07-LA-105, PM R0.0/R18.1
EA 31450K – EFIS 0715000122 – PPNO 4858
Program Code: 20.20.075.651 – Program Name: Flexible Congestion Relief
July/2015

Project Study Report-Project Development Support

(PSR-PDS)

To

Request Programming for Capital Support (Project Approval and Environmental Document Phase) in the 2016 STIP

On Route I-105

Between Imperial Highway and California Street Intersection, West of I-405 in the City of El Segundo.

And Studebaker Road, East of I-605 in the City of Norwalk

APPROVAL RECOMMENDED:

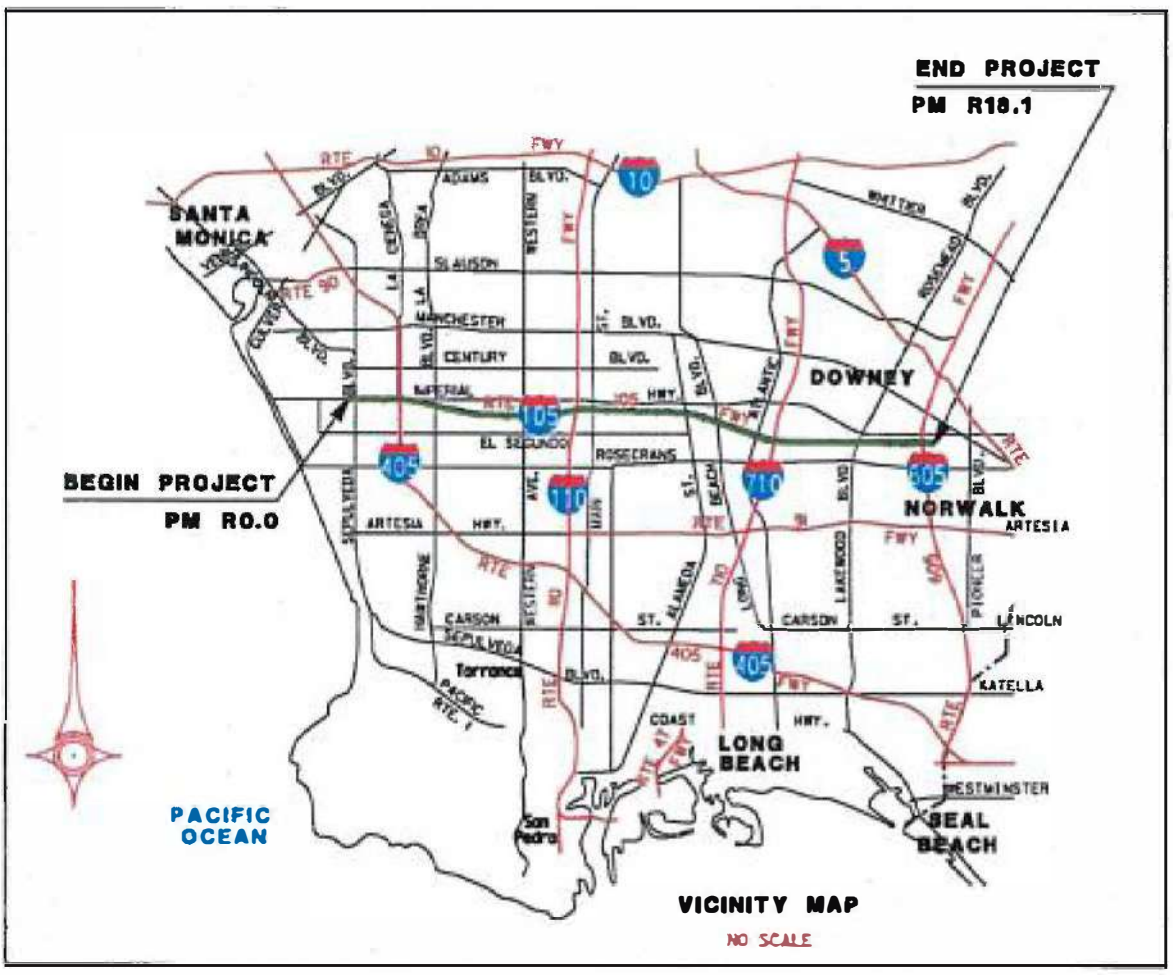
Mehdi Salehinik, *CALTRANS PROJECT MANAGER*

APPROVED:

Carrie Bowen, *DISTRICT DIRECTOR*

9/8/15
DATE

Vicinity Map



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.

HASSAN H ZADEH

07/27/2015
DATE

Table of Contents

1. INTRODUCTION

Project Description:

This project proposes to improve traffic condition on I-105 starting at Imperial Highway/California Street Intersection west of I-405 in the City of El Segundo, and terminating at Studebaker Road east of I-605 in the City of Norwalk, in Los Angeles County. This improvement will potentially enhance and mitigate the existing and forecasted future deficiencies in the operational capacity and safety on I-105. The improvements include converting High Occupancy Vehicle (HOV) lane to High Occupancy Toll (HOT) lane or adding additional HOT lane in each direction. For this purpose four (4) alternatives, shown below and described in Section 7 are considered:

Alternative 1: No-Build.
Alternative 2: Convert existing HOV to HOT lane.
Alternative 3: Convert existing HOV to two HOT lanes, with non-standard lane and shoulder widths
Alternative 4: Convert existing HOV to two HOT lanes, with standard lane and shoulder widths.

Project Limits	07-LA-105, PM R0.0/R18.1
Number of Alternatives	4
Current Capital Outlay Support Estimate for PA&ED	$5 to $15 million.
Current Capital Outlay Construction Cost Range	Alternative 2, $100 to $175 million. Alternative 3, $125 to $200 million. Alternative 4, $2,000 to $2,500 million.
Current Capital Outlay Right-of-Way Cost Range	Alternative 4, $50 - $100 million
Funding Source	Combination of Federal, State, and Local.
Type of Facility	8-lane freeway.
Number of Structures	Alternative 4, 90.
Anticipated Environmental Determination or Document	Environmental Impact Report/ Environmental Impact Statement (EIR/EIS).
Legal Description	In LA County, between California St/Imperial Highway Intersection and Studebaker Rd.
Project Development Category	4A

The remaining capital outlay support, right-of-way, and construction components of the project are preliminary estimates and are not suitable for programming purposes. Either a project report or a supplemental PID following the format of a PSR will serve as the programming document for the remaining components of the project. A project report will serve as approval of the "selected" alternative.

2. BACKGROUND

Interstate 105 (Glenn Anderson Freeway also referred to as the Century Freeway) is the major east-west commuter freeway in southern part of Los Angeles County. It is part of the California Freeway and Expressway System, and has been recognized as an essential link in a multi-modal transportation network. It originates in the City of El Segundo west of I-405, and terminates at Studebaker Road east of I-605 in the City of Norwalk. The Los Angeles Metro Green Line Light Rail Transit (LRT) runs in the median of I-105 for the majority of the route, providing rapid transit through south Los Angeles towards Los Angeles International Airport (LAX). Stations are in place at several interchanges thus allowing easy access to bus corridors along city streets.

The entire I-105 spans 18.1 miles and it is designed as a six-lane facility with auxiliary lanes between most on-ramps and off-ramps; plus an exclusive median transit way for LRT and HOV. The freeway has about 320-feet of right-of-way with wider widths at the interchanges and transit stations. The existing Mixed Flow (MF) and HOV lane widths are 12 ft. and right and left shoulder widths are typically 10 ft. The posted speed limit is 65 mph.

I-105 runs parallel to Imperial Highway and SR-91 linking LAX and it functions as a major collector distributor route feeding; Routes 405, 110, 710, 605 and local streets. This route is a part of the Federal Surface Transportation Assistance Act (STAA) Route Network for oversized Trucks and the Subsystem of Highways for the Movement of Extralegal Permit Loads (SHELL).There are several arterial streets paralleling I-105 that provide alternative routes to commuters wishing to avoid peak hour congestion on the freeway

Caltrans has initiated this project and held several meetings with Metro and the City of Los Angeles. This project has support from Metro and the City of Los Angeles.

3. PURPOSE AND NEED STATEMENT

Purpose:

The purpose of this project is to mitigate existing congestion, and thus enhance traffic operations and mobility on I-105. The proposed improvements along the I-105 corridor will accomplish the following objectives:

- Enhance operations and improve trip reliability, and travel times within the corridor,
- Improve the traffic flow by reducing the congested areas and therefore, offering the motorist a faster and reliable commute.
- Sustain and manage mobility within the corridor to include other transportation options such as managed lane.

Need:

Deficiencies on I-105 within the project limits are summarized below:

- Current daily traffic demand on some sections of I-105 exceeds capacity due to heavy traffic on both weekdays and weekends.

- The existing traffic of the mixed flow and HOV lanes of I-105 exceeds the capacity; thus future operating conditions will be further deteriorated.
- According to 2013 HOV Degradation Plan, the existing HOV facilities are degraded and the travel speed is below 45 MPH during peak periods.

4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT

The preliminary findings and recommendations of Traffic Engineering Performance Assessment (TEPA) are based on an assessment of the readily available information and data. Formal traffic engineering studies will be performed during the PA/ED phase.

Summary of preliminary finding and recommendations:

4.1. Forecasting, Modeling, and Traffic Analysis:

- The forecasted traffic data will be based on SCAG 2012 RTP model with the forecast years of 2025 and 2045.
- The Modeling Toolse/ Methodologies will be based on TransCAD and SCAG 2012 RTP regional Travel Demand Model.
- For each proposed alternative:
  1. Collect and analyze existing/current traffic data;
  2. Check the network for accuracy and code the new elements, if applicable into the model network;
  3. Perform model runs and process results;
  4. Prepare the forecasting analysis report
- The following studies need to be completed during the PA/ED phase:
  1. Concept of Operations.
  2. Traffic and Revenue Study.

4.2. Traffic Engineering Requirements:

- HOT lane program requires placement of many overhead signs and toll gantry equipment. Special design will be required for overhead signs and toll gantry equipment foundation next to the railroad tracks. In addition, speed and occupancy sensors and Express Lanes striping/pavement markings will be required.
- Existing elements such as CCTV cameras and changeable message signs systems need to be replaced/upgraded and incorporated into the new communication system.
- Replace/upgrade the existing communication system including installation of additional new equipment/devices in communication hubs and the Los Angeles Regional Transportation Management Center (LARTMC). The following are the communication hubs and LARTMC at:
  1. Los Angeles Airport (LAX-Hub), Southbound Route 405, west of Imperial Highway, PM 21.3;
  2. Norwalk (NWK-Hub): Northbound Route 5, south of Rosemead Blvd, PM 6.8
  3. Los Angeles Regional Transportation Management Center

(LARTMC-Hub): 2901 W. Broadway, Los Angeles, CA 90041, between Route 2 and Route 134 Interchange.

- Upgrade impacted electrical systems, including but not limited to Lighting and Sign Illumination, Ramp Meters, Count Stations, and Census Stations.
- Impacted ramp metering to be upgraded to the new design standards per DD-35-R1 and latest Ramp Metering Design Manual. There are 31 ramp meters and 18 connector meters within the project limits.
- Transportation Management Plan Data Sheet will be required at PA&ED phase.
- Upgrade Metal Beam Guard Rail (MBGR) and concrete barrier at left shoulder between PM 17.4 and PM 18.1.

4.3. Infrastructure Omissions:

- There is no direct HOV connector from the Eastbound 105 to Northbound 605.
- There are 16 choke points sections within the project limits. These segments are mainly located between successive off-ramps and on-ramps in each direction. For the Choke Point Locations List see Attachment I.

5. DEFICIENCIES

5.1 Existing deficiencies within the project limits are:

- Insufficient capacity to meet traffic demand, resulting in delays during the peak hours and reduced level of service.
- Existing constraints such as structures columns, right of way, and environmentally sensitive areas limits further development along the corridor.
- Higher than average accident rates along the eastbound direction:

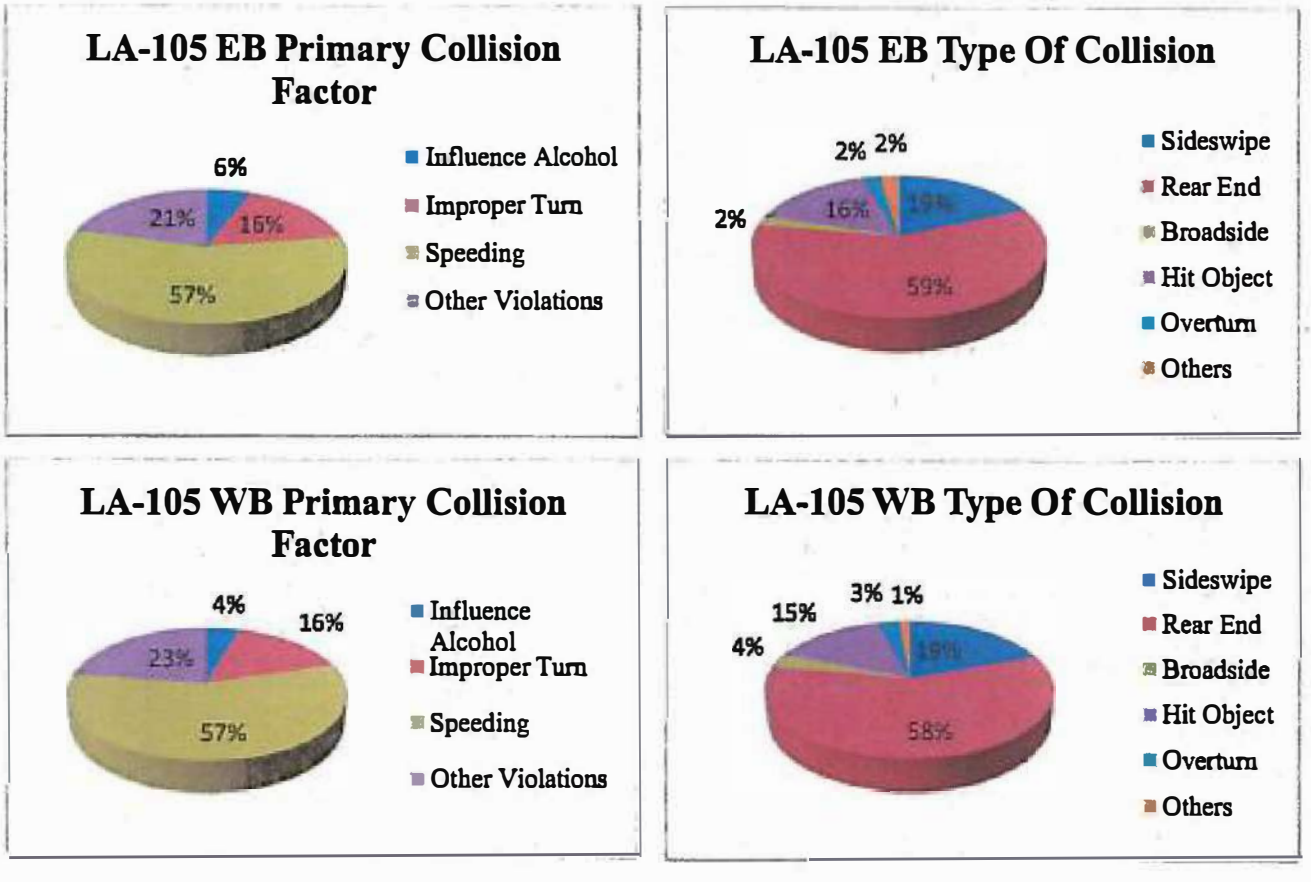
The Traffic Accident Surveillance and Analysis System – Transportation System Network (TASAS - TSN), Table B for the three years period of 04/01/2010 through 03/31/2013 is shown in Table 5-1. The actual accident rates of the eastbound direction are slightly higher than the average rates.

Table 5-1 Accident Rates

Location	Accident Rates					
I-105	Actual (Accidents/MVM)			Average (Accidents/MVM)		
	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
Eastbound	**0.004**	**0.29**	**0.91**	0.003	0.25	0.81
Westbound	0.002	0.24	0.78	0.003	0.25	0.81

- The intersection at the end of the EB 105 and Studebaker Road is a table C (high accident concentration) location as vehicles exiting freeway hit the MBGR.
- The accident data summary for this time period, for EB and WB directions is shown in Figure 5-1. These accident data reveals that majority of the accidents are rear-end collisions with speed being the primary cause.

Figure 5-1 Primary Collision Factor and Type of Collision



5.2. Traffic Data:

Average Annual Daily Traffic (AADT) for years 2015, 2025, and 2045 for various sections is shown in Table 5.2.

Table 5.2 Average Annual Daily Traffic

Dist	Route	County		Post Mile	Description	2015 AADT	2025 AADT	2045 AADT
7	105	LA	R	0.5	LOS ANGELES, JCT. RTE. 1	71000	75260	82786
7	105	LA	R	1.244	LOS ANGELES, DOUGLAS STREET	133000	140980	155078
7	105	LA	R	2.106	LOS ANGELES, JCT. RTE. 405	165000	174900	192390
7	105	LA	R	3.053	HAWTHORNE, HAWTHORNE BLVD	211000	223660	246026

Table 5.2 Average Annual Daily Traffic

Dist	Route	County		Post Mile	Description	2015 AADT	2025 AADT	2045 AADT
7	105	LA	R	4.705	INGLEWOOD, CRENSHAW BOULEVARD	220000	233200	256520
7	105	LA	R	6.766	LOS ANGELES, VERMONT AVENUE	255000	270300	297330
7	105	LA	R	7.386	LOS ANGELES, JCT. RTE. 110	232000	245920	270512
7	105	LA	R	8.903	LOS ANGELES, CENTRAL AVENUE	231000	244860	269346
7	105	LA	R	9.775	WILLOWBROOK, WILMINGTON AVENUE	236000	250160	275176
7	105	LA	R	11.506	LYNWOOD, LONG BEACH BOULEVARD	233000	246980	271678
7	105	LA	R	13.471	LYNWOOD, JCT. RTE. 710	233000	246980	271678
7	105	LA	R	14.65	SOUTHGATE, PARAMOUNT BOULEVARD	207000	219420	241362
7	105	LA	R	15.763	DOWNEY, LAKEWOOD BOULEVARD	230000	243800	268180
7	105	LA	R	16.639	DOWNEY, BELLFLOWER. BOULEVARD	214000	226840	249524
7	105	LA	R	17.823	NORWALK, JCT. RTE. 605	207000	219420	241362
7	105	LA	R	18.145	NORWALK, STUDEBAKER ROAD	18500	19610	21571

5.3. Level of Service (LOS):

Level of Service of the MF and HOV lanes, for No-Build (Alternative 1) and Build (Alternatives 2, 3, and 4) are shown in Table 5.3. Key findings of the freeway segment analysis show the following:

- The analyzed 2014 existing conditions and 2025/2045 (Alternativea- 1, No Build) Operational conditions will deteriorate further without improvements.
- The analyzed Alternative 2 (Convert HOV to HOT lane) will provide limited operations benefit compared to Alternative 1 (No Build) as no additional capacity is being added and the HOV occupancy requirement is not changing. Furthermore, assumptions were made that some HOV users would leave the HOT lanes and be replaced by single occupant toll-paying users. However, if the HOV users are not replaced by single occupant toll-paying users, then the Mixed Flow Lane (MFL) traffic conditions will deteriorate further.
- The analyzed Alternatives 3 and 4 will improve the I-105 MFL and HOT operational conditions for years 2025/2045 by adding capacity. The analysis of Alternatives 3 and 4 further assumes that some HOV users will leave the HOT lanes and will be replaced by single occupant toll-paying vehicles.

Table 5.3 – Level of Service

					Alternative 1 (No Build)		Alternative 2 (Convert HOV to HOT)		Alternative 3 & 4 (Convert HOV to 2 HOT)	
Dir	**Segment**	**From**	**To**	**LOS 2014**	**LOS 2025**	**LOS 2045**	**LOS 2025**	**LOS 2045**	**LOS 2025**	**LOS 2045**
West Bound	I-605 to I-710	WB ON from NB/SB 605	Lakewood on-ramp	C	D	D	C	D	C	C
		Lakewood on-ramp	I-710 UC	D	D	D	C	C	C	C
	I-710 to I-110	I-710 UC	Long Beach off-ramp	D	D	E	D	E	C	D
		Long Bch off-ramp	Imperial Hwy on-ramp	D	E	E	E	E	D	D
		Imperial Hwy on-ramp	NB I-110 on-ramp	E	F	F	F	F	D	D
	I-110 to SR-01	I-110 WB on-ramp	Vermont WB on-ramp	E	F	F	F	F	D	D
		Vermont WB on-ramp	WB Prairie off-ramp	E	F	F	E	E	D	D
		WB Prairie off-ramp	WB Imperial off-ramp*	D	F	F	E	E	D	D
East Bound	SR-01 to I-110	EB Imperial on-ramp**	EB Prairie on-ramp	D	D	E	D	D	C	D
		EB Prairie on-ramp	EB Hoover on-ramp	D	D	E	D	E	D	D
	I-110 to I-710	EB Hoover on-ramp	EB Long Beach off-ramp	D	D	E	D	D	C	D
		EB Long Bch off-ramp	EB Garfield off-ramp	D	D	E	D	D	D	D
	I-710 to I-605	EB Garfield off-Ramp	EB Lakewood off-ramp	D	D	E	C	C	C	C
		EB Lakewood off-ramp	NB/SB I-605 off-ramp	D	D	D	C	D	C	C

* End of HOV lane traveling westbound.
** Begin HOV lane traveling eastbound.

6. CORRIDOR AND SYSTEM COORDINATION

Freeway 105 is located within the LOS Angeles County. There are four freeway-to-freeway interchanges (I-405, I-110, I-605, and I-705) within the project limits. I-105 corridor is part of the California Freeway and Expressway System. Based on Transportation Concept Report (TCR) 2014, to have Level of Service D in year 2035 additional lanes are required.

There are two approved PSR-PDS to improve capacity/operations, within the project limits:

- EA 30380K, PM R3.1/R5.2 to widen the freeway at EB from 3 to 4 MFL; approved on 06/09/2014.
- EA 30120K, PM R3.1/R5.5 to widen the freeway at WB from 3 to 4 MFL; approved on 05/22/2014.

7. ALTERNATIVES

A total of four alternatives were studied. For Cross Sections see Attachment C.
Implementation of Active Traffic Management (ATM) strategies will be part of each alternative. ATM is a proactive traffic management approach which uses various strategies to dynamically manage and control traffic based on prevailing conditions for recurrent and non-recurrent congestion. These strategies include speed harmonization, queue warning, junction control, part-time shoulder use, dynamic re-routing and traveler information. These strategies will ultimately improve mobility and enhance safety by using real-time data, technology, and decision support structures for system operators to make informed, performance-driven decisions on how to manage traffic flow.

Alternative 1: No-Build.

- This alternative keeps the existing configuration with no improvement.

Alternative 2: Convert existing HOV to HOT lane.

This alternative keeps the existing configuration with the following improvements:

- Install Toll and communication infrastructures.
- Modify/Install Overhead Signs.

The proposed improvements will provide limited operations benefit compared to Alternative 1. It may not increase the capacity of the freeway; however, some sections of the freeway will have some improvements in the LOS, (see Table 5.3). This alternative will not impact the existing right of way and any of the structures. Storm Water Data Repot has identified 52 locations within the project limits for treatment BMPs. These proposed permanent treatment BMPs are recommended by the I-105 Corridor Storm Water Management Study Final Report dated, May 2012. Construction cost of the permanent treatment BMPs, construction site BMPs, and design pollution prevention BMPs are included in the estimated cost of the project.

- Vertical clearances of 6 structures are less than the required standard. See Table 7-1 and Attachment K.

Total Capital Outlay Cost of this alternative ranges from $100 to $175 million; See Attachment D.

Alternative 3: Convert existing HOV to two HOT lanes, with non-standard lane and shoulder widths.

This alternative keeps the existing configuration and includes the following improvements:

- Restripe the freeway to create two 12 ft. width HOT lanes. For this purpose the left shoulders width will be reduced to 2 ft., the buffer area widths to 2 ft., and 2 MFL widths to 11 ft.
- Install Toll and communication infrastructures.
- Modify/Install Overhead Signs.

The proposed improvements would meet the purpose and need of the project. It will increase the capacity and maintain or improve the current LOS. There is no impact on the existing right of way and structures. Storm Water Data Repot has identified 52 locations within the project limits for treatment BMPs. These proposed permanent treatment BMPs are recommended by the I-105 Corridor Storm Water Management Study Final Report, dated May 2012. Construction cost of the permanent treatment BMPs, construction site BMPs, and design pollution prevention BMPs are included in the estimated cost of the project.

- Non-standard features, shown on Table 7-1 include:
  1. Lane width of 2 MFL at each direction is 11ft.
  2. Vertical clearances of 6 structures are less than the required standard. See Table 7-1 and Attachment K.

Total Capital Outlay Cost of this alternative ranges from $125 to $200 million; See Attachment D.

Alternative 4: Convert existing HOV to two HOT lanes, with standard lane and shoulder widths.

This alternative includes the following improvements:

- Widen Freeway by 12 ft. on both directions to provide 2 HOT lanes in each direction.e
- Install new fiber optics and relevant equipment under the new shoulders.
- Relocate drainage system.
- Relocate dewatering and control wells. Further coordination will be needed with: Head Quarter's Geotechnical Office, the Water Replenishment District (WRD), and the Regional Water Quality Control Board (RWQCB).
- Reconstruct interchanges, Over Crossings and widen Under Crossings.
- Relocate sound walls.

- Construct new retaining walls.
- Acquire right of way including 2 large commercial and 32 residential buildings.
- Install Toll and communication infrastructures.
- Modify/Install Overhead Signs.

The proposed improvements would meet the purpose and need of the project. It will increase the capacity and maintain or improve the current LOS. Right of way acquisitions include 2 large commercial and 32 residential buildings. Fifty four (54) structures need to be widened or modified and 36 structures (mainly at interchanges) need to be reconstructed. Fifty four (54) on/off ramps will be impacted. Storm Water Data Repot has identified 52 locations within the project limits for treatment BMPs. These proposed permanent treatment BMPs are recommended by the I-105 Corridor Storm Water Management Study Final Report dated May 2012. Construction cost of the permanent treatment BMPs, construction site BMPs, and design pollution prevention BMPs are included in the estimated cost of the project.
Total Capital Outlay Cost of this alternative ranges from $2,000 to $2,500 million; See Attachment D.

Table 7-1 Design Exceptions

Design Standards Risk Assessment			
Alter-native	**Design Standards from Highway Design Manual (HDM):**	**Probability of Design Exception Approval (None, Low, Medium, High,)**	**Justification for Probability Rating**
2 and 3	**HDM Section 309.2: Vertical clearances standard for freeway is 16.5 ft. and for local street is 15 ft.** Existing and proposed vertical clearances of 6 structures are less than the required standard. See Attachment K.	**Medium**	1. Reconstruction cost of structures for freeway and local streets. 2. Possible right of way and environmental impact.

3	**HDM Section 301.1:** **Lane width standard for freeway is 12 ft.** Proposed lane widths of 2 lanes in each direction are 11ft. **HDM Section 302.1:** **Left shoulder width standard for freeway is 10 ft.** Proposed shoulder widths of the left shoulders are 2 ft.	**Low**	1. Reconstruction cost of structures for freeway and local streets. 2. Possible right of way and environmental impact.

8. RIGHT-OF-WAY

No additional right of way is anticipated for Alternatives 1, 2, and 3. Alternative 4 impacts 2 large commercials and 32 residential buildings. See Attachment G.

Utilities:

Alternatives 1, 2, and 3 do not impact utilities. Alternative 4 impacts on utilities are:

1. Pothole: 1-12" Union Oil line on sidewalk at SW of La Cienega Blvd and Rte105.
2. Pothole: 1-10" VCP sanitary sewer in concrete encasement about 620' from NB Western Ave and EB Rte105.
3. Pothole: 1-10" VCP sanitary sewer in concrete encasement about 570' from NB Western Ave and WB Rte105.
4. Pothole: 1-18" VCP sanitary sewer shipon NE at Arthur Ave and Rte 105.
5. Pothole: 1-18" VCP sanitary sewer shipon NW at Arthur Ave and Rte 105.
6. Relocate: Edison Steel Riser Pole on sidewalk at SW of La Cienega Blvd and Rte105.
7. Relocate: Electrical Tower (OH Transmission Line) NE at Western Ave and Rte105.
8. Relocate: Power Pole at NE Mona Blvd and Imperial Hwy.
9. Relocate: Underground SCE line along sidewalk EB on Imperial Hwy from Mona Blvd to Philadelphia Way.
10. Relocate: SCE Wooden Power Pole along EB off-ramp to Garfield Ave.
11. Relocate: 1-12" in 16" Casing Torrey Oil Co on NB sidewalk at La Cienega Blvd and Rte105.
12. Relocate: 1-8" Cement pipe sewer on NB sidewalk at La Cienega Blvd and Rte105.
13. Relocate: 1-8" Cast iron water line City of Lynwood 600' from Alameda St. along Philadelphia Way Frontage Rd.
14. Relocate: OH AT&T line along EB off-ramp to Garfield Ave.

Railroad:

Alternative 4 impacts the Union Pacific Railroad (UPRR) right of way, which runs parallel to the EB I-105 at PM 6.5 between Budlong Ave and VermontaAve. In the event our contractors need

to enter onto UPRR's right of way, a right of entry and service contract will need to be executed. Furthermore, if it is determined that the realignment of the roadway will result in the new roadway being within 25' of the centerline of the existing track, an agreement with UPRR will need to be reached to relocate those tracks.

9. STAKEHOLDER INVOLVEMENT

The main stakeholders on the project are Caltrans, Los Angeles County Metropolitan Transportation Authority (Metro), and City of Los Angeles. Several meetings have been held between Caltrans, Metro, and the City of Los Angeles representatives. Metro and City of Los Angeles are both in support of this project.

10. ENVIRONMENTAL DETERMINATION/DOCUMENTATION

A Preliminary Environmental Analysis Report (PEAR) was approved on July 15, 2015. The anticipated environmental document is Environmental Impact Repot (EIR) for CEQA and Environmental Impact Statement (EIS) for NEPA, See Attachment E.

The following technical studies will be required during PA/ED phase:

- Air Quality Review Report.
- Bioacoustics Study Report (Noise and Vibration).
- Community Impact Assessment Report.
- Cultural Resources.
- Hazardous Waste Assessment.
- Location Hydraulic Study.
- Natural Environmental Study report (Biology).
- Storm Water Data Report.
- Traffic Analysis.
- Visual Impact Assessment.
- Geotechnical Report.
- Greenhouse Gas Analysis.
- Relocation Impact Report.

11. FUNDING

It has been determined that this project is eligible for Federal-aid funding; and it is proposed to use a combination of potentially available federal, state and local funds to fully fund the project. This project has support from Metro and the City of Los Angeles.

Capital Outlay Project Estimate

	Range of Estimate		STIP Funds		Other Funds	
Alternative	Construction ($1,000,000)	Right-of-Way ($1,000,000)	Construction	Right-of-Way	Construction	Right-of-Way
1	0	0	0	0	0	0
2	100 to 175	0	TBD	TBD	TBD	TBD
3	125 to 200	0	TBD	TBD	TBD	TBD
4	2,000 to 2,500	50 to 100	TBD	TBD	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.

Capital Outlay Support Estimate

The capital outlay support estimate for programming PA&ED in the 2016 STIP is $5 to $15 million. However, if alternative 4 is selected the capital outlay support could be higher.

12. SCHEDULE

Alternative 2 & 3:

Project Milestones	WBS	Schedule Deliver Date
Circulate DED Externally	M120	12/13/2016
PA&ED	M200	10/10/2017
Project PS&E	M380	08/20/2019
Right of Way Certification	M410	12/02/2019
Ready to List	M460	12/13/2019
Award	M495	06/17/2020
Approve Contract	M500	08/11/2020
Contract Acceptance	M600	07/19/2023
End Project	M800	06/16/2024

The anticipated funding fiscal year for construction is 2019/2020.

Alternative 4:

Project Milestones	WBS	Schedule Deliver Date
Circulate DED Externally	M120	08/15/2017
PA&ED	M200	06/19/2018
Project PS&E	M380	05/05/2021
Right of Way Certification	M410	07/06/2021
Ready to List	M460	07/20/2021
Award	M495	01/06/2022
Approve Contract	M500	02/14/2022
Contract Acceptance	M600	09/04/2025
End Project	M800	08/10/2026

The anticipated funding fiscal year for construction is 2021/2022.

13. RISKS REGISTER

Risk Register is shown in Attachment H.

14. FHWA COORDINATION

This project is considered to be an Assigned Project in accordance with the current FHWA and Department of Transportation (Caltrans) Joint Stewardship and Oversight Agreement. This was concurred by the FHWA Liaison Engineer Josue M. Yambo, on January 28, 2015.

15. PROJECT REVIEWS

Field Review _____ Date 02/11/2015
District Maintenance _____ Shawn Enjily _____ Date 06/11/2015
District Traffic Safety Engineer _____ Yunus Ghausi _____ Date 06/11/2015
Office of Design A _____ Mario Guitierrez ___ Date 06/11/2015
Environmental Planning _____ Dawn Kukla _____ Date 07/15/2015
Headquarters Project Delivery Coordinator Peter Vacura _____ Date 07/20/2015
Project Manager _____ Mehdi Salehinik ____ Date 06/09/2015
FHWA _____ Josue M Yambo ____ Date 06/11/2015
Quality Review _____ Date 07/09/2015
Metro Review _____ Shahrzad Amiri _____ Date 07/21/2015
City of Los Angeles Review _____ Borja Leon _____ Date 08/04/2015

16. PROJECT CONTACTS

16A. DISTRICT CONTACTS:

Mehdi Salehinik Project Manager, Project Management	213-897-7195
Marco Ruano, Chief, Office of Project and Special Studies	213-897-9863
Albert A Andraos Senior Transportation Engineer, Office of Project and Special Studies	213-897-4921
Hassan Hossein Zadeh Project Engineer, Office of Project and Special Studies	213-897-4160
Saleh Kibria Transportation Engineer, Office of Project and Special Studies	213-897-5328
Dawn Kukla Senior Environmental Planner, Division of Environmental Planning	213-897-3643
Douglas Hoover Office Chief, Right of Way Appraisals, Planning, and Management	213-897-8553
Zoe Yue Office of Design A	213-897-0137

16B. METRO CONTACTS:

Shahrzad Amiri	213-922-3061
Kathy McCune	213-922-7241

16C. CITY OF Los Angeles CONTACTS:

Borja Leon	213-473-9771
Daniel Rodman	213-978-2751

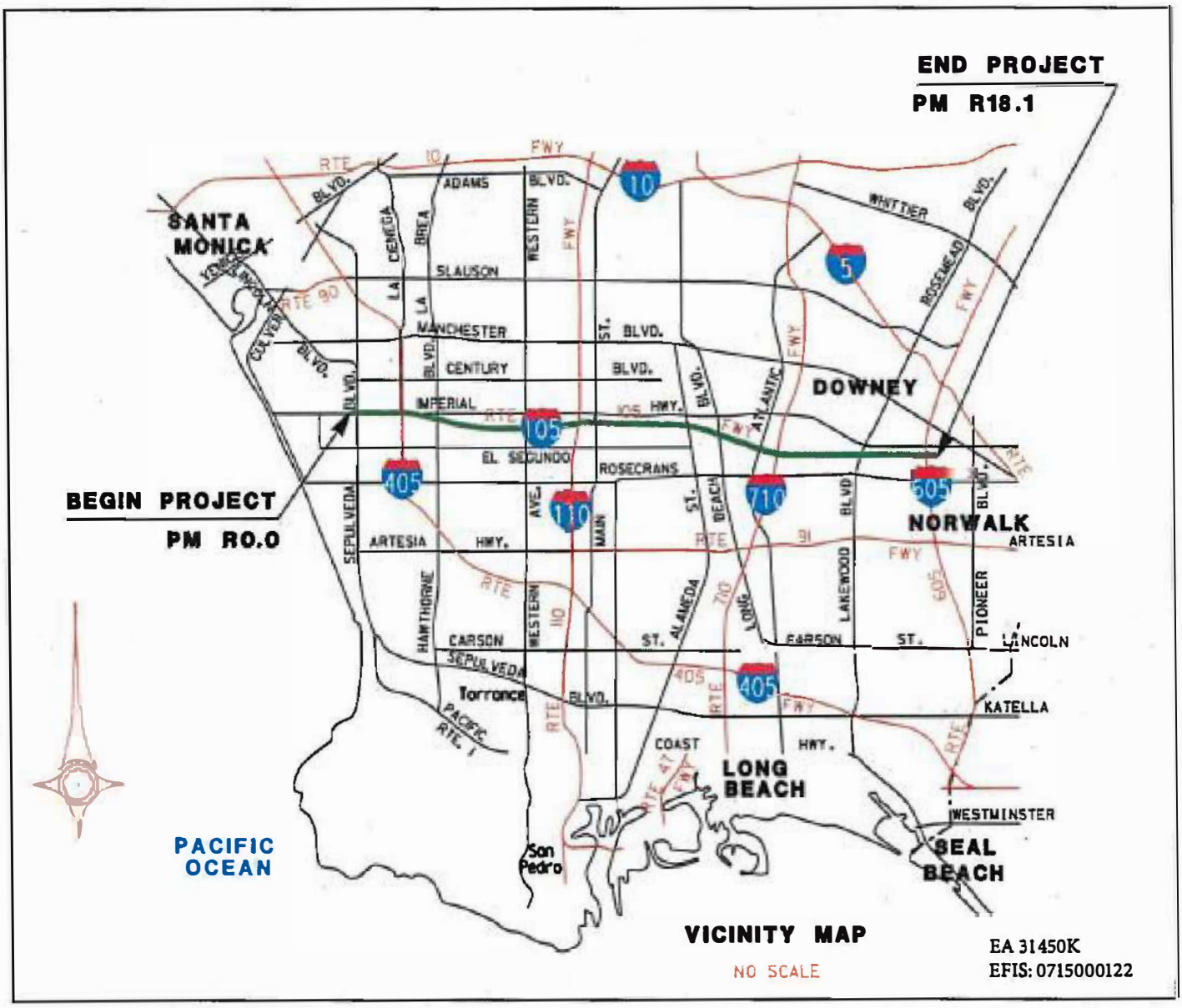
17. ATTACHMENTS

A. Vicinity map.
B. Strip Map
C. Cross Sections.

D. Capital Outlay Project Estimate.
E. Preliminary Environmental Analysis Report (PEAR).
F. Transportation Planning Scoping Information Sheet.
G. Right-of-Way Conceptual Cost Estimate Component.
H. Risk Register.
I. Choke Point Location List.
J. Storm Water Data Report.
K. Structures With Non-Standard Vertical Clearance.

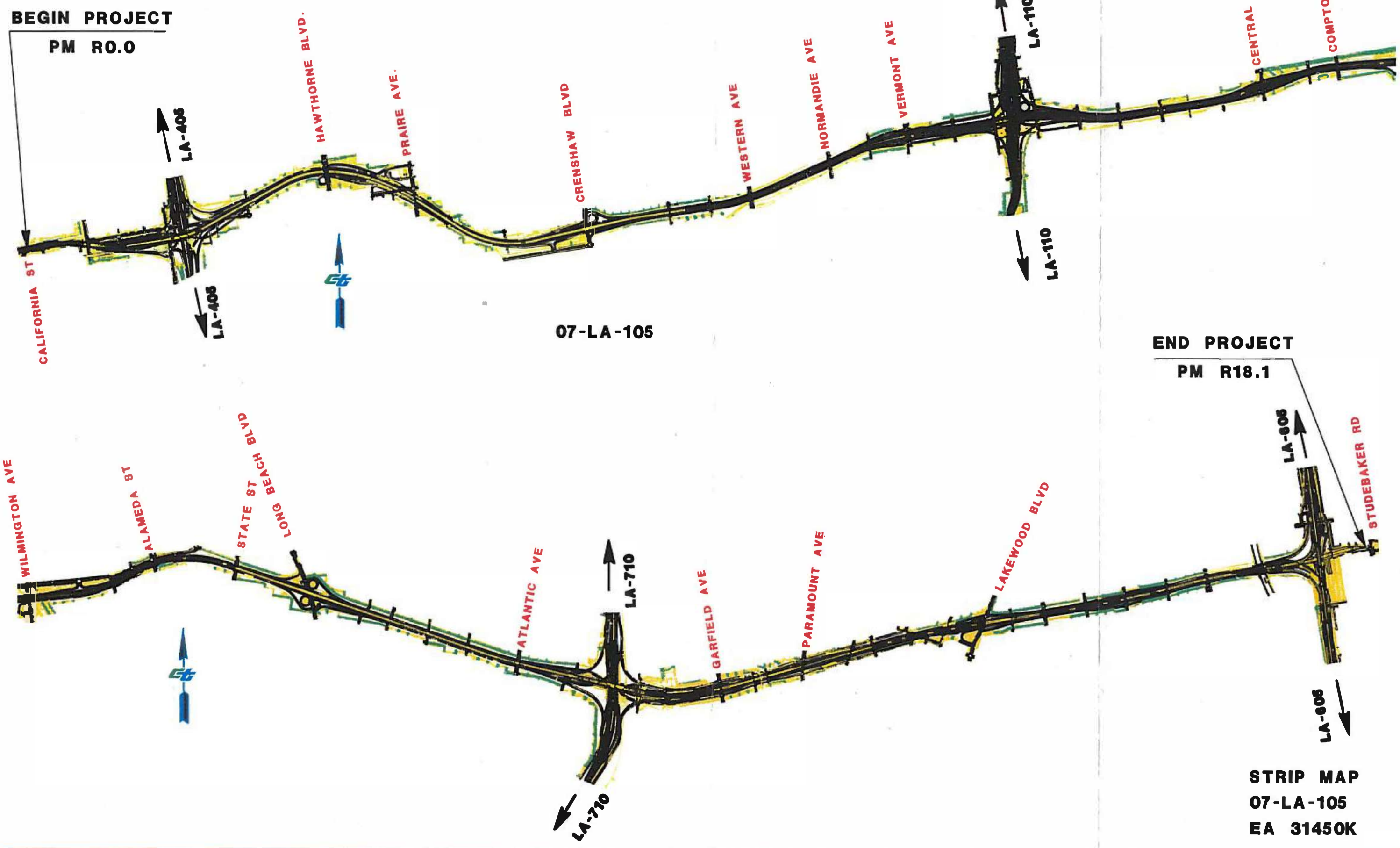
ATTACHMENT A

VICINITY MAP


END PROJECT
PM R18.1
BEGIN PROJECT
PM R0.0
SANTA MONICA
DOWNEY
NORWALK
ARTESIA
LONG BEACH
Torrance
San Pedro
SEAL BEACH
WESTMINSTER
LAKEWOOD
PIONEER
LINCOLN
KATELLA
PACIFIC OCEAN
VICINITY MAP
NO SCALE
EA 31450K
EFIS: 0715000122

ATTACHMENT B

STRIP MAP


BEGIN PROJECT
PM R0.0
CALIFORNIA ST
LA-405
LA-405
HAWTHORNE BLVD.
PRAIRE AVE.
CRENSHAW BLVD
WESTERN AVE
NORMANDIE AVE
VERMONT AVE
LA-110
LA-110
CENTRAL AVE
COMPTON AVE
07-LA-105
END PROJECT
PM R18.1
WILMINGTON AVE
ALAMEDA ST
STATE ST
LONG BEACH BLVD
ATLANTIC AVE
LA-710
LA-710
GARFIELD AVE
PARAMOUNT AVE
LAKEWOOD BLVD
LA-605
LA-605
STUDEBAKER RD
STRIP MAP
07-LA-105
EA 31450K

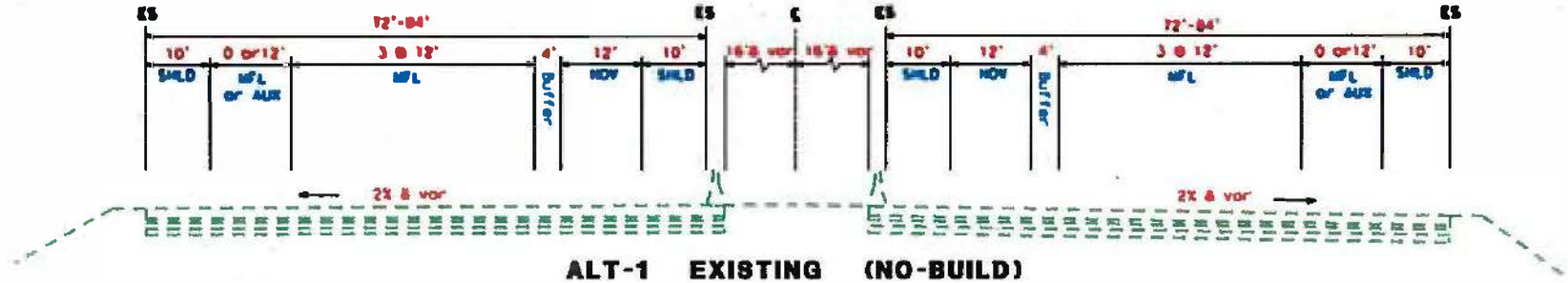
ATTACHMENT C

TYPICAL CROSS SECTIONS

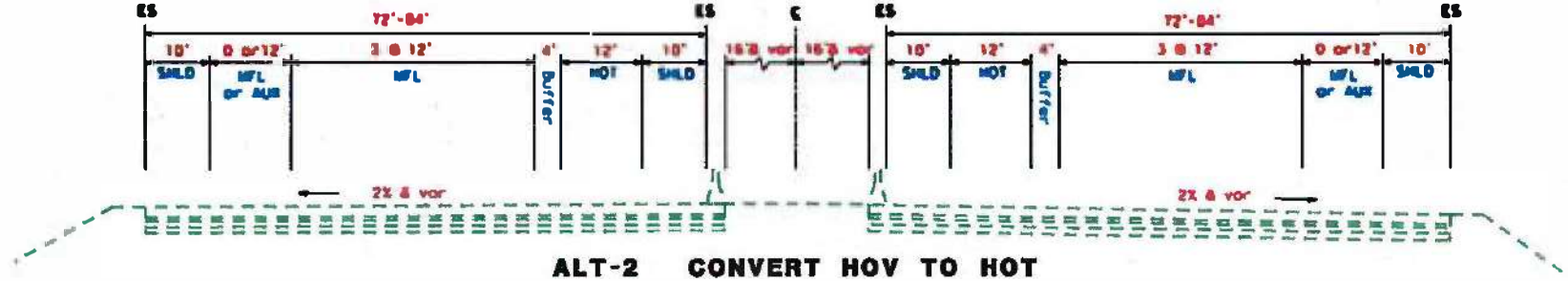
07	LA	105	R0.0/R18.1

WESTBOUND RTE 105

EASTBOUND RTE 105



ALT-1 EXISTING (NO-BUILD)



ALT-2 CONVERT HOV TO HOT

TYPICAL CROSS SECTIONS

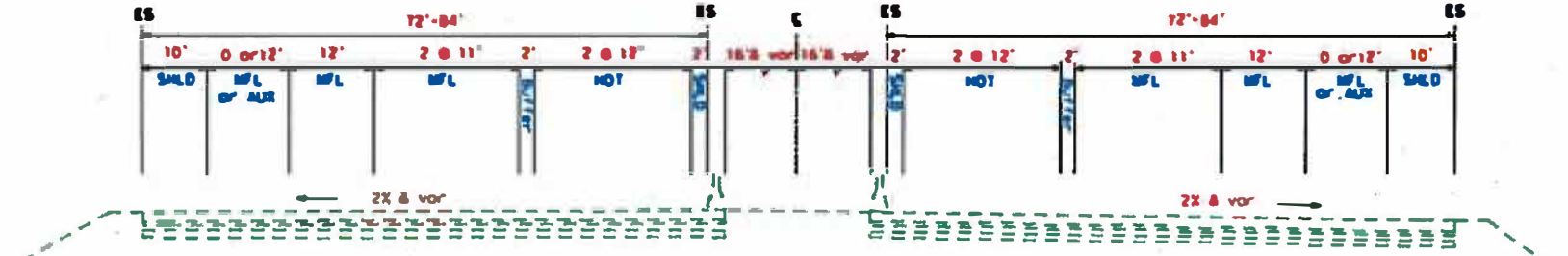
NO SCALE X-1

EA 31450K

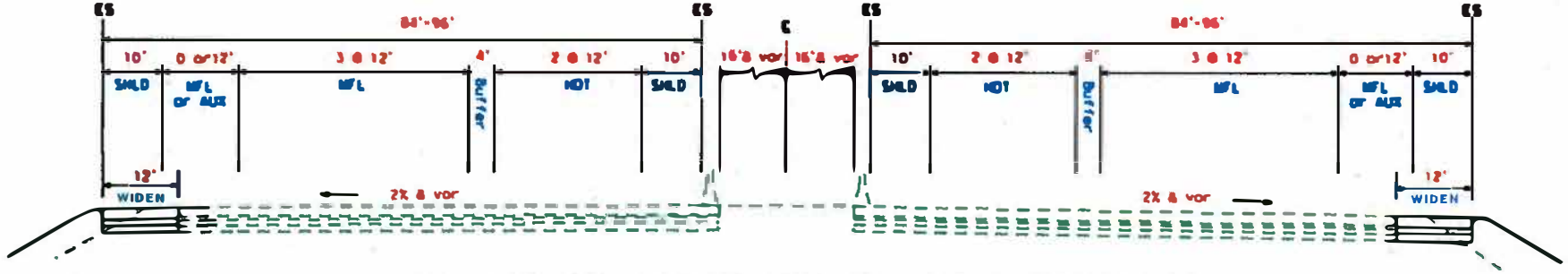
07	LA	105	R0.0/R18.1

WESTBOUND RTE 105

EASTBOUND RTE 105



ALT-3 CONVERT HOV TO TWO HOT LANES (NON-STANDARD)



ALT-4 CONVERT HOV TO TWO HOT LANES (STANDARD)

TYPICAL CROSS SECTIONS

NO SCALE X-2

ATTACHMENT D

CAPITAL OUTLAY PROJECT ESTIMATE

Project Study Report – Project Development Support
Capital Outlay Project Estimate

Dist- Co- Rte: 07-LA-105

PM: R0.0/R18.1

Program Code: 20.20.075.651

Project Number: EA 31450K

Month/Year: May/2015

PROJECT DESCRIPTION:

Limits: Imperial Highway and California Street Intersection, West of I-405 in the City of El Segundo and Studebaker Road, East of I-605 in the City of Norwalk.

Scope: Convert HOV to HOT lane.

Alternative: 2

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$100 to $175 million
TOTAL STRUCTURE ITEMS	$0
TOTAL ENVIRONMENTAL MITIGATION ITEMS	Included in Roadway Items
SUBTOTAL CONSTRUCTION COSTS	$100 to $175 million
TOTAL RIGHT-OF-WAY ITEMS	$0
TOTAL PROJECT CAPITAL OUTLAY COSTS	$100 to $175 million

Project Study Report – Project Development Support
Capital Outlay Project Estimate

Dist - Co – Rte: 07-LA-105

PM: R0.0/R18.1

Program Code: 20.20.075.651

Project Number: EA 31450K

Month/Year:aMay/2015

PROJECT DESCRIPTION:

Limits: Imperial Highway and California Street Intersection, West of I-405 in the City of El Segundo and Studebaker Road, East of I-605 in the City of Norwalk.

Scope: Convert HOV to 2 HOT lanes (non-standard).

Alternative: 3

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$125 to $200 million
TOTAL STRUCTURE ITEMS	$0
TOTAL ENVIRONMENTAL MITIGATION ITEMS	Included in Roadway Items
SUBTOTAL CONSTRUCTION COSTS	$125 to $200 million
TOTAL RIGHT-OF-WAY ITEMS	$0
TOTAL PROJECT CAPITAL OUTLAY COSTS	$125 to $200 million

III. ENVIRONMENTAL MITIGATION

	Quantity	Unit		Unit Price		Item Cost
Environmental Mitigation	_____	_____	X	_____	=	_____

Explanation:
Cost included in the roadway items.

TOTAL ENVIRONMENTAL MITIGATION ITEMS $_____

IV. RIGHT-OF-WAY ITEMS

	Escalated Value
A. Acquisition, including excess lands, damages to remainder(s) and Goodwill	$_____
B. Utility Relocation (State share)	$_____

Anticipated Date of Right-of-Way Certification 10/09/2020
(Date to which values are escalated)

Explanation:
No right of way is impacted.

TOTAL RIGHT-OF-WAY ITEMS $_____

I. ROADWAY ITEMS

	Average Cost per Lane Mile		Number of Lane Miles		Total Cost
Low Total Cost	$2.76 million	X	36.2	=	$100 million
High Total Cost	$4.83 million	X	36.2	=	$175 million

Explanation:

Roadway items included storm water treatment & pollution control, hazardous waste, tolling system, signing system, traffic control, traffic delineation, fiber optic, highway planting, mobilization and contingencies.

The breadth of range is based on available information and reasonable assumptions.

TOTAL ROADWAY ITEMS $100 to 175 million

II. STRUCTURES ITEMS

	Structure (1)	Structure (2)	Structure (3)
Bridge Name	_____	_____	_____
Total Cost for Structure	_____	_____	_____

Explanation:

No structure is impacted.

TOTAL STRUCTURE ITEMS $_____

I. ROADWAY ITEMS

Average Cost per Lane Mile		Number of Lane Miles	Total Cost	
Low Total Cost	$1.73 million	X 72.4 =	$125	million
High Total Cost	$2.76 million	X 72.4 =	$200	million

Explanation:

Roadway items included storm water treatment & pollution control, environmental mitigation, hazardous waste, tolling system, signing system, traffic control, traffic delineation, fiber optic, highway planting, mobilization and contingencies.

The breadth of range is based on available information and reasonable assumptions.

TOTAL ROADWAY ITEMS $125 to $200 million

II. STRUCTURES ITEMS

	Structure (1)	Structure (2)	Structure (3)
Bridge Name	_____	_____	_____
Total Cost for Structure	_____	_____	_____

Explanation:

No structure is impacted.

TOTAL STRUCTURE ITEMS $_____

III. ENVIRONMENTAL MITIGATION

	Quantity	Unit		Unit Price		Item Cost
Environmental Mitigation	_____	_____	X	_____	=	_____

Explanation:
Cost included in the roadway items.

TOTAL ENVIRONMENTAL MITIGATION ITEMS $_____

IV. RIGHT-OF-WAY ITEMS

	Escalated Value
A. Acquisition, including excess lands, damages to remainder(s) and Goodwill	$_____
B. Utility Relocation (State share)	$_____

Anticipated Date of Right-of-Way Certification 10/09/2020
(Date to which values are escalated)

Explanation:
No right of way is impacted.

TOTAL RIGHT-OF-WAY ITEMS $_____

Project Study Report – Project Development Support
Capital Outlay Project Estimate

Dist - Co – Rte: 07-LA-105

PM: R0.0/R18.1

Program Code: 20.20.075.651

Project Number: EA 31450K

Month/Year: May/2015

PROJECT DESCRIPTION:

Limits: Imperial Highway and California Street Intersection, West of I-405 in the City of El Segundo and Studebaker Road, East of I-605 in the City of Norwalk.

Scope: Convert HOV to 2 HOT lanes (standard).

Alternative: 4

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$400 to $500 million
TOTAL STRUCTURE ITEMS	$1,550 to $1,900 million
TOTAL ENVIRONMENTAL MITIGATION ITEMS	Included in Roadway Items
SUBTOTAL CONSTRUCTION COSTS	$1,950 to $2,400 million
TOTAL RIGHT-OF-WAY ITEMS	$50 to $100 million
TOTAL PROJECT CAPITAL OUTLAY COSTS	$2,000 to $2,500 million

I. ROADWAY ITEMS

Average Cost per Lane Mile		Number of Lane Miles	Total Cost
Low Total Cost	$5.52 million	X 72.4	= $400 million
High Total Cost	$6.90 million	X 72.4	= $500 million

Explanation:

Roadway items included roadway widening (Roadway excavation and pavement work), storm water treatment & pollution control, environmental mitigation, hazardous waste, tolling system, signing system, traffic control, traffic delineation, fiber optic, highway planting, mobilization and contingencies.

The breadth of range is based on available information and reasonable assumptions.

TOTAL ROADWAY ITEMS $400 to $500 million

II. STRUCTURES ITEMS

	Structure (1)	Structure (2)	Structure (3)
Bridge Name	See attached table		
Total Cost for Structure	Included in the Structure items		

Explanation:

- 90 structures will be impacted (See attached Table1).
- Construction of new retaining walls along the EB and WB of Route 105 (See attached table2).
- Construction of new sound walls along the EB and WB of Route 105 (see attached table3).

TOTAL STRUCTURE ITEMS $1,550 to $1,900 million

III. ENVIRONMENTAL MITIGATION

	Quantity	Unit		Unit Price		Item Cost
Environmental Mitigation	_____	____	X	_____	=	_____

Explanation:
Cost included in the roadway items.

TOTAL ENVIRONMENTAL MITIGATION ITEMS $_____

IV. RIGHT-OF-WAY ITEMS

	Escalated Value
A. Acquisition, including excess lands, damages to remainder(s) and Goodwill	$50 to $100 million
B. Utility Relocation (State share)	Included in item A

Anticipated Date of Right-of-Way Certification (Date to which values are escalated) 10/09/2020

Explanation:
Items included in the Total Right-of-way Items cost estimate:

- Acquisitions of 2 large commercial properties and 32 residential buildings.
- Relocation/installation of utilities.

TOTAL RIGHT-OF-WAY ITEMS $50 to $100 million

Table1- Impacted Bridge Construction for Alternative No. 4:

Loc.	Bridge Name	Bridge No.	Structure Type	Alt 4
1	Airport Viaduct	53 2400L	CIP/PS Box	W
2	Airport Viaduct	53 2400R	CIP/PS Box	W
3	W105-S1 Connector OC	53 2800F	CIP/PS Box	R
4	W105-N1 Connector OC	53 2802F	CIP/PS Box	R
5	Imperial HWY EB On-Ramp	53 2400S	CIP/PS Box	R
6	Nash St Off-Ramp OC	5332803K	CIP/PS Box	R
7	Douglas St On-Ramp OC	5332738S	CIP/PS Box	R
8	E105-N&S 405 Connector Separation	53 2805G	CIP/PS Box	R
9	Imperial HWY On-Ramp	53 2806S	CIP/PS Box	R
10	Imperial HWY WB Off-Ramp	53 2807K	CIP/PS Box	R
11	Airport Viaduct	53 2400	CIP/PS Box	W
12	N405-W105 Connector	53 2442G	CIP/PS Box	R
13	S405-E105 Connector	53 2443F	CIP/PS Box	R
~~14~~	~~Imperial HWY on-ramp OC~~ [1]	~~53-2434T~~		
15	Inglewood Ave UC	53-2435	CIP/PS Box	W
16	Hawthorne Blvd OC	5332432	CIP/PS Box	M
17	Hawthorne Blvd POC	5332739	CIP/PS Box	R
18	Prairie Ave off-ramp OC	53 2656S	CIP/PS Box	R
19	Imperial HWY OC	53 2655	CIP/PS Box	R
20	Prairie Ave OC	53 2517	CIP/PS Box	R
21	118th St POC	5332516	CIP/PS Box	M
22	Dominguez Channel	53-2518	CIP/PS Box	W
23	Yukon Ave UC	53-2598	CIP/PS Box	W
24	Crenshaw Blvd UC	53-2519	CIP/PS Box	W
25	Van Ness Ave OC	5332520	CIP/PS Box	M
26	Wilton Place OC	5332522	CIP/PS Box	M
27	Western Ave OC	53 2524	CIP/PS Box	R
28	Normandie Ave OC	53 2525	CIP/PS Box	M
29	Budlong Ave OC	53 2526	CIP/PS Box	M
30	Vermont Ave OC	5332527	CIP/PS Box	M
31	Vermont Ave off-ramp OC	53 2675K	CIP/PS Box	R
32	Hoover Street UC	53-2528	CIP/PS Box	W
33	E105-N110 HOV Connector OC	53 2682E	CIP/PS Box	R
34	E105-N110 Connector OC	53 2404G	CIP/PS Box	R
35	W105-S110 Connector OC	53 2407F	CIP/PS Box	R
36	W105-N110 HOV Connector OC	53 2680F	CIP/PS Box	R

Table1- Impacted Bridge Construction for Alternative No. 4:

Loc.	Bridge Name	Bridge No.	Structure Type	Alt 4
37	Route 105/110 Separation	53-2405L	CIP/PS Box	W
38	Route 105/110 Separation	53-2405R	CIP/PS Box	W
39	Broadway UC	53-2401R	CIP/PS Box	W
40	Main Street UC	53-2410L/R	CIP/PS Box	W
41	San Pedro St UC	53-2476	CIP/PS Box	W
42	Avalon Blvd UC	53-2477	CIP/PS Box	W
43	Stanford Ave UC	53-2478	CIP/PS Box	W
44	Central Ave UC	53-2480	CIP/PS Box	W
~~45~~	~~Compton Creek Off ramp~~[1]	~~53-2483K~~	-	
46	Compton Creek	53-2483	CIP/PS Box	W
47	Compton Creek On-ramp	53-2483S	CIP/PS Box	
48	Success Ave UC	53-2484	CIP/PS Box	W
49	Compton Ave UC	53-2485	CIP/PS Box	W
50	Willowbrook OH	53-2487L/R	CIP/PS Box	W
51	Alameda St Viaduct	53-2490	CIP/PS Box	W
52	State Street UC	53-2662	CIP/PS Box	W
53	Long Beach Blvd UC	53-2493	CIP/PS Box	W
54	Long Beach Blvd UC WB On-ramp	53-2493K	CIP/PS Box	R
55	Long Beach Blvd UC EB On-ramp	53-2493S	CIP/PS Box	R
56	Fir Street UC	53-2494	CIP/PS Box	W
57	Fir Street UC On-ramp	53-2494S	CIP/PS Box	R
58	Bullis Road UC	53-2495	CIP/PS Box	W
59	Gertrude Dr UC	53-2496	CIP/PS Box	W
60	Harris Ave UC	53-2497	CIP/PS Box	W
61	Atlantic Ave UC	53-2452	CIP/PS Box	W
62	E105-N710 Connector OC	53 2418G	CIP/PS Box	R
63	E105-N710/Wright Road OC	53 2610G	CIP/PS Box	R
64	Wright Road UC	53-2453	CIP/PS Box	W
65	N710-W105 Connector OC	53 2415G	CIP/PS Box	R
66	S710-E105 Connector OC	53 2420F	CIP/PS Box	R
67	W105-S710 Connector OC	53 2414F	CIP/PS Box	R
67A	Route 105/710 & LA River Separation [2]	53 2419	CIP/PS Box	W
68	N710-E105 Connector OC	53-2455G	CIP/PS Box	R
69	Garfield Ave OC	53-2423	CIP/PS Box	M
70	Façade Ave OC	53-2424	CIP/PS Box	M
71	Century Blvd UP	53-2427	CIP/PS Box	M

Table1- Impacted Bridge Construction for Alternative No. 4:

Loc.	Bridge Name	Bridge No.	Structure Type	Alt 4
72	Arthur Ave Utility & POC	53-2426	CIP/PS Box	R
73	Paramount Blvd OC	53-2425	CIP/PS Box	M
74	Markel Ave OC	53-2428	CIP/PS Box	M
75	Downey Ave OC	53-2429	CIP/PS Box	M
76	Gardendale St OC	53-2430	CIP/PS Box	M
77	Barlin Ave OC	53-2564	CIP/PS Box	M
78	E105-Lakewood Blvd Off-ramp	53-2565G	CIP/PS Box	R
79	Lakewood Blvd OC	53-2566	CIP/PS Box	M
80	Hanwell Ave OC	53-2567	CIP/PS Box	M
81	Clark Ave (Columbia Way) OCt	53-2570	CIP/PS Box	M
82	Ardis Ave OC	53-2572	CIP/PS Box	M
83	Bellflower Blvd OC	53-2573	CIP/PStBox	M
84	Dunrobin Ave OC	53-2574	CIP/PS Box	M
85	Woodruff Ave OC	53-2575	CIP/PS Box	M
86	E105-N&S605/San Gabriel River	53-2698G	CIP/PS Box	R
87	San Gabriel River	53-2576	CIP/PS Box	W
87A	N&S 650-San Gabriel River [2]	53-2697H	CIP/PS Box	R
88	E 105-N605 Connector	53-2702G	CIP/PS Box	R
89	N605-W105 Connector OC	53-2700G	CIP/PS Box	R
90	WesttPlazatPOC	53-2761R	CIP/PS Box	R

Note:
Blank = No Impact W=Widen M=Modify Abutment *** R= Reconstruct
*** Cost of Abutments modification is included in the Roadway Items Cost per request memo.

1. Location 14 and Location 45 have been eliminated in this study because they are outside of the project limits.
2. Location 67A and Location 87A have been added to this study.

Table2- Impacted Retaining Wall Construction for Alternative 4:

Eastbound - Alternative No. 4 Table:

No.	Location	Begin PM	End PM	Proposed Replacement Type
1	Eastbound	2.80	3.00	Soil Nail
2	Eastbound	3.00	3.30	Soil Nail
3	Eastbound-Choke Area	3.30	3.78	TypeS Spd Ftg
4	Eastbound	3.78	4.25	TypeS Spd Ftg
5	Eastbound-Choke Area	4.25	4.80	Type 1 Spd Ftg
6	Eastbound	4.80	5.58	Soil Nail
7	Eastbound	5.93	6.86	Soil Nail
8	Eastbound-Choke Area	6.86	7.20	Type 1 Spd Ftg
9	Eastbound	7.80	8.23	Type 1 Spd Ftg
10	Eastbound-Choke Area	8.28	8.42	Type 1 Spd Ftg
11	Eastbound-Choke Area	8.46	8.87	Type 1 Spd Ftg
12	Eastbound-Choke Area	8.92	9.16	Type 1 Spd Ftg
13	Eastbound	9.21	9.35	Type 1 Spd Ftg
14	Eastbound-Choke Area	9.40	9.75	Type 1 Spd Ftg
15	Eastbound-Choke Area	9.93	10.25	Type 1 Spd Ftg
16	Eastbound-Choke Area	11.11	11.50	Type 1 Spd Ftg
17	Eastbound-Choke Area	11.63	11.87	Type 1 Spd Ftg
18	Eastbound-Choke Area	11.93	12.04	Type 1 Spd Ftg
19	Eastbound-Choke Area	12.09	12.29	Type 1 Spd Ftg
20	Eastbound-Choke Area	12.33	12.50	Type 1 Spd Ftg
21	Eastbound	12.57	12.72	Type 1 Spd Ftg
22	Eastbound	12.91	13.17	Type 1 Spd Ftg
23	Eastbound-Choke Area	12.92	13.03	Type 1 Spd Ftg
24	Eastbound	13.23	13.42	Type 1 Spd Ftg
25	Eastbound-Choke Area	13.52	13.96	Type 1 Spd Ftg
26	Eastbound	13.96	17.38	Soil Nail
27	Eastbound	17.51	18.00	TypeS Spd Ftg

Table2- Impacted Retaining Wall Construction for Alternative 4:

Westbound- Alternative No. 4 Table:

No.	Location	Begin PM	End PM	Proposed Replacement Type
1	Westbound	2.80	3.00	Soil Nail
2	Westbound-Choke Area	2.67	3.06	Type 1 Spd Ftg
3	Westbound	3.06	3.30	Soil Nail
4	Westbound-Choke Area	3.30	3.83	Soil Nail
5	Westbound	3.83	4.64	Type 1 Spd Ftg
6	Westbound-Choke Area	4.64	5.00	Type 1 Spd Ftg
7	Westbound	4.76	5.58	Soil Nail
8	Westbound	5.93	6.44	Soil Nail
9	Westbound-Choke Area	6.44	6.50	Soil Nail
10	Westbound	6.50	6.70	Soil Nail
11	Westbound-Choke Area	6.70	6.90	Type 1 Spd Ftg
12	Westbound	6.90	7.20	Type 1 (Pile)
13	Westbound	8.02	8.23	Type 1 Spd Ftg
14	Westbound	8.28	8.46	Type 1 Spd Ftg
15	Westbound	8.46	8.68	Type 1 Spd Ftg
16	Westbound-Choke Area	8.68	8.87	Type 1 Spd Ftg
17	Westbound-Choke Area	8.92	9.17	Type 1 Spd Ftg
18	Westbound-Choke Area	9.21	9.35	Type 1 Spd Ftg
19	Westbound-Choke Area	9.42	9.75	Type 1 Spd Ftg
20	Westbound-Choke Area	9.93	11.07	Type 1 Spd Ftg
21	Westbound-Choke Area	11.11	11.50	Type 1 Spd Ftg
22	Westbound-Choke Area	11.63	11.87	Type 1 Spd Ftg
23	Westbound-Choke Area	11.93	12.04	Type 1 Spd Ftg
24	Westbound-Choke Area	12.09	12.29	Type 1 Spd Ftg
25	Westbound-Choke Area	12.33	12.55	Type 1 Spd Ftg
26	Westbound	12.57	12.89	Type 1 Spd Ftg
27	Westbound-Choke Area	12.89	12.90	Type 1 Spd Ftg
28	Westbound-Choke Area	12.91	13.20	Type 1 Spd Ftg
29	Westbound	13.23	13.42	Type 1 Spd Ftg
30	Westbound-Choke Area	13.67	14.17	Type 1 Spd Ftg
31	Westbound	14.17	14.75	Soil Nail
32	Westbound-Choke Area	14.75	16.06	Soil Nail
33	Westbound	16.06	17.38	Soil Nail
34	Westbound	17.51	18.00	Soil Nail

Table3- Impacted Sound Wall Construction for Alternative 4:

No.	Dir	PM	Description	Type of Impact
1	WB	R3.75/R3.95	116 th St to 118th Pl	Relocation
2	EB	R3.70/R3.85	116 th St to 118th Pl	Relocation
3	WB	R3.95/R4.60	Edge of TW, 118th Pl to Crenshaw	Relocation
4	EB	R3.90/R4.10	Edge of TW, 118th Pl to Dominguez Channel	Relocation
5	WB	R6.92/R7.22	Edge of TW, E of Vermont to Figueroa	Relocation
6	EB	R6.94/R7.24	Edge of Conn, Route W105 to S110	Relocation
7	EB	R7.74/R7.94	Edge of TW, W of Main St to San Pedro	Relocation
8	EB	R8.24/R8.47	Edge of TW, Avalon to Stanford	Relocation
9	WB	R8.30/R8.67	Edge of TW, Avalon to Wordsworth	Relocation
10	EB	R8.73/R9.07	Edge of TW, Start from West of Central to E of Central	Relocation
11	EB	R9.39/R9.59	Edge of TW, Compton Ave to Wilmington off ramp	Relocation
12	EB	R9.57/R9.75	Edge of TW, Graham Ave to Wilmington	Relocation
13	EB	R10.25/R10.62	Edge of TW, Mona Ave to Alameda	Relocation
14	EB	R11.62/R11.79	Edge of Long Beach on-ramp	Relocation
15	EB	R11.77/R12.07	Edge of NB Long Beach on-ramp	Relocation
16	WB	R11.91/R13.17	12' edge of Spruce St to Wright Rd	Relocation
17	WB	R17.16/R17.61	Edge of 105 to 605 Connector	Relocation

ATTACHMENT E

PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT (PEAR)

PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

1. Project Information

District	County	Route	PM	EA
07	LA	105	R0.0/R18.1	31450K
Project Title: HOT lanes on Interstate 105				
Project Manager Mehdi Salebinik			Phone # 213-897-7195	
Project Engineer Hassan Zadeh			Phone # 213-897-4160	
Environmental Office Chief/Manager Dawn Kukla			Phone # 213-897-3643	
PEAR Preparer Le Chen			Phone # 213-897-4595	

2. Project Description

Purpose:

The purpose of this project is to improve existing congestion, and thus enhance traffic operations and mobility on I-105. The proposed improvements along the I-105 corridor will accomplish the following objectives:

- Enhance operations and improve trip reliability, and travel times within the corridor,
- To improve the traffic flow by reducing the congested areas and therefore, offering the motorist a faster and reliable commute.
- Sustain and manage mobility within the corridor.

Need:

Deficiencies on I-105 within the project limits are summarized below:

- Current daily traffic demand on some sections of I-105 exceeds capacity due to heavy traffic on both weekdays and weekends.
- The existing traffic of the mixed flow and HOV lanes of I-105 exceeds the capacity; thus future capacity will be further deteriorated.
- According to draft 2014 HOV Degradation Plan, the existing HOV facilities are degraded and the travel speed is below 45 MPH during peak periods.

Description of work

This project proposes to convert the existing HOV lane to a HOT (High Occupancy Toll) lane on I-105 in each direction. In addition, the facility will be widened and restriped to include another HOT lane in each direction. Retaining walls and alterations to existing overcrossing and on/off ramps will need to be conducted. Transponder readers need to be installed to support the HOT lanes.

Alternatives
There are 4 alternatives being proposed.
Alternative 1: No-Build
Alternative 2: Convert existing HOV lane to HOT lane.
Alternative 3: Convert existing HOV lane to 2 HOT lanes, with non-standard lanes and shoulder widths.
Alternative 4: Convert existing HOV lane to 2 HOT lanes, with standard lanes and shoulder widths.

Due to time restraints, for the purposes of this PEAR, alternative 2 and 4 will only be evaluated in the preceding sections. Should alternative 1 or 3 need to be evaluated, a new PEAR shall be prepared.

3. Anticipated Environmental Approval

CEQA		NEPA	
Environmental Determination			
Statutory Exemption	☐		
Categorical Exemption	☐	Categorical Exclusion	☐
Environmental Document			
Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND	☐	Routine Environmental Assessment with proposed Finding of No Significant Impact Complex Environmental Assessment with proposed Finding of No Significant Impact	☐ ☐
Environmental Impact Report	☒	Environmental Impact Statement	☒
CEQA Lead Agency (if determined):		Caltrans	
Estimated length of time (months) to obtain environmental approval:		18-24 months	
Estimated person hours to complete identified tasks:		23,000-25,000	

4. Special Environmental Considerations
Alternative 2 would not require any special environmental considerations.

Alternative 4 proposes significant widening and partial/full takes of residential/commercial parcels will be required. This alternative anticipates impacting 90 bridge structures, 54 on/off ramps and 17 soundwalls. Caltrans will need to do find appropriate relocations properties/sites.

The portion of I-105 west of Interstate 405 is within the Coastal Zone. Either a coastal zone permit or an exemption will need to be obtained for all build alternatives.

5. *Anticipated Environmental Commitments*

Alternative 2 will convert the existing HOV lane to HOT lane and it is anticipated that the communities in the area will need to be informed on transponders. Low income populations may also need to be granted assistance in signing up for a transponder account.

Alternative 4 proposes significant widening and partial/full takes of residential/commercial parcels will need to be acquired. Caltrans will need to do find appropriate relocations properties/sites.

If clearing and grubbing is to occur during the bird nesting season (February 15th to September 1st), a pre-construction bird survey will need to be conducted by a qualified biologist at least 10 working days prior to the start of construction for all build alternatives.

6. *Permits and Approvals*

If any river, stream, lake, waterway of the US or wetlands are impacted as part of this project for all build alternatives, water permits may need to be obtained (1602, 404, 401).

This project is also within the coastal zone so a coastal permit/exception will need to be obtained.

7. *Level of Effort: Risks and Assumptions*

Due to time restraints, Environmental Planning (EP) was asked to analyze 2 build alternatives (2 & 4). Of the 2 build alternatives, 4 is worse and EP assumed this would be the alternative chosen. The analysis identified preparing the highest possible environmental document (EIR/EIS) for this alternative. Since the highest possible document was chosen, there is little risk.

8. *PEAR Technical Summaries*

8.1 Land Use: Some residential and commercial properties will need to be acquired as part of alternative 4. The parcels will be used to widen the freeway. It is anticipated that impacts to land use will be less than significant.

8.2 Growth: Current daily traffic demands on sections of I-105 exceed capacity and are anticipated to exceed capacity on the majority of the corridor in future projections. HOV usage is also projected to increase past capacity in the future. It is anticipated that this project is needed in order to accommodate future growth of the area that Interstate 105 services.

8.3 Farmlands/Timberlands: No farmlands/timberlands within the project footprint.

8.4 Community Impacts: A community impact assessment will need to be conducted for any build alternative. Alternative 4 anticipates displacing families/businesses.

8.5 Visual/Aesthetics: Transponder readers will need to be installed for any build alternative and existing overcrossings and on/off ramps will need to be altered for alternative 4. This impact is minimal and is not expected to be significant.

8.6 Cultural Resources: Soil disturbance is anticipated. As long as Caltrans protocol is followed, it is anticipated that the project will not impact cultural resources. It is anticipated that this project would require a Historic Property Survey Report (HPSR), with an attached Archaeological Survey Report (ASR) and Historical Resources Evaluation Report.

8.7 Hydrology and Floodplain: Alternative 4 will propose to widen the freeway to accommodate the additional HOT lanes and bring the shoulders and lane widths to standards. This will create additional non permeable surface area, which will be offset by installing more drainage along the corridor. It is anticipated that this project will have no significant impacts to Hydrology and/or Floodplains.

8.8 Water Quality and Storm Water Runoff: If any river, stream, lake, waterway of the US or wetlands are impacted as part of this project, water permits may need to be obtained (1602, 404, 401).

8.9 Geology, Soils, Seismic and Topography: A geological technical study shall be conducted during PAED.

8.10 Paleontology: Should remains be found during excavation, work shall halt and a qualified specialist shall be contacted and determine if work can continue.

8.11 Hazardous Waste/Materials: A preliminary hazardous waste assessment was produced for this project on 4/27/15. The findings from the assessment highlight the follow concerns:

- Removal of traffic striping and pavement marking residue
- Treated Wood Waste of existing MBGR/Roadside sign wooden posts
- Aerially deposited lead contaminated soil investigation

It is recommended that a parcel-specific and corridor environmental site assessment and site investigation be conducted during PAED/PS&E phase due to potential acquisition of contaminated properties.

8.12 Air Quality: An Air Quality Assessment was performed for this project on 4/29/15. This assessment determined that the scope of the proposed project is not exempt from conformity requirements and an Air Quality Report is required to satisfy the project-level conformity requirements and to serve as a comprehensive technical document. In order for the Air Quality Unit to complete its project level analysis in the PAED phase, project needs to have been modeled by SCAG for a given emissions horizon year which matches the project dates of completion. SCAG will not model study - only - projects. They need to appear as feasible project with a

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funding plan and a reasonable date of completion. This will require listing project in the FTIP and the RTP (a regional compliance amendment) during the programming phase.

8.13 Noise and Vibration: This project is considered to be a Type 1 project and requires detailed noise analysis during the PAED phase.

8.14 Energy and Climate Change: Energy and Climate Change shall be evaluated in the Air Quality Report during PAED.

8.15 Biological Environment: Should clearing and grubbing occur during the bird nesting season (February 15th to September 1st) bird nesting surveys will need to be conducted by a qualified biologist at least 10 working days prior to the start of construction.

8.16 Cumulative Impacts: Cumulative Impacts will be determined during PAED.

8.17 Context Sensitive Solutions: Caltrans shall design the layout of alternative 4 to be feasible and buildable and to have the least impact on its surrounding community.

9. Summary Statement for PSR or PSR-PDS

Alternative 2 will require public awareness for transponders and low populations may require assistance in signing up/obtaining a transponder account.

Alternative 4 will encounter mainly community impacts due to the anticipated displacement of families/businesses. A relocation impact report will need to be conducted to capture the relocation assistance Caltrans will provide to the displacees. Should clearing and grubbing occur during the bird nesting season (February 15th to September 1st) bird nesting surveys will need to be conducted by a qualified biologist at least 10 working days prior to the start of construction. Construction impacts are temporary in nature but during construction, a traffic management plan should be implemented to reduce the impacts construction will have on the flow of traffic to the neighborhoods. Typical technical studies will need to be conducted from the other divisions that are usually associated with Environmental Documents.

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 (PSR). 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 Claudia Harbert	Date: 4/30/15
Biologist Paul Caron	Date: 4/13/15
Community Impacts specialist Le Chen	Date: 4/30/15
Noise and Vibration specialist Irene Dong	Date: 4/30/15
Air Quality specialist Liberty San Agustin	Date: 4/29/15
Paleontology specialist/liaison N/A	Date: N/A
Water Quality specialist N/A	Date: N/A
Hydrology and Floodplain specialist N/A	Date: N/A
Hazardous Waste/Materials specialist Steve Chan	Date: 4/27/15
Visual/Aesthetics specialist N/A	Date: N/A
Energy and Climate Change specialist Andrew Yoon	Date: 4/29/15
Other: N/A	Date: N/A
PEAR Preparer (Name and Title) Le Chen, Associate Environmental Planner	Date: 4/27/15

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: 7/13/15

Project Manager — Date: 7/15/15

REQUIRED ATTACHMENTS:
Attachment A: PEAR Environmental Studies Checklist
Attachment B: Estimated Resources by WBS Code
Attachment D: PEAR Environmental Commitments Cost Estimate (Standard PSR)

Attachment A: PEAR Environmental Studies Checklist

Rev.311/08

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

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

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Attachment B: Resources by WBS Code

EA: 07-31450	Project Title: 0715000122 - LA-105 CONVERT HOV LANES TO HOT LANES	District: 7	County: LA	Route: 105	PM: R2.1/R17.8
ProjID:					

WBS Task Activity Code	Division Chief	Office Chief	Senior	Env. Planner	Biology	Archaeo.	Arch. History	Native American Coord.	Haz. Waste	Socio-Economic	Storm Water	Const. Liaison	Stewardship	Air	Noise	Water	Paleo	OC	Enhancement	Support	Total
Functional Unit Number	1775	1775	4110	4110	1781	1779	1779		1848	4110	1849		1782	1848	1845		4110	1775		1775	
100 Project Management	40	40	50	150																66	376
100.10 – Project Management - PA&ED	40	40	50	100																40	270
100.15 – Project Management - PS&E	0			50																16	66
100.20 – Project Management - Construction																				40	40
100.25 – Project Management - Right of Way																					
160 Perform Preliminary Engineering Studies																					
160.05 – Updated Project Information				0		0	0											0			
160.10 – Engineering Studies																	0				
160.15 – Draft Project Report			0						0												
160.30 – Environmental Study Request											0		0					0			0 0
160.40 – NEPA Assignment					0																0
165 Perform Environmental Studies and Prepare	16	16	300	3920	140		1600		900	600			80		3600			80		40	10,592
165.05 – Env Scoping of Alternatives	0		100	500	0				0			0	0								600
165.10 – General Env Studies				800					900	600			80		3600						5,980
165.15 – Biological Studies				0	140																140
165.20 – Cultural Resource Studies							1600														1,600
165.25 – Draft Env Document	16	16	200	1800										0							2,032
165.30 – NEPA Assignment				120														80		40	240
170 Obtain Permits, Licenses, Agreements and					80								0	0							80
170.05 – Reqired PLACs																					
170.10 – PLACs					80																80
170.15 – Railroad Agreements	0																				
170.20 – Freeway Agreements	0																				
170.25 – Agreement for Material Sites					0				0	0							0				
170.30 – Executed Maintenance Agreements			0	0											0 0						
170.40 – Route Adoptions																					
170.45 – MOU from TERO																					
170.55 – NEPA Assignment													0								
175 Circulate Draft Environmental Document and	60	60	270	1130											550					24	2,094
175.05 – DED Circulation	0 0	0 0	20	380																	400
175.10 – Public Hearing	40	40	50	150											150						430
175.15 – Public Comment Responses & Corr	20	20	200	600			0		0			0	0 0 0		400	0					0 1,240
175.20 – Project Preferred Alternative		0		0							0 0										
175.25 – NEPA Assignment																				24	24
180 Prepare and Approve Project Report and	8	16	140	890									0		1000			40		40	2,134
180.05 – Final Project Report				16																	16
180.10 – Final Env Document	8	16	100	828											1000						1,952
180.15 – Completed Env Document			40	30				0	0												70
180.20 – NEPA Assignment				16														40		40	96
205 Obtain Permits, Licenses, Agreements, and								0													
205.05 – PLACs Determination																					
205.10 – PLACs			0	0 0																	

EA: 07-31450
Proj ID:

Attachment B: Resources by WBS Code - Page 2

WBS Task Activity Code	Division Chief	Office Chief	Senior	Env. Planner	Biology	Archaeo.	Arch. History	Native American Coord.	Haz. Waste	Socio-Economic	Storm Water	Const. Liaison	Stewardship	Air	Noise	Water	Paleo	QC	Enhancement	Support	Total
Functional Unit Number	1775	1775	4110	4110	1781	1779	1778		1846	4110	1849		1782	1848	1845		4110	1775		1775	
205.15 – Railroad Agreements																					
205.25 – Agreement for Material Sites																					
205.30 – Executed Maintenance Agreements																					
205.45 – MOU from TERO																					
205.55 – NEPA Delegation																					
230 Prepare Draft PS&E																					
230.05 – Draft Roadway Plans																					
230.10 – Draft Highway Planting Plans																					
230.30 – Draft Drainage Plans																					
230.35 – Draft Specifications																					
230.60 – Updated Project Info for PS&E Pkg																					
230.900 – NEPA Assignment											0										
230.99 – Other Draft PS&E Products																0					
235 Mitigate Environmental Impacts and Clean-				179			380	0	500				440		140						1,639
235.05 – Environmental Mitigation				156			300					0			140						576
235.10 – Detailed Site Investigation for HW									500												500
235.15 – HW Management Plan																				0	
235.20 – HW PS&E						0															
235.25 – HW Clean-up																					
235.30 – Haz Substances Disclosure Doc																					
235.35 – Long Term Mitigation Monitoring																					
235.40 – Updated Env Commitments Record				40									440								480
235.45 – NEPA Assignment						0	0	0								0	0				
255 Circulate, Review and Prepare Final District			40	200					100						120						460
255.05 – Circ. & Rev. Draft Dist PS&E Package				24																	24
255.10 – Updated PS&E Package									100					0	120						220
255.15 – Environmental Reevaluation			40	168						0	0				0		0				208
255.20 – Final District PS&E Package			0	0																	
255.40 – Resident Engineer's Pending File				8																	8
255.450 – NEPA Assignment								0							0			0	0		
260 Contract Bid Documents "Ready to List"				8																	8
260.75 – Env Cert at RTL				8																	8
270 Construction Engineering and Contract				8			0														8
270.22 – Contract Administration				8																	8
280 Administration of Permits, Licenses,				60									1330		100						1,490
280.10 – PLAC Compliance													1330		100				0	0	1,430
280.400 – PLAC Violations																					
280.500 – Other Environmental Compliance				60																	60
280.60 – Other Environmental Violations																					
280.70 – Updated ECR																					
280.75 – Environmental Reevaluation																					
280.80 – Updated PLACs																					
295 Accept Contract/Prepare Final Construction			0	4									40								48
295.35 – Certificate of Environmental Compliance			4	4									40								48

EA:	07-31450
Proj ID:	

Attachment B: Resources by WBS Code - Page 2

WBS Task Activity Code	Division Chief	Office Chief	Senior	Env. Planner	Biology	Archaeo.	Arch. History	Native American Coord.	Haz. Waste	Socio-Economic	Storm Water	Const. Liaison	Steward-ship	Air	Noise	Water	Paleo	QC	Enhancement	Support	Total
Functional Unit Number	1775	1775	4110	4110	1781	1776	1778		1846	4110	1849		1782	1848	1845		4110	1775		1775	
295.40 – Long Term Env Mit/Mont after CCA																					
Total for Functional Unit	124	132	804	5,646	200		1,600		1,600	600			1,690		5,510			120		200	18,826

EA: 07-31450
Proj ID:

Attachment B: Resources by WBS Code - Page 3

WBS Task Activity Code	Design	Hydraulic	Landscape	Planning	[illegible] Map	Surveys	Total
Functional Unit Number	3850		1850				
100 Project Management							376
100.10 – Project Management - PA&ED							270
100.15 – Project Management - PS&E							66
100.20 – Project Management - Construction							40
100.25 – Project Management - Right of Way							
160 Perform Preliminary Engineering Studies							
160.05 – Updated Project Information							
160.10 – Engineering Studies							
160.15 – Draft Project Report0							
160.30 – Environmental Study Request							
160.40 – NEPA Assignment							
165 Perform Environmental Studies and Prepare							10,512
165.05 – Env Scoping of Alternatives							600
165.10 – General Env Studies							5,900
165.15 – Biological Studies							140
165.20 – CulturalResource !Studies							1,800
165.25 – Draft Env Document							2,032
165.30 – NEPA Assignment							240
170 Obtain Permits, Licenses, Agreements and							60
170.05 – Reqired PLACs							
17000 – PLACs							60
170.15 – Railroad Agreements							
170.20 – Freeway Agreements							
170.25 – Agreement for Material Sites							
170.30 – Executed Maintenance Agreements							
170.400 Route Adoptions0	0	0					
170.45 – MOU from TERO							
170.55 – NEPA Assignment							
175 Circulate Draft Environmental Document and	0						2,094
175.05 – DED Circulation							400
175.10 – Public Hearing							430
175.15 – Public Comment Responses & Corr							1,240
175.20 – Project Preferred Alternative							
175.25 – NEPA Assignment							24
180 Prepare and Approve Project Report and							2,134
180.05 – Final Project Report							18
180.10 – Final Env Document							1,952
180.15 – Completed Env Document							70
180.200 NEPA Assignment							94
205 Obtain Permits, Licenses, Agreements, and	0						
205.05 – PLACs Determination							
205.10 – PLACs 0							
20505 – Railroad Agreements							
205.25 – Agreement for Material Sites							

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EA: 07-31450
Proj ID:

Attachment B: Resources by WBS Code - Page 4

WBS Task Activity Code	Design	Hydraulic	Land scape	Planning	Right-of-Way	Surveys	Total
Functional Unit Number	3850		1850				
205.30 – Executed Maintenance Agreements							
205.45 – MOU from TERO							
205.55 – NEPA Delegation							
230 Prepare Draft PS&E							
230.05 – Draft Roadway Plans							
230.10 – Draft Highway Planting Plans							
230.30 – Draft Drainage Plans							
230.35 – Draft Specifications							
230.60 – Updated Project Info for PS&E Pkg							
230.900 NEPA Assignment							
230.99 – Other Draft PS&E Products 0							
235 Mitigate Environmental Impacts and Clean-							1,110
235.05 – Environmental Mitigation							576
235.10 – Detailed Site Investigation for HW			0				500
235.15 – HW Management Plan 0							
235.20 – HW PS&E 0							
235.25 – HW Clean-up							
235.30 – Haz Substances Disclosure Doc							
235.35 – Long Tenn Mitigation Monitoring							
235.40 – Updated Env Commitments Record							40
235.45 – NEPA Assignment 0							
255 Circulate, Review and Prepare Final District							460
255.05 – Circ. & Rev. Draft Dist PS&E Package							24
255.10 – Updated PS&E Package							220
255.15 – Environmental Reevaluation							208
255.20 – Final District PS&E Package							
255.40 – Resident Engineer's Pending File							8
255.45 – NEPA Assignment							
260 Contract Bid Documents "Ready to List"							8
260.75 - Env Cert at RTL							8
270 Construction Engineering and Contract							8
270.22 – Contract Administration							8
280 Administration of Permits, Licenses,							160
280.10 – PLAC Compliance							100
280.40 – PLAC Violations							
280.50 – Other Environmental Compliance							60
280.60 – Other Environmental Violations							
280.70 – Updated ECR							
280.75 – Environmental Reevaluation							
280.80 – Updated PLACs							
295 Accept Contract/Prepare Final Construction							8
295.35 – Certificate of Environmental Compliance							8
295.40 – Long Term Env Mit/Mont after CCA							
Total for Functional Unit							16,836

Attachment D: PEAR Environmental Commitments Cost Estimate

Standard PSR Only

(Prepare a separate form for each viable alternative described in the Project Study Report)

PART 1 PROJECT INFORMATION *rev. 11/08*

District-County-Route-Post Mile 07-LA-105-PM R0.0/R18.1	EA: 31450K
Project Description: Convert existing HOV lane to HOT and widen Interstate 105 to add an additional HOT lane in each direction. Remove choke points and bring lanes and shoulders to standards	
Form completed by (Name/District Office): Le Chen, District 7, Environmental Planning	
Project Manager: Mehdi Salehinik	Phone Number: 7-7195
Date: 5/5/15	

PART 2 PERMITS AND AGREEMENTS

	Permits and Agreements **($$)**
☐ Fish and Game 1602 Agreement	
☐ Coastal Development Permit	
☐ State Lands Agreement	
☐ Section 401 Water Quality Certification	
☐ Section 404 Permit – Nationwide (U.S. Army Corps)	
☐ Section 404 Permit – Individual (U.S. Army Corps)	
☐ Section 10 Navigable Waters Permit (U.S. Army Corps)	
☐ Section 9 Permit (U.S. Coast Guard)	
☐ Other:	
Total (enter zeros if no cost)	0

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PART 3. ENVIRONMENTAL COMMITMENTS FOR PERMANENT IMPACTS

To complete the following information:

- Report costs in $1,000s.
- Include all costs to complete the commitment:
  - O.K. to break down by phase: Design, ROW, Construction, and/or provide Sub-Total.
  - Capital outlay and staff support. Refer to Estimated Resources by WBS Code. For example, if you estimated 80 hours for biological monitoring (WBS 235.35 Long Term Mitigation Monitoring), convert those hours to a dollar amount for this entry. For current conversion rates from PY to dollars, see the Project Manager.
  - Cost of right of way or easements.
  - If compensatory mitigation is anticipated (for wetlands, for example), insert a range for purchasing credits in a mitigation bank.
  - Long-term monitoring and reporting
  - Any follow-up maintenance
  - Use current costs; the Project Manager will add an appropriate escalation factor.
  - This is an estimating tool, so a range is not only acceptable, but advisable.

Environmental Commitments
Alternative 5B

	Estimated Cost in $1,000's				Notes
	Phases				
	Design	ROW	Construction	Sub-Total	
Noise abatement or mitigation					
Special landscaping					
Archaeological resources					
Biological resources			10	10	Bird Survey
Historical resources					
Scenic resources					
Wetland/riparian resources					
Res./bus. relocations					
Other:					
Total (enter zeros if no cost)	0	0	10	10	

ATTACHMENT F

TRANSPORTATION PLANNING SCOPING INFORMATION SHEET

ARTICLE 4 Transportation Planning Scoping Information Sheet

PROJECT INFORMATION

District	County	Route	Post Miles	Project ID No/ Expenditure Authorization No.
07	LA	105	R0.0/R18.1	EA 31450K / 0715000122

Project Name and Descriptione
PSR-PDS. Convert HOV to HOT Lane

Prepared by:

District Information Sheet Point of Contact:	Name: Hassan H Zadeh	Functional Unit:	Office of Project and Special Studies (OPSS)

Project Development Team (PDT) Information		
Title	**Name**	**Phone Number**
Project Manager	Mehdi Salehinik	213-897-7195
Project Engineer	Hassan Zadeh	213-897-4160

Transportation Planning Stakeholder Information		
Title	**Name**	**Phone Number**
Regional Planner	Dan Kopulsky	213-897-0213
System Planner	Shefa Bhuiyan	213-897-0649
Local Development-Intergovernmental Review (LD-IGR) Planner	Dianna Watson	213-897-9140
Community Planner	Dianna Watson	213-897-9140
Goods Movement Planner	Dan Kopulsky	213-897-0213
Transit Planner	Shefa Bhuiyan	213-897-0649
Bicycle and Pedestrian Coordinator	Dale Benson	213-897-2934
Native American Liaison	Alex Kirkish	213-897-2795
Other CoordinatorseITS	Jackie Tan	213-897-4698

Project Purpose and Need

Purpose:

The purpose of this project is to mitigate existing congestion, and thus enhance traffic operations and mobility on I-105. The proposed improvements along the I-105 corridor will accomplish the following objectives:

- Enhance operations and improve trip reliability, and travel times within the corridor,
- Improve the traffic flow by reducing the congested areas and therefore, offering the motorist a faster and reliable commute.
- Sustain and manage mobility within the corridor.

Need:

Deficiencies on I-105 within the project limits are summarized below:

- Current daily traffic demand on some sections of I-105 exceeds capacity due to heavy traffic on both weekdays and weekends.
- The existing traffic of the mixed flow and HOV lanes of I-105 exceeds the capacity; thus future capacity will be further deteriorated.
- According to draft 2014 HOV Degradation Plan, the existing HOV facilities are degraded and the travel speed is below 45 MPH during peak periods.

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.).
	Combination of Federal, State, and Local.
b	Is this a measure project? Yes /No X . If yes, name and describe the measure.

2. Regional Planning:

a	Name of and contact information for Metropolitan Planning Organization (MPO) or Regional Transportation Planning Agency (RTPA).
	Hasan Ikharata, Executive Director, Southern California Association of Governments 818 W. 7th St., Los Angeles, CA 90017
b	Name of and contact information for local jurisdiction (City or County)
	Los Angeles County, James Yang, jyang@dpwtlacounty.gov or Bella Hernandez, bhernan@dpw.lacounty.govt
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.
	NOT IN RTP BECAUSE NOT PROGRAMMED
d	Provide nexus between the RTP objectives and the project to establish the basis for the project purpose and need.
	NEXUS BETWEEN THE RTP OBJECTIVES: State Highway Operations and Protection Program (SHOPP)/Transportation Enhancement (TE)/Environmental Enhancement and Mitigation (EEM)/Safe Routes to School (SR2S)/etc.)
e	Is the project located in an area susceptible to sea-level rise?
	NO.
f	Name of Air Quality Management District (AQMD)
	South Coast AQMD.
g	If the project is located in a federal non-attainment or attainment-maintenance area is the project:
	• Regionally Significant? (per 40 (Code of Federal Regulations (CFR) 93.101) Y__ /N__ N/A
	• Exempt from conformity? (per 40 CFR 93.126 and 93.128) Y__ /N__ X
	• Exempt from regional analysis? (per 40 CFR 93.127) Y__ /N__ X
	• Not exempt from conformity (must meet all requirements)? Y__X /N__

3. Native American Consultation and Coordination:

a	If project is within or near an Indian Reservation or Rancheria? If so, provide the name of Tribe.
	N/A
b	Has/have the Tribal Government(s) been consulted? Y___/N__. If no, why not?
	N/A
c	If the project requires Caltrans to use right-of-way on trust or allotted lands, this information needs to be included as soon as possible as a key topic in the consultation with the Tribe(s). Has the Tribe been consulted on this topic? Y___/N__. If no, why not?
	N/A
d	Has the Bureau of Indian Affairs (BIA) been notified? Y__/N__X
e	Have all applicable Tribal laws, ordinances and regulations [Tribal Employment Rights Ordinances (TERO), etc.] been reviewed for required contract language and coordination?
	No, 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?
	This will be completed during the environmental process. TBD.
h	If a Native American monitor is required for this project, will this cost be reflected in cost estimates?
	TBD
i	In the event of project redesign, will the changes impact a Native American community as described above in d, e, or h?
	TBD

4. System Planning:

a	Is the project consistent with the DSMP? Y__/N_N_. If yes document approval date. If no, explain.
	In progress
b	Is the project identified in the TSDP? Y_X_/N__? If yes, document approval date. If no, explain.
	June 2015
c	Is the project identified in the TCR/RCR or CSMP? Y_X_/N_. If yes, document approval date___. If no, explain. Is the project consistent with the future route concept? Y__/N_N_. If no, explain.
	TCRs do not recommend any projects per the new guidelines.
d	Provide the Concept Level of Service (LOS) through project area.
	FO AND F1 (SEGMENT 1 – 4 – BEGIN FWY TO 605)
e	Provide the Concept Facility – include the number of lanes. Does the Concept Facility include High Occupancy Vehicle lanes? Y_X_/N__.
	6 + 2 (Both 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 – TCRs do not identify UTC following new guidelines.
g	Describe the physical characteristics of the corridor through the project area (i.e. flat, rolling or mountainous terrain...).
	Flat
h	Is the highway in an urban or rural area? Urban_X_/Rural__. Provide Functional Classification.

i	Is facility a freeway, expressway or conventional highway?
	Freeway
j	Provide Route Designations: (i.e. Interregional Transportation Strategic Plan (ITSP) High Emphasis or Focus Route, Surface Transportation Assistance Act (STAA) Route, Scenic Route...).
	STAA, STRATEGIC HWY NETWORK, MAJOR GOODS MOVEMENT ROUTE
k	Describe the land uses adjacent to project limits (i.e. agricultural, industrial...).
	MOSTLY COMMERICAL, RESIDENTIAL AND SOME INDUSTRIAL
l	Describe any park and ride facility needs identified in the TCR/CSMP, local plans, and RTP.
	N/A
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.
	AADT – 229,900 (RTE I-110e- I-710 - 2008), 232,200 (I-1d0 TO 710 -2035) – VMT 2008 -1,398,900 I-110 TO I-710 AND VMT 2035 - 1,412,900 (I-110 TO RTE 710) PEAK TRUCK DATA 2035 – 880 (710 TO 605)e *SOURCE: SCAG 2012-2035 RTP/SCS*
n	Has analysis on Daily Vehicle Hours of Delay (DVHD) from the Highway Congestion Monitoring Program (HICOMP) been completed and included? Y__/N_X_.

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.	I-105, PM R0.504
b	Development name, type, and size.	Los Angeles International Airport (LAX) Northside Plan 2.32 million square feet of new development
c	Local agency and/or private sponsor, and contact information.	Lisa Trifiletti, Los Angeles World Airports
d	California Environmental Quality Act (CEQA) status and Implementation Date.	CEQA is completed.
e	If project includes federal funding, National Environmental Policy Act (NEPA) status.	N/A
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.	Yes
g	Approved mitigation measures and implementing party.	Crenshaw/EXPO Light Rail Transit to LAX. Implementing party Metro.
h	Value of constructed mitigation and/or amount of funds provided.	$2.6 million fair share contribution to the identified improvements. Potential $1.5 million in coastal Corridor Trip Fees towards improvements to Lincoln and Sepulveda Blvd.
i	Encroachment Permit, Transportation Permit, Traffic Management Plan, or California Transportation Commission (CTC) Access approvals needed.	N/A
j	Describe relationship to Regional Blueprint, General Plans, or County Congestion	N/A

	Management Plans.	
k	Inclusion in a Regional Transportation Plan Sustainable Community Strategy or Alternative Planning Strategy?	N/A
l	Regional or local mitigation fee program in place?	N/A

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_X_. If yes, summarize the process and its results including any commitments made to the community. If no, why not?
	Local Agency have not submitted grant request.
b	Are any active/completed/proposed Environmental Justice (EJ) or Community-Based Transportation (CBTP) Planning Grants in the project area? Y__/N_X_. 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 (None). Has a context sensitive solutions (CSS) approach been applied? Y_/N__
	N/A
	FINAL PID INFORMATION
d	How will the proposed transportation improvements impact the local community? Is the project likely to create or exacerbate existing environmental or other issues, including public health and safety, air quality, water quality, noise, environmental justice or social equity? Y__/N__. Describe issues, concerns, and recommendations (from sources including neighborhood/community groups) and what measures will be taken to reduce existing or potential negative effects.
	To be determined during the PA/ED phase.
e	Does this highway serve as a main street? Y__/N_X_. 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.
	Automobile, bus, bicycle, pedestrian, commuter train, cargo airplanes and passenger airplanes. Intermodal facilities include LAX, Hawthorne Municipal Airport, Rail Yards such as the Intermodal Container Transfer Facility (ICTF), the proposed Southern California International Gateway (SCIG) and the Alameda Corridor. The project may further increase congestion and choke points on the mixed flow lanes as some users may be unable or unwilling to pay to use the HOT lanes.
	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).
	There is the likelihood that additional negative impacts to Goods Movement may increase due to converting from HOV to HOT lanes since neither of these facilities are accessible by trucksc Converting from HOV to HOT lanes may actually increase the Mixed Flow Lane use thereby further increasing congestion and chokepoints for trucks and other modesc

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 existing facility whether it be HOV or HOT lanes already interconnects with other modes such as LAX, Hawthorne Airport and through other routes such as I-110, I-405, I-605 and I-710 the San Pedro Bay seaports. It is unknown if converting to HOT lanes would improve Goods Movement regionally or statewide.
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_X_/N__. If yes, describe.
	I-105 is in close proximity with LAX and Hawthorne Municipal Airport and the San Pedro Bay Seaports
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_X_/N__. If yes, describe how the project addresses this demand.
	The project does not address or mitigate a high truck volume facility. HOT lanes are not open for truck use.
f	If the project is located near an airport, seaport, or railroad depot, describe how circulation (including truck parking) needs are addressed.
	Trucks need more room at interchanges, on and off ramps to successfully maneuver safely taking into consideration bicycle and pedestrian users. I-105 is in close proximity to LAX, Hawthorne Airport and various warehouses, distribution and logistics centers that are scattered in the entire areacThese facilities require lots of parking spaces and although local authorities may require parking, more needs to be provided as freight would likely increase in the near future.
g	Describe any other freight issues.
	In addition to trucks, rail, airports and seaports, freight also includes underground and above ground facilities such as oil and gas pipe lines and overhead electric power lines (power grids). It is hoped this project would take those modes into consideration tooc

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.
	LACMTA (Metro), LAWA (Fly-Away), Orange County Transportation Authority (OCTA), Gardena Municipal Bus Lines
b	Have transit agencies been contacted for possible project coordination? Y_X_/N__. If no, why not?
	Metro and City of Los Angeles.
c	Describe existing transit services and transit features (bus stops, train crossings, and transit lines) within the corridor.
	Metro Green Line (LRT) operates in median of I-105 between I-605 and I-405, with eight stations located in the median. Metro, LAX Fly-Away and OCTA express buses use various segments of I-105, including the HOV lanes. There are no stops located on the freeway. Metro and Gardena Municipal Bus Lines operate local bus service on parallel streets in the corridor.
d	Describe transit facility needs identified in short- and long-range transit plans and RTP. Describe how these future plans affect the corridor.
	Airport Metro Connector and South Bay Metro Green Line extension would increase potential trip pairs and transit ridership in the corridor.
	FINAL PID INFORMATION
e	Describe how the proposed project integrates transit and addresses impacts to transit services and transit facilities.
	Additional traffic, or congestion, in HOV lanes can negatively impact reliability and speed of transit services using HOV lanes.
f	Have transit alternatives and improvement features been considered in this project? Y__/N_X_ If yes, describe. If no, why not?
	Existing Light Rail Transit and Buses services.

9. Bicycle:

	INITIAL PID INFORMATION
a	Does the facility provide for bicyclist safety and mobility needs? If no, please explain.
	No. The Facility is a freeway facility that is not open to bicycle travel, however, bicycles are allowed to travel on local streets crossing and parallel to the facility.
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.).
	Yes, Within the freeway R/W, but outside the operating R/W, the City of Lynwood plans to construct a Class I Bikeway parallel with the freeway, within their City Limits.
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.
	Yes. Los Angeles County Bicycle Coalition (LACBC) www.la-bike.org
	FINAL PID INFORMATION
d	Will bicycle travel deficiencies be corrected? How or why not?
	Unknown. If freeway improvements include interchange and local street improvements, then complete streets upgrades will be made as per Caltrans policy.
e	How will this project affect local agency plans for bicycle safety and mobility improvements?
	The project appears to be in compliance with local bike plans as long as it does not impact the City of Lynwood's proposed Class I bike facility.
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? Yes. Pedestrian routes were served with the construction of the I-105 freeway. If yes, describe how bicycle travel provisions will be included in this project.
	This project is an opportunity to improve bicycle access across the corridor, and restore the lost access.

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

	INITIAL PID INFORMATION
a	Does this facility provide for pedestrian safety and mobility needs? No. If so, describe pedestrian facilities. Do continuous and well-maintained sidewalks exist? Some existing pedestrian facilities within the I-105 corridor do not meet current ADA standards. Are pedestrians forced to walk in the roadway at any locations due to lack of adequate pedestrian facilities? Yes. Please explain.
	Wheelchairs may be forced into the roadway due to non-compliant ADA sidewalks and curb ramps on some of the freeway overcrossings, frontage roads, and ramp termini areas.c
b	Are pedestrian crossings located at reasonable intervals?
	Consider adding Pedestrian Overcrossings at several locations identified by Local Agencies. Have freeway caps been proposed for any sections of the I-105 corridor?
c	Are all pedestrian facilities within the corridor ADA accessible and in compliance with Federal and State ADA laws and regulations?
	No.
	FINAL PID INFORMATION
d	Will pedestrian travel deficiencies be corrected? How or why not?
	Yes, if deficiency lies within the project limits of work.
e	How will this project affect local agency plans for pedestrian safety and mobility improvements?
	Unknown
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? Yes. Bicycle accessible routes were severed with the construction of the I-105 freeway. If yes, describe how pedestrian travel provisions will be included in

	this project.
	This project is an opportunity to improve and reconnect the lost bicycle access across the corridor.
g	Are there any external pedestrian advocacy groups and advisory committees that should be included in the project stakeholder list? Yes. If so, provide contact information.
	www.californiawalks.org
h	Have ADA barriers as noted in the District's ADA Transition Plan been identified within the project limits? No. Survey is being conducted to identify ADA barriers. If not included in the project, provide justification and indicate whether District Design coordinator approval was obtained.
	N/A

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?
	This corridor does not accommodate equestrian traffic.
	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_X_/N__. If yes, describe. If no, explain.
	Need to replace / upgrade existing elements as CCTV camera, changeable message sign system, traffic elements, communication system including installing additional new equipment/devices in communication hubs and LARTMC
	FINAL PID INFORMATION
b	Have ITS features been identified? If so, are they included a part of this project? Describe. If no, why not?
	Yes. In the future when the communication system and existing elements needs to be reconstructed and upgraded, it will occur from hub to hub and LARTMC several miles apart not just at a location alone.

ATTACHMENT G

RIGHT-OF-WAY CONCEPTUAL COST ESTIMATE COMPONENT

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

To: Albert Andraos , Design Manager
Project Management
District 7, Los Angeles Office

Date: 5/15/15

From: Dan Murdoch, Office Chief
Right of Way Appraisals, and Planning & Management
District 7, Los Angeles Office

07-LA-105-PMR0.0/R18.1
Project ID # 0715000122
EA: 31450K
Alt: 2
Data Sheet ID NO: ds1283

A Field Review was conducted

Scope of the Right of Way

Right of Way Required	No	
Number of Parcels		
Type of Parcels		
Land Area:	Fee:	Easement:
Displaced Persons/Businesses		
Demolition/Clearance		
Railroad Involvement	No	
Utility Involvement	No	

Cost Estimates

Support Costs

Capital Costs

Schedule

Right of Way will require 24 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 10/9/20.

Areas of Concern

The estimator was provided with very preliminary plans and maps, which may ultimately be significantly revised, which may in turn, necessitate that this conceptual cost estimate be modified and updated.

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

To: Albert Andraose , Design Manager
Project Management
District 7, Los Angeles Office

Date: 7/17/15

From: Dan Murdoch, Office Chief
Right of Way Appraisals, and Planning & Management
District 7, Los Angeles Office

07-LA-105-PMPM R0.0/R18.1
Project ID # 0715000122
EA: 31450K
Alt: 3
Data Sheet ID NO: ds1405

A Field Review was conducted

Scope of the Right of Way

Right of Way Required	No	
Number of Parcels		
Type of Parcels		
Land Area:	Fee:	Easement:
Displaced Persons/Businesses		
Demolition/Clearance		
Railroad Involvement	No	
Utility Involvement	No	

Cost Estimates

Support Costs

Capital Costs

Schedule

Right of Way will require 24 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 10/9/20.

Areas of Concern

The estimator was provided with very preliminary plans and maps, which may ultimately be significantly revised, which may in turn, necessitate that this conceptual cost estimate be modified and updated.
On 7-17-15 Ds1405 Alt. 3 was duplicated off of ds1288 Alt. 4A, to revise Alternative #, per P.E.

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

To: Albert Andraos , Design Manager
Program Management
District 7, Los Angeles Office

From: Dan Murdoch, Office Chief
Right of Way Appraisals, and Planning & Management
District 7, Los Angeles Office

Date: 7/31/15

07-LA-105-PMPM R0.0/R8.1
Project ID# 0715000022
EA: 31450K
Alt: 4
Data Sheet ID NO: ds1406

A Field Review was conducted	Yes	
Scope of the Right of Way		
Right of Way Required	Yes	
Number of Parcels	26-50	
Type of Parcels	Suburban	
Land Area:	Fee: 288720 sqft	Easement:
Displaced Persons/Businesses	Yes	
Demolition/Clearance	Yes	
Railroad Involvement	Yes	
Utility Involvement	Yes	

Cost Estimates

Support Costs	$1,000,001-$5,000,000
Capital Costs	$50,000,001-$100,000,000

Schedule

Right of Way will require 24 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 10/9/20.

Areas of Concern

The estimator was provided with very preliminary plans and maps, which may ultimately be significantly revised, which may in turn, necessitate that this conceptual cost estimate be modified and updated.

In regards to APN 6169-011-004, City Planning and zoning regulations require circuitous access around buildings for fire safety, as well as the grantor's operational needs, thus the proposed impacts have a significant effect on the property as currently improved. Furthermore there was consideration for business losses and claims due to proposed taking.

On 7-17-15: dsl406 Alt. 4 was revised from ds1289 Alt. 4B, in order to revise alternative number, per PE.

On 7-31-15: ds1406 was revised to reflect "Yes" to Railroad involvement, if contractors enter onto UPRRs right of way, a right of entry and service contract will need to be executed. Furthermore, if roadway is realigned within 25' of the existing UPRR centerline, an agreement with UPRR will need to be reached to relocate those RR tracks.

ATTACHMENT H

RISK REGISTER

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

RISK REGISTER CERTIFICATION (ACCOUNTABILITY CHECKPOINTS)

Form PM-0001 (Rev. 4/2013)

The risk register is to approved and signed-off by the deputies* listed below for all scalability levels. By signing this form, you are certifying that you have reviewed the risks documented in the register and agree that they have been managed to the extent possible by the POT.

Project Information ☑ Capital Project ☐ Major Maintenance Project (Check One)

Project ID/District-EA	EFIS ID:0715000122/EA:07-31450
Project Description	LA-105-2.1R/17.8R-IN LA FR I-405 TO I-605 – CONVERT HOV TO HOT LANES
Project Manager (PM)	SALEHINIK, MEHDI
Project Risk Manager (for Risk Level 3 Projects)	

☐ No Risk Register Certification Required -- Check Box if project is less than $1 million in total cost and risk register not prepared. Sign below and submit this form with PID, PA&ED, PS&E submittal, and RE Handoff File (as applicable).

Project Manager Signature _____ Date: _____

PID (Recommended for Capital Projects Only excluding Minor Projects)

Project Manager		Date: 7/28/15
Deputy District Director, Planning	for G.S.	Date: 8/12/15
Deputy District Director*, Design**		Date: 8/17/15
Deputy District Director, Project Management		Date: 7/31/15

PA&ED (Required for Capital Projects Only)

Project Manager		Date:
Deputy District Director*, Environmental		Date:
Deputy District Director*, Design**		Date:
Deputy District Director, Project Management		Date:

Prior to PS&E (Required for Capital Projects and Maintenance Projects)

Project Manager		Date:
Deputy District Director*, Design**		Date:
Deputy District Director*, Construction		Date:
Deputy District Director*, Right of Way		Date:
Deputy District Director*, Environmental		Date:
Deputy District Director, Project Management**		Date:

RE File Hand-Off (Recommended for Capital Projects and Major Maintenance Projects)

Project Manager		Date:
Deputy District Director*, Design**		Date:
Deputy District Director*, Construction		Date:
Deputy District Director, Project Management**		Date:

*or the respective Project Delivery Division Chief signatures in the North Region or Central Region
**or Deputy District Director, Maintenance signature for HM Projects designed by the District Maintenance Division

ADA Notice For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.

Project Risk Register for 31450 as of 08/17/15

No.	Status*	ID	Risk Type	RBS Category	WBS Impacted	Critical Path Impacted?	Title	Risk Statement	Impact Description	Linear/Non-Linear	Risk Probability	Risk Impact	Impact Consequence Cost/Time	Cost/Time Score	Cost$K (Low)	Cost $K (Most Likely)	Cost$K (High)	Probable Cost Impact ($K)	Time in Mos (Low)	Time in Mos (Mos Likely)	Time in Mos (High)	Probable Time Impact	Rationale (for Rating)*	Response Strategy	Response Action	Mitigation Option (Minimize Prob or Impact)	Risk Triggers	Residual Risks	Secondary Risks	Risk Interaction	Risk Owner	Comments	Last Updated
1	Active	24354		CON	5.27		Freeway Closures	Freeway Closures Impacts (Alternative 4)	Closures of freeway will impact the freeway to re/construct structures	Linear	40-59%	High	Time	16 (HIGH)					3	6	9	2.97		Mitigate	Major effort should be expended to coordinate the freeway closures						Mehdi Salehinik		7/22/2015 14:11
2	Active	24356		DGN	3.23		Dewatering, Control Wells and Pumping Plants	The relocation of dewatering and control wells between Garfield Ave and Woodruff Ave on westbound Route 105 & Four pumping plants (houses) could be impacted by the proposed widening (Alternative 4).	The relocation of those wells and pumping plants could cause major disruption to the operation of the wells.	Linear	40-59%	High	Cost	15 (HIGH)	3000	5000	10000	2970					Mitigate	Strong coordination with Water Replenishment District and the Regional Water Quality Control Board						Mario Gutierrez		7/31/2015 11:50
3	Active	24429		DGN	3.23		Dewatering, Control Wells and Pumping Plants	The relocation of dewatering and control wells between Garfield Ave and Woodruff Ave on westbound Route 105 & Four pumping plants (houses) could be impacted by the proposed widening (Alternative 4).	The relocation of those wells and pumping plants could cause major disruption to the operation of the wells.	Linear	40-59%	High	Time	16 (HIGH)					3	6	9	2.97		Mitigate	Strong coordination with Water Replenishment District and the Regional Water Quality Control Board						Mario Gutierrez		7/31/2015 11:50
4	Active	24428		RoW	4.22		Residential and Commercial and Railroad Impacts	Impact to residential & commercial buildings & Railroad (Alternative 4)	There are two large commerical and 32 residential buildings that could be impacted due to acquisition of right of way for the project. Also, the right of way of Pacific Railroad will be patially impacted.	Linear	40-59%	High	Time	16 (HIGH)					12	8	24	7.26		Mitigate	Finalize design and begin acquisition process as quickly as possible						Dan Murdoch		7/31/2015 11:44
5	Active	24438		DGN	3.23		Utility Relocation Plan	Delays in recieving relocation plans from utility companies (Alternatives 2, 3 and 4)	Relocation plans approval delay would negatively impact the execution of the Utility Agreements and consequesntly delay the RoW Cert date	Linear	40-59%	High	Time	16 (HIGH)					6	9	12	4.46		Mitigate	Early coordination with utility companies and having regular status meetings						ZoeYue		7/31/2015 13:39
6	Active	24426		DGN	3.23		Design Exceptions	Timely approval of design exceptions (Alternatives 2 and 3)	Because of the nature of the project, approval of the design exceptions could delay the project. .	Linear	20-39%	Moderate	Time	9 (MEDIUM)					6	9	12	2.66		Mitigate	Work closely with HQ to get the design exceptions approved in timely manner and perform additional studies to justify the non-standard features.						Mario Gutierrez		8/17/2015 13:40
7	Active	24481		DGN	3.23		Design Exceptions	Unable to obtain approval of design exceptions (Alternatives 2 and 3)	Project will be constructed with full-standard features.	Linear	1-9%	Very Low	Cost	1 (LOW)	2000000	2250000	2500000	112500						Accept						Mario Gutierrez		8/17/2015 13:48

8	Active	24430		CON	5.27		Traffic Disruption	Disruption of traffic during construction (Alternatives 2,3 & 4)		Linear	20-39%	Moderate	Time	9 (MEDIUM)					6	9	12	2.66		Mitigate	Develop TMP& Stage Construction Plans; Coordinate with local agency							Mehdi Salehinik		7/22/2015 14:11
9	Active	24434		DGN	4.2		Utilities Relocation	Utility relocation requires more time thantplanned (Alternative 4)	If Utility companies aretbusyiduring certain times of the year, canicause additional delay	Linear	20-39%	Moderate	Time	9 (MEDIUM)					3	4	6	1.28		Mitigate	Finalize plans and begin utilities relocationtas quickly as possible and to provide strong coordination and communication with utility companies							ZoetYue		7/10/2015 14:21
10	Active	24424		ENV	2.165		UST, Groundwater and Soil Conditions Associated with Impacted Parcels	ESA & SI are required to evaluate hazardous waste conditions (Alternatives 4)		Linear	10-19%	Low	Time	4 (LOW)					2	4	6	0.58		Mitigate	Prepare ESA/SI during PA&ED							Steve Chan		7/22/2015 14:02
11	Active	24359		DGN	3.23		Los Angeles Metro Light Rail	Impacts to the Metro railroad (Alternatives 2, 3 & 4)	Due to the Metro Green Line's proximity to the project.	Linear	1-9%	Very Low	Time	1 (LOW)					3	6	9	0.3		Mitigate	Coordinate with Metro with regard to the schedule of the project and the impactsito the Green Line							Mario Gutierrez		7/22/2015 14:05
TOTAL EXPECTED IMPACT																		$115470(K)			25.14 (Mos.)												

ATTACHMENT I

CHOKE POINT LOCATION LIST

I-105 CHOKE POINTS LOCATION LIST

No.	Beg PM	End PM	Direction	Description
1	R1.55	R2.58	WB	West of Aviation to Inglewood UC
2	R3.30	R3.81	WB	WB on from Imperial Hwy to WB off to Praire/Howthore
3	R4.63	R4.98	WB	WB On from NB Crenshaw to WB Crenshaw off-ramp
4	R6.45	R6.95	WB	From West of Budlong to WB Vermont off-ramp
5	R7.35	R7.84	WB	JCT Rte 105/110 to WB off to Rte 110
6	R8.07	R11.30	WB	WB Central off-ramp to WB on-ramp fr SB Long Beach Blvd
7	R11.44	R12.40	WB	WB on fr NB Long Beach to Gertrude Dr UC
8	R12.92	R13.42	WB	WB on fr NB Rte 710 to JCT Rte 105/710
9	R13.65	R14.15	WB	WB On from Garfield Ave to Garfield Ave OC
10	R14.85	R16.08	WB	West of Markel Ave OC to WB off to Lakewood
11	R3.08	R3.77	EB	EB off to Praire to East of Praire Ave OC
12	R4.24	R4.73	EB	EB off to Crenshaw Bl/120th to Crenshaw Blvd UC
13	R6.85	R7.84	EB	EB off to Rte 110 to East of Main St UC
14	R8.62	R9.13	EB	EB Central off-ramp to EB on-ramp fr Central
15	R9.50	R12.44	EB	EB off-ramp to Wilmington to West of Harris Ave
16	R12.90	R13.88	EB	EB off to Rte 710 to Seg EB off Garfield 105/710

ATTACHMENT J

STORM WATER DATA REPORT

Long Form - Storm Water Data Report

Dist-County-Route: 07-LA-105

Post Mile Limits: PM 0.0/18.1

Project Type: Convert HOV to HOT Lanes, Project Study Report- Project development Support (PSR-PDS)

Project ID (or EA): 0715000122 (31450K)

Program Identification: 40.50.745.651

Phase: ☒ PID (PSR-PDS)
☐ PA/ED
☐ PS&E

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

Is the Project required to consider Treatment BMPs? Yes ☒ No ☐

If yes, can Treatment BMPs be incorporated into the project? Yes ☒ No ☐

If No, a Technical Data Report must be submitted to the RWQCB at least 30 days prior to the projects RTL date. List RTL Date: _____

Total Disturbed Soil Area: 85.0 acres Risk Level: 2

Estimated: Construction Start Date: 11/02/2020 Construction Completion Date: 07/02/2025

Notice of Intent (NOI) Date to be submitted: 10/02/2020

Erosivity Waiver	Yes ☐	Date: _____	No ☒
Notification of ADL reuse (if Yes, provide date)	Yes ☐	Date: _____	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.

Hassan H Zadeh, Registered Project Engineer — Date: 06/01/2015

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

Mehdi Salehinik, *Project Manager* — Date: 6/1/15

David Lawrence for Roger Castillo, *Designated Maintenance Representative* — Date: 06/01/15

Ron Russak, Designated Landscape Architect Representative — Date: 06/01/15

[Stamp Required for PS&E only) *Shirley Pak, District/Regional Design SW Coordinator or Designee* — Date: 6/3/2015

1. Project Description:

This Project Study Report-Project Development Support (PSR-PDS) proposes to improve and increase the capacity of 18-mile stretch of I-105 starting at Imperial Highway/California Street Intersection (PM 0.0) west of I-405 and terminating at Studebaker Road (PM 18.1) east I-605 in Norwalk, in Los Angeles County. This improvement will enhance and mitigate the existing and forecasted future deficiencies in the operational capacity and safety. I-105 runs parallel to Imperial Highway and SR-91 linking LAX and functions as a major collector distributor route feeding; Routes 405, 110, 710, 605 and ten local streets. It is a major alternative truck route close to the ports of Los Angeles and Long Beach. The improvements include converting HOV lane to HOT lane or adding additional HOT lane in each direction. For this purpose the following alternative will be studied:

Alternative 1: No-Build.

Alternative 2: Convert existing HOV to HOT lane.

Alternative 3: Convert existing HOV to two HOT lanes, with non-standard lanes and shoulders widths.

Alternative 4: Convert existing HOV to two HOT lanes, with standard lanes and shoulders widths.

Due to the forecasted population growth increasing in Los Angeles County; the purpose of this project is to improve traffic operations, relieve traffic congestion during peak hours, as well as encourage carpooling and improve air quality in this whole stretch of the freeway. Additional improvements including: bridge widening, bridge replacements, upgrading concrete barrier, reconstruction of existing drainage, modify existing interchanges due to the freeway widening, replacing sound wall, and installing Intelligent Transportation System (ITS) elements. Following are current Capital Outlay Construction Cost Ranges per alternative:

Alternative 2 is $100 - $175 million; Alternative 3 is $125 - $200 million and Alternative 4 is $2.0 billion – 2.5 billion.

The total disturbed soil area (DSA) for Alternative 4 is estimated to be 55 acres. The total disturbed soil area includes all areas needed for project construction activities. Based on Alternatives (Alt 2, Alt 3, and Alt 4) DSA will vary 5 to 55 acres. Within the project limits, existing impervious surface area estimated to be approximately 265 acres. The increase in impervious surface area after the project is completed for Alt 4 is approximately 50 acres (for Alt 2 & 3 does not increase impervious area). The DSA and net new impervious areas will be calculated during the PA/ED and PS&E phases of the project.

This project lies within the limits of the Los Angeles County Municipal Separate Sewer Storm System (MS4) area.

2. Site Data and Storm Water Quality Design Issues (refer to Checklists SW-1, SW-2, and SW-3)

- The project is located in the Dominguez Channel Watershed (HSA 411.01), the Los Angeles River Reach2 Watershed (HSA 412.10) and San Gabriel River Reach1 Watershed (HSA 405.15). The water quality in the watershed is primarily under the jurisdiction of the California Region Water Quality Control Board, Los Angeles Region 4 (LARWQCB).
- Within the project limits the 2010 303(d) listed impairments are:

Receiving Water Bodies/Reaches	Pollutants
Dominguez Channel (lined portion above Vermont ave.)	Ammonia, Copper, Diazinon, Indicator Bacteria, Lead, Toxicity, Zinc,
Los Angeles River Reach 2 (Carson to Figueroa St.)	Coliform Bacteria, Oil, Ammonia, Copper, Lead, Nutrients (Algae), Trash
San Gabriel River Reach 1 (Estuary to Firestone)	Coliform Bacteria, pH
Compton Creek	Benthic-Macroinvertebrate Bioassessments, Coliform Bacteria, Copper, Lead, pH, Trash

The project limits are in the Los Angeles River, Dominguez Channel, San Gabriel River and Santa Monica Bay Watersheds. The Total Maximum Daily Loads (TMDLs) are as follows:

Dominguez Channel

Established TMDL

Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL

Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL became effective on March 23, 2012. Targeted pollutants are copper, lead, zinc, PAH, DDT, PCBs, Benzopyrene and Dieldrin for water column in the channel and harbors, and for sediments in the harbors. The TMDL requires the dischargers of the Los Angeles River and the San Gabriel River to monitor water quality at the mouth of each River. Caltrans will participate in groups of agencies to

jointly comply with the TMDL. Project engineers shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Los Angeles River

Established TMDLs

Los Angeles River Trash TMDL

The Los Angeles River Trash TMDL became effective August 28, 2002. Caltrans is proceeding with Trash TMDL Implementation Projects, which are to retrofit Gross Solid Removal Devices (GSRDs) at the existing drainage outfalls in the rights-of-way. Table A lists those Trash TMDL Implementation Projects that are either in construction or completed. Any projects that overlap within the limits of freeway corridors listed in Table A are not required to consider GSRDs for those overlapping limits. However, Project Engineers shall consider placing infiltration basins or media filters as much as possible in lieu of GSRDs at existing and proposed drainage systems.

Table A

		PM		
EA	Route	From	To	Status
226611	405	30.31	36.15	completed
226711	60	2.7	6.6	completed
	710	22.5	23.8	
2266A1	5	27.62	28.15	completed
	10	9.02	13.82	
	90	1.84	2.70	
2267A1	10	5.59	8.80	completed
	91	10.25	13.88	
	105	8.25	13.15	
	110	21.65	23.61	
231311	2	15.40	21.46	completed
	101	7.21	7.21	
	170	14.78	19.92	
	134/710	13.34	13.34	
	210	22.73	23.88	
	405	25.46	29.41	
235901	5	16.35	16.35	completed
	101	12.70	26.50	
	134	0.00	9.86	

Los Angeles River Nitrogen Compounds and Related Effects TMDL

The Los Angeles River Nitrogen Compounds and Related Effects TMDL became effective March 23, 2004. The TMDL requires the Storm Water NPDES Permittees to submit a Monitoring Work Plan by March 23, 2005 to estimate nitrogen loadings associated with runoff from the storm drain systems. County of Los Angeles has submitted the Monitoring Work Plan as required on behalf of Caltrans and other Storm Water NPDES Co-Permittees in the watershed. Targeted pollutants are Total ammonia as nitrogen (NH3-N), Nitrate-nitrogen (NO3-N), nitrite-nitrogen (NO2-N), and Nitrate nitrogen plus nitrite-nitrogen (NO3-N + NO2-N).The Department's monitoring data depicts Caltrans discharges to be below the TMDL limits, thus no additional measures are needed to be considered for meeting the conditions of the Nitrogen TMDL.

Los Angeles River and Tributaries Metals TMDL

The Los Angeles River and Tributaries Metals TMDL became effective on January 11, 2006. Caltrans will work with 5 groups of Responsible Agencies toward compliance of the TMDL. Targeted Pollutants are total Cu, Pb, Zn, Cd and Se. Project engineers shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Total Maximum Daily Loads for Indicator Bacteria in the Los Angeles River

The Total Maximum Daily Loads for Indicator Bacteria in the Los Angeles River became effective on March 23, 2012. The TMDL requires the Responsible Agencies, including Caltrans, to reduce number of exceedance days of bacteria concentrations in the Los Angeles River and achieve waste load allocations in 25 years. Caltrans will be working with groups of Responsible Agencies to jointly comply with the TMDL. Project engineers shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL

Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL became effective on March 23, 2012. Targeted pollutants are copper, lead, zinc, PAH, DDT, PCBs, Benzopyrene and Dieldrin for water column in the channel and harbors, and for sediments in the harbors. The TMDL requires the dischargers of the Los Angeles River and the San Gabriel River to monitor water quality at the mouth of each River. Caltrans will participate in groups of agencies to jointly comply with the TMDL. Project engineers shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

San Gabriel River

Future TMDL

Total Maximum Daily Loads for Indicator Bacteria in the San Gabriel River, Estuary and Tributaries

The Total Maximum Daily Loads for Indicator Bacteria in the San Gabriel River, Estuary and Tributaries will be adopted by the Los Angeles Regional Water Quality Control Board (Region 4). The TMDL is anticipated to become effective in the near future. The TMDL Requires the Responsible Agencies, including Caltrans to achieve compliance with waste load allocations in 20 years. Caltrans will be working with groups of Responsible Agencies to jointly comply with the TMDL. Project Engineer shall consider treatment controls for the project and consult with the NPDES Storm Water Coordinator.

Established TMDLs

The Trash TMDL for the East Fork of San Gabriel River

The Trash TMDL for the East Fork of San Gabriel River has been in effect since April 17, 2001. Caltrans is not a responsible party.

San Gabriel River and Impaired Tributaries Metals and Selenium TMDL

The San Gabriel River and Impaired Tributaries Metals and Selenium TMDL was approved by the United State Environmental Protection Agency (USEPA) on March 26, 2007. The TMDL assigns Dry Weather waste load allocations (WLA) to MS4 Permittees and Caltrans for copper in San Gabriel River Estuary, Reach 1 and Coyote Creek, and for Selenium in San Jose Creek Reaches 1 & 2, The TMDL assigns Wet Weather WLA to MS4 Permittees and Caltrans for lead in San Gabriel Reach 2 and upstream reaches and tributaries, and for copper, lead and zinc in Coyote Creek and its tributaries. Caltrans will be working with groups of Responsible Agencies to jointly comply with the TMDL. Project Engineer shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL

Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL became effective on March 23, 2012. Targeted pollutants are copper, lead, zinc, PAH, DDT, PCBs, Benzopyrene and Dieldrin for water column in the channel and harbors, and for sediments in the harbors. The TMDL requires the dischargers of the Los Angeles River and the San Gabriel River to monitor water quality at the mouth of each River. Caltrans will participate in groups of agencies to

jointly comply with the TMDL. Project engineers shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Santa Monica Bay

Established TMDLs

Dry Weather Bacteria TMDL for the Santa Monica Bay Beaches and Wet Weather Bacteria TMDL for the Santa Monica Bay Beaches

The Dry Weather Bacteria TMDL for the Santa Monica Bay Beaches focuses on storm drain flows during summer and winter dry weathers. Caltrans is in compliance with the TMDL. The Wet Weather Bacteria TMDL for the Santa Monica Bay Beaches outlines 7 Jurisdiction Groups in the Santa Monica Bay coastal watersheds and assigns a Primary Responsible Jurisdiction and the Additional Responsible Jurisdictions and Agencies to each Jurisdiction Group. Caltrans participates in the Jurisdiction Groups as an Additional Responsible Agency and is working cooperatively with other Responsible Agencies toward compliance of the TMDL. Project Engineer shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Santa Monica Bay Nearshore and Offshore Debris TMDL

The Santa Monica Bay Nearshore and Offshore Debris TMDL became effective on March 20, 2012. The TMDL requires the Responsible Agencies in the Santa Monica Bay, Ballona Creek and Malibu Creek Watersheds, including Caltrans, to reduce amount of trash and plastic pellets in the storm water discharges to "zero" in eight (8) years. Responsible Agencies may implement a Minimum Frequency of Assessment and Collection (MFAC) Program in or adjacent to the waterbody or place full capture devices at the drainage outfalls. Project Engineer shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

Santa Monica Bay Total Maximum Daily Load for DDT and PCBs

The Santa Monica Bay Total Maximum Daily Load for DDT and PCBs was adopted by the United States Environmental Protection Agency (USEPA) on March 26, 2012. The TMDL assigns waste load allocations for DDT and PCB to the Responsible Agencies in the Santa Monica Bay, Ballona Creek and Malibu Creek Watersheds, including Caltrans. Caltrans will be working with other Responsible Agencies to jointly comply with the TMDL. Project Engineer shall consider treatment controls for the project and consult with the District NPDES Storm Water Coordinator.

- The proposed project does not involve work in the waters of the United States; a 401 Certification is not required.
- There is no drinking water reservoir and/or recharge facility within the project limits.
- The anticipated environmental document will be an Environmental Impact Report (EIR) and Environmental Impact Statement (EIS) by CEQA and NEPA guidelines respectively. Furthermore, appropriate environmental studies would be completed during the PA/ED and PS&E phases.

- The combined project risk level matrix resulted in a calculated project risk of: Level 2. Risk Level 2 projects will require additional sampling and monitoring. Monitoring locations will be identified at a later phase.
- The climate is classified as Mediterranean with dry summers and rainy winters, but relatively modest transitions in temperature. The rainy season according to Caltrans Storm Water Management Plan is from October 1st to May 1st. The average annual rainfall is approximately 13.5 inches. The existing soil type within the project limits is being classified by the geotechnical engineer and will be available during PA/ED and PS&E phases.
- The Office of Environmental Design (OED) recommended that a Site Investigation (SI) be conducted in the PS&E phase to prepare hazardous waste assessment and standard/nonstandard special provision to make appropriate recommendations for Aerially Deposited Lead (ADL) soil management.
- All proposed Treatment BMPs will be located within the existing and/or proposed Caltrans right-of-way. Right-of-way acquisition is not anticipated for Treatment BMPs implementation. There are 37 existing Treatment BMPs within the project limits.
- The project involves disturbing existing slopes only when necessary, minimizing the disturbance of vegetation, and concentrated flows shall be collected in stabilized drains and channels to avoid potential storm water impacts. Additional information will be provided during PS&E phase.

3.e Regional Water Quality Control Board Agreements

The Los Angeles Regional Water Quality Control Board (RWQCB) requires all new/major reconstruction projects that increase impervious area to evaluate the feasibility of post construction Treatment BMPs as a condition of the permit process. It has been determined that the following BMPs will be incorporated into the project: Bio-swale, Bio-strip, GSRD, and Media Filter to meet the permit requirement.

Since this project does not qualify for a CE (Categorical Exemption); the following permit approvals and/or documents will be required: Regional Water Quality Control Board (401), US Army Core Engineer (404), Coastal Development Permit, California Department of Fish and Game 1602 permit coordination may be required.

4. Proposed Design Pollution Prevention BMPs to be used on the Project

- Since this project increases the amount of impervious surface there will be a consequent increase to velocity or volume of downstream flow, and sediment load.
- The project will discharge to lined channels, existing storm drains and change the hydraulic capacity.

Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

- Since this project increases the amount of impervious surface there will be a anticipated to increase storm water volume and flow velocity of downstream flow due to widening. The hydraulics, including quantified increase of flow, of the downstream system will be analyzed in the PA/ED and PS&E phases.

- The project will discharge to lined channels, existing storm drains, and change the hydraulic capacity.

Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

- Existing slopes at the project site are 1:2 (V:H) or flatter, stable, and vegetated. All disturbed slopes will be reconstructed to match the existing slopes.
- The entire area within the project limits is classified as landscaped. Per Caltrans policy, all landscape that is disturbed due to construction will be replaced following Caltrans Policy and Procedure.

Concentrated Flow Conveyance Systems, Checklist DPP-1, Parts 1 and 4

- All existing runoff is directed to the existing road drainage system and no scour and gully will be caused. No oversize drains will be constructed. Existing flow is already concentrated and conveyed in the roadway drainage system and discharged to Los Angeles River hydrological areas. Detailed description and design of needed concentrated conveyaace system to be implemented will be deferred to the next phase.

Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

- This project will involve clearing, grubbing and excavation in specific locations that will be clearly defined on the contract plans during the project PS&E phase to maximize the preservation of existing vegetation.

  Any landscaping that is removed or disturbed by construction related activities will be replaced following Caltrans Replacement Highway Planting Policy. All such work will be provided and detailed in the next phase of the project.

Total estimated cost range for Design Pollution Prevention BMPs for various alternatives is $1,500,000 - $30,000,000.

5. Proposed Permanent Treatment BMPs to be used on the Project

Treatment BMP Strategy, Checklist T-1

- In accordance with the Deputy District Directive DD-92 dated March 17, 2008 this project may implement all permanent treatment BMPs recommended in Corridor Storm Water Management Studies (Corridor Studies).
- The proposed permanent treatment BMPs as recommended by Corridor Storm Water Management Study Final Report, May 2012 on Route 105. There have been a total of fifty two potential Treatment BMPs (1 Bio-strip, 3 Media Filter, 35 Bio-Swales, 1 Detention Device, and 12 GSRDs) identified on the I-105 within project limits.

Biofiltration Swales/Strips, Checklist T-1, Parts 1 and 2

- The Corridor Storm Water Management Study recommends incorporating 1 Bio-filtration Strip and 35 Bio-filtration Swales (Swale/Strip) are recommended throughout the project limits. Funding has been allocated for the implementation of Bio-filtration Swales/Strip in the project.

Recommended Biofiltrations

Site No.	Post Mile	Direction	Paved Tributary Area (Ac.)	Paved WQV (ft3)	BMP TYPE
2	4.49	EB	0.51	1388	Bio-Swale
3	4.51	EB	0.68	1851	Bio-Swale
4	4.61	WB	0.67	1824	Bio-Swale
6	4.83	WB	0.44	1198	Bio-Swale
7	4.86	WB	0.96	2,586	Bio-Strip
10	6.61	WB	0.69	1879	Bio-Swale
29	9.21	WB	1.78	4846	Bio-Swale
31	9.64	WB	1.01	2750	Bio-Swale
32	9.70	EB	2.29	6235	Bio-Swale
34	9.74	EB	1.00	2723	Bio-Swale
35	10.07	WB	0.74	2015	Bio-Swale
37	10.12	WB	0.53	1443	Bio-Swale
39	11.02	WB	1.48	4029	Bio-Swale
41	11.07	EB	0.65	1770	Bio-Swale
41A	10.97	EB	1.01	2750	Bio-Swale

Site No.	Post Mile	Direction	Paved Tributary Area (Ac.)	Paved WQV (ft3)	BMP TYPE
44	11.25	WB	1.45	3948	Bio-Swale
45	11.26	WB	0.51	1388	Bio-Swale
46	11.42	WB	2.51	6833	Bio-Swale
48	11.56	WB	0.64	1742	Bio-Swale
50	11.64	EB	0.42	1143	Bio-Swale
51	11.64	EB	1.01	2750	Bio-Swale
53	11.77	WB	1.13	3076	Bio-Swale
54	11.65	EB	2.16	5881	Bio-Swale
55	11.83	WB	0.61	1661	Bio-Swale
56	11.90	WB	0.56	1525	Bio-Swale
57	11.94	WB	1.77	4819	Bio-Swale
59	12.07	EB	0.77	2096	Bio-Swale
61	12.29	WB	0.58	1579	Bio-Swale
62	12.30	EB	0.58	1579	Bio-Swale
63	12.35	EB	0.72	1960	Bio-Swale
64	12.42	WB	1.31	3566	Bio-Swale
65	12.46	EB	0.77	2096	Bio-Swale
68	12.62	WB	2.13	5799	Bio-Swale
70	12.75	WB	1.52	4138	Bio-Swale
72	13.16	WB	1.03	2804	Bio-Swale
77	17.60	WB	.70	1906	Bio-Swale

Dry Weather Diversion, Checklist T-1, Parts 1 and 3

- There Is no persistent dry weather flow in storm drains present at any of the project locations. Dry weather flow diversion is not necessary and it is not planned to be incorporated in this project.

Infiltration Devices – Checklist T-1, Parts 1 and 4

- Infiltration devices are not recommended by the I-105 Corridor Study. Infiltration devices are not feasible and therefore not incorporated in this project.

Detention Devices, Checklist T-1, Parts 1 and 5

- The Corridor Storm Water Management Study recommends incorporating 1 Detention devices is recommended throughout the project limit. Funding has been allocated for the implementation of Bio-filtration Swales/Strip in the project.

Site No.	Post Mile	Direction	Paved Tributary Area (Ac.)	Paved WQV (ft3)	BMP TYPE
75	10.10	EB	4.59	12,496	Detention Device

Gross Solids Removal Devices (GSRDs), Checklist T-1, Parts 1 and 6

- The 12 GSRDs are recommended by the I-105 Corridor Study to accommodate gross solid.

Recommended GSRDs

Site No.	Post Mile	Direction	Tributary Area (acres)	Peak Design Flow (ft^3/s)	BMP Type
1	4.47	EB	1.60	3.27	Inclined Screen GSRD
8	4.83	EB	1.72	3.51	Inclined Screen GSRD
11	7.00	EB	1.13	2.31	Inclined Screen GSRD
12	8.01	EB	2.51	5.51	Inclined Screen GSRD
13	8.12	EB	1.19	2.61	Inclined Screen GSRD
25	8.93	EB	0.97	2.12	Inclined Screen GSRD
39	11.02	WB	1.48	3.25	Inclined Screen GSRD
41	11.07	EB	0.65	1.43	Inclined Screen GSRD
41A	10.97	EB	1.01	2.22	Inclined Screen GSRD
42	11.10	WB	0.56	1.23	Inclined Screen GSRD
43	11.14	EB	0.74	1.62	Inclined Screen GSRD
76	13.66	WB	1.22	2.86	Inclined Screen GSRD

Traction Sand Traps, Checklist T-1, Parts 1 and 7

- The project is not located in an area where traction sand or abrasives are applied more than twice a year. Traction sand traps are not necessary and are not proposed to be implemented on this project.

Media Filters, Checklist T-1, Parts 1 and 8

- Per I-105 Corridor Storm Water Management Study, dated May 2012, three media filters are recommended within the project limits.

Recommended Media Filters

Site No.	Post Mile	Direction	Total Tributary Area (acres)	Paved WQV (ft3)	BMP Type
5	4.76	WB	1.28	3,485	Earthen Austin S. Filter
36	10.10	WB	4.67	12,714	Austin Vault S. Filter
47	11.49	EB	1.63	4,438	Earthen Austin S. Filter

Multi-Chambered Treatment Trains (MCTTs), Checklist T-1, Parts 1 and 9

- MCTTs are not recommended as a Treatment BMP because existing outfall locations do not serve a "critical source area." Therefore, these devices are not feasible and are not recommended on this project.

Wet Basins, Checklist T-1, Parts 1 and 10

- Wet Basins are not feasible because there is no permanent source of water that may support a permanent pool throughout the project. Therefore, these devices are not incorporated into this project.

- There funding allocated to implement permanent treatment BMPs on this project is $12,930,000.

6. Proposed Temporary Construction Site BMPs to be used on Project

- This project will require the preparation of SWPPP (DSA>1 acre).

During construction, the following temporary construction site BMPs will be considered in the project Special Provisions and will be incorporated in a separate bid item:

- Prepare Storm Water Pollution Prevention Plan
- Storm Water Sampling and Analysis Day
- Water Pollution Control Maintenance Sharing
- Additional Water Pollution Control

- Temporary Fiber rolls (SC-5)
- Street Sweeping (SC-7)
- Temporary Drain Inlet Protection (SC-10)
- Scheduling (SS-1)
- Preservation of Existing Vegetation (SS-2)
- Stabilized Construction Entrance/Exit (TC-1)
- Concrete Waster Management (WM-8)
- Storm Water Annual Report
- Rain Event Action Plan

The following lump sum items are included in the job site Management.

- Paving, Sealing, Saw cutting and Grinding Operations (NS-6)
- Illegal Connection and Illegal Discharge Detection and Reporting
- Vehicle and Equipment Fueling (NS-9)
- Vehicle and Equipment Maintenance (NS-10)
- Spill Prevention and Control (WM-4)
- Solid Waste Management (WM-5)
- Hazardous Waste Management (WM-6)
- Sanitary/Septic waste Management (WM-9)
- A detailed analysis and selection will be provided during PS&E stage.
- Dewatering will be determined at PA/ED or PS&E phase due to insufficient information (geological/geotechnical data) obtain at this phase.

On 5/12/2015, Jimmy Chan, Acting District Construction Storm Water Coordinator, concuered on the temporary construction site BMPs strategy used for the scope of this project.

Total estimated cost range for Construction Site BMPs for various alternatives is $2,500,000 - $50,000,000.

7. Maintenance BMPs (Drain Inlet Stenciling)

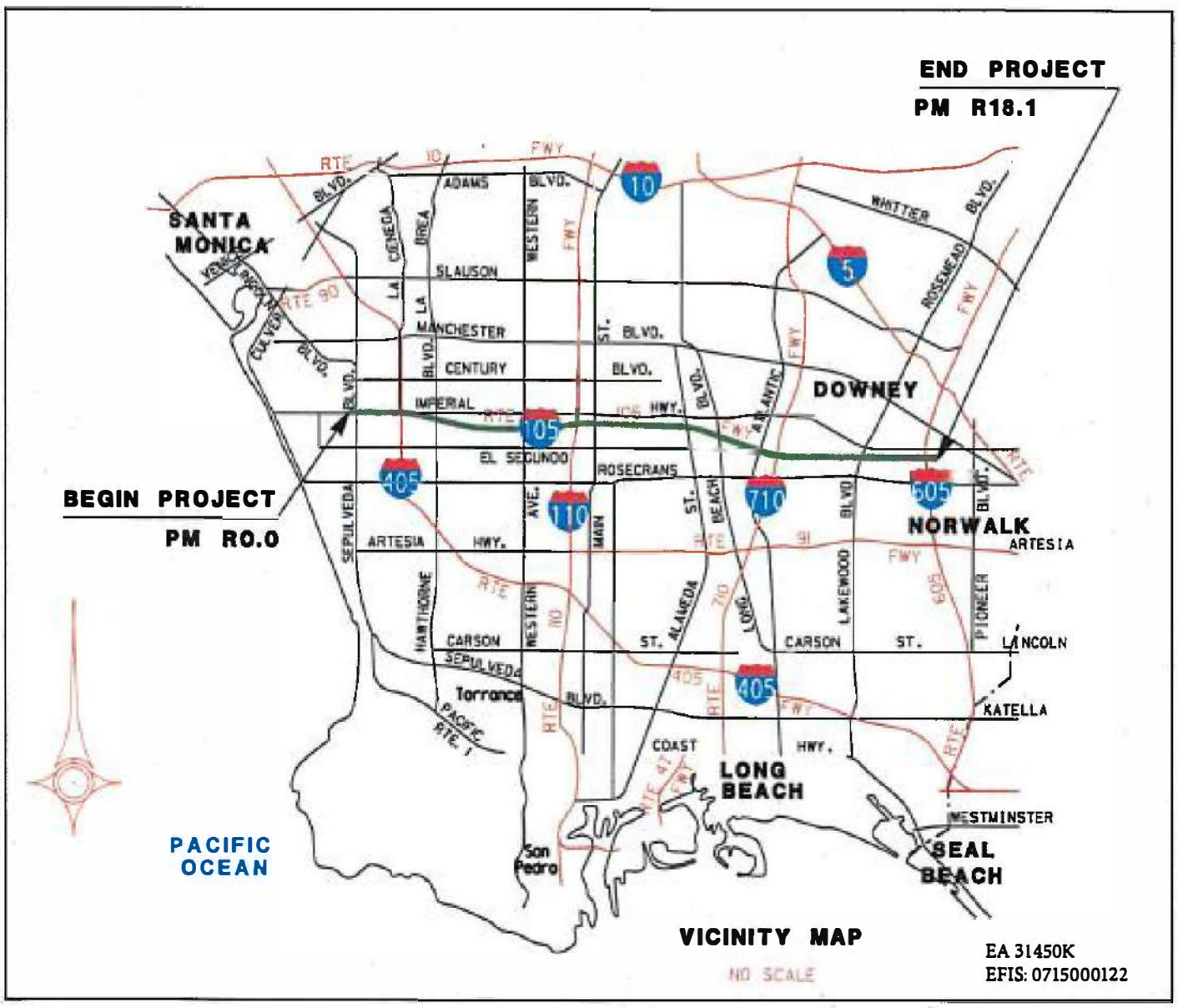
- No drain inlet stenciling will be performed on this project.

Required Attachments

- *Vicinity Map*
- *Evaluation Documentation Form (EDF)*
- *Risk Level Determination Documentation*

Supplemental Attachments

Due to the fact that this is a PID (PSR-PDS) SWDR, the typical supplemental attachments are not required. No additional documentation/checklists were identified by the District Stormwater Coordinator as being necessary.


END PROJECT
PM R18.1
BEGIN PROJECT
PM R0.0
SANTA MONICA
DOWNEY
NORWALK
LONG BEACH
SEAL BEACH
Torrance
San Pedro
PACIFIC OCEAN
ADAMS BLVD.
SLAUSON
MANCHESTER BLVD.
CENTURY BLVD.
IMPERIAL HWY.
EL SEGUNDO
ROSECRANS
ARTESIA HWY.
CARSON ST.
COAST HWY.
WHITTIER BLVD.
LINCOLN
KATELLA
WESTMINSTER
VICINITY MAP
NO SCALE
EA 31450K
EFIS: 0715000122

DATE: 05/05/2015

Project ID (or EA): 0715000014 (EA 31180K)

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
1.	Begin Project Evaluation regarding requirement for consideration of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs. Go to 2
2.	Is this an emergency project?		✓	If Yes, go to 10. If No, continue to 3.
3.	Have TMDLs or other Pollution Control Requirements been established for surface waters within the project limits? Information provided in the water quality assessment or equivalent document.	✓		If Yes, contact the District/Regional NPDES Coordinator to discuss the Department's obligations under the TMDL (if Applicable) or Pollution Control Requirements, go to 9 or 4. S.P. MAG EPM 6/2/2015 (Dist/Reg/SW Coordinator Initials) If No, continue to 4.
4.	Is the project located within an area of a local MS4 Permittee?			If Yes. *(Los Angeles County)*, go to 5. If No, document in SWDR go to 5.
5.	Is the project directly or indirectly discharging to surface waters?			If Yes, continue to 6. If No, go to 10.
6.	Is it a new facility or major reconstruction?			If Yes, continue to 8. If No, go to 7.
7.	Will there be a change in line/grade or hydraulic capacity?			If Yes, continue to 8. If No, go to 10.
8.	Does the project result in a net increase of one acre or more of new impervious surface?			If Yes, continue to 9. If No, go to 10. *50.0 Acres (Net Increase New Impervious Surface)*
9.	Project is required to consider approved Treatment BMPs.	✓		See Sections 2.4 and either Section 5.5or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.
10.	Project is not required to consider Treatment BMPs. _____*(Dist./Reg. Design SW Coord. Initials)* _____*(Project Engineer Initials)* _____*(Date)*			Document for Project Files by completing this form, and attaching it to the SWDR.

1 See *Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs*

RISK DETERMINATION WORKSHEET

Version 8/17/2011

Step 1: Determine Sediment Risk via one of the options listed:

1. GIS Map Method - EPA Rainfall Erosivity Calculator & GIS map
2. Individual Method - EPA Rainfall Erosivity Calculator & Individual Data

Step 2: Determine Receiving Water Risk via one of the options listed:

1. GIS map of Sediment Sensitive Watersheds provided
2. Site Specific Analysis (support documentation required)

Step 3: Determine Combined Risk Level

Risk Level Assessment For: EA 31450K

Sediment Risk Factor Worksheet		Entry
A) R Factor		
Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm	**R Factor Value:**	195.07
B) K Factor (weighted average, by area, for all site soils)		
The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be es large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
Site specific K factor guidance	**K Factor Value:**	0.32
C) LS Factor (weighted average, by area, for all slopes)		
The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
LS Table	**LS Factor Value:**	1.40
	Watershed Erosion Estimate (=RxKxLS) in tons/acre	87.39136
	Site Sediment Risk Factor:	High
	Low Sediment Risk:t< 15 tons/acre	
	Medium Sediment Risk: >=15 and <75 tons/acre	
	High Sediment Risk: >= 75 tons/acre	

Receiving Water (RW) Risk Factor Worksheet	Entry (Yes/No)	Score
A. Watershed Characteristics		
A.1. Does the disturbed area discharge (either directly or indirectly) to a 303(d)-listed waterbody impaired by sediment (For help with impaired waterbodies please visit the link below) or has a USEPA approved TMDL implementation plan for sediment?: http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/impaired2010.shtml	no	Low
OR		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan) http://www.waterboards.ca.gov/waterboards_map.shtml		

Region 1 Basin Plan	Region 4 Basin Plan	Region 7 Basin Plan
Region 2 Basin Plan	Region 5 Basin Plan	Region 8 Basin Plan
Region 3 Basin Plan	Region 6 Basin Plan	Region 9 Basin Plan

Combined Risk Level Matrix

		Sediment Risk		
		Low	Medium	High
Receiving Water Risk	Low	Level 1	Level 2	
	High	Level 2		Level 3

Project Sediment Risk:	High
Project RW Risk:	Low
Project Combined Risk:	Level 2

GIS Map Method:

1. The R factor for the project is calculated using the online calculator at: http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm

2. The K and LS factors may be obtained by accessing the GIS maps located on the State Water Board FTP website at: ftp://swrcb2a.waterboards.ca.gov/pub/swrcb/dwq/cgp/Risk/

EPA United States Environmental Protection Agency

Water: Stormwater

LEW Results

Rainfall Erosivity Factor Calculator for Small Construction Sites

Facility Information

Start Date: 11/02/2020
End Date: 07/02/2025
Latitude: 33.9145
Longitude: -118.1792

Erosivity Index Calculator Results

EROSIVITY INDEX VALUE OF 195.07 HAS BEEN DETERMINED FOR THE CONSTRUCTION PERIOD OF 11/02/2020 - 07/02/2025.

A rainfall erosivity factor of 5.0 or greater has been calculated for your site and period of construction. You do NOT qualify for a waiver from NPDES permitting requirements

Start Over


K (0.32)


LS (14)
10 km
5 mi

ATTACHMENT K

STRUCTURES WITH NON-STANDARD

VERTICL CLEARANCE

STRUCTURS VERTICAL CLEARANCE TABLE

No.	PM	Name	Bridge No	Std. Clearance (ft)	Existing Clearance (ft)
1	R0.53	W105-N1 Connector OC (Access Rd)	53 2802F	15	13.9
2	R6.74	Vernont Ave OC	53 2527	16.5	16.3
3	R7.26	E105-N110 Connector OC	53 2404G	16.5	16.1
4	R8.94	Central Ave UC	53-2480	15.0	14.8
5	R11.91	Fir Street UC	53-2494	15.0	14.7
6	R12.58	Harris Ave UC	53-2497	15.0	14.8