-91 EB	Norwalk Blvd Loop on-ramp to Bloomfield Ave off-ramp	-	-	-	-	D
SR-91 EB	Bloomfield Ave off-ramp to Shoemaker Ave off-ramp	D	E	D	D	D
SR-91 EB	lane drop to Shoemaker Ave off-ramp	-	-	E	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
SR-91 EB	Shoemaker Ave off-ramp to Shoemaker Ave/Park Plaza Dr on-ramp	D	E	E	E	E
SR-91 Westbound						
SR-91 WB	Artesia Blvd off-ramp to Artesia Blvd on-ramp	-	-	E	E	E
SR-91 WB	Artesia Blvd on-ramp to Bloomfield Ave on-ramp	-	-	D	-	D
SR-91 WB	Norwalk Blvd off-ramp to Norwalk Blvd Loop on-ramp	D	E	D	-	D
SR-91 WB	Norwalk Blvd Loop on-ramp to Norwalk Blvd Direct on-ramp	D	E	-	-	-
SR-91 WB	Norwalk Blvd off-ramp to Bloomfield Ave on-ramp	-	-	-	D	-
SR-91 WB	Bloomfield Ave on-ramp to Norwalk Blvd Loop on-ramp	-	-	-	D	-
SR-91 WB	Pioneer Blvd off-ramp to Pioneer Blvd Loop on-ramp	D	E	D	D	D
SR-91 WB	Pioneer Blvd Loop on-ramp to Pioneer Blvd Direct on-ramp	D	E	-	-	-
SR-91 WB	I-605 NB off-ramp to Studebaker Rd off-ramp	D	D	C	C	C
SR-91 WB	Studebaker Rd off-ramp to I-605 NB on-ramp	C	D	C	C	C
SR-91 WB	I-605 NB on-ramp to I-605 SB on-ramp	C	D	D	D	D
SR-91 WB	I-605 SB on-ramp to Bellflower Blvd off-ramp	D	E	D	D	E
SR-91 WB	Bellflower Blvd off-ramp to Bellflower Blvd on-ramp	D	D	D	D	D
SR-91 WB	Clark Ave off-ramp to Lakewood Blvd off-ramp	D	E	-	-	-
SR-91 WB	Lakewood Blvd off-ramp to Lakewood Blvd Loop on-ramp	C	D	D	-	D
SR-91 WB	Lakewood Blvd off-ramp to Downey Ave off-ramp	-	-	-	D	-
SR-91 WB	Downey Ave off-ramp to Downey Ave on-ramp	D	E	D	-	D
SR-91 WB	Downey Ave off-ramp to Lakewood Blvd on-ramp	-	-	-	D	-

- 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	Del Amo Blvd off-ramp	Diverge	D	D	-	-	-
I-605 NB	Del Amo Blvd Loop on-ramp	Merge	C	C	-	-	-
I-605 NB	Del Amo Blvd Direct on-ramp	Merge	C	C	C	C	D
I-605 NB	South St off-ramp	Diverge	D	D	B	B	C
I-605 NB	South St Loop on-ramp	Merge	C	C	C	C	C
I-605 NB	South St Direct on-ramp	Lane Addn	B	B	C	C	C
I-605 NB	SR-91 EB off-ramp/SR-91 WB off-ramp	Major Diverge	C	C	C	C	C
I-605 NB	SR-91 EB on-ramp	Lane Addn	F	F	B	B	B
I-605 NB	Alondra Blvd Loop on-ramp	Merge	D	D	D	D	D
I-605 NB	Alondra Blvd Direct on-ramp	Lane Addn	D	F	D	D	D
I-605 NB	Rosecrans Ave off-ramp	Diverge	E	E	C	C	C
I-605 NB	I-105 WB off-ramp	Major Diverge	D	D	D	D	D
I-605 Southbound							
I-605 SB	Rosecrans Ave Loop on-ramp	Merge	C	C	D	D	D

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	Rosecrans Ave Direct on-ramp	Lane Addn	C	C	D	D	D
I-605 SB	Alondra Blvd off-ramp	Lane Drop	C	C	B	B	B
I-605 SB	Alondra Blvd Loop on-ramp	Merge	C	C	D	D	D
I-605 SB	SR-91 EB/WB off-ramp	Major Diverge	-	-	D	D	D
I-605 SB	SR-91 WB on-ramp	Merge	C	C	C	C	C
I-605 SB	SR-91 EB on-ramp	Lane Addn	C	F	C	C	C
I-605 SB	South St off-ramp	Diverge	C	F	C	C	C
I-605 SB	South St Loop on-ramp	Merge	C	C	C	C	C
I-605 SB	South St Direct on-ramp	Merge	C	C	C	C	C
I-605 SB	Del Amo Blvd off-ramp	Diverge	D	D	C	C	C
I-605 SB	Del Amo Blvd Loop on-ramp	Merge	C	C	-	-	-
I-605 SB	Del Amo Blvd Direct on-ramp	Merge	C	C	-	-	-
SR-91 Eastbound							
SR-91 EB	Lakewood Blvd Loop off-ramp	Diverge	-	-	-	D	C
SR-91 EB	Downey Ave on-ramp	Merge	-	-	-	C	-
SR-91 EB	Lakewood Blvd Loop on-ramp	Merge	C	D	C	C	-
SR-91 EB	Lakewood Blvd Direct on-ramp	Lane Addn	C	F	-	-	-
SR-91 EB	Bellflower Blvd on-ramp	Merge	C	C	D	D	D
SR-91 EB	I-605 SB off-ramp/I-605 NB off-ramp	Major Diverge	C	C	C	C	C
SR-91 EB	I-605 SB on-ramp	Merge	F	F	B	B	B
SR-91 EB	I-605 NB on-ramp	Lane Addn	C	D	C	C	D
SR-91 EB	Studebaker Rd on-ramp	Merge	-	-	-	-	C
SR-91 EB	Pioneer Blvd off-ramp	Diverge	-	-	-	-	D
SR-91 EB	Pioneer Blvd Loop on-ramp	Merge	D	D	-	-	D
SR-91 EB	Norwalk Blvd off-Ramp	Diverge	-	-	-	-	D
SR-91 EB	Norwalk Blvd Loop on-ramp	Merge	D	D	-	-	C
SR-91 EB	Bloomfield Ave off-ramp	Diverge	-	-	-	-	D
SR-91 EB	Shoemaker Ave off-ramp	Diverge	-	-	E	C	D
SR-91 Westbound							
SR-91 WB	Artesia Blvd on-ramp	Merge	C	C	C	C	C
SR-91 WB	Norwalk Blvd Loop on-ramp	Merge	C	C	-	-	-
SR-91 WB	Pioneer Blvd on-ramp	Merge	-	-	-	-	B
SR-91 WB	Pioneer Blvd Loop on-ramp	Merge	C	C	-	-	C
SR-91 WB	Studebaker Rd off-ramp	Diverge	C	D	C	C	C
SR-91 WB	I-605 NB on-ramp	Lane Addn	C	D	C	C	B
SR-91 WB	I-605 SB on-ramp	Merge	F	F	B	B	B
SR-91 WB	Bellflower Blvd off-ramp	Lane Drop	B	C	B	B	-
SR-91 WB	Lakewood Blvd off-ramp	Diverge	D	D	-	-	-
SR-91 WB	Paramount Blvd on-ramp	Merge	C	C	-	-	-
SR-91 WB	Downey Ave off-ramp	Diverge	-	-	-	D	-
SR-91 WB	Lakewood Blvd on-ramp	Merge	-	-	-	D	-

- 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	Del Amo Blvd off-ramp	Diverge	D	E	-	-	-
I-605 NB	Del Amo Blvd Loop on-ramp	Merge	C	C	-	-	-
I-605 NB	Del Amo Blvd Direct on-ramp	Merge	C	C	C	C	D
I-605 NB	South St off-ramp	Diverge	E	E	B	B	C
I-605 NB	South St Loop on-ramp	Merge	C	C	D	D	D
I-605 NB	South St Direct on-ramp	Lane Addn	C	C	C	C	C
I-605 NB	SR-91 EB off-ramp/SR-91 WB off-ramp	Major Diverge	C	D	D	D	D
I-605 NB	SR-91 EB on-ramp	Lane Addn	F	F	A	A	A
I-605 NB	Alondra Blvd Loop on-ramp	Merge	D	D	E	E	E
I-605 NB	Alondra Blvd Direct on-ramp	Lane Addn	D	F	D	D	D
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 Southbound							
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	Alondra Blvd off-ramp	Lane Drop	C	C	B	B	B
I-605 SB	Alondra Blvd Loop on-ramp	Merge	D	D	E	E	E
I-605 SB	SR-91 EB/WB off-ramp	Major Diverge	-	-	E	E	E
I-605 SB	SR-91 WB on-ramp	Merge	C	D	D	D	C
I-605 SB	SR-91 EB on-ramp	Lane Addn	D	F	D	D	D
I-605 SB	South St off-ramp	Diverge	F	F	C	C	C
I-605 SB	South St Loop on-ramp	Merge	C	D	D	D	D
I-605 SB	South St Direct on-ramp	Merge	C	D	D	D	D
I-605 SB	Del Amo Blvd off-ramp	Diverge	D	F	C	C	F
I-605 SB	Del Amo Blvd Loop on-ramp	Merge	C	C	-	-	-
I-605 SB	Del Amo Blvd Direct on-ramp	Merge	C	C	-	-	-
SR-91 Eastbound							
SR-91 EB	Lakewood Blvd Loop off-ramp	Diverge	-	-	-	E	E
SR-91 EB	Downey Ave on-ramp	Merge	-	-	-	E	-
SR-91 EB	Lakewood Blvd Loop on-ramp	Merge	D	F	E	E	-
SR-91 EB	Lakewood Blvd Direct on-ramp	Lane Addn	C	F	-	-	-
SR-91 EB	Bellflower Blvd on-ramp	Merge	D	E	E	E	E
SR-91 EB	I-605 SB off-ramp/I-605 NB off-ramp	Major Diverge	C	C	C	C	C
SR-91 EB	I-605 SB on-ramp	Merge	F	F	B	B	B
SR-91 EB	I-605 NB on-ramp	Lane Addn	F	F	E	E	E
SR-91 EB	Studebaker Rd on-ramp	Merge	-	-	-	-	E
SR-91 EB	Pioneer Blvd off-ramp	Diverge	-	-	-	-	E
SR-91 EB	Pioneer Blvd Loop on-ramp	Merge	F	F	-	-	E
SR-91 EB	Norwalk Blvd off-Ramp	Diverge	-	-	-	-	D

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
SR-91 EB	Norwalk Blvd Loop on-ramp	Merge	F	F	-	-	E
SR-91 EB	Bloomfield Ave off-ramp	Diverge	-	-	-	-	D
SR-91 EB	Shoemaker Ave off-ramp	Diverge	-	-	F	C	D
SR-91 Westbound							
SR-91 WB	Artesia Blvd on-ramp	Merge	C	D	D	D	D
SR-91 WB	Norwalk Blvd Loop on-ramp	Merge	C	D	-	-	-
SR-91 WB	Pioneer Blvd on-ramp	Merge	-	-	-	-	E
SR-91 WB	Pioneer Blvd Loop on-ramp	Merge	C	D	-	-	C
SR-91 WB	Studebaker Rd off-ramp	Diverge	D	D	C	C	D
SR-91 WB	I-605 NB on-ramp	Lane Addn	D	F	D	D	C
SR-91 WB	I-605 SB on-ramp	Merge	F	F	C	C	C
SR-91 WB	Bellflower Blvd off-ramp	Lane Drop	B	C	C	C	-
SR-91 WB	Lakewood Blvd off-ramp	Diverge	D	E	-	-	-
SR-91 WB	Paramount Blvd on-ramp	Merge	D	D	-	-	-
SR-91 WB	Downey Ave off-ramp	Diverge	-	-	-	D	-
SR-91 WB	Lakewood Blvd on-ramp	Merge	-	-	-	E	-

- 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	SR-91 WB on-ramp to Alondra Blvd off-ramp	D	E	D	D	D
I-605 NB	Rosecrans Ave on-ramp to Hoxie Ave/Imperial Hwy off-ramp	C	C	-	-	-
I-605 Southbound						
I-605 SB	Imperial Hwy on-ramp to Rosecrans Ave off-ramp	D	E	-	-	-
I-605 SB	Alondra Blvd Direct on-ramp to SR-91 EB Off-Ramp/SR-91 WB off-ramp	E	F	-	-	-
SR-91 Eastbound						
SR-91 EB	Lakewood Blvd Direct on-ramp to Bellflower Blvd off-ramp	-	-	-	E	E
SR-91 EB	Paramount Blvd on-ramp to Downey Ave off-ramp	D	E	-	-	-
SR-91 EB	Downey Ave on-ramp to Lakewood Blvd off-ramp	D	E	D	-	D
SR-91 EB	Clark Ave on-ramp to Bellflower Blvd off-ramp	D	E	E	-	-
SR-91 EB	Studebaker Rd on-ramp to Pioneer Blvd off-ramp	D	E	D	D	-
SR-91 EB	Pioneer Blvd Direct on-ramp to Norwalk Blvd off-ramp	E	F	D	-	-
SR-91 EB	Pioneer Blvd Loop on-ramp to Norwalk Blvd off-ramp	-	-	-	D	-
SR-91 EB	Norwalk Blvd Direct on-ramp to Bloomfield Ave off-ramp	E	F	D	-	-
SR-91 EB	Norwalk Blvd Loop on-ramp to Bloomfield Ave off-ramp	-	-	-	D	-
SR-91 Westbound						
SR-91 WB	183rd St on-ramp to Artesia Blvd off-ramp	D	D	E	E	E
SR-91 WB	Artesia Blvd on-ramp to Norwalk Blvd off-ramp	-	-	-	D	-
SR-91 WB	Bloomfield Ave on-ramp to Norwalk Blvd off-ramp	D	E	D	-	E

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
SR-91 WB	Norwalk Blvd Direct on-ramp to Pioneer Blvd off-ramp	D	E	C	-	-
SR-91 WB	Norwalk Blvd loop on-ramp to Pioneer Blvd off-ramp	-	-	-	C	C
SR-91 WB	Pioneer Blvd Direct on-ramp to I-605 NB off-ramp	E	E	-	-	-
SR-91 WB	Bellflower Blvd on-ramp to Clark Ave off-ramp	E	F	-	-	-
SR-91 WB	Bellflower Blvd on-ramp to Lakewood Blvd off-ramp	-	-	D	D	D
SR-91 WB	Lakewood Blvd Direct on-ramp to Downey Ave off-ramp	D	E	C	-	C
SR-91 WB	Downey Ave on-ramp to Paramount Blvd off-ramp	D	E	-	-	-

- 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	SR-91 WB on-ramp to Alondra Blvd off-ramp	D	E	E	E	E
I-605 NB	Rosecrans Ave on-ramp to Hoxie Ave/Imperial Hwy off-ramp	C	D	-	-	-
I-605 Southbound						
I-605 SB	Imperial Hwy on-ramp to Rosecrans Ave off-ramp	D	E	-	-	-
I-605 SB	Alondra Blvd Direct on-ramp to SR-91 EB Off-Ramp/SR-91 WB off-ramp	E	F	-	-	-
SR-91 Eastbound						
SR-91 EB	Lakewood Blvd Direct on-ramp to Bellflower Blvd off-ramp	-	-	-	E	E
SR-91 EB	Paramount Blvd on-ramp to Downey Ave off-ramp	D	F	-	-	-
SR-91 EB	Downey Ave on-ramp to Lakewood Blvd off-ramp	D	E	E	-	E
SR-91 EB	Clark Ave on-ramp to Bellflower Blvd off-ramp	D	E	E	-	-
SR-91 EB	Studebaker Rd on-ramp to Pioneer Blvd off-ramp	E	E	E	E	-
SR-91 EB	Pioneer Blvd Direct on-ramp to Norwalk Blvd off-ramp	F	F	D	-	-
SR-91 EB	Pioneer Blvd Loop on-ramp to Norwalk Blvd off-ramp	-	-	-	D	-
SR-91 EB	Norwalk Blvd Direct on-ramp to Bloomfield Ave off-ramp	E	F	D	-	-
SR-91 EB	Norwalk Blvd Loop on-ramp to Bloomfield Ave off-ramp	-	-	-	D	-
SR-91 Westbound						
SR-91 WB	183rd St on-ramp to Artesia Blvd off-ramp	D	D	E	E	E
SR-91 WB	Artesia Blvd on-ramp to Norwalk Blvd off-ramp	-	-	-	E	-
SR-91 WB	Bloomfield Ave on-ramp to Norwalk Blvd off-ramp	E	F	E	-	F
SR-91 WB	Norwalk Blvd Direct on-ramp to Pioneer Blvd off-ramp	E	E	D	-	-
SR-91 WB	Norwalk Blvd loop on-ramp to Pioneer Blvd off-ramp	-	-	-	D	D
SR-91 WB	Pioneer Blvd Direct on-ramp to I-605 NB off-ramp	E	F	-	-	-
SR-91 WB	Bellflower Blvd on-ramp to Clark Ave off-ramp	E	F	-	-	-
SR-91 WB	Bellflower Blvd on-ramp to Lakewood Blvd off-ramp	-	-	E	E	E
SR-91 WB	Lakewood Blvd Direct on-ramp to Downey Ave off-ramp	D	F	C	-	C
SR-91 WB	Downey Ave on-ramp to Paramount Blvd off-ramp	D	E	-	-	-

- 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 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 Gateway Cities Council of Governments Strategic Transportation Plan (STP), a series of simulation models are being prepared which cover the study area boundaries (and beyond). These models can be used for traffic operations analysis and testing of design alternatives during the PA/ED phase.

In addition, the HCM analysis is a standard practice required by Caltrans, however, application of the HCM methodologies has inherent drawbacks when presenting corridor level congestion summaries. The primary concern with application of the HCM 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. To supplement the base year HCM analysis, Caltrans PeMS speed data has been extracted and reviewed along the I-605/SR-91 freeway corridors to evaluate existing hot spots and congestion activity throughout the freeway system.

Safety / Accident Data

The Traffic Accident Surveillance and Analysis System (TASAS) – Transportation System Network (TSN) data was provided by Caltrans Districts 7 and 12, and includes accidents that occurred between April 1, 2007 and March 31, 2010 on I-605 from PM 1.7 to 6.8 and on SR-91 from PM 14.0 to 19.9, as well as for the interchange ramps. This data was analyzed for the Feasibility Report and a summary of the accident data provided in TASAS Table B is shown below in Table 7 for I-605 and in Table 8 for SR-91:

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

Location	Actual Accident Rates			Statewide Avg. Accident Rates			Number of Accidents			
	Fatal	Fatal+Inj.	Total	Fatal	Fatal+Inj.	Total	Fatal	Inj.	PDO	Total
Freeway Mainline Segments										
Del Amo Blvd-South St – Northbound	0.000	0.180	0.770	0.010	0.320	1.040	0 (0%)	20 (23%)	67 (77%)	87
Del Amo Blvd-South St – Southbound	0.000	0.200	0.610	0.010	0.320	1.040	0 (0%)	23 (33%)	46 (67%)	69
South St-SR-91 – Northbound	0.006	0.240	0.780	0.011	0.340	1.100	1 (1%)	40 (29%)	95 (70%)	136
South St-SR-91 – Southbound	0.000	0.170	0.520	0.011	0.340	1.100	0 (0%)	30 (33%)	61 (67%)	91
SR-91-Alondra Blvd – Northbound	0.000	0.220	0.700	0.012	0.340	1.160	0 (0%)	28 (32%)	59 (68%)	87
SR-91-Alondra Blvd – Southbound	0.000	0.190	0.740	0.012	0.340	1.160	0 (0%)	24 (26%)	68 (74%)	92
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
Freeway-to-Freeway Direct Connector										
I-605 NB off-ramp to SR-91	0.000	0.110	0.320	0.002	0.090	0.300	0 (0%)	5 (36%)	9 (64%)	14
I-605 NB on-ramp from EB SR-91	0.000	0.480	1.550	0.004	0.150	0.450	0 (0%)	14 (31%)	31 (69%)	45
I-605 NB on-ramp from WB SR-91	0.000	0.080	0.290	0.003	0.110	0.350	0 (0%)	3 (27%)	8 (73%)	11
I-605 SB on-ramp from EB SR-91	0.000	0.260	0.600	0.003	0.110	0.350	0 (0%)	6 (43%)	8 (57%)	14
I-605 SB on-ramp from WB SR-91	0.000	0.370	1.120	0.004	0.150	0.450	0 (0%)	8 (33%)	16 (67%)	24
I-605 SB off-ramp to SR-91	0.000	0.070	0.150	0.002	0.090	0.300	0 (0%)	5 (50%)	5 (50%)	10
Freeway-to-Arterial Ramps										
I-605 NB off-ramp to Del Amo Blvd	0.117	0.590	1.060	0.004	0.420	1.200	1 (11%)	4 (44%)	4 (44%)	9
I-605 NB on-ramp from EB Del Amo Blvd	0.000	0.000	0.190	0.004	0.200	0.700	0 (0%)	0 (0%)	1 (100%)	1
I-605 NB on-ramp from WB Del Amo Blvd	0.000	0.120	0.700	0.003	0.200	0.650	0 (0%)	1 (17%)	5 (83%)	6
I-605 SB off-ramp to Del Amo Blvd	0.000	0.390	1.090	0.004	0.420	1.200	0 (0%)	5 (36%)	9 (64%)	14
I-605 SB on-ramp from WB Del Amo Blvd	0.000	0.000	0.000	0.004	0.200	0.700	0	0	0	0
I-605 SB on-ramp from EB Del Amo Blvd	0.000	0.220	0.440	0.003	0.200	0.650	0 (0%)	1 (50%)	1 (50%)	2
I-605 NB off-ramp to South St	0.074	0.660	1.920	0.004	0.420	1.200	1 (4%)	8 (31%)	17 (65%)	26
I-605 NB on-ramp from EB South St	0.000	0.260	0.790	0.004	0.200	0.700	0 (0%)	2 (33%)	4 (67%)	6
I-605 NB on-ramp to WB South St	0.000	0.160	0.320	0.003	0.200	0.650	0 (0%)	2 (50%)	2 (50%)	4
I-605 SB off-ramp to South St	0.000	0.400	1.810	0.004	0.420	1.200	0 (0%)	8 (22%)	28 (78%)	36
I-605 SB on-ramp from WB South St	0.000	0.140	1.000	0.004	0.200	0.700	0 (0%)	1 (14%)	6 (86%)	7
I-605 SB on-ramp from EB South St	0.000	0.140	0.700	0.003	0.200	0.650	0 (0%)	1 (20%)	4 (80%)	5
I-605 NB off-ramp to Alondra Blvd	0.000	0.170	0.950	0.004	0.420	1.200	0 (0%)	2 (18%)	9 (82%)	11
I-605 NB on-ramp from EB Alondra Blvd	0.000	0.230	0.920	0.004	0.200	0.700	0 (0%)	1 (25%)	3 (75%)	4
I-605 NB on-ramp from WB Alondra Blvd	0.000	0.220	0.330	0.003	0.200	0.650	0 (0%)	2 (67%)	1 (33%)	3
I-605 SB off-ramp to Alondra Blvd	0.000	0.380	0.910	0.002	0.180	0.600	0 (0%)	5 (42%)	7 (58%)	12
I-605 SB on-ramp from WB Alondra Blvd	0.000	0.170	0.340	0.004	0.200	0.700	0 (0%)	1 (50%)	1 (50%)	2
I-605 SB on-ramp from EB Alondra Blvd	0.000	0.150	0.310	0.003	0.200	0.650	0 (0%)	1 (50%)	1 (50%)	2
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

Source: Caltrans TASAS Table B.

- Note:
1. Accident rates are expressed as # of accidents/ Million vehicle miles for mainline, and # of accidents/Million vehicles for connectors 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 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-605 Freeway High Accident Rate Locations

Freeway-to-Freeway Direct Connectors

9. NB I-605 on-ramp from EB SR-91: This flyover ramp is from SR-91 EB to I-605 NB. Both the fatality and injury rate and the total accident rate are higher than the statewide average rate by 3.1 and 3.4 times respectively. Trucks are involved in 12% of the accidents. The predominant accident type is hit object (64%) with most being beyond the right shoulder, and speeding (65%) is the most common contributing factor.
11. SB I-605 on-ramp from WB SR-91: This SB on-ramp is located at the interchange of I-605 and WB SR-91. Both the fatality and injury rate and the total accident rate are higher than the statewide average rate by 2.5. The predominant type of accident is hit object (75%) with most of the accidents occurring on both left and right shoulders, with speeding (79%) being the most common contributing factor. The most common type of object struck is off-road (74%).

Freeway-to-Arterial Interchange Ramps

13. NB I-605 off-ramp to South St: This is a ramp from I-605 NB to South St. The fatality and injury rate is slightly higher than the statewide average rate and the total accident rate is 1.6 times the statewide average accident rate. The largest accident type is rear end (50%) and speeding (41%) is the most common contributing factor.
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.
19. SB I-605 off-ramp to South Street: This is a ramp from I-605 SB to South St. The fatality and injury rate is slightly less than the statewide average rate and the total accident rate is 1.5 times the statewide average accident rate. The largest accident types are broadside (31%) and rear end (28%), and other (41%) is the most common contributing factor.

Table 8 includes a summary of SR-91 accident data analysis.

Table 8: SR-91 TASAS Table B Accident Rates from 4/1/2007 to 3/31/2010

Location	Actual Accident Rates			Statewide Avg. Accident Rates			Number of Accidents			
	Fatal	Fatal+Inj.	Total	Fatal	Fatal+Inj.	Total	Fatal	Inj.	PDO	Total
Freeway Mainline Segments										
Downey Ave-Lakewood Blvd – Eastbound	0.015	0.230	0.960	0.010	0.290	1.010	1 (2%)	15 (23%)	50 (76%)	66
Downey Ave-Lakewood Blvd – Westbound	0.000	0.160	0.710	0.010	0.290	1.010	0 (0%)	11 (22%)	38 (78%)	49
Lakewood Blvd-Clark Ave – Eastbound	0.000	0.540	1.470	0.010	0.290	0.990	0 (0%)	33 (37%)	57 (63%)	90

Location	Actual Accident Rates			Statewide Avg. Accident Rates			Number of Accidents			
	Fatal	Fatal+Inj.	Total	Fatal	Fatal+Inj.	Total	Fatal	Inj.	PDO	Total
Lakewood Blvd-Clark Ave – Westbound	0.000	0.210	0.800	0.010	0.290	0.990	0 (0%)	13 (27%)	36 (73%)	49
Clark Ave-Bellflower Blvd – Eastbound	0.000	0.250	1.130	0.010	0.270	0.950	0 (0%)	17 (22%)	59 (78%)	76
Clark Ave-Bellflower Blvd – Westbound	0.000	0.130	0.590	0.010	0.270	0.950	0 (0%)	9 (23%)	31 (78%)	40
Bellflower Blvd-I-605 – Eastbound	0.000	0.420	1.580	0.010	0.280	0.950	0 (0%)	71 (26%)	199 (74%)	270
Bellflower Blvd-I-605 – Westbound	0.000	0.160	0.630	0.010	0.280	0.950	0 (0%)	28 (26%)	80 (74%)	108
I-605-Pioneer Blvd – Eastbound	0.000	0.490	2.130	0.011	0.330	1.110	0 (0%)	84 (23%)	283 (77%)	367
I-605-Pioneer Blvd – Westbound	0.000	0.550	1.980	0.011	0.330	1.110	0 (0%)	95 (28%)	246 (72%)	341
Pioneer Blvd-Norwalk Blvd – Eastbound	0.000	0.270	1.040	0.011	0.330	1.100	0 (0%)	22 (26%)	62 (74%)	84
Pioneer Blvd-Norwalk Blvd – Westbound	0.000	0.900	3.500	0.011	0.330	1.100	0 (0%)	73 (26%)	211 (74%)	284
Norwalk Blvd-Bloomfield Ave – Eastbound	0.013	0.360	1.050	0.011	0.320	1.080	1 (1%)	26 (33%)	53 (66%)	80
Norwalk Blvd-Bloomfield Ave – Westbound	0.000	0.360	1.320	0.011	0.320	1.080	0 (0%)	27 (27%)	73 (73%)	100
Bloomfield Ave-Artesia Ave – Eastbound	0.029	0.370	0.970	0.011	0.330	1.080	1 (3%)	12 (35%)	21 (62%)	34
Bloomfield Ave-Artesia Ave – Westbound	0.057	0.290	1.320	0.011	0.330	1.080	2 (4%)	8 (17%)	36 (78%)	46
Freeway-to-Freeway Direct Connector										
SR-91 EB off-ramp to I-605	0.000	0.080	0.230	0.002	0.090	0.300	0 (0%)	4 (33%)	8 (67%)	12
SR-91 EB on-ramp from SB I-605	0.000	0.180	0.450	0.003	0.190	0.650	0 (0%)	7 (41%)	10 (59%)	17
SR-91 EB on-ramp from NB I-605	0.000	0.500	1.210	0.003	0.110	0.350	0 (0%)	12 (41%)	17 (59%)	29
SR-91 WB off-ramp to I-605	0.000	0.120	0.680	0.002	0.090	0.300	0 (0%)	7 (18%)	33 (83%)	40
SR-91 WB on-ramp from NB I-605	0.000	1.250	3.260	0.003	0.190	0.650	0 (0%)	25 (38%)	40 (62%)	65
SR-91 WB on-ramp from SB I-605	0.000	0.360	1.020	0.003	0.110	0.350	0 (0%)	11 (35%)	20 (65%)	31
Freeway-to-Arterial Ramps										
SR-91 EB off-ramp to Downey Ave	0.000	0.610	1.220	0.004	0.420	1.200	0 (0%)	5 (50%)	5 (50%)	10
SR-91 EB on-ramp from Downey Ave	0.000	0.260	1.020	0.002	0.260	0.750	0 (0%)	2 (25%)	6 (75%)	8
SR-91 WB off-ramp to Downey Ave	0.000	0.410	0.540	0.004	0.420	1.200	0 (0%)	3 (75%)	1 (25%)	4
SR-91 WB on-ramp from Downey Ave	0.000	0.000	0.230	0.002	0.260	0.750	0 (0%)	0 (0%)	2 (100%)	2
SR-91 EB off-ramp to Lakewood Blvd	0.000	0.140	0.920	0.004	0.420	1.200	0 (0%)	2 (15%)	11 (85%)	13
SR-91 WB off-ramp to Lakewood Blvd	0.000	0.210	0.960	0.004	0.420	1.200	0 (0%)	2 (22%)	7 (78%)	9
SR-91 WB on-ramp from NB Lakewood Blvd	0.000	0.000	0.700	0.004	0.200	0.700	0 (0%)	0 (0%)	7 (100%)	7
SR-91 WB on-ramp from SB Lakewood Blvd	0.000	0.170	0.510	0.003	0.200	0.650	0 (0%)	1 (33%)	2 (67%)	3
SR-91 EB on-ramp from Clark Ave	0.000	0.150	0.930	0.002	0.260	0.750	0 (0%)	1 (17%)	5 (83%)	6
SR-91 WB off-ramp to Clark Ave	0.000	0.150	0.610	0.004	0.420	1.200	0 (0%)	1 (25%)	3 (75%)	4
SR-91 EB off-ramp to Bellflower Blvd	0.000	0.800	1.870	0.004	0.420	1.200	0 (0%)	9 (43%)	12 (57%)	21
SR-91 EB on-ramp from Bellflower Blvd	0.000	0.000	0.330	0.003	0.200	0.650	0 (0%)	0 (0%)	3 (100%)	3
SR-91 WB off-ramp to Bellflower Blvd	0.000	0.350	1.390	0.004	0.420	1.200	0 (0%)	3 (25%)	9 (75%)	12
SR-91 WB on-ramp from Bellflower Blvd	0.000	0.000	0.720	0.002	0.260	0.750	0 (0%)	0 (0%)	9 (100%)	9
SR-91 EB on-ramp from Studebaker Rd	0.000	0.180	0.180	0.002	0.260	0.750	0 (0%)	1 (100%)	0 (0%)	1
SR-91 WB off-ramp to Studebaker Rd	0.000	0.730	2.690	0.004	0.420	1.200	0 (0%)	3 (27%)	8 (73%)	11
SR-91 EB off-ramp to Pioneer Blvd	0.000	0.000	0.730	0.002	0.420	1.200	0 (0%)	0 (0%)	10 (100%)	10
SR-91 EB on-ramp from SB Pioneer Blvd	0.000	0.000	0.260	0.004	0.200	0.700	0 (0%)	0 (0%)	1 (100%)	1
SR-91 EB on-ramp from NB Pioneer Blvd	0.000	0.420	1.040	0.004	0.200	0.650	0 (0%)	2 (40%)	3 (60%)	5
SR-91 WB off-ramp to Pioneer Blvd	0.000	0.140	0.870	0.004	0.420	1.200	0 (0%)	1 (17%)	5 (83%)	6
SR-91 WB on-ramp from NB Pioneer Blvd	0.000	0.440	0.890	0.004	0.200	0.700	0 (0%)	3 (50%)	3 (50%)	6
SR-91 WB on-ramp from SB Pioneer Blvd	0.000	0.160	0.160	0.003	0.200	0.650	0 (0%)	1 (100%)	0 (0%)	1
SR-91 EB off-ramp to Norwalk Blvd	0.000	0.720	1.150	0.004	0.420	1.200	0 (0%)	5 (63%)	3 (38%)	8
SR-91 EB on-ramp from SB Norwalk Blvd	0.000	0.350	0.690	0.004	0.200	0.700	0 (0%)	1 (50%)	1 (50%)	2
SR-91 EB on-ramp from NB Norwalk Blvd	0.000	0.000	0.000	0.003	0.200	0.650	0	0	0	0
SR-91 WB off-ramp to Norwalk Blvd	0.000	1.040	1.740	0.004	0.420	1.200	0 (0%)	6 (60%)	4 (40%)	10
SR-91 WB on-ramp from NB Norwalk Blvd	0.000	0.270	0.550	0.004	0.200	0.700	0 (0%)	1 (50%)	1 (50%)	2
SR-91 WB on-ramp from SB Norwalk Blvd	0.000	0.250	0.760	0.003	0.200	0.650	0 (0%)	1 (33%)	2 (67%)	3
SR-91 EB off-ramp to Bloomfield Ave	0.000	0.320	1.780	0.004	0.420	1.200	0 (0%)	4 (18%)	18 (82%)	22
SR-91 WB on-ramp from Bloomfield Ave	0.000	0.290	0.480	0.002	0.260	0.750	0 (0%)	3 (60%)	2 (40%)	5

Source: Caltrans TASAS Table B.

- Note:
1. Accident rates are expressed as # of accidents/ Million vehicle miles for mainline, and # of accidents/Million vehicles for connectors 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 SR-91 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.

SR-91 Freeway High Accident Rate Locations

Freeway Mainline Segments

25. EB SR-91 from Lakewood Blvd to Clark Ave: This segment is on EB SR-91 from Lakewood Blvd to Clark Ave. The fatality and injury rate is 1.9 times higher than the statewide average rate and the total accident rate is 1.5 times higher than the statewide average rate. The predominant type of accident in this section is rear end accidents (80%) with speeding (73%) being the most common primary factor.
26. EB SR-91 from Bellflower Blvd to I-605 interchange: This segment of EB SR-91 is located approaching the I-605 interchange. The fatality and injury rate is lower than the statewide average but the total accident rate is 1.5 times the statewide average rate. The majority of the accidents in the section of freeway are rear end (72%) and the most common primary factor is speeding (70%). The second most common accident is sideswipe (18%).
27. EB SR-91 from I-605 to Pioneer Blvd: This segment is on SR-91 EB from I-605 to Pioneer Blvd. The fatality and injury rate is slightly higher than the statewide average rate and the total accident rate is almost 1.9 times the statewide average accident rate. Trucks accounted for five% of the vehicles involved in accidents. The predominant type of accident in this section is rear end accidents (78%) with speeding (75%) being the most common primary factor.
28. WB SR-91 from Pioneer Blvd to I-605 interchange: This WB SR-91 segment is located just east of the SR-91/I-605 interchange. Both the fatality and injury rate and accident rate are higher than the statewide average at 3.2 and 3.3 times respectively. Similar to the eastbound approach to the I-605 interchange the majority of accidents are rear end (83%) and the primary factor is speeding (79%).
29. WB SR-91 from Norwalk Blvd to Pioneer Blvd: This segment is on SR- 91 WB from Norwalk Blvd to Pioneer Blvd. The fatality and injury rate is 2.7 times higher than the statewide average rate and the total accident rate is almost 3.2 times the statewide average accident rate. The predominant type of accident in this section is rear end accidents (84%) with speeding (83%) being the most common primary factor.

Freeway-to-Freeway Direct Connectors

31. EB SR-91 on-ramp from NB I-605: This ramp is located at the SR-91/I- 605 interchange from NB I-605 to SR-91 EB. Both the fatality and injury rate and the total accident rate are higher than the statewide average rates by 4.5 and 3.5 times respectively. The most common accident type was hit object (79%) with the accidents occurring mainly beyond the left shoulder and right shoulder. The primary contributing factors were speeding (59%) and improper turn (31%), with off-road (81%) the predominant type of object struck.
32. WB SR-91 On-Ramp from SB I-605: This ramp is located at the SR-91/I- 605 interchange from SB I-605 to SR-91 WB. Both the fatality and injury rate and the total accident rate are higher than the statewide average rates by 3.3 and 2.9 times respectively. The most common accident type was hit object (71%) with the accidents occurring mainly beyond the left shoulder. The predominant collision factor was speeding (47%). with off-road (44%) the predominant type of object struck.
33. WB SR-91 on-ramp from NB I-605: This ramp is located at the SR- 91/I-605 interchange from NB I-605 to SR-91 WB. Both the fatality and injury rate and the total accident rate are higher than the statewide average rates by 3.2 and 3.3 times respectively. The most common accident type was hit object (74%) which would result from a vehicle leaving the roadway. However, the primary factor contributing to the accidents is the influence of alcohol at 48%, followed by speeding at 35% of the total 65 accidents over the 3 year period.
34. WB SR-91 off-ramp to I-605 ramp: This ramp is location at the SR-91/I-605 interchange from WB SR-91 to I-605 NB/SB. The fatality and injury rate is 2.3 times the statewide average rate and the total accident rate is 3.4 times the statewide average total accident rate. The predominant accident type is rear end (75%) followed by hit object (15%). The most common primary factor is speeding (78%) followed by improper turn (12%). The high accident rate at this ramp location is related to the SR-91 WB between Pioneer Blvd and I-605 interchange segment high accident location described above.

Freeway-to-Arterial Interchange Ramps

35. EB SR-91 off-ramp to Bellflower Blvd: This is a ramp from SR-91 EB to Bellflower Blvd. The fatality and injury rate is slightly less than the statewide average rate and the total accident rate is 1.5 times the statewide average accident rate. The largest accident type is rear end (62%) and speeding (48%) is the most common contributing factor.
36. WB SR-91 off-ramp to Studebaker Rd: This is a ramp from SR-91 WB to Studebaker Rd. The fatality and injury rate and the total accident rate are 1.7 and 2.2 times higher than the statewide average accident rate, respectively. The

largest accident type is broadside (64%) and other violations (64%) is the most common contributing factor.

37. WB SR-91 off-ramp to Artesia Blvd: This is a ramp from SR-91 WB to Artesia Blvd. The fatality and injury rate is 3.6 times higher than the statewide average rate and the total accident rate is 3.2 times the statewide average accident rate. The largest accident type is broadside (59%) and other violations (63%) is the most common contributing factor.

The proposed I-605/SR-91 interchange and other corridor improvements would provide exit and connector ramps with standard superelevation rates and transitions, which would provide drivers with 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 where feasible, and as a result accidents attributed to these existing nonstandard geometric configurations should be reduced. On I-605 and SR-91 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/SR-91 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 (under separate cover) as summarized herein (Section 4) and within the Feasibility Report, the existing I-605/SR-91 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.

Without this project, the operation and efficiency of the I-605/SR-91 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 shown 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 within the Traffic Analysis Summary in Section 4. For a summary of the deficiency analysis, for existing, No-Build Alternative, and the three build Alternatives, see Tables 1 through 6 in Section 4.

From the traffic analysis in Section 4, existing traffic conditions show that there are a number of deficiencies including six basic freeway segment locations on EB SR-91 that are projected to operate at LOS E or F. 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 SR-91 interchange of 40-55 mph, speeds on WB SR-91 through the study area are under 30 mph, and EB SR-91 speeds are generally over 45 mph. During the PM peak hour, the PeMS data illustrates congestion speeds on NB and SB I-605 approaching the SR-91 interchange of 54 mph or more (though a recent PeMS data review of NB I-605 approaching SR-91 for the a.m. peak period shows significantly lower speeds, which will be further evaluated during PA/ED), EB SR-91 speeds are generally under 35 mph approaching the I-605 interchange, and WB SR-91 congestion speeds approaching I-605 interchange are between 32 mph and 55 mph.

Other existing conditions deficiencies include the freeway merge and diverge analysis that shows four locations on I-605 and five locations on SR-91 experiencing LOS E or F, the freeway weaving analysis shows one location on I-605 and seven locations on SR-91 with LOS E or F, and one local intersection location is represented as operating at LOS E in the AM peak hour and LOS F in the PM peak hour with another local intersection location operating at LOS E in the AM peak hour. 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.

6. CORRIDOR AND SYSTEM COORDINATION

I-605 is functionally classified as an Interstate, State Highway, and an Urban Principal Arterial-P3. I-605 is an STAA route on the National Network, is included in the STRAHNET, is a Priority Global Gateway trade corridor as part of the Global

Gateways Development Program, and a Transportation Gateway of Major Statewide Significance per the Caltrans Interregional Transportation Strategic Plan (ITSP).

SR-91 is functionally classified as a freeway and an urban principal arterial, and it is included in the California Freeway and Expressway System. SR-91 is also a High Emphasis Route, and a Goods Movement Route. It is also a STAA National Network Route for use by oversized trucks.

The 2012 Regional Transportation Plan (RTP), titled “2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future”, adopted by Southern California Association of Governments (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-605 and SR-91 in the following projects:

(1) 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 and should be considered in the overall system coordination due to potential overlap, or gaps, in improvements between the two projects.

The 2012 -2035 RTP/SCS (sustainable communities strategy) also includes a regional Express/HOT Lanes network on SR-91 from I-110 in Los Angeles County to SR-55 in Orange County.

The I-605 Transportation Concept Report (TCR) (Caltrans, July 2013) shows that 10 lanes (both directions) are required on I-605 south of SR-91 to attain the minimum acceptable LOS F0 and that 11 lanes are required to attain LOS D. North of SR-91, 12 lanes are required for LOS F0 and 16 lanes are required for LOS D. Existing I-605 includes 4 mixed flow lanes and 1 high occupancy vehicle (HOV) lane south of SR-91 and 5 mixed flow lanes and 1 HOV lane north of SR-91 in each direction.

The SR-91 TCR (Caltrans, June 2013) shows that 11 lanes (both directions) are required on SR-91 west of I-605 to attain the minimum acceptable LOS F0 and that 16 lanes are required to attain LOS D. East of I-605, 10 lanes are required for LOS F0 and 13 lanes are required for LOS D. Existing SR-91 includes 4 mixed flow lanes and 1 HOV lane in each direction west of I-605 and 4 mixed flow lanes and 1 HOV lane east 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%. Therefore, the project team has included enforcement areas within the study area, see the geometric plans in Attachment B. 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 the entire project length of EB and WB SR-91. Various a.m. and p.m. peak hour remediation strategies are identified including restriping through the I-605/SR-91 interchange to remove the WB and EB lane drops, possibly metering the connector ramps, and/or designing EB SR-91 HOV ingress/egress weaving lanes. Widening through the interchange is proposed by the I-605/SR-91 project, which will address the mainline congestion related impacts to the HOV lanes.

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. Possibly future implementation of the study findings needs to be monitored during the PA/ED phase to determine how the I-605/SR-91 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. To the north of SR-91 within the railroad R/W is the Bellflower Pedestrian and Bicycle Trail (signed as the Bellflower Bike Trail) that terminates at Flora Vista Park just north of SR-91. This trail may someday be extended through the interchange to provide regional access for alternative transportation modes. Local bicycle and pedestrian master plans will be reviewed in greater detail during the PA/ED phase.

In addition, the GCCOG has developed Guiding Principles which help to define 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. 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 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/SR-91 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 No-Build Alternative does not address the Purpose and Need for the project.

Alternative 1: Alternative 1 improvements to I-605 and SR-91 include freeway system and local interchange reconstruction or modifications, mainline widening of one mixed flow lane in each direction, and various auxiliary lanes on SR-91 and I-605. An I-605 SB mixed flow lane is proposed from Excelsior Dr (project limit) to Del Amo Blvd. An I-605 NB mixed flow lane is proposed from SR-91 to Alondra Blvd, and NB auxiliary lanes are proposed from Del Amo Blvd to South St and also north of Alondra Blvd. SR-91 generally includes one mixed flow lane and/or one auxiliary lane in each direction, except that from I-605 to the Bloomfield Ave interchange, SR-91 adds two EB mixed flow lanes. This build alternative would widen the existing I-605/SR-91 interchange and a preliminary constructability review was completed for the staging concept, which is shown in Attachment K. Many of the existing freeway-to-freeway connectors for I-605 and SR-91 are nonstandard for lane and shoulder widths as well as for superelevation rates, which is why many of the connector ramps are being reconstructed. Existing nonstandard freeway mainline left median shoulders (vary from 0' to 3'+) and mainline lane widths (11' to 12') are proposed to be maintained under this alternative. Any new ramp realignments or freeway mainline widening maintains standard lane and shoulder widths. See Attachment B for the proposed Alternative 1 geometric plans and Attachment C for

the cross-sections. Also, see the Alternatives Descriptions Table 9 below for additional improvement details.

A design option for Alternative 1 includes a tight-diamond local interchange configuration at I-605 SB Ramps/Alondra Blvd and the current ramp connection with Piuma Ave is eliminated.

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, and minimizes adjacent right-of-way, environmental and economic impacts.

Alternative 2: Alternative 2 consists of similar improvements as Alternative 1, except that Alternative 2 implements Caltrans Highway Design Manual standards for all lane and shoulder widths. Additional R/W impacts will be required to accommodate the proposed improvements to meet Caltrans standards. This build alternative would reconstruct the existing I-605/SR-91 interchange due to the increased standard cross-section widths of the improvements. A preliminary constructability review was completed for the staging concept, which is shown in Attachment K. Any new ramp realignments or freeway mainline widening maintains standard lane and shoulder widths. Alternative 2 also proposes a 2-lane exit at the SR-91 EB off-ramp. See Attachment B for the proposed Alternative 2 geometric plans and Attachment C for the cross-sections. Also, see the Alternatives Descriptions Table 9 below for additional improvement details.

Alternative 2 addresses the Purpose and Need for the project by reducing congestion and improving freeway operations (both mainline and ramps), improving safety, and improving local and system interchange operations. 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 3: The goal of Alternative 3 is to implement, to the maximum extent reasonable, the standard mainline freeway and ramp lane widths and shoulder widths for the geometric improvements from Alternative 2 within the existing R/W to the greatest extent feasible and to transition to Alternative 1 improvements (maintaining nonstandard existing median shoulder and mainline lane widths) within constrained R/W corridors. Therefore, SR-91 improvements mostly reflect the Alternative 1 cross-section, and I-605 improvements mostly reflect Alternative 2 with some exceptions. For SR-91 EB, only one mixed flow lane is proposed from I-605 to Pioneer Blvd instead of two as proposed in the other Alternatives. Also, no mainline improvements are proposed for I-605 from Del Amo Blvd to South St since the LOS is forecast to be adequate under the 2035 No-Build Alternative. This build alternative would widen the existing I-605/SR-91 interchange and a preliminary constructability review was completed for the staging concept, which is shown in Attachment K. Any new ramp realignments or freeway mainline widening maintains standard lane and

shoulder widths. See Attachment B for the proposed Alternative 3 geometric plans and Attachment C for the cross-sections. Also, 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 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 STP traffic simulation model in that phase.

Additional alternatives and design options were also reviewed but are no longer carried forward for further consideration due to high costs or significant R/W encroachment into adjacent properties. A collector-distributor (C-D) road system for WB SR-91 between Bloomfield Ave and I-605 was considered due to the multiple closely spaced local interchanges including Norwalk Blvd and Pioneer Blvd. Based on cost and extensive R/W encroachment the concept is being dropped from further consideration.

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. There is the potential need for purchasing additional R/W where nonstandard features cannot be justified. 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/SR-91 PSR-PDS Alternatives Descriptions

Location	No-Build	Alternative 1	Alternative 2	Alternative 3
I-605: Del Amo Blvd to South St	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane SB, and 1 aux lane NB Ramps: Del Amo Blvd SB off-ramp modified to a 2 lane exit (including option lane) and widened at the ramp terminus to 4 lanes. Del Amo Blvd NB on-ramp adds an aux lane instead of merging. South St SB direct on- and loop on-ramps realigned. South St NB off-ramp modified to a 2 lane exit (including option lane) and widened at the ramp terminus to 3 lanes.	Mainline: Adds 1 mixed flow lane SB, and 1 aux lane NB at standard widths for all lanes and shoulders (typical). Ramps: Del Amo Blvd SB off-ramp modified to a 2 lane exit (including option lane) and widened at the ramp terminus to 4 lanes. Del Amo Blvd NB on-ramp realigned and adds an aux lane instead of merging. South St SB direct on- and loop on-ramps realigned. South St NB off-ramp modified to a 2 lane exit (including option lane) and widened at the ramp terminus to 3 lanes.	Mainline: No improvements. Ramps: Del Amo Blvd SB off-ramp widened at the ramp terminus to 4 lanes. South St NB off-ramp widened at the ramp terminus to 4 lanes.
I-605: South St to SR-91	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane SB. Ramps: South St SB off-ramp realigned and widened at the ramp terminus to 4 lanes.	Mainline: Adds 1 mixed flow lane SB. Ramps: South St SB off-ramp realigned and widened at the ramp terminus to 4 lanes. South St NB direct on-ramp and loop on-ramp realigned.	Mainline: Adds 1 mixed flow lane SB (which drops prior to South St). Ramps: South St SB off-ramp widened at the ramp terminus to 4 lanes.
I-605: SR-91 interchange	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane SB. Ramps: WB SR-91 to SB I-605 connector widened and adds mainline mixed flow lane. EB SR-91 to SB I-605 connector widened to 2 lanes. NB I-605 to WB SR-91 connector loop widened to 2 lanes. NB I-605 to EB SR-91 connector modified to a 2 lane exit (including option lane).	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: WB SR-91 to SB I-605 connector widened and adds mainline mixed flow lane. EB SR-91 to SB I-605 connector widened to 2 lanes. NB I-605 to WB SR-91 connector loop widened to 2 lanes. NB I-605 to EB SR-91 connector modified to a 2 lane exit (including option lane).	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: WB SR-91 to SB I-605 connector widened and adds mainline mixed flow lane. EB SR-91 to SB I-605 connector widened to 2 lanes.
I-605: SR-91 to Alondra Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane SB and NB. EB Alondra Blvd widened by 1 lane. Ramps: Alondra Blvd NB off-ramp modified to 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus. Alondra Blvd SB direct on-ramp and WB Alondra Blvd loop on-ramp eliminated and reconfigured to hook ramp with Piuma Ave.	Mainline: Adds 1 mixed flow lane SB and NB. EB Alondra Blvd widened by 1 lane. Ramps: Alondra Blvd NB off-ramp modified to 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus. Alondra Blvd SB direct on-ramp and WB Alondra Blvd loop on-ramp eliminated and reconfigured to hook ramp with Piuma Ave.	Mainline: Adds 1 mixed flow lane SB and NB. EB Alondra Blvd widened by 1 lane. Ramps: Alondra Blvd NB off-ramp modified to 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus. Alondra Blvd SB direct on-ramp and WB Alondra Blvd loop on-ramp eliminated and reconfigured to hook ramp with Piuma Ave.
I-605: Alondra Blvd to Excelsior Dr	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane SB and 1 aux lane NB. Ramps: Alondra Blvd SB off-ramp reconfigured to a hook ramp and modified to a 2 lane exit (including option lane). Alondra Blvd NB loop on-ramp modified to a D-type ramp and the direct NB on-ramp realigned at Alondra Blvd. Design Option: Alondra Blvd SB ramps reconfigured to a diamond configuration. Ramp connection with Piuma Ave is eliminated.	Mainline: Adds 1 mixed flow lane SB and 1 aux lane NB at standard widths for all lanes and shoulders (typical). Ramps: Alondra Blvd SB off-ramp reconfigured to a hook ramp and modified to a 2 lane exit (including option lane). Alondra Blvd NB loop on-ramp modified to a D-type ramp and the direct NB on-ramp realigned at Alondra Blvd.	Mainline: Adds 1 mixed flow lane SB and NB. Ramps: Alondra Blvd SB off-ramp reconfigured to a hook ramp and modified to a 2 lane exit (including option lane). Alondra Blvd NB loop on-ramp modified to a D-type ramp and the direct NB on-ramp realigned at Alondra Blvd.
SR-91: Downey Ave to Lakewood Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane WB that drops at Downey Ave interchange. Adds 1 mixed flow lane EB by extending lane drop at Lakewood Blvd. Ramps: WB off-ramp to Downey Ave modified to a 2 lane exit (including option lane). Lakewood Blvd ramps realigned.	Mainline: Adds 1 mixed flow lane WB that drops at Downey Ave interchange. Adds lane SB on Lakewood Blvd. Ramps: WB off-ramp to Downey Ave modified to a braided connector. EB Lakewood Blvd off-ramp braided with the EB Downey Ave on-ramp. Lakewood Blvd WB loop on-ramp eliminated.	Mainline: Adds 1 mixed flow lane WB that drops at Downey Ave interchange. Adds 1 mixed flow lane EB by extending lane drop at Lakewood Blvd. Ramps: WB off-ramp to Downey Ave modified to a 2 lane exit (including option lane). Lakewood Blvd ramps realigned.
SR-91: Lakewood Blvd to Clark Ave	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane EB, and 1 mixed flow lane and 1 aux lane WB. Ramps: WB off-ramp to Downey Ave modified to a 2 lane exit (including option lane). Lakewood Blvd ramps realigned.	Mainline: Adds 1 mixed flow lane EB, and 1 mixed flow lane and 1 aux lane WB. Ramps: Lakewood Blvd EB direct on-ramp moved further east to increase spacing from the EB loop on-ramp. Lakewood Blvd WB off-ramp modified to an aux lane exit.	Mainline: Adds 1 mixed flow lane EB, and 1 mixed flow lane and 1 aux lane WB. Ramps: WB off-ramp to Downey Ave modified to a 2 lane exit (including option lane). Lakewood Blvd ramps realigned.
SR-91: Clark Ave to Bellflower Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 aux lane EB, and 1 mixed flow lane and 1 aux lane WB (by extending existing aux lanes through Clark Ave). Ramps: Clark Ave WB off-ramp and EB on-ramp eliminated. Bellflower Blvd WB on-ramp and EB off-ramp realigned. Bellflower Blvd EB off-ramp modified to a 2 lane exit (including option lane).	Mainline: Adds 1 aux lane EB, and 1 mixed flow lane and 1 aux lane WB (by extending existing aux lanes through Clark Ave). Ramps: Clark Ave WB off-ramp and EB on-ramp eliminated. Bellflower Blvd WB on-ramp and EB off-ramp realigned. Bellflower Blvd EB off-ramp modified to a 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus.	Mainline: Adds 1 aux lane EB, and 1 mixed flow lane and 1 aux lane WB (by extending existing aux lanes through Clark Ave). Adds SB lane to Bellflower Blvd. Ramps: Clark Ave WB off-ramp and EB on-ramp eliminated. Bellflower Blvd WB on-ramp and EB off-ramp realigned. Bellflower Blvd EB off-ramp modified to a 2 lane exit (including option lane).

Location	No-Build	Alternative 1	Alternative 2	Alternative 3
SR-91: Bellflower Blvd to I-605	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 aux lane EB (by extending the existing bump out aux lane to Bellflower Blvd) and 1 mixed flow lane WB. Ramps: SB I-605 to WB SR-91 connector modified to add 2 WB SR-91 lanes. EB SR-91 to I-605 connector modified from 3 dedicated lanes to 3 lanes including option lane.	Mainline: Adds 1 aux lane EB (by extending the existing bump out aux lane to Bellflower Blvd) and 1 mixed flow lane WB. Ramps: SB I-605 to WB SR-91 connector modified to add 2 WB SR-91 lanes. EB SR-91 to I-605 connector modified from 3 dedicated lanes to 3 lanes including option lane.	Mainline: Adds bump out WB aux lane just east of Bellflower Blvd. Bellflower Blvd EB on-ramp provided with short mainline acceleration lane. Ramps: Bellflower Blvd WB off-ramp modified to a 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus. Bellflower Blvd EB on-ramp realigned. EB SR-91 to I-605 connector modified from 3 dedicated lanes to 3 lanes including option lane.
SR-91: I-605 Interchange	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 aux lane EB and WB. Ramps: SB I-605 to EB SR-91 adds 2 mainline mixed flow lanes. SB I-605 to WB SR-91 adds 2 mainline mixed flow lanes. WB SR-91 to I-605 connector widened to 3 lanes. WB SR-91 to NB I-605 connector modified to a 2 lane exit.	Mainline: Adds 2 mixed flow lanes EB, and 1 mixed flow lane WB. Ramps: WB SR-91 to SB I-605 connector modified to a 2 lane exit (including option lane). SB I-605 to EB SR-91 adds 2 mainline mixed flow lanes. SB I-605 to WB SR-91 adds 2 mainline mixed flow lanes. WB SR-91 to I-605 connector widened to 3 lanes and split to NB/SB I-605 modified from one lane for each to 2 lanes for each including an option lane. WB SR-91 to SB I-605 connector widened to 2 lanes.	Mainline: Adds 2 mixed flow lanes EB, and 1 mixed flow lane WB. Ramps: WB SR-91 to SB I-605 connector modified to a 2 lane exit (including option lane). SB I-605 to EB SR-91 adds 2 mainline mixed flow lanes. SB I-605 to WB SR-91 adds 2 mainline mixed flow lanes. WB SR-91 to I-605 connector widened to 3 lanes and split to NB/SB I-605 modified from one lane for each to 2 lanes for each including an option lane. WB SR-91 to SB I-605 connector widened to 2 lanes. Design Option: NB I-605 to EB SR-91 connector adds a mainline aux lane.
SR-91: I-605 to Pioneer Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 2 mixed flow lanes EB, and 1 mixed flow lane WB. Ramps: WB SR-91 to I-605 connector widened to 3 lanes and modified from a 2 lane exit to a 3 lane exit (including option lane). Pioneer Blvd EB off-ramp widened to 3 lanes at the ramp terminus. Pioneer Blvd WB direct on-ramp eliminated and loop on-ramp modified to D-type, which also adds WB mainline lane.	Mainline: Adds 2 mixed flow lanes EB, and 1 mixed flow lane WB. Ramps: WB SR-91 to I-605 connector widened to 3 lanes and modified from a 2 lane exit to a 3 lane exit (including option lane). Pioneer Blvd EB off-ramp widened to 3 lanes at the ramp terminus. Pioneer Blvd WB direct on-ramp eliminated and loop on-ramp modified to D-type, which also adds WB mainline lane.	Mainline: Adds 1 mixed flow lane EB and WB. Ramps: WB SR-91 to I-605 connector widened to 3 lanes and modified from a 2 lane exit to a 3 lane exit (including option lane). Pioneer Blvd EB off-ramp modified from dedicated exit lane to option lane exit and widened to 3 lanes at the ramp terminus. Pioneer Blvd WB direct on-ramp eliminated and loop on-ramp modified to D-type, which also adds WB mainline lane. Design Option: NB I-605 to EB SR-91 connector adds an EB mainline mixed flow lane. Maintains Pioneer Blvd EB aux lane exit. Design Option: Pioneer Blvd/168th St/WB SR-91 ramps intersection includes modified geometry.
SR-91: Pioneer Blvd to Norwalk Blvd	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 2 mixed flow lanes EB, and 1 mixed flow lane WB. Ramps: Pioneer Blvd WB off-ramp modified to a 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus. Pioneer Blvd EB direct on-ramp eliminated and loop on-ramp modified to D-type, which also adds WB mainline lane. Norwalk Blvd EB off-ramp modified to a 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus. Norwalk Blvd WB direct on-ramp eliminated and loop on-ramp modified to D-type, which also adds WB mainline lane.	Mainline: Adds 2 mixed flow lanes EB, and 1 mixed flow lane WB. Ramps: Pioneer Blvd WB off-ramp modified to a 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus. Pioneer Blvd EB direct on-ramp eliminated and loop on-ramp modified to D-type, which also adds WB mainline lane. Norwalk Blvd EB off-ramp modified to a 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus. Norwalk Blvd WB direct on-ramp eliminated and loop on-ramp modified to D-type, which also adds WB mainline lane.	Mainline: Adds 2 mixed flow lanes EB, and 1 mixed flow lane WB. Ramps: Pioneer Blvd WB off-ramp modified to an option lane exit and widened to 3 lanes at the ramp terminus. Pioneer Blvd EB direct on-ramp eliminated and loop on-ramp modified to D-type and merges with the mainline. Norwalk Blvd EB off-ramp modified to an option lane exit and widened to 3 lanes at the ramp terminus. Norwalk Blvd WB direct on-ramp eliminated and loop on-ramp modified to D-type, which merges with the mainline.
SR-91: Norwalk Blvd to Bloomfield Ave	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 2 mixed flow lanes EB (1 mixed flow lane drops at Bloomfield Ave interchange), and 1 mixed flow lane WB. Ramps: Bloomfield Ave EB off-ramp modified to 2-dedicated lanes exit and widened to 4 lanes at the ramp terminus. Bloomfield Ave WB on-ramp realigned. Norwalk Blvd EB direct on-ramp eliminated and loop on-ramp modified to D-type and adds mainline aux lane. Norwalk Blvd WB off-ramp modified to a 2 lane exit (including option lane) and widened to 3 lanes at the ramp terminus.	Mainline: Adds 2 mixed flow lanes EB (1 mixed flow lane drops at Bloomfield Ave interchange), and 1 mixed flow lane WB. Ramps: Norwalk Blvd EB direct on-ramp eliminated and loop on-ramp modified to D-type. Bloomfield Ave WB on-ramp modified to diamond with a mainline merge and braided with Norwalk Blvd WB off-ramp, which is modified to an option exit lane and widened to 3 lanes at the ramp terminus. Bloomfield Ave EB off-ramp modified to a 2 lane exit (including option lane) and widened to 4 lanes at the ramp terminus.	Mainline: Adds 2 mixed flow lanes EB (1 mixed flow lane drops at Bloomfield Ave interchange), and 1 mixed flow lane WB. Ramps: Norwalk Blvd EB direct on-ramp eliminated and loop on-ramp modified to D-type, which merges with the mainline. Norwalk Blvd WB off-ramp realigned and widened to 3 lanes at the ramp terminus. Bloomfield Ave EB off-ramp modified to an option lane exit and widened to 4 lanes at the ramp terminus. Bloomfield Ave WB on-ramp realigned.
SR-91: Bloomfield Ave to Shoemaker Ave	Mainline: No improvements. Ramps: No Improvements.	Mainline: Adds 1 mixed flow lane WB. Ramps: Artesia Blvd WB on-ramp adds mainline lane.	Mainline: Adds 1 mixed flow lane EB and WB. Ramps: Shoemaker Ave EB off-ramp realigned and modified to a 2 lane exit (including option lane). Artesia Blvd WB on-ramp realigned and adds mainline lane.	Mainline: Adds 1 mixed flow lane EB and WB. Ramps: Shoemaker Ave EB off-ramp modified to a dedicated exit lane. Artesia Blvd WB on-ramp realigned and adds mainline lane.

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

Based on an assessment of the geometric improvements along the SR-91 and I-605 corridors within the limits of the I-605/SR-91 project, the proposed improvements may be able to be constructed in up to five (5) separate construction phases. While constructing all phases concurrently would be ideal for delivering the project, current financial resources will not accommodate funding for the entire I-605/SR-91 project in the near-term. The construction phases (see Attachment L) are envisioned as follows:

- Construction Phase 1: WB SR-91 from Pioneer Blvd to I-605
- Construction Phase 2: WB SR-91 from Shoemaker Ave to Pioneer Blvd
- Construction Phase 3: WB SR-91 from I-605 to Downey Ave, and EB SR-91 from Downey Ave to Bellflower Blvd
- Construction Phase 4: EB SR-91 from Bellflower Blvd to Shoemaker Ave
- Construction Phase 5: NB and SB I-605 from Carson St/Del Amo Blvd to Excelsior Dr (just south of Rosecrans Ave)

At this time, it is anticipated that Construction Phases 1 and 2 could be combined into a WB SR-91 improvement project phase that could be implemented in the near-term in order to correct operational deficiencies with the WB SR-91 to NB/SB I-605 connector. Specifically, the current WB SR-91 exit move to the NB/SB I-605 connector is a two-lane exit that then flares to a third lane approximately 2,200' westerly of the connector ramp gore point to allow for a two-lane NB I-605 connector and a single-lane SB I-605 connector. This congestion "hot spot" experiences significant queuing and creates operational deficiencies along WB SR-91 upstream of the connector ramp. To meet the logical termini and independent utility criteria, the Construction Phase 1 improvements, which include constructing a three-lane exit (two dedicated exit lanes and one optional lane), may need to extend east of Pioneer Blvd to include Construction Phase 2 due to the closely spaced interchanges between

Pioneer Blvd, Norwalk Blvd, and Bloomfield Ave that also contribute to traffic congestion in the WB direction. It is anticipated that this initial project phase would be identified as a potential stand-alone Phase 1 Project and would require a MND/FONSI. Summary information for this potential Phase I Project is as follows:

Project Limits	07-LA-91-PM 14.10/PM 16.70		
Alternatives	1	2	3
Capital Outlay Support for PA/ED	\$5-\$7M	\$5-\$7M	\$5-\$7M
Capital Outlay Construction Cost Range	\$70-\$85M	\$100-\$135M	\$85-105M
Capital Outlay Right-of-Way Cost Range	\$100-\$200K	\$17-\$21M	\$12-\$15M

Construction Phases 3, 4, and 5, which address other mainline capacity and operational deficiencies unrelated to the WB SR-91 to NB/SB I-605 connector congestion “hot spot”, would then be addressed as a separate stand-alone Phase 2 Project that would be environmentally cleared with an EIR/EIS and possibly constructed in the construction phases identified herein as additional funding sources are available.

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, as described in the I-605/I-5 PSR-PDS (EA 07-29820K), the improvement construction area from Excelsior Dr UC (just south of Rosecrans Ave) to I-105 could be combined with I-605 improvements for this I-605/SR-91 project (EA 07-29810K) and included as part of the stand-alone Phase 2 Project.

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 SR-91 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/SR-91 overcrossing replacement in Alternative 2 will be staged to allow the same number of existing freeway lanes to remain open during construction. Similarly, the I-605/SR-91 overcrossing widening improvements for Alternatives 1 and 3 were also prepared for constructability review. These preliminary stage construction concepts were prepared and independently reviewed for I-605/SR-91 to ensure there were no fatal flaws and that the improvements are constructible. Refer to Attachment K for the preliminary stage construction concepts that detail the constructability of the widening and the replacement construction concepts for I-605/SR-91. 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.

Replacement (if required) or other impacts to the Artesia Community Center by the project from improvements for the WB SR-91 off-ramp at Pioneer Blvd will be further evaluated in the PA/ED phase of project development. Sight distance on the adjacent freeway off-ramp may be an issue, and if the building cannot be cut and refaced to provide adequate sight distance, then reconstruction of a new community

center would be required by the project prior to removing the existing facility from service.

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 south of I-5 and for SR-91 (dated February 2010 and January 2010, respectively). The available Caltrans BMP Corridor Study exhibits are included with the SWDR (under separate cover). These are applicable excerpts from the Caltrans BMP studies are provided as background information for the BMP notes referenced on the layout plans in Attachment B.

The proposed project's western area along the SR-91 indirectly drains to the Los Cerritos Channel and the remaining project area drains indirectly to the San Gabriel River and ultimately into the Pacific Ocean. The San Gabriel River generally flows in the north to south collecting water from the San Gabriel Mountains down through the Los Angeles Basin and across the San Gabriel Valley. The San Gabriel River runs through the project area while the western area of the SR-91 is located approximately 0.5 mi north of the Los Cerritos Channel, which ultimately drains to the San Gabriel River. The anticipated storm water project risk level is Level 2. The total impervious area treated by the proposed Treatment BMPs is approximately 53.9 acres. The new impervious area proposed for Alternative 2 which includes the largest footprint of all the alternatives is approximately 48 acres; therefore, the Treatment BMPs are expected to provide 112% treatment of the added impervious areas.

The principal receiving water bodies are the San Gabriel River Reach 1 (Estuary to Firestone Blvd) and Los Cerritos Channel. The two water bodies are located in the Los Angeles Regional Water Quality Control Board (LARWQCB). The State Water Quality Control Board's 2010 Integrated Report Map (303d listed waters) lists Coliform Bacteria and pH as the pollutant or stressor of concern for the San Gabriel River Reach 1 (Estuary to Firestone Blvd). Total Maximum Daily Loads (TMDL) are required and the proposed implementation of the USEPA approved TMDL completion is scheduled for the years of 2019 Coliform Bacteria and 2009 pH. The San Gabriel River has approved TMDLs for Trash and Metals.

The State Water Quality Control Board's 2010 Integrated Report Map lists Ammonia, Bis(2ethylhexyl)phthalate (DEHP), Chlordane (sediment), Copper, Lead, pH, Trash, and Zinc as the pollutant or stress of concern for the Los Cerritos Channel. TMDLs are required and the proposed implementation of the USEPA approved TMDL completion, which is scheduled for the years of 2015 for Ammonia, 2019

Bis(2ethylhexyl)phthalate (DEHP), 2019 Chlordane (sediment), 2019 Copper, 2019 Lead, 2021 pH, 2019 Trash, and 2019 Zinc. The Los Cerritos Channel has an approved TMDL for Metals.

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/SR-91 Alternative 2 geometric plans. Alternative 2 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 ongoing 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 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).

The Initial Site Assessment (ISA) prepared during PA/ED will identify any high risk contaminated sites that require site investigation and mitigation and anticipated entry permits.

8. RIGHT-OF-WAY

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 SR-91).

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	SR-91	I-605	SR-91	I-605	SR-91	I-605	SR-91	I-605	SR-91	I-605	SR-91	I-605	SR-91
Residential	0	0	5	6	0	0	13	40	11	94	33	47	0	22
Commercial/Industrial	0	0	5	11	0	0	13	16	1	2	2	8	0	3
Agency/Other	0	0	1	8	0	0	8	31	0	2	2	20	0	3
SUBTOTAL	0	0	11	25	0	0	34	87	12	98	37	75	0	28
TOTAL	0	0	36		0		121		110		112		28	

Under Alternative 1, it is expected that 11 residential properties will be subject to partial acquisitions. There will be 16 commercial/industrial properties subject to partial acquisitions along with 9 partial acquisitions of agency/other properties. Alternative 2 includes 105 full acquisitions and 53 partial acquisitions of residential properties, 3 full acquisitions and 29 partial acquisitions of commercial/industrial properties, and 2 full acquisitions and 39 partial acquisitions of agency/other properties. For Alternative 3, it is expected that there will be 22 full acquisitions and 80 partial acquisitions of residential properties, 3 full acquisitions and 10 partial acquisitions of commercial/industrial properties, and 3 full acquisitions and 22 partial acquisitions of agency/other 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.

Utilities:

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

Utility

Cable
 Electrical
 Gas

Owner

Time Warner Cable
 Southern California Edison
 Southern California Gas Company

Oil	Mobil Oil
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:

The inactive Metro railway (formerly the Pacific Electric Railway) passes under I-605 just south of Artesia Blvd that will require I-605 bridge and freeway connector widening activities coordination will be required with the railroad R/W for Alternatives 1, 2, and 3. The same inactive railroad passes under SR-91 just west of I-605 and will require widening activities within the R/W. To the north of SR-91 within the railroad R/W is the Bellflower Pedestrian and Bicycle Trail (signed as the Bellflower Bike Trail) that terminates at Flora Vista Park just north of SR-91. This trail may someday be extended through the interchange to provide regional access for alternative transportation modes.

9. STAKEHOLDER INVOLVEMENT

The Cities of Artesia, Bellflower, Cerritos, Hawaiian Gardens, Lakewood, Long Beach, and Norwalk; County of Los Angeles; Metro (the project sponsor); GCCOG; and Caltrans have attended Project Development Team (PDT) and/or Technical Advisory Committee (TAC) meetings and geometric workshops to develop the purpose and need in addition to reviewing 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 although there is a potential for public controversy associated with land acquisitions required for project alternatives. 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 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 geometric plans. 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 will require the below 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 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-605 and SR-91 corridors in the Cities of Artesia, Bellflower, Cerritos, Hawaiian Gardens, Lakewood, Long Beach, and Norwalk.

11. FUNDING

At this time, no federal or state funding has been identified for this project. The project will be 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	\$395-480M	\$6 - 7M	TBD	TBD
Alternative 2	\$680-830M	\$71 - 87M	TBD	TBD
Alternative 3	\$490-600M	\$26 - 32M	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: \$12-\$25M.

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. However, there may be opportunities to advance project phases as well.

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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LA Metro

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Consultant
Gateway Cities Council of Governments

Mumbie Fredson-Cole(213) 897-9355
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Caltrans District 7

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David Levinsohn.....(714) 648-2859
Environmental Studies
URS Corporation

Gary Hamrick.....(562) 432-8484
Traffic Studies
Iteris

16. PROJECT REVIEWS

District Maintenance	Larry Wiering	Date: 4/16/14
District Traffic Safety Engineer	Ed Shiao	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

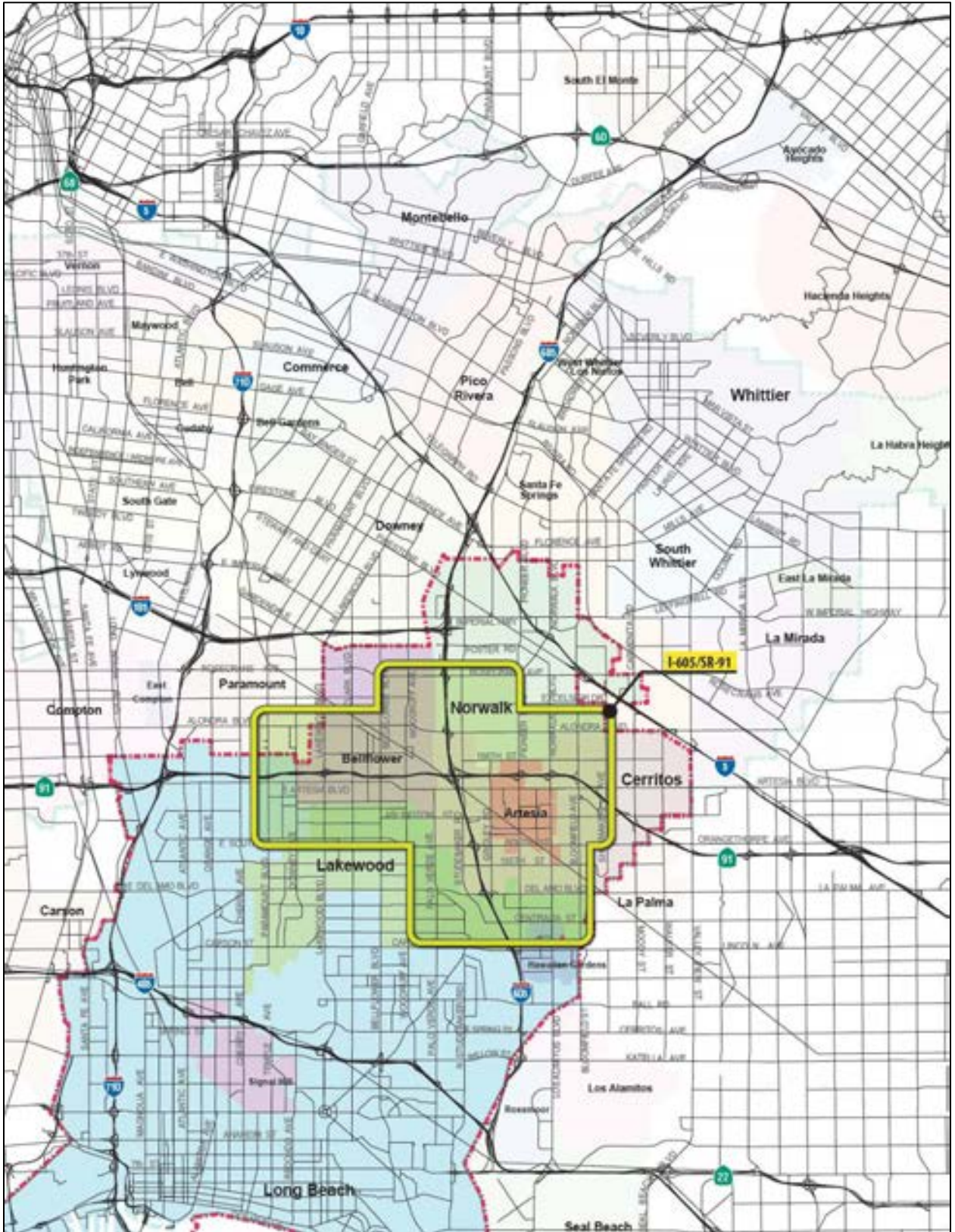
ATTACHMENTS (Number of Pages)

Attachment A – Regional Vicinity Map (1)
Attachment B – Project Area and Alternatives Plans (60) (*bound separately*)
Attachment C – Typical Cross Sections (14) (*bound separately*)
Attachment D – Cost Estimates (1)
Attachment E – Preliminary Environmental Analysis Report (PEAR) (29)
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 Concepts for I-605/SR-91 (22)
(*bound separately*)
Attachment L – Potential Construction Phasing/Project Phasing Concept

Attachment A

Regional Vicinity Map

Attachment A – I-605/SR-91 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/SR-91 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	\$435.5	\$5.8	\$165.3	\$607
Alt 2	\$747.9	\$78.5	\$308.0	\$1,134
Alt 3	\$540.7	\$28.7	\$212.8	\$782

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)	
\$395	\$480	\$6	\$7	\$150	\$185	\$550	\$670
\$675	\$825	\$71	\$87	\$280	\$340	\$1,025	\$1,250
\$490	\$600	\$26	\$32	\$195	\$235	\$705	\$865

Cost Summary By Corridor Alternative 1

Corridor	Northbound / Eastbound					Southbound / Westbound					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	\$28.0	\$0.5	\$6.4	\$3.8	\$38.2	\$49.6	\$1.8	\$8.4	\$4.1	\$62.1	\$100.2	\$130.3	\$3.0	\$49.9	\$183.3
SR-91	\$93.4	\$1.9	\$31.6	\$9.5	\$134.5	\$79.2	\$0.2	\$14.9	\$6.2	\$100.3	\$234.8	\$305.2	\$2.8	\$115.4	\$423.4
I-605/SR-91 PSR-PDS Total	\$121.4	\$2.4	\$38.0	\$13.3	\$172.7	\$128.8	\$2.0	\$23.3	\$10.3	\$162.4	\$335.0	\$435.5	\$5.8	\$165.3	\$606.7

Cost Summary By Corridor Alternative 2

Corridor	Northbound / Eastbound					Southbound / Westbound					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	\$39.1	\$9.5	\$20.3	\$5.6	\$65.1	\$61.8	\$8.3	\$11.3	\$4.8	\$77.9	\$142.9	\$185.8	\$23.1	\$77.8	\$286.8
SR-91	\$158.0	\$24.8	\$68.5	\$18.5	\$245.1	\$152.3	\$17.9	\$25.9	\$9.1	\$187.3	\$432.4	\$562.1	\$55.4	\$230.2	\$847.7
I-605/SR-91 PSR-PDS Total	\$197.1	\$34.3	\$88.8	\$24.1	\$310.2	\$214.1	\$26.2	\$37.2	\$13.9	\$265.2	\$575.3	\$747.9	\$78.5	\$308.0	\$1,134.5

Cost Summary By Corridor Alternative 3

Corridor	Northbound / Eastbound					Southbound / Westbound					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	\$30.3	\$0.6	\$3.5	\$2.9	\$36.7	\$44.8	\$2.2	\$10.7	\$2.1	\$57.6	\$94.3	\$122.5	\$3.6	\$47.2	\$173.3
SR-91	\$126.4	\$7.6	\$35.7	\$11.1	\$173.2	\$115.5	\$11.7	\$26.6	\$6.3	\$148.5	\$321.7	\$418.2	\$25.1	\$165.6	\$608.9
I-605/SR-91 PSR-PDS Total	\$156.7	\$8.2	\$39.2	\$14.0	\$209.9	\$160.3	\$13.9	\$37.3	\$8.4	\$206.1	\$416.0	\$540.7	\$28.7	\$212.8	\$782.2

Note: Storm water BMP costs (\$17.7M for temporary construction site BMPs and \$11.6M 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/SR-91

Project Study Report-Project Development Support

Preliminary Environmental Analysis Report

Prepared for



Prepared by



June 4, 2014

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PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

1. Project Information

District 7	County Los Angeles	Route Interstate 605 State Route 91	PM 2.87 to 6.36 14.10 to 19.81	EA 07-29810
Project Title: I-605/SR-91				
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/SR-91 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, just south of Rosecrans Avenue) to the north and Carson Street/Del Amo Boulevard (PM 2.87) to the south. The limits of the proposed improvements to SR-91 are from Downey Avenue (PM 14.10) to the west and Shoemaker Avenue (PM 19.81) to the east. SR-91 serves as a major east-west corridor connector-distributor for traffic coming from the Ports of Los Angeles and Long Beach into the Inland Empire and beyond. The project is predominantly located within the Cities of Artesia, Bellflower, Cerritos, and Norwalk; improvements also extend to the adjacent Cities of Lakewood and Long Beach.

Purpose and Need

The I-605/SR-91 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 SR-91 and I-605 freeway mainline capacity, closely spaced freeway entrance and exit ramps, and inadequate older design features at the freeway-to-freeway interchange. The existing system interchange 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. The purpose of the project is to reduce congestion and improve freeway operations, improve local interchange operations, improve safety and limit freeway improvements to within the existing state right-of-way (ROW) to the maximum extent possible while also minimizing environmental and economic impacts.

The project is needed in order to address existing and future mainline SR-91 and I-605 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. Additional design options are also being evaluated within the PSR-PDS. 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, the addition of auxiliary lanes, and improvements to interchanges on SR-91 and I-605.

Proposed improvements to I-605 segment of the project include the addition of one southbound (SB) general purpose lane from Excelsior Drive (northern project limit) to Del Amo Boulevard (southern project limit). A general purpose lane is also proposed on I-605 northbound (NB) from SR-91 to Alondra Boulevard. Auxiliary lanes are proposed on I-605 NB from Del Amo Boulevard to South Street, and also north of Alondra Boulevard. Interchange improvements along I-605 include ramp realignments and modifications to the on/off ramps at Del Amo Boulevard, South Street and Alondra Boulevard.

Proposed improvements to SR-91 segment of the project generally include one general purpose lane and/or one auxiliary lane in each direction, eastbound (EB) and westbound (WB), except that from I-605 east to the Bloomfield Avenue interchange, two new EB general purpose lanes will be added. This build alternative would widen the existing I-605/SR-91 interchange. Additional interchange improvements along SR-91 include realignments and modifications to the on/off ramps at Lakewood Boulevard, Bellflower Boulevard, Pioneer Boulevard, Norwalk Boulevard, Bloomfield Avenue, Shoemaker Avenue and Artesia Boulevard.

Reconstruction of the I-605/SR-91 interchange is included in this alternative to accommodate the additional general purpose lanes on I-605 and to update the current nonstandard lane and shoulder widths at freeway-to-freeway connectors, which will also be widened to two lanes. Existing nonstandard freeway mainline left median shoulders and lane widths are proposed to be maintained under this alternative to minimize ROW acquisitions. A design option for Alternative 1 includes a tight-diamond local interchange configuration to the I-605 SB ramps at Alondra Boulevard and the current ramp connection with Piuma Avenue is eliminated.

- Alternative 2.

Under Alternative 2, similar improvements to I-605 and SR-91 as described in Alternative 1 are proposed, except Alternative 2 implements Caltrans Highway Design Manual standards for all lane and shoulder widths. Additional ROW acquisitions will be necessary to accommodate proposed improvements to meet Caltrans standards.

- Alternative 3.

Alternative 3 includes many of the design elements identified in Alternative 1, with the following exceptions:

- No mainline improvements will occur on I-605 between Del Amo Boulevard to South Street.
- South Street SB off-ramp at I-605 will be widened to four lanes at the ramp terminus.
- EB SR-91 connector to SB I-605 will be widened to two lanes.
- SB lane on SR-91 will be added from Clark Avenue to Bellflower Boulevard.
- Modified design at SR-91 on/off-ramps at Bellflower Boulevard.
- Design options included to add mainline aux lane to NB I-605 to EB SR-91 and modifications to SR-91 at Pioneer Boulevard.
- Modifications to SR-91 WB off-ramp at Norwalk Boulevard.
- Modifications to SR-91 EB off-ramp at Shoemaker Avenue.

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 five project construction segments as follows:

- Construction Segment 1: WB SR-91 from Pioneer Boulevard to I-605
- Construction Segment 2: WB SR-91 from Shoemaker Avenue to Pioneer Boulevard
- Construction Segment 3: WB SR-91 from I-605 to Downey Avenue, and EB SR-91 from Downey Avenue to Bellflower Boulevard
- Construction Segment 4: EB SR-91 from Bellflower Boulevard to Shoemaker Avenue
- Construction Segment 5: NB and SB I-605 from Carson Street/Del Amo Boulevard to Excelsior Drive (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 Segments 1 and 2 above. Logical termini and independent utility criteria can be met under this project phase. Improvements include the addition of one mixed flow lane, on-ramp modifications at Bloomfield Avenue, and on/off-ramp modifications at Pioneer Boulevard and Norwalk Boulevard. The WB SR-91 to NB I-605 connector would be modified to a two lane exit under Alternative 1; under Alternatives 2 and 3, the connector would be widened to three lanes (two dedicated exit lanes and one optional lane). It is anticipated that this phase can be identified as a stand-alone project with environmental clearance possible through preparation of a Mitigated Negative Declaration (MND) under CEQA, and with an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) under NEPA.

The second phase of the project will include the project improvements identified in Construction Segments 3 through 5 above. Improvements proposed under this phase address other mainline capacity and operational deficiencies unrelated to the WB SR-91 to NB/SB I-605 connector congestion “hot spot”, and would be constructed as additional funding sources are available. Environmental clearance for this phase would require preparation of an Environmental Impact Report (EIR) under CEQA, and an Environmental Impact Statement (EIS) under NEPA. 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, as described in the I-605/I-5 PSR-PDS (EA 07-29820K), Construction Segment 3 of the I-605/I-5 PSR-PDS from the Excelsior Drive undercrossing (just south of Rosecrans Avenue) to I-105 could be combined with

improvements for this I-605/SR-91 project (EA 07-29810K) and included as part of this second phase.

3. Anticipated Environmental Approval

CEQA		NEPA	
Environmental Determination			
Statutory Exemption	<input type="checkbox"/>		
Categorical Exemption	<input type="checkbox"/>	Categorical Exclusion	<input type="checkbox"/>
Environmental Document			
Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND	<input type="checkbox"/>	Routine Environmental Assessment with proposed Finding of No Significant Impact	<input type="checkbox"/>
	<input type="checkbox"/>	Complex Environmental Assessment with proposed Finding of No Significant Impact	<input type="checkbox"/>
Environmental Impact Report	<input checked="" type="checkbox"/>	Environmental Impact Statement	<input checked="" type="checkbox"/>
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 1 will require minimal ROW acquisition; no full property acquisitions are expected and relocation efforts are not anticipated. Alternatives 2 and 3 will require both partial and full property acquisitions, including displacement of residential and commercial properties which may possibly result in the need for relocation. Acquisitions have been documented under Section 8.2.1 of this report. The number of acquisitions associated with Alternative 2 and 3 could potentially result in public controversy or may result in litigation over market values which would potentially create project delays. There is more property acquisitions 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, Alternatives 2 and 3 will result in the full acquisition of the North Artesia Community Center. A Section 4(f) Evaluation will be required to fully assess these and any other identified project impacts.

Visual/Aesthetics. Proposed project improvements include elevated roadway and bridge profiles, as well as the reconstruction and replacement of sound walls 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 will be warranted to identify concerns from potentially impacted residents and property owners and will ensure that project improvements do not result in a negative impact to sensitive receptors.

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 – The Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and Title 49 Code of Federal Regulations, Part 24 governs Right-of-Way impacts and relocations for projects which receive federal financial assistance. Acquisitions and relocations associated with the project 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 such as Clark Street, 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
<i>Federal</i>				
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
<i>State</i>				
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 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.
- Based on review of readily available documentation from relevant sources including those obtained from local jurisdictions, 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.
- Based on review of readily available documentation and data obtained from relevant sources, 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:

The project is predominantly located within the Cities of Artesia, Bellflower, Cerritos, and Norwalk; improvements also extend to the adjacent Cities of Lakewood and Long Beach. Existing land uses are described below, and more detail is provided in the technical memorandum.

- **SB I-605 between Del Amo Boulevard to South Street (Cerritos and Lakewood).** Uses adjacent to the highway include single family residential, industrial, and a utility easement which features a plant nursery.
- **NB I-605 between Del Amo Boulevard to South Street (Cerritos and Lakewood).** Adjacent to the freeway is single family residential uses and utility corridor which features a plant nursery.
- **SB I-605 between South Street and SR-91 (Cerritos).** Land uses within this segment include regional commercial, which contains the Cerritos Auto Square, light industrial, and Valley Christian High School.
- **NB I-605 between South Street and SR-91 (Cerritos).** Uses adjacent to the freeway include regional commercial, which features the Los Cerritos Shopping Center, office, and Gahr High School.
- **SB I-605 between SR-91 and Alondra Boulevard (Cerritos).** Adjacent to the SB I-605/SR-91 interchange is the Los Coyotes Water Reclamation Plant with the Iron Wood Golf Course. Light industrial uses are located adjacent to the freeway.
- **NB I-605 between SR-91 and Alondra Boulevard (Cerritos).** Land uses within this segment include single family residential, medical office, commercial, and open space for Reservoir Park.
- **SB I-605 between Alondra Boulevard and Rosecrans Avenue (Norwalk).** Single family residential uses are located next to SB I-605.

- **NB I-605 between Alondra Boulevard and Rosecrans Avenue (Norwalk).** Land uses next to NB I-605 include single family residential uses, and Anna M. Glazier Elementary School and Glazier Park.
- **WB SR-91 between Downey Avenue and Lakewood Boulevard (Bellflower).** High density residential, industrial, and commercial uses, a utility corridor, and a mobile home park are located within this segment.
- **EB SR-91 between Downey Avenue and Lakewood Boulevard (Bellflower).** Uses within this segment include high density residential, industrial, commercial, a motel, a utility corridor, and a mobile home park
- **WB SR-91 between Lakewood Boulevard and Bellflower Boulevard (Bellflower).** Commercial and medium to high density residential uses as well as St. Bernard's Church and School are located adjacent to the freeway.
- **EB SR-91 between Lakewood Boulevard and Bellflower Boulevard (Bellflower).** This segment contains a variety of land uses including commercial, low, medium and high density residential, a church and open space for Palm Street Park.
- **WB SR-91 between Bellflower Boulevard and I-605 (Bellflower and Cerritos).** Uses adjacent to the freeway include commercial, industrial, low, medium and high density residential, a church, Las Flores Elementary School, Los Coyotes Water Reclamation Facility and open space for Caruthers and Flora Vista Park, the Bellflower Bike and San Gabriel River Trails, and Iron-Wood Golf Course.
- **EB SR-91 between Bellflower Boulevard and I-605 (Bellflower).** Low and medium density residential, light and general industrial, and commercial uses, such as automobile sales and small retail are located within the segment.
- **WB SR-91 between I-605 and Pioneer Boulevard (Cerritos and Artesia).** Light industrial, commercial, low and medium density residential, and Neimes Elementary School are located within this segment.
- **EB SR-91 between I-605 and Pioneer Boulevard (Cerritos and Artesia).** Uses adjacent to the freeway include light industrial, commercial, low density residential, and Gahr High School and Ecology Park.
- **WB SR-91 between Pioneer Boulevard and Norwalk Boulevard (Cerritos and Artesia).** Uses within this segment include light industrial, commercial, low density residential, and open space for the North Artesia Community Center and AJ Padelford Park.

- **EB SR-91 between Pioneer Boulevard and Norwalk Boulevard (Cerritos and Artesia).** Commercial, low and medium density, and Benito Juarez Elementary School are located adjacent to the freeway.
- **WB SR-91 between Norwalk Boulevard and Bloomfield Avenue (Cerritos and Artesia).** Institutional uses (ABC Unified School District offices and ABC Adult School) and medium density residential are located adjacent to the freeway.
- **EB SR-91 between Norwalk Boulevard and Bloomfield Avenue (Cerritos and Artesia).** Office, low density residential and commercial uses are located adjacent to the freeway.

8.1.2 Potential ROW Acquisition and Relocation Impacts:

Temporary easements will be required from various properties along the I-605 and SR-91 to accommodate construction of the proposed improvements under all three Alternatives. These improvements include construction of new soundwalls and retaining walls or modification of existing walls.

Under Alternative 1, it is expected that 11 residential properties will be subject to partial acquisitions. There will be 16 commercial/industrial properties subject to partial acquisition along with 9 partial acquisition of agency/other properties. Alternative 2 includes 105 full acquisitions and 53 partial acquisition of residential properties, 3 full acquisitions and 29 partial acquisitions of commercial/industrial properties, and 39 partial acquisitions of agency/other properties. For Alternative 3, it is expected that there will be 22 full acquisitions and 80 partial acquisitions of residential properties, 3 full acquisitions and 10 partial acquisitions of commercial/industrial properties, and 22 partial acquisitions and 3 full acquisitions of agency/other 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>I-605</i>						
Residential	0	5	11	13	0	33
Commercial/Industrial	0	5	1	13	0	2
Agency/Other	0	1	0	8	0	2
<i>Subtotal</i>	<i>0</i>	<i>11</i>	<i>12</i>	<i>34</i>	<i>0</i>	<i>37</i>
<i>SR-91</i>						
Residential	0	6	94	40	22	47
Commercial/Industrial	0	11	2	16	3	8
Agency/Other	0	8	2	31	3	20
<i>Subtotal</i>	<i>0</i>	<i>25</i>	<i>98</i>	<i>87</i>	<i>28</i>	<i>75</i>
<i>Total acquisitions by type</i>	Full	Partial	Full	Partial	Full	Partial
	<i>0</i>	<i>36</i>	<i>110</i>	<i>121</i>	<i>28</i>	<i>112</i>
TOTAL	36		229		140	

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 if 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) 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 Artesia, Bellflower, Cerritos, and Norwalk; improvements also extend to the adjacent Cities of Lakewood and Long Beach. 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 ten Census Tracts were assessed (5530, 5543, 5544.01, 5544.03, 5544.04, 5545.14, 5545.21, 5545.22, 5548.01, and 5702.03). Information was obtained predominantly from 2010 Census and 2005-2007 American Community Survey data.

Table 8-2 Demographic Information

Race/Ethnicity	Project Area		Los Angeles County	
	Number	Percent	Number	Percent
White	16,425	31.8	4,936,599	50.3
Black or African American	7,061	13.7	856,874	8.7
American Indian & Alaska Native	290	0.6	72,828	0.7
Asian	11,778	22.8	1,346,865	13.7
Some Other Race	13,429	26.0	2,140,632	21.8
Two or More Races	1,912	3.7	438,713	4.5
Hispanic or Latino ¹	20,597	39.9	4,687,889	47.7
Total Population	51,599	N/A ¹	9,818,605	N/A ¹

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 39.9 and 44.6 percent, respectively. The next two largest populations in the project area are percent White at 31.8 percent and Asian at 22.7. Some other race accounted for 26 percent of the population.

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.

8.4.2 Potential Community Impacts:

Community Character and Cohesion:

The I-605 and SR-91 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 with Alternative 2 requiring the most ROW. 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

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%.

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 10 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 as well as 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:

- North Artesia Community Center (Artesia)
- AJ Bradford Park (Artesia)
- Palm Street Park (Bellflower)
- Caruthers Park Community Center (Bellflower)
- Flora Vista Park (Bellflower)
- Bellflower Bike Trail (Bellflower)
- Iron Wood Golf Course (Cerritos)
- Reservoir Hill Park (Cerritos)
- Open Space Corridor at abandoned Metropolitan Transportation Authority railroad facility (Cerritos)
- Ecology Park (Cerritos)
- San Gabriel River Trail (Cerritos/Los Angeles County)
- Glazier Park (Norwalk)

Schools located adjacent to the proposed project include the following:

- Las Flores Elementary School (Bellflower)
- Valley Christian High School (Cerritos)
- Gahr High School (Cerritos)
- Benito Juarez Elementary School (Cerritos)
- Tracy High School (Cerritos)

Utilities and service systems traversing or adjacent to the I-605 and SR-91 project segments include underground and overhead power transmission lines, gas, water, sewer, telephone and fiber-optic lines. The Los Coyotes Water Reclamation

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 06037C1980F, 06037C1839F, 06037C1840F, and 06037C1820F. 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 Los Alamitos and Whittier 7.5 minute Quadrangle maps, 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 active hazardous materials release sites within the project area. Preliminary plans dated 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 reduced 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 Draft 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 (CO₂) 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/SR-91 interchange improvements and proposed Alondra Boulevard improvements. 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 – Minimal Impacts (NES-MI) 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 only potential resource identified within the project area is the San Gabriel River. Project improvements will generally occur within the Lower Coastal Plain of the River, which is fully channelized with a concrete bottom that has little to no vegetation present. The San Gabriel River Corridor Master Plan Final Program EIR notes that vegetation adjacent to the river consists of ruderal and ornamental vegetation with no indication of special status wildlife species reported within this particular portion of the river.

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 Draft 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 Property Survey Report
- Historic Resource Evaluation Report
- Preliminary Site Investigation
- Initial Site Assessment (Phase I and Phase II)
- Natural Environment Study-Minimal Impacts
- 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 SR-91 in the Cities of Cerritos and Bellflower.

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 Kevin Cunningham, Benjamin Matlock	Date: 11/7/13
Noise and Vibration specialist Ted Lindberg	Date: 11/7/13
Air Quality specialist Tin Chung	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 Chung	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.

Environmental Branch Chief

Date: _____

Project Manager

Date: _____

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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	M	
Growth	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L	
Farmlands/Timberlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
Community Impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	M	
Community Character and Cohesion	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Relocations	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	H	
Environmental Justice	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	M	
Utilities/Emergency Services	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	M	
Visual/Aesthetics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	M	
Cultural Resources:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Archaeological Survey Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Historic Resources Evaluation Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Historic Property Survey Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Historic Resource Compliance Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Section 106 / PRC 5024 & 5024.5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Native American Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L	
Finding of Effect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
Data Recovery Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
Memorandum of Agreement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
Other: N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
Hydrology and Floodplain	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	M	
Water Quality and Stormwater Runoff	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	H	
Geology, Soils, Seismic and Topography	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Paleontology	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L	
PER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
PMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
Hazardous Waste/Materials:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	H	
ISA (Additional)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	H	
PSI	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	M	
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
Air Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	M	
Noise and Vibration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	M	
Energy and Climate Change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L	
Biological Environment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Natural Environment Study	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L	
Section 7:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
Formal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
Informal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
No effect	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L	
Section 10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	
USFWS Consultation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	L	
NMFS Consultation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L	

Environmental Studies for PA&ED Checklist

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

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 / SR-91	2.87-6.36 / 14.10-19.81	ID 0713000240 / EA 07-29810
Project Name and Description: I-605/SR-91 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
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* 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 I-605/SR-91 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 SR-91 and I-605 freeway mainline capacity, closely spaced freeway entrance and exit ramps, and inadequate older design features at the freeway-to-freeway interchange. The existing system interchange 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. The purpose of the project is to reduce congestion and improve freeway operations, improve local interchange operations, improve safety and limit freeway improvements to within the existing state right-of-way to the

maximum extent possible while also minimizing environmental and economic impacts.

Need: The project is needed in order to address existing and future mainline SR-91 and I-605 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

** 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 <input checked="" type="checkbox"/> /No <input type="checkbox"/> . 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 and capacity enhancements.
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: <ul style="list-style-type: none"> • Regionally Significant? (per 40 (Code of Federal Regulations (CFR) 93.101) Y <input checked="" type="checkbox"/> /N • Exempt from conformity? (per 40 CFR 93.126 and 93.128) Y <input type="checkbox"/> /N • Exempt from regional analysis? (per 40 CFR 93.127) Y <input type="checkbox"/> /N • Not exempt from conformity (must meet all requirements)? Y <input type="checkbox"/> /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 <input checked="" type="checkbox"/> . If no, why not?
	No tribes have been identified in the TCRs.
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 <input checked="" type="checkbox"/> . If no, why not?
	No tribes are identified in the TCR for SR-91 or I-605 within the project limits.
d	Has the Bureau of Indian Affairs (BIA) been notified? Y ___ /N <input checked="" type="checkbox"/>
	No tribes are identified in the TCR for SR-91 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 SR-91 or I-605.

4. System Planning:

a	Is the project consistent with the DSMP? Y ___ /N <input checked="" type="checkbox"/> . 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 <input checked="" type="checkbox"/> ? 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 <input checked="" type="checkbox"/> /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 SR-91, 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). SR-91: 4 mixed flow lanes Freeway and 1 HOV lane (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: I-605 TCR (Caltrans, July 2013) shows that for the SR-91 to I-105 segment, the UTC is 16 lanes for LOS D, or 12 lanes for LOS F0. 4-Lane Freeway and 2 HOV (per District 7 CCP Fact Sheet). South of SR-91, 10 lanes are required for LOS F0 and 11 lanes are required for LOS D. SR-91: SR-91 TCR (Caltrans, July 2013) shows that 11 lanes (both directions) are required on SR-91 west of I-605 to attain the minimum acceptable LOS F0 and that 16 lanes are required to attain LOS D.

	East of I-605, 10 lanes are required for LOS F0 and 13 lanes are required for LOS D.
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 <input checked="" type="checkbox"/> /Rural <input type="checkbox"/> . Provide Functional Classification.
	I-605 and SR-91: Urban Interstate, NHS.
i	Is facility a freeway, expressway or conventional highway?
	I-605 and SR-91 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 SR-91: NHS, STAA, Interregional Road System Route, High Emphasis Route, Goods Movement Route
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.
	Unknown.
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 – 295,000 ADT; directional split 52%; Peak Hour 23,900; Truck Peak Hour 1,100; 2008 VMT 635,200; 2035 VMT 635,000; sources 2012-2035 RTP/SCS (2008 for existing) and I-605 TCR, July 2013. SR-91: Segment OC Line to I-605 – 315,000 ADT; directional split 52.0%; Peak Hour 20,400; Truck Peak Hour 1,500; 2008 VMT 916,600; 2035 VMT 842,707; sources 2012-2035 RTP/SCS (2008 for existing) and SR-91 TCR, July 2013. SR-91: Segment I-605 to I-710 – 300,000 ADT; directional split 52.2%; Peak Hour 23,400; Truck Peak Hour 2,400; 2008 VMT 446,700; 2035 VMT 453,700; sources 2012-2035 RTP/SCS, 2008 for existing and SR-91 TCR, July 2013.
n	Has analysis on Daily Vehicle Hours of Delay (DVHD) from the Highway Congestion Monitoring Program (HICOMP) been completed and included? Y <input type="checkbox"/> /N <input checked="" type="checkbox"/> .

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 – 605 – PM 6.36/15.10 – Adjacent; LA – 5 – PM 6.39/9.45– Adjacent. Project 2: LA - 005 - PM 4.910 – 8.310 Project 3: LA 19 – PM 6.90 Project 4: Bloomfield Ave. and Artesia, City of Cerritos Project 5: LA – 91 PM 12.344
b	Development name, type, and size.	Project 1: I-605/SR-91 interchange and corridors. Project 2: Tierra Luna Mixed Use development 1500 units, 675,000 square feet and 375,000 sq. ft - Hotel Project 3: City Ventures Project – Fire Museum

		Project 4: Via Piazza –Construct 236,806 sq ft. 198 units and 378 parking spaces. Project 5: Jordan High School renovation of 213,000 sq ft and reconstruction of gym and other buildings
c	Local agency and/or private sponsor, and contact information.	Project 1: LA Metro, Ernesto Chaves Project 2: Downey Studios/City of Downey Project 3: City of Bellflower Project 4: City of Cerritos Project 5: City of Long Beach
d	California Environmental Quality Act (CEQA) status and Implementation Date.	Project 1: 6/30/2016 (assumed, Phases 1 and/or 2) – MND Project 2: 1/06/2012 - FEIR Project 3: MND Project 4: MND Project 5: NOP
e	If project includes federal funding, National Environmental Policy Act (NEPA) status.	Project 1: 6/30/2016 (assumed, Phases 1 and/or 2) – FONSI
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.

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 <input checked="" type="checkbox"/> /N <input type="checkbox"/> 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 <input type="checkbox"/> /N <input type="checkbox"/> . 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 <input type="checkbox"/> /N <input checked="" type="checkbox"/> . 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 <input checked="" type="checkbox"/> /N <input type="checkbox"/> . If yes, describe. I-605 and SR-91 are 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 <input checked="" type="checkbox"/> /N <input type="checkbox"/> . 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 <u>x</u> . 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 <u>x</u> 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 <input checked="" type="checkbox"/> /N <input type="checkbox"/> . 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 2.87/6.36; EA/ 07-29810K/
LA-91-PM 14.10/19.81 EFIS 0713000240 Alternative No. 1 (PSR-PDS)

Project Limit Between Excelsior Drive (on I-605) and Downey Avenue (on SR-91) and
Carson Street/Del Amo Boulevard (on I-605) and Shoemaker Avenue (on SR-91)

Project Description SR-91 and I-605 Interchange Improvements

1) Public Information

<input checked="" type="checkbox"/>	a. Brochures and Mailers	\$ 1,000,000
<input checked="" type="checkbox"/>	b. Press Release	
<input type="checkbox"/>	c. Paid Advertising	\$
<input type="checkbox"/>	d. Public Information Center/Kiosk	\$
<input checked="" type="checkbox"/>	e. Public Meeting/Speakers Bureau	\$ 200,000
<input type="checkbox"/>	f. Telephone Hotline	
<input checked="" type="checkbox"/>	g. Internet	
<input checked="" type="checkbox"/>	h. Others <u>Website Design and Maintenance</u>	\$ 75,000

2) Motorists Information Strategies

<input type="checkbox"/>	a. Changeable Message Signs (Fixed)	\$
<input checked="" type="checkbox"/>	b. Changeable Message Signs (Portable)	\$ 2,250,000
<input checked="" type="checkbox"/>	c. Ground Mounted Signs	\$ 500,000
<input type="checkbox"/>	d. Highway Advisory Radio	\$
<input type="checkbox"/>	e. Caltrans Highway Information Network (CHIN)	
<input type="checkbox"/>	f. Others _____	\$

3) Incident Management

<input checked="" type="checkbox"/>	a. Construction Zone Enhanced Enforcement Program (COZEEP)	\$ 1,632,000
<input checked="" type="checkbox"/>	b. Freeway Service Patrol	\$ 2,000,000
<input type="checkbox"/>	c. Traffic Management Team	
<input type="checkbox"/>	d. Helicopter Surveillance	\$
<input type="checkbox"/>	e. Traffic Surveillance Stations (Loop Detector and CCTV)	\$
<input type="checkbox"/>	f. Others _____	\$

4) Construction Strategies

- a. Lane Closure Chart
- b. Reversible Lanes
- c. Total Facility Closure
- d. Contra Flow
- e. Truck Traffic Restrictions \$ _____
- f. Reduced Speed Zone \$ _____
- 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 = \$ 7,657,000

Project Notes:

The project will modify the SR-91/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 150 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 \$2,250,000. 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 San Gabriel River bridge widening
- Construct E91-N605 connector bridge
- Construct W91-S605 connector bridge
- Construct Studebaker Rd bridge widening
- Construct W91-N and S605 connector bridge widening

Stage 2:

- Construct portion of RTE 91/605 separation widening
- Construct portion of SR-91
- Construct portion of S605-E91 loop ramp connector

Stage 3:

- Construct portion of RTE 91/605 separation widening
- Construct portion of Studebaker Rd bridge widening
- Construct portion of SR-91
- Construct portion of I-605

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 1,200 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): $\$85 \times 2 \times 9,600 \text{ hours} = \$1,632,000$

Freeway Service Patrols (FSP) are required at closure events. To estimate the FSP budget, it is also assumed there will be a total of 200 closure events at a cost of \$10,000 per event during the course of the project for a total of \$2,000,000.

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

(Preliminary TMP Elements and Costs)

Co/Rte/PM LA-605-PM 2.87/6.36; EA/ 07-29810K/
 LA-91-PM 14.10/19.81 EFIS 0713000240 Alternative No. 2 (PSR-PDS)

Project Limit Between Excelsior Drive (on I-605) and Downey Avenue (on SR-91) and
 Carson Street/Del Amo Boulevard (on I-605) and Shoemaker Avenue (on SR-91)

Project Description SR-91 and I-605 Interchange Improvements

1) Public Information

<input checked="" type="checkbox"/>	a. Brochures and Mailers	\$ 1,000,000
<input checked="" type="checkbox"/>	b. Press Release	
<input type="checkbox"/>	c. Paid Advertising	\$
<input type="checkbox"/>	d. Public Information Center/Kiosk	\$
<input checked="" type="checkbox"/>	e. Public Meeting/Speakers Bureau	\$ 300,000
<input type="checkbox"/>	f. Telephone Hotline	
<input checked="" type="checkbox"/>	g. Internet	
<input checked="" type="checkbox"/>	h. Others <u>Website Design and Maintenance</u>	\$ 75,000

2) Motorists Information Strategies

<input type="checkbox"/>	a. Changeable Message Signs (Fixed)	\$
<input checked="" type="checkbox"/>	b. Changeable Message Signs (Portable)	\$ 3,000,000
<input checked="" type="checkbox"/>	c. Ground Mounted Signs	\$ 500,000
<input type="checkbox"/>	d. Highway Advisory Radio	\$
<input type="checkbox"/>	e. Caltrans Highway Information Network (CHIN)	
<input type="checkbox"/>	f. Others _____	\$

3) Incident Management

<input checked="" type="checkbox"/>	a. Construction Zone Enhanced Enforcement Program (COZEEP)	\$ 2,176,000
<input checked="" type="checkbox"/>	b. Freeway Service Patrol	\$ 2,000,000
<input type="checkbox"/>	c. Traffic Management Team	
<input type="checkbox"/>	d. Helicopter Surveillance	\$
<input type="checkbox"/>	e. Traffic Surveillance Stations (Loop Detector and CCTV)	\$
<input type="checkbox"/>	f. Others _____	\$

4) Construction Strategies

- a. Lane Closure Chart
- b. Reversible Lanes
- c. Total Facility Closure
- d. Contra Flow
- e. Truck Traffic Restrictions \$ _____
- f. Reduced Speed Zone \$ _____
- 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 = \$ 9,051,000

Project Notes:

The project will modify the SR-91/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 5. 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 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 San Gabriel River bridge widening
- Construct E91-N605 connector bridge
- Construct W91-S605 connector bridge
- Construct Studebaker Rd bridge widening
- Construct W91-N and S605 connector bridge widening
- Construct portion of S605-E91 loop ramp connector
- Construct portion of RTE 91/605 separation
- Construct portion of N605-W91 loop ramp connector

Stage 2:

- Construct portion of RTE 91/605 separation
- Construct portion of SR-91

Stage 3:

- Construct portion of RTE 91/605 separation

Stage 4:

- Construct portion of RTE 91/605 separation
- Construct portion of SR-91
- Construct portion of N605-W91 loop ramp connector
- Construct portion of S605-E91 loop ramp connector

Stage 5:

- Construct portion of I-605

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): $\$85 \times 2 \times 12,800 \text{ hours} = \$2,176,000$

Freeway Service Patrols (FSP) are required at closure events. To estimate the FSP budget, it is also assumed there will be a total of 200 closure events at a cost of \$10,000 per event during the course of the project for a total of \$2,000,000.

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

(Preliminary TMP Elements and Costs)

Co/Rte/PM LA-605-PM 2.87/6.36; EA/ 07-29810K/
LA-91-PM 14.10/19.81 EFIS 0713000240 Alternative No. 3 (PSR-PDS)

Project Limit Between Excelsior Drive (on I-605) and Downey Avenue (on SR-91) and
Carson Street/Del Amo Boulevard (on I-605) and Shoemaker Avenue (on SR-91)

Project Description SR-91 and I-605 Interchange Improvements

1) Public Information

<input checked="" type="checkbox"/>	a. Brochures and Mailers	\$ 1,000,000
<input checked="" type="checkbox"/>	b. Press Release	
<input type="checkbox"/>	c. Paid Advertising	\$
<input type="checkbox"/>	d. Public Information Center/Kiosk	\$
<input checked="" type="checkbox"/>	e. Public Meeting/Speakers Bureau	\$ 200,000
<input type="checkbox"/>	f. Telephone Hotline	
<input checked="" type="checkbox"/>	g. Internet	
<input checked="" type="checkbox"/>	h. Others <u>Website Design and Maintenance</u>	\$ 75,000

2) Motorists Information Strategies

<input type="checkbox"/>	a. Changeable Message Signs (Fixed)	\$
<input checked="" type="checkbox"/>	b. Changeable Message Signs (Portable)	\$ 2,250,000
<input checked="" type="checkbox"/>	c. Ground Mounted Signs	\$ 500,000
<input type="checkbox"/>	d. Highway Advisory Radio	\$
<input type="checkbox"/>	e. Caltrans Highway Information Network (CHIN)	
<input type="checkbox"/>	f. Others _____	\$

3) Incident Management

<input checked="" type="checkbox"/>	a. Construction Zone Enhanced Enforcement Program (COZEEP)	\$ 1,632,000
<input checked="" type="checkbox"/>	b. Freeway Service Patrol	\$ 2,000,000
<input type="checkbox"/>	c. Traffic Management Team	
<input type="checkbox"/>	d. Helicopter Surveillance	\$
<input type="checkbox"/>	e. Traffic Surveillance Stations (Loop Detector and CCTV)	\$
<input type="checkbox"/>	f. Others _____	\$

4) Construction Strategies

- a. Lane Closure Chart
- b. Reversible Lanes
- c. Total Facility Closure
- d. Contra Flow
- e. Truck Traffic Restrictions \$ _____
- f. Reduced Speed Zone \$ _____
- 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 = \$ 7,657,000

Project Notes:

The project will modify the SR-91/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 150 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 \$2,250,000. 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 San Gabriel River bridge widening
- Construct E91-N605 connector bridge
- Construct W91-S605 connector bridge
- Construct Studebaker Rd bridge widening
- Construct W91-N and S605 connector bridge widening

Stage 2:

- Construct portion of RTE 91/605 separation widening
- Construct portion of SR-91
- Construct portion of S605-E91 loop ramp connector

Stage 3:

- Construct portion of RTE 91/605 separation widening
- Construct portion of Studebaker Rd bridge widening
- Construct portion of SR-91
- Construct portion of I-605

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 1,200 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): $\$85 \times 2 \times 9,600 \text{ hours} = \$1,632,000$

Freeway Service Patrols (FSP) are required at closure events. To estimate the FSP budget, it is also assumed there will be a total of 200 closure events at a cost of \$10,000 per event during the course of the project for a total of \$2,000,000.

Attachment G

Conceptual Cost Estimate – Right-of-Way Component

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Mohamed Ahmed

Date: May 14, 2014

From: Adrian Anderson
 RBF Consulting

07 - LA - 605 – PM 2.87/PM 6.36,
 07 - LA - 91 – PM 14.10/PM 19.81
 Project ID - 0713000240
 EA 07-29810
 Project Description: I-605/SR-91
 PSR-PDS Alternative 1

A Field Review was conducted YES NO

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.

Right of Way Required YES NO

Number of Fee Parcels 1-10 11-25 26-50 51-100 >100 >200
 Number of Easement Parcels 1-10 11-25 26-50 51-100 >100 >200

Urban Rural

Land Area: Fee 62,500 SF Easement 78,000 SF

Displaced Persons/Businesses YES NO

Demolition/Clearance YES NO

Railroad Involvement YES NO

Utility Involvements YES NO 50-75 Number of utilities in area (Anticipated Utility Facility Impacts)

Cost Estimates

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

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

07 - LA - 605 – PM 2.87/PM 6.36,
 07 - LA - 91 – PM 14.10/PM 19.81
 Project ID - 0713000240
 EA 07-29810
 Project Description: I-605/SR-91
 PSR-PDS Alternative 2

A Field Review was conducted YES NO

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.

Right of Way Required YES NO

Number of Fee Parcels 1-10 11-25 26-50 51-100 >100 >200

Number of Easement Parcels 1-10 11-25 26-50 51-100 >100 >200

Urban Rural

Land Area: Fee 993,000 SF Easement 259,500 SF

Displaced Persons/Businesses YES NO

Demolition/Clearance YES NO

Confirm Railroad Involvement YES NO

Utility Involvements YES NO 50-75 Number of utilities in area (Anticipated Utility Facility Impacts)

Cost Estimates

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

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

07 - LA - 605 – PM 2.87/PM 6.36,
 07 - LA - 91 – PM 14.10/PM 19.81
 Project ID - 0713000240
 EA 07-29810
 Project Description: I-605/SR-91
 PSR-PDS Alternative 3

A Field Review was conducted YES NO

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.

Right of Way Required YES NO

Number of Fee Parcels 1-10 11-25 26-50 51-100 >100 >200

Number of Easement Parcels 1-10 11-25 26-50 51-100 >100 >200

Urban Rural

Land Area: Fee 337,500 SF Easement 111,000 SF

Displaced Persons/Businesses YES NO

Demolition/Clearance YES NO

Confirm Railroad Involvement YES NO

Utility Involvements YES NO 50-75 Number of utilities in area (Anticipated Utility Facility Impacts)

Cost Estimates

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

Capital Costs \$0 - \$100,000 \$5,000,001 - \$15,000,000
 \$100,001 - \$500,000 \$15,000,001 - \$50,000,000
 \$500,001 - \$1,000,000 \$50,000,001 - \$100,000,000
 \$1,000,001 - \$5,000,000 >\$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 07-29810					Project Name: I-605 / SR-91 PSR-PDS			Project Manager: Mumbie Cole			Date Created: 11/11/2013	Last Updated: 5/13/2014					
					Co - Rte - PM: LA-605-2.87/6.36, LA-91-14.10/19.81			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	07-29810-01	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	07-29810-02	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 chaves@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	07-29810-03	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	07-29810-04	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	07-29810-05	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	07-29810-06	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	07-29810-07	Active	Threat	ENV	11/11/13	Update of Biological Assessment	Environmental Requirement	TIME	Probability 2=Low (10-19%) Low Impact		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	

Project Risk Register

DIST- EA 07-29810						Project Name: I-605 / SR-91 PSR-PDS			Project Manager: Mumbie Cole				Date Created: 11/11/2013	Last Updated: 5/13/2014			
						Co - Rte - PM: LA-605-2.87/6.36, LA-91-14.10/19.81			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)
									4 =Med								
8	07-29810-08	Active	Threat	DESIGN	11/11/13	Mainline Pavement Rehabilitation	Design Performance and Reliability	SCOPE	Med	3=Med (20-39%)	Adrian Anderson (949) 855-5780 atanderson@rbf.com	Caltrans requires rehabilitation 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	07-29810-09	Active	Threat	DESIGN	11/11/13	Special Aesthetic Design	Design / Environmental Requirement	TIME	Med	3=Med (20-39%)	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	07-29810-10	Active	Threat	ENV	11/11/13	Regulatory Permitting	Environmental Requirement	SCOPE	Med	3=Med (20-39%)	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	07-29810-11	Active	Threat	ENV	11/11/13	Right of Entry for Cultural Resources Data Recovery	Environmental Requirement	TIME	Med	2=Low (10-19%)	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	07-29810-12	Active	Threat	ENV	11/11/13	Unanticipated discoveries during Cultrual Resources data Recovery	Environmental Requirement	TIME	Med	3=Med (20-39%)	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	07-29810-13	Active	Threat	CON	11/11/13	Traffic Staging / Circulation Impacts from nearby project construction	Construction Requirement	TIME	High	2=Low (10-19%)	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	07-29810-14	Active	Threat	CON	11/11/13	Project Funding	Construction Requirement	TIME	High	2=Low (10-19%)	Ernesto Chaves (213) 922-7343 chaves@metro.net	Funding is limited or becomes unavailable for the project	MITIGATE	Agressively seek funding for the project		265 AWARDED AND APPROVED CONSTRUCTION CONTRACT	
									Impact 16 =Very High								

Project Risk Register

DIST- EA 07-29810						Project Name: I-605 / SR-91 PSR-PDS			Project Manager: Mumbie Cole				Date Created: 11/11/2013	Last Updated: 5/13/2014			
						Co - Rte - PM: LA-605-2.87/6.36, LA-91-14.10/19.81			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	07-29810-15	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 meetings	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	07-29810-16	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 chaves@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	07-29810-17	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 acquisition would require condemnation	ACCEPT	Negotiate with property owners and adjust schedule		225 OBTAIN RIGHT OF WAY INTERESTS FOR PROJECT RIGHT OF WAY CERTIFICATION	
18	07-29810-18	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	07-29810-19	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	07-29810-20	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 chaves@metro.net	Hazardous material is discovered	MITIGATE	Identify and implement hazardous materials removal plan		235 MITIGATE ENVIRONMENTAL IMPACTS AND CLEAN UP HAZARDOUS WASTE	
21	07-29810-21	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			

Project Risk Register

DIST- EA 07-29810						Project Name: I-605 / SR-91 PSR-PDS			Project Manager: Mumbie Cole				Date Created: 11/11/2013		Last Updated: 5/13/2014		
						Co - Rte - PM: LA-605-2.87/6.36, LA-91-14.10/19.81			Telephone: (213) 897-9355								
ITEM	ID #	Status	Threat / Opportunity	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	07-29810-22	Active	Threat	DESIGN	11/11/13	Increase in Material Costs	Design Requirement	COST	High		(949) 855-5780 atanderson@rbf.com	Economic rebound increases demand for building materials. Milestone submittal cost estimates identify an increasing cost trend	MITIGATE	activity on similar projects in the region. Monitor any policy decision(s) affecting project costs (i.e. MAP-21)		230 PREPARE DRAFT PS&E	
									Impact 8 =High								
23	07-29810-23	Active	Threat	DESIGN	11/11/13	Bridge Type Selection Denial	Design Requirement	TIME	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	
									Probability 1=Very Low (1-9%) Impact 16 =Very High								

Attachment I

Storm Water Data Report - Cover Sheet

Long Form - Storm Water Data Report



Dist-County-Route: 07-LA-605; 07-LA-91
 Post Mile Limits: (605) PM 2.87/PM 6.36; (91) PM 14.1/PM 19.81
 Project Type: Interchange Improvements
 Project ID (or EA): 0713000240; 07-29810
 Program Identification: _____
 Phase: PID-PSR-PDS
 PA/ED
 PS&E

Regional Water Quality Control Board(s): Los Angeles

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: 109 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.

[Signature] 6/2/14 [Signature] 6/20/14
 Kevin Everts, Date Mohamed Ahmed, Date
 Registered Project Engineer Caltrans Designated Oversight Representative

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

[Signature] 6/23/14
 Mumbie Cole, Project Manager Date

[Signature] 06-23-14
 Roger Castillo, Designated Maintenance Representative Date

[Signature] 06-24-14
 Ron Russak, Designated Landscape Architect Representative Date

[Stamp Required for PS&E only] [Signature] 6/24/2014
 Shirley Oak, District/Regional Design SW Coordinator or Designee Date

Attachment J

Nonstandard Design Features Matrix (bound separately)

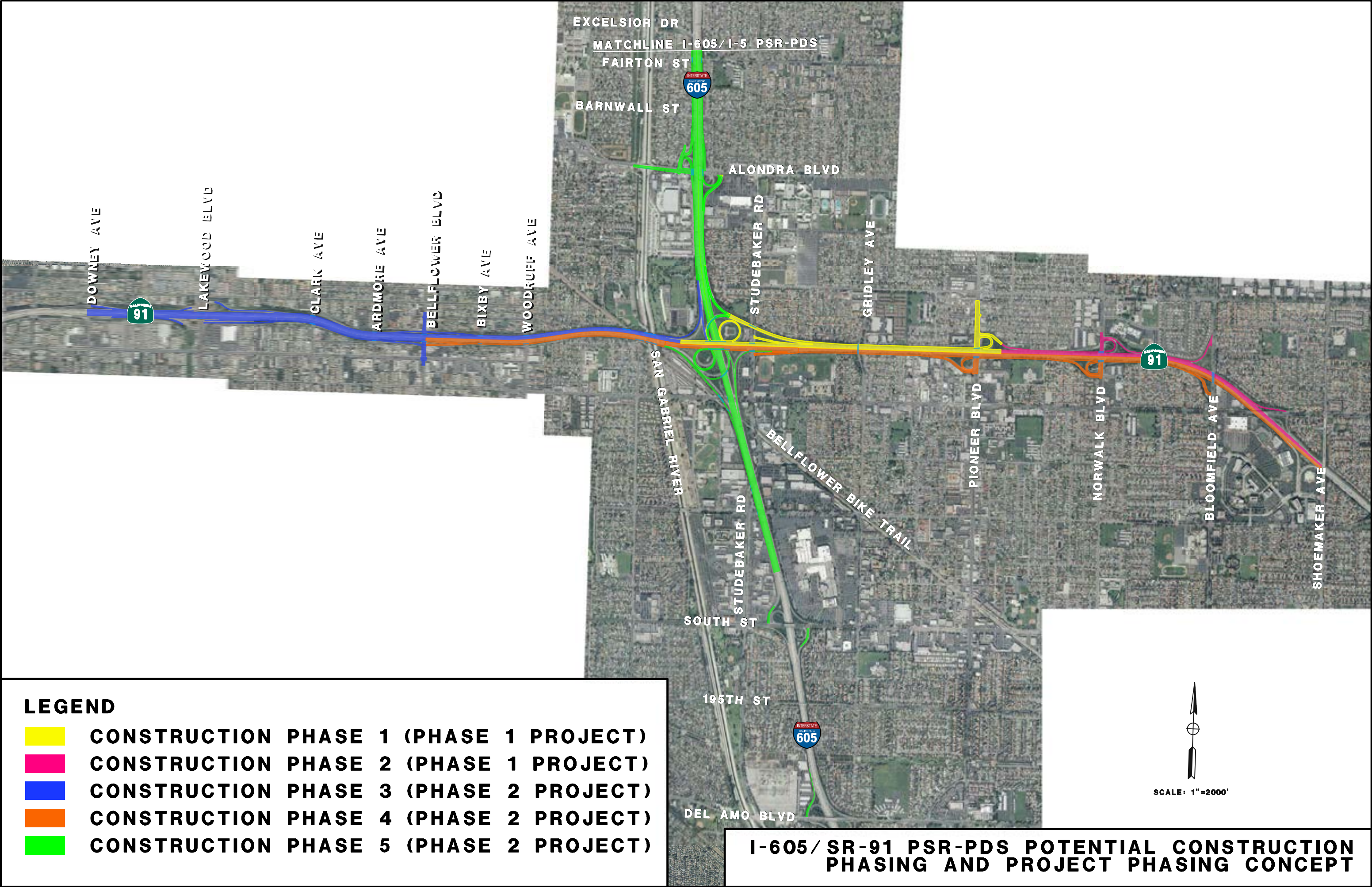
Attachment K

Preliminary Stage Construction Concept for I-605/SR-91 (bound separately)

Attachment L

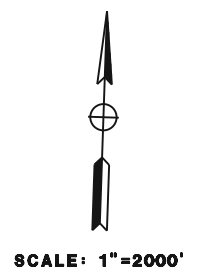
Potential Construction Phasing/Project Phasing Concept

H:\data\134662\CADD\Transp\WKE\Phasing\Overview_91-605.dgn 04-JUN-2014



LEGEND

- CONSTRUCTION PHASE 1 (PHASE 1 PROJECT)**
- CONSTRUCTION PHASE 2 (PHASE 1 PROJECT)**
- CONSTRUCTION PHASE 3 (PHASE 2 PROJECT)**
- CONSTRUCTION PHASE 4 (PHASE 2 PROJECT)**
- CONSTRUCTION PHASE 5 (PHASE 2 PROJECT)**



I-605/SR-91 PSR-PDS POTENTIAL CONSTRUCTION PHASING AND PROJECT PHASING CONCEPT