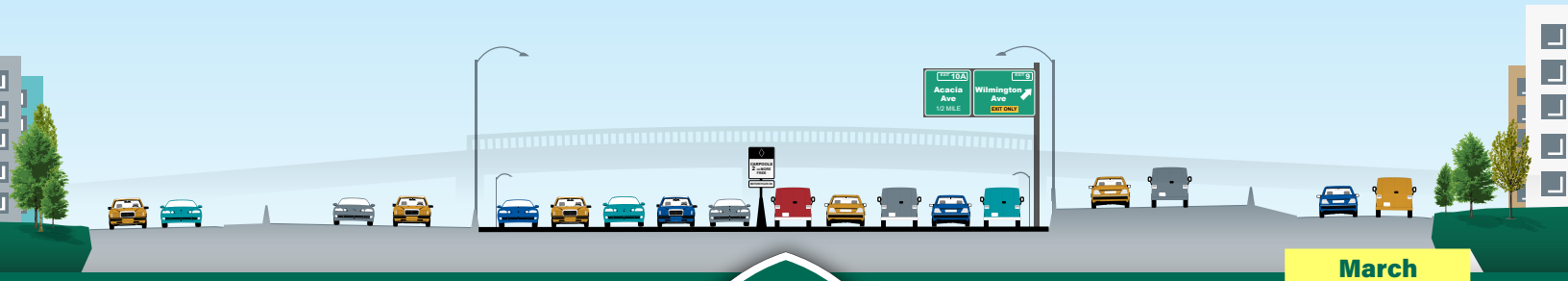
SR-91
CENTRAL AVENUE TO ACACIA COURT IMPROVEMENT PROJECT



March
2021

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment

LOS ANGELES COUNTY, CALIFORNIA DISTRICT 7 – LA – 91
(PM R7.00/R11.04) EA 07-35920/EFIS 0719000201

The environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

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

SCH#
07 LA-91 PM R7.00/R11.04
EA 07-35920
EFIS 0719000201

Improve State Route 91 (SR-91) corridor between Central Avenue and Acacia Court located in the City of Compton and the City of Carson (Postmile R7.00 to Postmile R11.04) and includes one overhead sign located near Long Beach Boulevard within the City of Long Beach in Los Angeles County, California.

INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION/ ENVIRONMENTAL ASSESSMENT

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

THE STATE OF CALIFORNIA
Department of Transportation

RESPONSIBLE AGENCIES:
Los Angeles County Metropolitan Transportation Authority
California Transportation Commission

March 1, 2021
Date

Ronald Kosinski
Deputy District Director
District 7, Division of Environmental Planning
California Department of Transportation
CEQA/NEPA Lead Agency

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SCH: [Insert]

PROPOSED MITIGATED NEGATIVE DECLARATION
Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) in cooperation with the Los Angeles County Metropolitan Transportation Authority (Metro) and Gateway Cities Council of Governments (GCCOG), proposes to improve a portion of the State Route 91 (SR-91) corridor between Central Avenue and Acacia Court (Postmile R7.00 to Postmile R11.04) located in the City of Compton and the City of Carson and one overhead sign located near Long Beach Boulevard within the City of Long Beach in Los Angeles County, California.

The proposed purpose of the project is to reduce congestion, improve mobility and safety of the freeway (both mainline and ramps) on SR-91 between approximately Central Avenue and Acacia Court, and enhance local roadway operations. Caltrans is the lead agency under the California Environmental Quality Act (CEQA).

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt an MND for this project. This does not mean that Caltrans' decision regarding the project is final. This MND is subject to change based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project, and pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have **no impact** on aesthetics, agriculture and forest resources, biological resources, cultural resources, energy, noise, land use and planning, mineral resources, population and housing, public services, recreation, and wildfire.

In addition, the proposed project would have **less than significant impacts** to air quality, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, transportation, tribal cultural resources, utilities and service systems.

In addition, the proposed project would have **less than significant impacts with mitigation incorporated** to geology and soils (paleontology).

_____ _____

Ronald Kosinski
Deputy District Director
District 7, Division of Environmental Planning
California Department of Transportation

Date

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Table of Contents

APPENDICES

FIGURES

TABLES

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Chapter 1 Proposed Project

This Initial Study/Environmental Assessment (IS/EA) is a joint document prepared in compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The California Department of Transportation (Caltrans) is the NEPA lead agency and the CEQA lead agency.

On July 16, 2020, the Council on Environmental Quality (CEQ) published in the Federal Register the Final Rule to update its regulations for the implementation of the National Environmental Policy Act (NEPA). For NEPA reviews that began prior to September 14, 2020, Caltrans has decided to proceed under the 1978 regulations for the proposed action.

1.1 NEPA Assignment

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program) pursuant to 23 USC 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, Caltrans entered into a Memorandum of Understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012, and was renewed on December 23, 2016, for a term of five years. In summary, Caltrans continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Caltrans assumed all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

1.2 Introduction

Caltrans, in cooperation with the Los Angeles County Metropolitan Transportation Authority (Metro), and Gateway Cities Council of Governments (GCCOG), proposes to improve a portion of the State Route 91 (SR-91) corridor between Central Avenue and Acacia Court located in the City of Compton and the City of Carson and one overhead sign located near Long Beach Boulevard within the City of Long Beach in Los Angeles County, California.

In 2012, Metro and the GCCOG initiated the SR-91/Interstate 605 (I-605)/I-405 "Congestion Hot Spots Feasibility Study." The feasibility study was completed in 2013 and identified freeway and arterial "Hot Spots" throughout the SR-91 corridor. In 2017, Metro and Caltrans approved a Project Study Report-Project Development Support (PSR-PDS) for SR-91 between Central Avenue (postmile [PM] R8.2) and Paramount Boulevard (PM R13.8). The PSR-PDS served as the Project Initiation Document (PID) and identified alternatives and design options to improve mobility within the project limits and estimated the capital outlay support cost necessary to complete the technical studies and analyses for the Project Approval and Environmental Document (PA/ED) phase of the project.

The PSR-PDS found that SR-91 operates at a substandard Level of Service (LOS) and currently experiences substantial congestion, which is forecasted to increase in the absence of physical and operational improvements.

1.2.1 Existing Facility

SR-91 is a major east-west facility in the southerly portion of Los Angeles County. SR-91 is used primarily for interstate, interregional, and intraregional travel to move people and goods through Los Angeles, Orange, Riverside, and San Bernardino Counties and provides access to the ports of Los Angeles and Long Beach. It also serves one of the largest centers in the Los Angeles basin for warehousing and transloading, which is located in the cities of Compton and Carson (Figures 1.2-1 and 1.2-2).

SR-91 is part of the National Highway System and Freeway and Expressway System. It is a Terminal Access route. Its functional classification is "other Freeway or Expressway." The project segment of SR-91, west of Interstate 710 (I-710), generally consists of four mixed-use lanes and one high-occupancy vehicle (HOV) lane in both the eastbound and westbound direction, separated by a median barrier. All existing freeway mainline lanes are between 11 and 12 feet wide. Median and outside shoulders are provided; however, the widths of shoulders are nonstandard throughout most of the project area. The median shoulder width is 2 feet in both eastbound and westbound directions. The eastbound and westbound outside shoulders are paved, with widths varying from 8 to 10 feet and 10 to 13 feet, respectively.

1.2.2 Local Roads and Intersections

Within the project area, Artesia Boulevard consists of a pair of two-lane frontage roads, one for westbound traffic and one for eastbound traffic that parallel SR-91. The westbound Artesia Boulevard frontage road begins at Acacia Court and ends at Avalon Boulevard. The existing westbound lanes are 12 to 18 feet wide with 2-foot gutters on both sides. The eastbound Artesia Boulevard frontage road begins at Central Avenue and is a continuation of Albertoni Street, which ends at Acacia Court. The existing eastbound lanes are 12 feet wide with a 6-foot wide outside shoulder and 2 foot wide gutters on either side. East of Acacia Court, Artesia Boulevard continues as a two-way facility on the northern side of SR-91.

The frontage roads intersect with Central Avenue, Wilmington Avenue, and Acacia Court. Central Avenue is a four-lane arterial that runs north-south over SR-91; the existing lanes are 11 to 22 feet wide. Wilmington Avenue is a four-lane arterial that runs north-south over SR-91, and the existing lanes are 11 to 14 feet wide. Acacia Court is a one-way, two-lane arterial that is a continuation of the eastbound Artesia Boulevard frontage road. It runs north-south under SR-91, and the existing lanes are 11 feet wide. Along the SR-91 mainline; the primary land uses are commercial and industrial, with heavy truck volumes in the project area. As a result, there is pavement degradation at the local road intersections of Central Avenue and Wilmington Avenue. Within the project limits, there are a total of 16 billboards are located on either side of SR-91, on city right of way (ROW) along Artesia Boulevard. Within the project limits, there are no bicycle lanes, and sidewalks are limited along Central Avenue, Wilmington Avenue, and Acacia Court.

1.2.3 Funding and Programming

This project is included in the Southern California Association of Governments (SCAG) *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) and the Federal Transportation Improvement Program (FTIP) Amendment 19-12 with Identification

Number (ID No.) LA0G1563 (SCAG 2020) (See Correspondence/Attachments in Chapter 4, Comments and Coordination). The project description shows that Metro proposes to improve the weaving conflict on SR-91 between Central Avenue to Acacia Court by adding a two-lane Collector-Distributor (C-D) road in each direction. The proposed improvements also include enhancements to the truck turning radii at the SR-91 Wilmington Avenue and Central Avenue Interchanges.

Future phases of the SR-91 Central Avenue to Acacia Court Improvement Project are anticipated to be funded by Metro's Measure R half-cent sales tax program. In addition, this Project will be eligible for Federal-aid funding with the approved NEPA document.

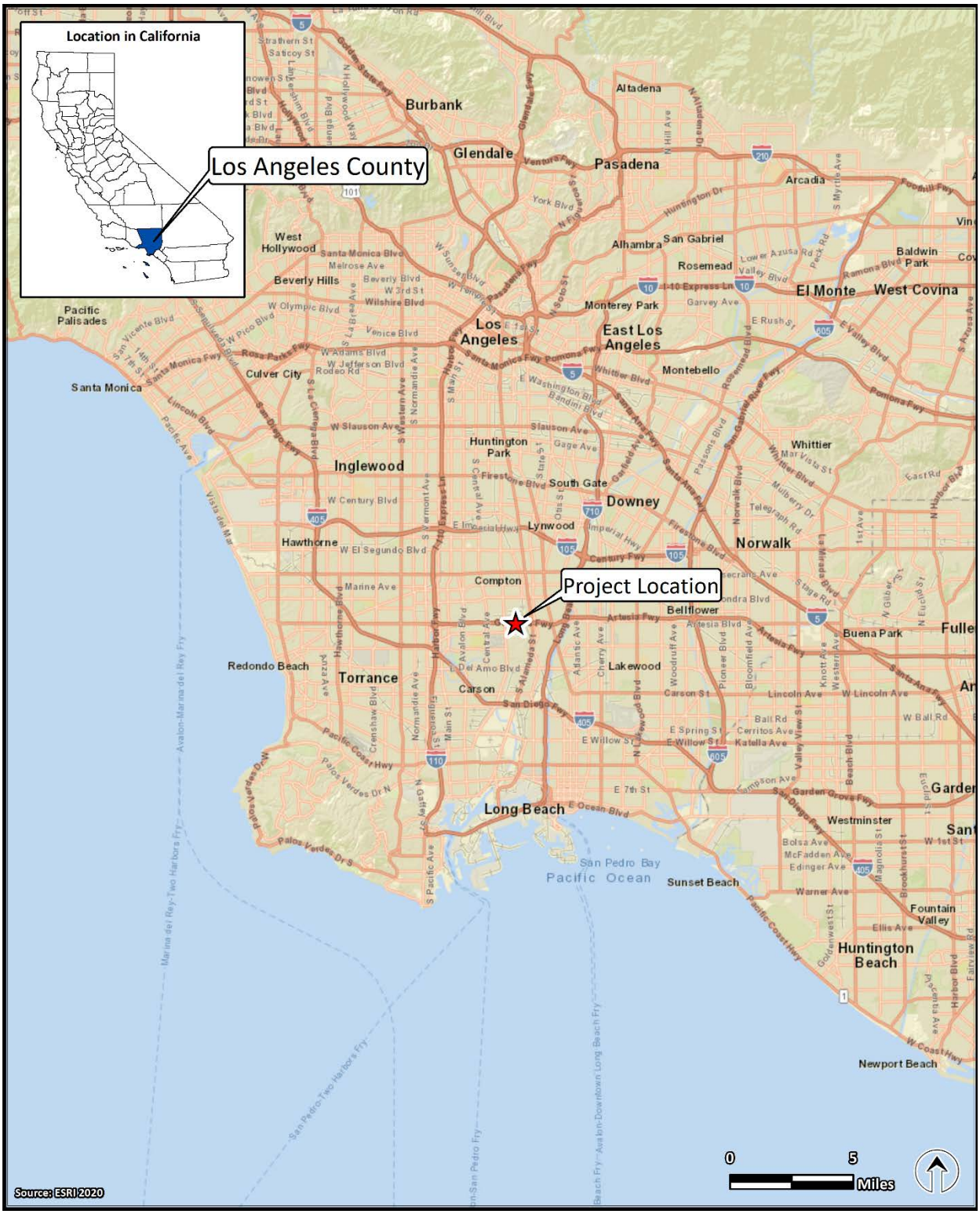


Figure 1.2-1 Project Location Map

Source: HNTB (July 2020)

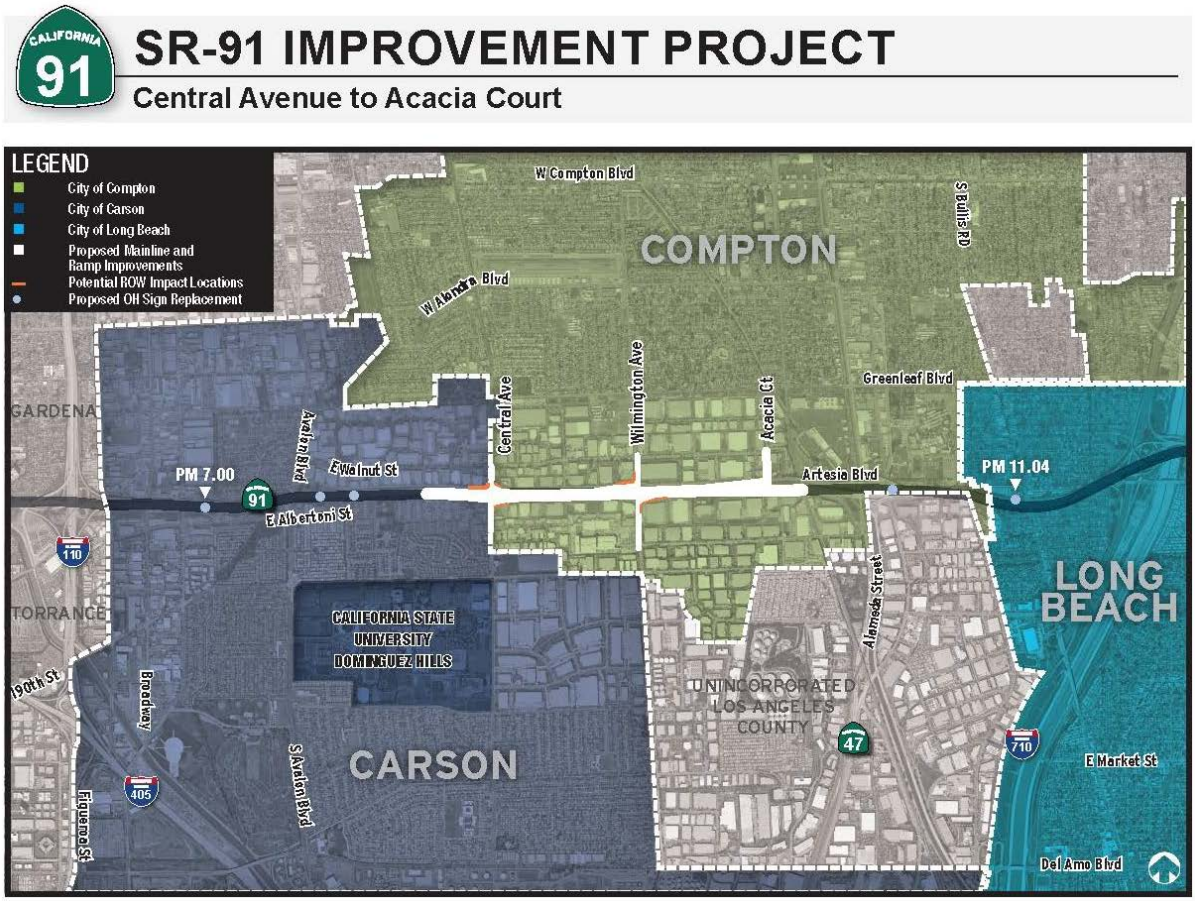


Figure 1.2-2. Project Vicinity Map

Source: HNTB (July 2020)

1.3 Purpose and Need

1.3.1 Purpose

The purpose of the project is to reduce congestion, improve mobility and safety of the freeway (both mainline and ramps) on SR-91 between approximately Central Avenue and Acacia Court, and enhance local roadway operations.

1.3.2 Need

The SR-91 corridor currently experiences congestion, which is exacerbated by increased traffic volumes and closely spaced freeway entrance and exit ramps. The short distance between the closely spaced interchanges at Central Avenue, Wilmington Avenue, and Acacia Court causes congestion and weaving issues on the mainline. There is also a high concentration of collisions throughout the corridor.

1.3.2.1 Capacity, Transportation Demand, and Safety

Existing Capacity

SR-91 experiences congestion between the I-110 and I-710 interchanges in the westbound direction during the morning peak period, and eastbound congestion during the afternoon peak period. Within the project limits, vehicle weaving between the closely spaced interchanges at Central Avenue, Wilmington Avenue, and Acacia Court is the main contributor to traffic congestion. In addition, because the land uses within the project limits, adjacent to the SR-91, are primarily commercial and industrial, a large amount of heavy truck traffic exists in the project area. Some of the other issues identified within the project area include closely spaced local intersections at the ramp termini. The Traffic Operations Analysis Report (TOAR) (November 2020), examined the existing (2019) weekday AM (6:00 to 9:00) and PM (4:00 to 7:00) peak period traffic demands and the Average Daily traffic (ADT) along SR-91; the results are summarized in Table 1.3-1.

Table 1.3-1. Existing Year (2019) SR-91 Peak Period Volumes and ADT

SR-91 Segment	Mixed Flow + HOV AM	Mixed Flow + HOV PM	ADT[a]
Avalon Boulevard to Central Avenue	7,508	7,304	112,780
Central Avenue to Wilmington Avenue	7,438	7,073	110,190
Wilmington Avenue to Acacia Court	7,702	7,713	117,250
Acacia Court to Alameda Street	7,587	7,584	115,350
Santa Fe Avenue to Acacia Court	9,610	6,340	120,120
Acacia Court to Wilmington Avenue	10,196	7,022	130,090
Wilmington Avenue to Central Avenue	9,992	7,159	129,560
Central Avenue to Avalon Boulevard	9,478	7,002	128,750

Source: TOAR Figure 3-1 (November 2020)

[a] Represents the average number of vehicles per day
+ = plus/and

Table 1.3-2 shows the weekday AM (6:00 to 9:00) and PM (4:00 to 7:00) peak period traffic volumes for the ramps within the project area under the Existing Year (2019).

Table 1.3-2. Existing Year (2019) Ramp Peak Period Volumes

Freeway	Ramp	AM	PM
Eastbound SR-91	Avalon Boulevard On-Ramp	408	369
Eastbound SR-91	Central Avenue Off-Ramp	804	910
Eastbound SR-91	Central Avenue On-Ramp	734	679
Eastbound SR-91	Wilmington Avenue Off-Ramp	578	373
Eastbound SR-91	Wilmington Avenue On-Ramp	842	1,013
Eastbound SR-91	Acacia Court Off-Ramp	115	129
Eastbound SR-91	Alameda Street Off-Ramp	287	85
Westbound SR-91	Acacia Court On-Ramp	586	682

Freeway	Ramp	AM	PM
Westbound SR-91	Wilmington Avenue Off-Ramp	567	381
Westbound SR-91	Wilmington Avenue On-Ramp	363	518
Westbound SR-91	Central Avenue Off-Ramp	859	646
Westbound SR-91	Central Avenue On-Ramp	345	489
Westbound SR-91	Avalon Boulevard Off-Ramp	750	516
Westbound SR-91	Avalon Boulevard Off-Ramp	750	516

Source: TOAR (November 2020)

The existing weekday AM (6:00 to 9:00) and PM (4:00 to 7:00) peak period heavy vehicle percentages for SR-91 mainline are summarized in Table 1.3-3.

Table 1.3-3. Existing Year (2019) AM and PM Peak Period Truck Percentages

Segment SR-91	AM	PM
Avalon Boulevard to Central Avenue	7%	5%
Central Avenue to Wilmington Avenue	8%	4%
Wilmington Avenue to Acacia Court	9%	5%
Acacia Court to Alameda Street	9%	5%
Santa Fe Avenue to Acacia Court	4%	6%
Acacia Court to Wilmington Avenue	5%	6%
Wilmington Avenue to Central Avenue	5%	5%
Central Avenue to Avalon Boulevard	4%	5%

Source: TOAR (November 2020)

Level of Service

Freeway traffic flow can be defined in terms of LOS. There are six defined LOS for freeways: LOS A to LOS F. As shown in Figure 1.3-1, LOS A represents free-flowing traffic with low traffic volumes and high speeds. LOS F represents traffic volumes that exceed the facility capacity and result in forced flow operations at low speeds.

During the AM peak period, the westbound SR-91 corridor operates under over-saturated conditions east of the Santa Fe Avenue off-ramp. Additionally, queues from the I-110 interchange and Wilmington Avenue off-ramp spillback onto the westbound SR-91 corridor and cause slowdowns in the outside lanes. During the PM peak period, the entire eastbound SR-91 corridor operates under over-saturated conditions due to a downstream bottleneck beyond our study area.

During the AM peak period, all of the study segments on eastbound SR-91 including the mainline, ramps, and HOV lanes currently operate at LOS D or better conditions. In the westbound direction, SR-91 mainline experiences substantial congestion during the AM peak period due to heavy commute traffic, resulting in a bottleneck between Long Beach Boulevard and Santa Fe Avenue, which currently operates at LOS F conditions and adds to the congestion on I-710. West of Santa Fe Avenue, there is some slow-down of traffic on the outside lanes at the weaving segment between the Acacia Court on-ramp and Wilmington Avenue off-ramp and

at the westbound off-ramp to I-110; however, these mainline segments as a whole still operate at LOS D or better conditions during the AM peak period. The westbound HOV lane operates at LOS E conditions between Santa Fe Avenue and Acacia Court, and LOS D west of Acacia Court.

During the PM peak period, all of the study locations on eastbound SR-91 including mainline, ramps, and HOV lanes experience substantial traffic congestion and operate at LOS F conditions due to the downstream bottleneck at I-710 and Atlantic Avenue, which results in a substantial eastbound SR-91 queue that extends back to I-110. In the westbound direction, SR-91 has adequate capacity to accommodate traffic demand and all of the study segments including mainline, ramps, and HOV lanes currently operate at LOS C or better conditions during the PM peak period, as shown in Tables 1.3-4 and 1.3-5.

LEVELS OF SERVICE
for Freeways

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

Figure 1.3-1. Level of Service for Freeways

Table 1.3-4. Existing (2019) Peak Period Freeway Mainline Operations – Eastbound SR-91

Study Location by Segments	Status	AM Peak Period MF	AM Peak Period HOV	PM Peak Period MF[a]	AM Peak Period HOV[b]
Eastbound SR-91: Avalon Boulevard On-Ramp to Central Off-Ramp	Weaving	D	A	**F**	**F**
Eastbound SR-91: Central Avenue Off-Ramp to Central Avenue On-Ramp	Weaving (HOV Access)	C	A	**F**	**F**
Eastbound SR-91: Central Avenue On-Ramp to Wilmington Avenue Off-Ramp	Weaving	D	A	**F**	**F**
Eastbound SR-91: Wilmington Avenue Off-Ramp to Wilmington Avenue On-Ramp	Basic	C	A	**F**	**F**
Eastbound SR-91: Wilmington Avenue On-Ramp to Acacia Court Off-Ramp	Weaving	D	A	**F**	**F**
Eastbound SR-91: Acacia Court Off-Ramp to Alameda Street Off-Ramp (four-lane section)	Basic	D	A	**F**	**F**
Eastbound SR-91: Acacia Court Off-Ramp to Alameda Street Off-Ramp (five-lane section)	Basic	C	A	**F**	**F**

Source: TOAR (November 2020)

[a] LOS F in PM Peak Period MF and AM Peak Period HOV columns indicate unacceptable LOS conditions.
[b] Refer to Figure 1.3-1 for a more detailed explanation of Levels of Service for Freeways.

A = no delays
C = minimal delays
D = minimal delays
F = considerable delays
MF = mixed flow lane
HOV = high occupancy vehicle lane

Table 1.3-5. Existing (2019) Peak Period Freeway Mainline Operations – Westbound SR-91

Study Location	Status	AM Peak Period MF	AM Peak Period HOV	PM Peak Period MF	PM Peak Period HOV
Westbound SR-91: Santa Fe Avenue Off-Ramp to Acacia Court On-Ramp	Basic	D	**E[a]**	C	C
Westbound SR-91: Acacia Court On-Ramp to Wilmington Avenue Off-Ramp	Weaving	C	**F[a]**	C	C
Westbound SR-91: Wilmington Avenue Off-Ramp to Wilmington Avenue On-Ramp	Basic	C	**F[a]**	C	C
Westbound SR-91: Wilmington Avenue On-Ramp to Central Avenue Off-Ramp	Weaving	C	**F[a]**	C	C
Westbound SR-91: Central Avenue Off-Ramp to Central Avenue On-Ramp	Basic	C	**F[a]**	C	C
Westbound SR-91: Central Avenue Off-Ramp to Central Avenue On-Ramp (HOV Lane Ends)	Basic	D	N/A	C	N/A
Westbound SR-91: Central Avenue On-Ramp to Avalon Boulevard Off-Ramp	Weaving	D	N/A	C	N/A

Source: TOAR (November 2020)

Note: Refer to Figure 1.3-1 for a more detailed explanation of Levels of Service for Freeways.

[a] Indicates unacceptable LOS conditions
N/A = not applicable

Local Roadways

The TOAR also evaluated AM and PM peak hour delays and LOS for existing (2019) conditions for the study intersections. The peak periods for weekday are AM (6:00 to 9:00) and PM (4:00 to 7:00). LOS is a congestion rating that varies from LOS A to F. LOS A represents stable flow and very slight delay. LOS E represents unstable flow, poor progression, and long signal cycle lengths, and LOS F represents forced flow or jammed conditions and is considered over capacity. LOS was used to evaluate the existing operating capacity of intersections within the project study area, as illustrated in Figure 1.3-2.

Table 1.3-6 shows the AM and PM peak hour delays and respective LOS for the study intersections. As shown, the key study intersections operate at LOS D or better during both peak hour periods, except for the Wilmington Avenue/eastbound Artesia/SR-91 eastbound ramp intersection, which currently operates at LOS E conditions during the PM peak period.

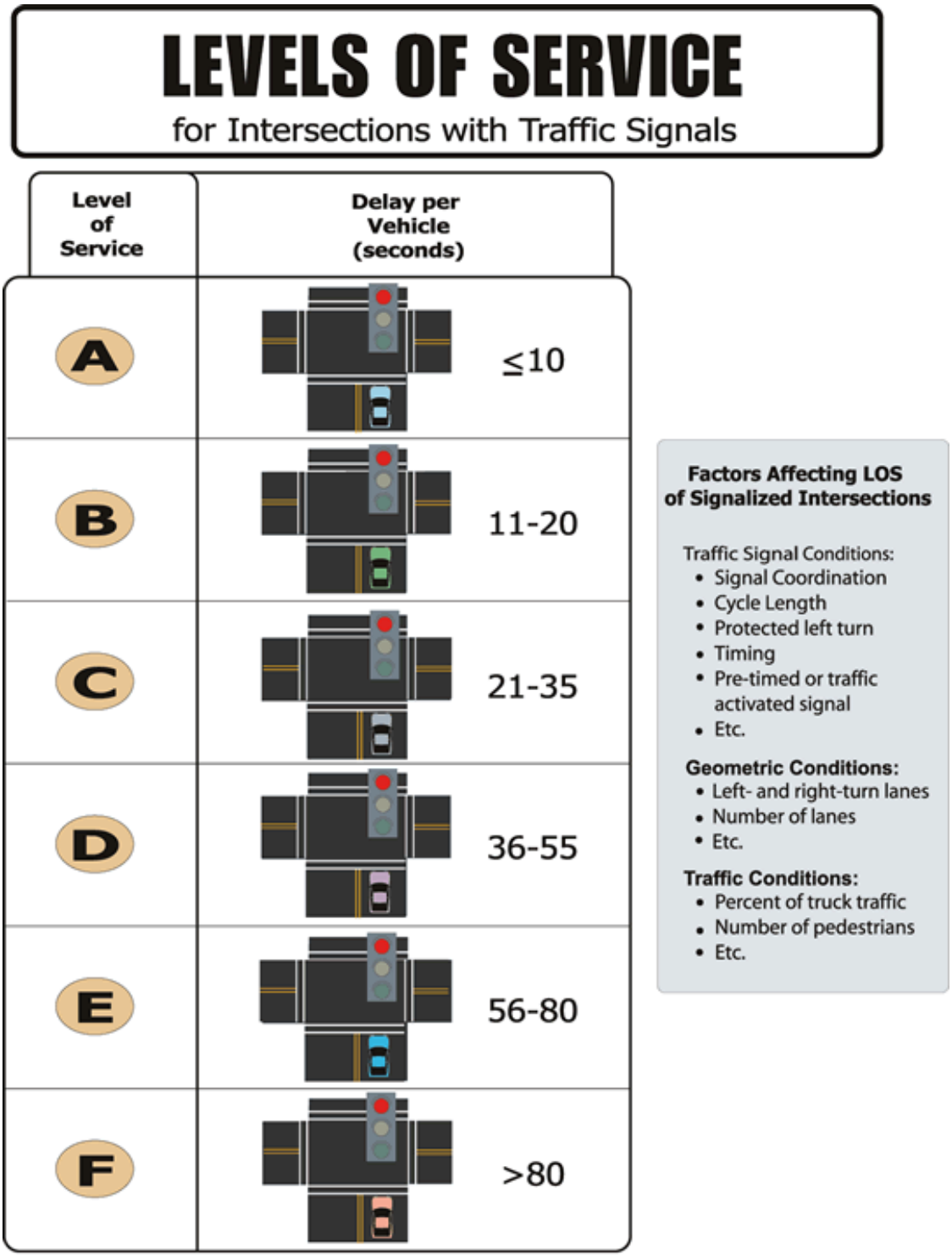
Table 1.3-6. Existing (2019) Peak Period Intersection Operations

Study Intersection	Status	AM Peak Period LOS	AM Peak Period Delay[b]	PM Peak Period LOS	PM Peak Period Delay[b]
Central Avenue/SR-91 Westbound Ramp	Signal	C	23	C	23
Central Avenue/SR-91 Eastbound Ramp	Signal	C	32	C	29
Wilmington Avenue/SR-91 Westbound Ramp	Signal	D	39	D	47
Wilmington Avenue SR-91 Eastbound Ramp[a]	Signal	C	29	**E[c]**	**58[c]**
Acacia Court/Artesia Boulevard	Signal	B	17	C	35

Source: TOAR (November 2020)

[a] Intersection was analyzed in the Highway Capacity Manual 2000 due to the nonstandard NEMA phase.
[b] Delay is reported in seconds per vehicle.
[c] Indicates unacceptable LOS.

Note: Refer to Figure 1.3-2 for a more detailed explanation of Levels of Service for Intersections.



Source: 2000 HCM, Exhibit 16-2, Level of Service Criteria for Signalized Intersections

Figure 1.3-2. Levels of Service for Intersections with Traffic Signals

HCM = Highway Capacity Manual
> = greater than
≤ = less than or equal to

Heavy truck volumes are substantial at key study intersections, which result in some slow down, especially for all vehicles turning, including trucks. See Table 1.3-7 for 2019 peak period truck percentages at key study intersections indicating the truck percentages range from 11 to 20 percent.

Table 1.3-7. Existing (2019) Peak Period Truck Percentages (Intersections)

Study Location	AM Peak Period	PM Peak Period
Central Avenue/SR-91 Westbound Ramps	12%	12%
Central Avenue/SR-91 Eastbound Ramps	11%	11%
Wilmington Avenue/SR-91 Westbound Ramps	11%	13%
Wilmington Avenue/SR-91 Eastbound Ramps	15%	13%
Acacia Court/Artesia Boulevard	20%	10%

Source: TOAR (November 2020)

Local roadway geometric improvements have been identified to enhance the truck turning radii at the Central Avenue and Wilmington Avenue intersections. Additional wayfinding signage and pavement markings are proposed, providing lane designations to northbound Wilmington Avenue and Central Avenue right-turn movements to the eastbound C-D road on-ramps and Artesia Boulevard. These local roadway enhancements would improve overall mobility of the local road network by reducing traffic conflicts at the intersections.

Transportation Demand

The project improvements are located within an existing facility in a highly-developed urban area with few developable vacant lands within the project study area. The pattern and rate of population and housing growth is expected to remain consistent with the population anticipated by existing general plans for the area. Utilities, land use, and community facilities would not be affected; proposed improvements to address short weaving distances and consolidation of access for three closely spaced interchanges would not influence growth; and no growth-related impacts are expected.

The SR-91 corridor currently carries relatively high percentages of truck traffic on both mainline and ramps in the study area. SR-91 is identified in the Caltrans District 7 Goods Movement Corridor as a primary corridor from I-710 to Orange County and as a secondary corridor from I-110 to I-710. Current levels of congestion and future projections indicate that congestion will continue to worsen.

Accidents and Safety

For the purposes of this project, Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) includes a 3-year collision history for the study area from April 1, 2016 to March 31, 2019. Collision data for the SR-91 mainline segments within the project limits includes the number of fatality collisions, fatality and injury collisions, total collisions for the freeway mainline segments, and the actual 3-year rates with a comparison to the statewide average collision rates on similar facilities.

A total of 615 collisions occurred on the SR-91 mainline between Avalon Boulevard and Santa Fe Avenue between April 1, 2016 and March 31, 2019. Collision rates at 5 out of the 10 analyzed mainline segments showed a higher than statewide average for the following similar facilities:

- Eastbound SR-91, Avalon Boulevard to Central Avenue
- Eastbound SR-91, Central Avenue to Wilmington Avenue
- Eastbound SR-91, Wilmington Avenue to Acacia Court
- Eastbound SR-91, Acacia Court to Alameda Street
- Westbound SR-91, Acacia Court to Wilmington Avenue
- Westbound SR-91, Central Avenue to Avalon Boulevard

Eastbound SR-91 from Avalon Boulevard to Central Avenue

Fatal accident rates at this location exceed the statewide average. During the 3-year period, 91 collisions occurred, two of which were fatal. There were also 23 injury accidents that occurred. As a result, the fatal accident rate was 0.018 a/mvm (accidents per million vehicle miles), compared with the statewide average of 0.002 a/mvm. The primary collision factors were:

- Speeding (42)
- Improper turn (9)
- Influence of alcohol (6)
- Other than driver (3)
- Other violations (30)
- Unknown (1)

The types of collisions included:

- Rear end (39)
- Sideswipe (35)
- Hit object (14)
- Overturned (2)
- Broadside (1)

The accidents occurring in this segment were primarily experienced during the PM peak hour period, and a high percentage of the collisions were rear end (43 percent) and sideswipe accidents (38 percent). Traffic congestion and weaving are two key factors related to these types of collisions. The proposed project would redirect weaving areas from the freeway mainline to the C-D road and increase the weaving distance from Avalon Boulevard, thus alleviating congestion on the freeway and improving merge and diverge movements. It is anticipated that the accident rates would be reduced with the project.

Eastbound SR-91 from Central Avenue to Wilmington Avenue

Fatal plus injury and total accident rates at this location exceed the statewide average. During the 3-year period, 93 collisions occurred and 34 of these were injury accidents. The fatal plus injury accident rate of 0.42 a/mvm and a total accident rate of 1.14 a/mvm exceed the statewide average of 0.26 a/mvm and 0.84 a/mvm, respectively. The primary collision factors were:

- Speeding (64)
- Other violations (20)
- Improper turn (3)
- Influence of alcohol (1)
- Other than driver (4)
- Unknown (1)

The types of collisions included:

- Rear end (68)
- Sideswipe (16)
- Hit object (9)

The accidents appear to be primarily a result of congestion and weaving, as most of the collisions occurred during the PM peak hour period, and a high percentage of collisions were either rear-end (73 percent) or sideswipe (17 percent). The project proposes a C-D road, which would consolidate multiple access points from the Central Avenue and Wilmington Avenue interchanges into a single access point. As a result, traffic congestion and merge and diverge movements on the mainline would improve. Accident rates are anticipated to be reduced with the project.

Eastbound SR-91 from Wilmington Avenue to Acacia Court

Fatal plus injury and total accident rates at this location exceed the statewide average. During the 3-year period, 85 collisions occurred, 22 of which were injury accidents. The fatal plus injury accident rate of 0.30 a/mvm and a total accident rate of 1.15 a/mvm exceed the statewide average of 0.24 a/mvm and 0.80 a/mvm, respectively. The primary collision factors were:

- Speeding (49)
- Other violations (27)
- Other than driver (4)
- Improper turn (3)
- Influence of alcohol (2)

The types of collisions included:

- Rear end (49)
- Sideswipe (26)
- Hit object (9)
- Broadside (1)

The accidents appear to be primarily a result of congestion and weaving, as most of the collisions occurred during the PM peak hour period, and a high percentage of collisions were either rear-end (58 percent) or sideswipe (31 percent). The proposed project would redirect the short and nonstandard weaving areas from the freeway mainline to the C-D road to assist in consolidating multiple ingress and egress points. These modifications would reduce the ingress/egress points on the freeway mainline, and accident rates are anticipated to be improved with the project.

Westbound SR-91 from Acacia Court to Wilmington Avenue

Fatal accident rates exceed the statewide average. During the 3-year period, 46 collisions occurred; 1 accident was fatal and 8 were injury accidents. The fatal accident rate of 0.014 a/mvm exceeds the statewide average of 0.002 a/mvm. The primary collision factors were:

- Other violations (19)
- Speeding (14)
- Improper turn (7)

- Other than driver (4)
- Influence of alcohol (2)

The types of collisions included:

- Rear end (17)
- Sideswipe (17)
- Hit object (10)
- Overturned (1)
- Other (1)

The accidents appear to be primarily a result of congestion and weaving, as most of the collisions occurred during the PM peak hour period, and a high percentage of collisions were either rear-end (37 percent) or sideswipe (37 percent). The project proposes a C-D road, which would consolidate multiple access points from the Central Avenue and Wilmington Avenue interchanges into a single access point. As a result, traffic congestion and merge and diverge movements on the mainline would improve. Accident rates are anticipated to be reduced with the project.

Westbound SR-91 from Wilmington Avenue to Central Avenue

This location has actual accident rates less than the statewide average. During the 3-year period, 52 collisions occurred, 10 of which were injury accidents. The primary collision factors were:

- Speeding (27)
- Other violations (15)
- Improper turn (4)
- Influence of alcohol (4)
- Unknown (2)
- Other than driver (1)

The types of collisions included:

- Rear end (24)
- Sideswipe (17)
- Hit object (10)
- Broadside (1)

The C-D road would consolidate multiple access points from the Central Avenue and Wilmington Avenue interchanges into a single access point. As a result, traffic congestion on the mainline would improve, as well as merge and diverge movements. It is anticipated that the accident rates would be reduced with the project. The C-D Road Alternative is anticipated to provide traffic safety benefits.

1.3.2.2 Operational Deficiencies

Within the project limits, vehicles and trucks weaving to enter and exit the mainline between the closely spaced interchanges (less than 1 mile apart) at Acacia Court, Wilmington Avenue, and Central Avenue is the main contributor to traffic congestion. In addition, during the AM and PM peak period, the SR-91 mainline truck percentage ranges from 4 to 9 percent. Adjacent land

uses to SR-91 are primarily commercial and industrial, and at key intersections, the truck percentages are higher and range from 11 to 20 percent. The large amount of truck traffic has caused substantial pavement degradation at the intersections of Central Avenue and Wilmington Avenue. In addition to the high percentage of trucks, local intersections are spaced close to ramp termini, which results in traffic queuing for all vehicles navigating these turns, especially large trucks.

1.3.2.3 Legislation

In November 2008, California voters approved Measure R, a half-cent sales tax for Los Angeles County, to finance new transportation projects and programs and accelerate those already in the pipeline. According to the ballot measure, Measure R funding was to be used for traffic relief, rail extensions, and to reduce dependency on foreign oil. The tax took effect in July 2009. Measure R alone does not fully fund all projects. Measure R contains an Expenditure Plan that identifies the projects to be funded and additional funding sources that would be used to complete the projects. The SR-91 Central Avenue to Acacia Court Improvement Project is funded by the County of Los Angeles' Measure R sales tax funds and administered by Metro. Although federal funds have not been identified, they are anticipated.

1.3.2.4 Independent Utility and Logical Termini

Federal regulations (23 *Code of Federal Regulations* [CFR] 771.111(f)) require that “logical termini” and “independent utility” be established for a transportation improvement project evaluated under NEPA. The project limits were defined based on providing a logical and independent set of improvements. Logical termini are defined as rational end points for transportation improvement and analysis of the potential environmental impacts of a proposed project. A project is defined as having independent utility if it meets the project purpose in the absence of other improvements in the project limits.

Logical Termini

The focus of the proposed project is to reduce congestion, improve mobility and safety of the freeway, and enhance local roadway operations. The traffic study area covers SR-91 between Avalon Boulevard and Santa Fe Avenue and local street intersections at and adjacent to the freeway interchanges. The proposed project provides logical termini because the western and eastern termini ensure a sufficient length (approximately 4 miles) to integrate the proposed improvements within the existing facilities and interchanges including advanced signage that would avoid any abrupt transitions.

Independent Utility

The addition of a concrete-barrier-separated C-D road system, included in the proposed project would address the weaving issues associated with the closely spaced interchanges without changing the configuration of the mainline. The proposed improvements on the local roads address operational issues associated with heavy truck volumes and would enhance operations on local roads. The proposed project focuses on addressing the project need and would provide benefits to the traveling public without requiring or being dependent on the provision of other improvements to SR-91 or other freeways or arterials. These improvements would also benefit travelers as they enter and exit the freeway or travel in the general purpose and HOV lanes because mainline operations would be improved overall. The proposed project represents a reasonable expenditure even if no additional transportation improvements are made in the corridor. The proposed project can be implemented in the absence of any other improvements, and it does not restrict consideration of alternatives for other reasonably foreseeable

transportation improvements in the SR-91 corridor and areas adjacent to the project limits. The proposed project would have independent utility because it meets the project purpose and need in the absence of other improvements in the SR-91 corridor.

1.4 Project Description

The proposed project would improve congestion on the SR-91 between Central Avenue and Acacia Court and at the local interchanges of Central Avenue, Wilmington Avenue and Acacia Court. The project aims to improve mobility and safety of the SR-91 freeway (both mainline and ramps) and enhance local roadway operations.

1.4.1 Alternatives

1.4.1.1 Build Alternative

The C-D road implements a concrete-barrier- and/or retaining wall system that would separate the C-D road from the mainline and run parallel to the SR-91 mainline, connecting Central Avenue, Wilmington Avenue, and Acacia Court on- and off-ramps. This alternative would consolidate multiple access points from the Central Avenue, Wilmington Avenue, and Acacia Court interchanges into a single access point, which would reduce the number of ingress/egress points on the freeway mainline and redirect the short and nonstandard weaving areas from the freeway mainline to the C-D road. This would improve the merge and diverge movements and traffic congestion on the freeway mainline, while increasing the weaving distance of on- and off-ramps between Acacia Court and Avalon Boulevard. The C-D road would have minimal ROW impacts because it would be constructed within existing Caltrans ROW. Table 1.4-1 and Figures 1.4-1 and 1.4-2 presents the major project features for the Build Alternative.

Table 1.4-1 Build Alternative Major Project Features

Location	Description
SR-91 Mainline	Eastbound C-D road between Central Avenue to Acacia Court with new concrete barrier separation from the mainline
	Westbound C-D road between Acacia Court to Central Avenue with new concrete barrier separation from the mainline
	Freeway signage
	Eastbound HOV ingress/egress shifted east
	Westbound HOV ingress/egress shifted west
	New CHP enforcement areas at three locations
	Ramp metering at four locations
Local Roadway	Free flowing right-turn from Acacia Court to Eastbound Artesia Boulevard
	Wayfinding signage
	Pavement markings with lane designations
	Truck Turning Radii Improvements at eastbound and westbound Artesia Boulevard and Central Avenue and Wilmington Avenue intersections

Complete Streets Non-Motorized, Pedestrian and Transit Features	Class II buffered bike lane with Bicycle Tolerant Drainage Grates and Conflict Zone Green Paint on eastbound and westbound Artesia Boulevard between Central Avenue and Acacia Court and on Albertoni Street between Lysander Drive and Central Avenue
	Bicycle and pedestrian signage and LED lighting in pedestrian/bicycle accessible areas, where existing lighting is insufficient
	ADA-compliant curb ramps high-visibility crosswalks and accessible pedestrian signals
	Leading pedestrian interval with countdown displays at eastbound Artesia Boulevard and Wilmington Avenue intersection
	Bridge access and sidewalks on Central and Wilmington Avenues will be provided to eliminate existing gaps to the bridge and intersections between eastbound and westbound Artesia Boulevard
	Traffic island with a pedestrian refuge area at Acacia Court/Artesia Boulevard intersection in the southeast quadrant, with a marked crosswalk crossing, accessible pedestrian signals, pedestrian change interval countdown displays at the marked crosswalk, and rectangular rapid flashing beacons
	The existing Metro and Long Beach transit stop (routes 51, 60, 61, 130, 132, 202, and 260) at Artesia Boulevard and Acacia Court will be relocated farther east on Artesia Boulevard and will include improved assets such as a concrete bus pad, a transit shelter, bench, transit information, and pedestrian scale lighting

LED = light-emitting diode

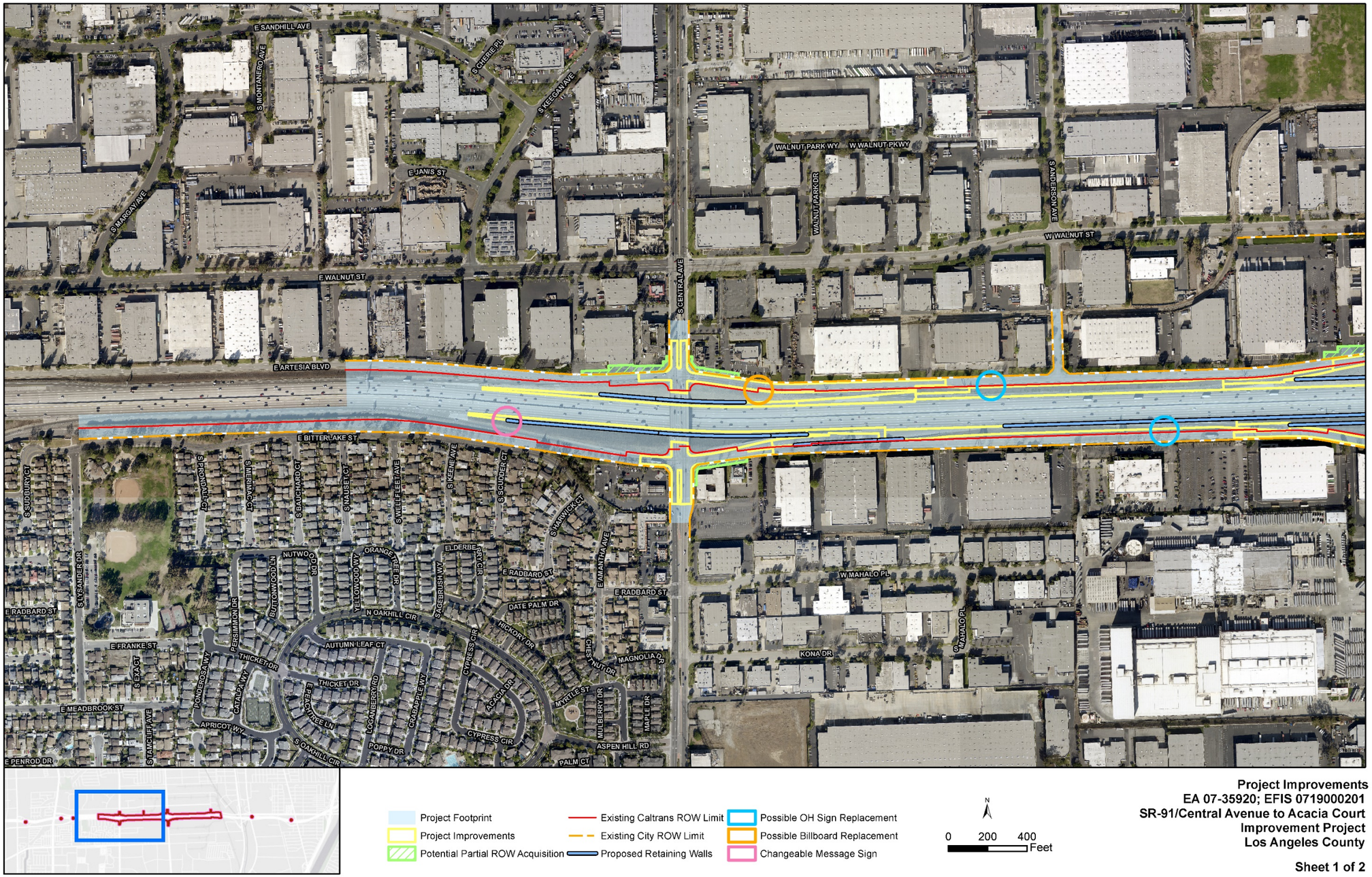


Figure 1.4-1. Build Alternative (Central Avenue to Wilmington Avenue)

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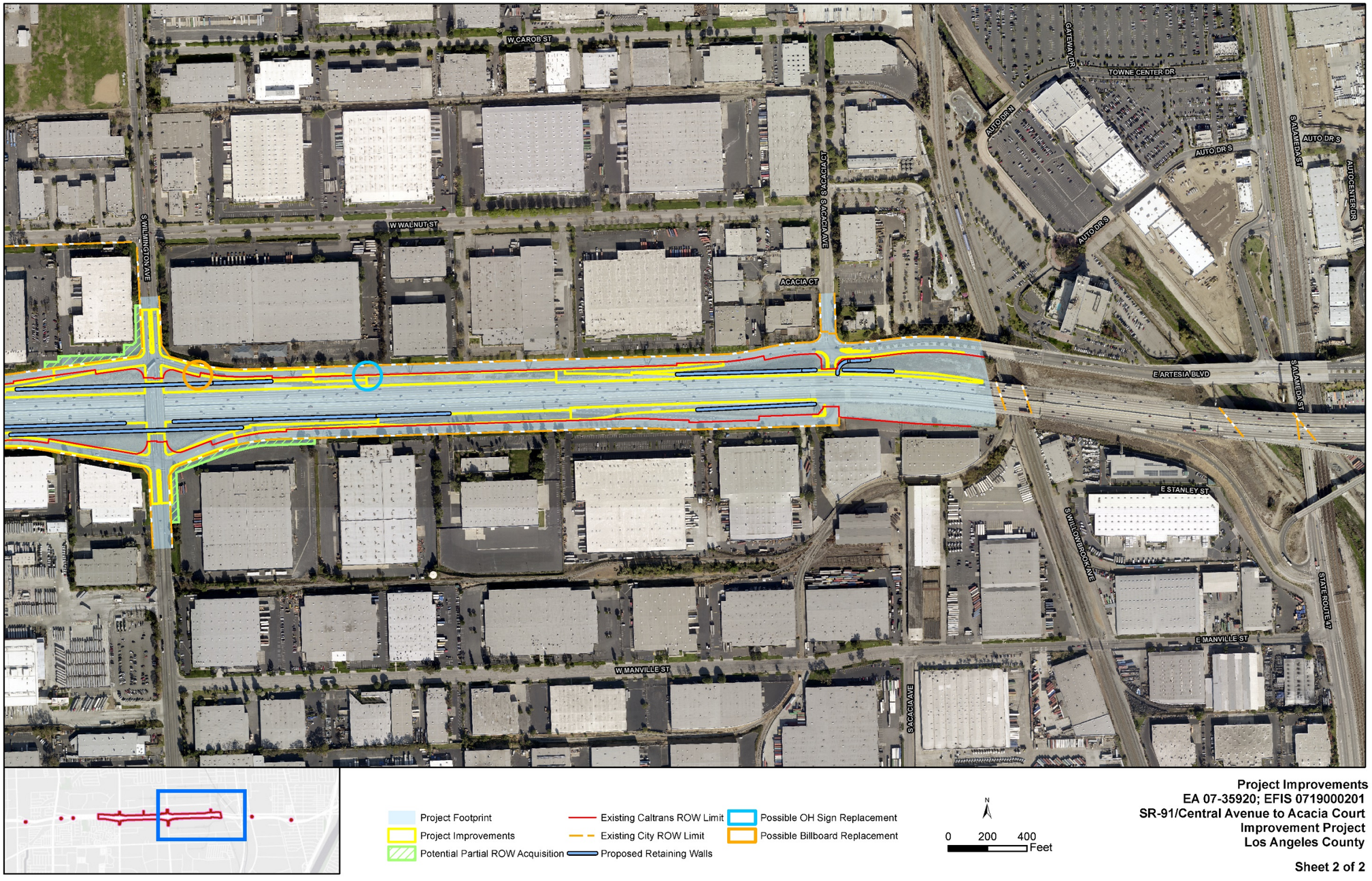

Figure 1.4-2. Build Alternative (Wilmington Avenue to Acacia Court)

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SR-91 Mainline Improvements

The eastbound C-D road would begin approximately 2,200 feet east of the existing eastbound Central Avenue off-ramp. Eastbound SR-91 would be widened to accommodate a single 12-foot auxiliary lane, providing the entrance for the C-D road. The eastbound C-D road is proposed to have a 5-foot inside shoulder, two 12-foot lanes, and a 10-foot outside shoulder (Figure 1.4-3). Approximately 1,000 feet east of the Central Avenue Overcrossing, a concrete barrier separating the freeway mainline from the C-D road would begin and the existing eastbound Central Avenue on-ramp would merge with the C-D road as a second auxiliary lane. The eastbound C-D road would remain two lanes through the Wilmington Avenue interchange, and the eastbound Wilmington Avenue on-ramp would merge into the C-D road, creating a third lane. The eastbound C-D road would merge onto the SR-91 mainline at the approximate location of the existing Alameda Street auxiliary lane entrance. The eastbound C-D road would be fully merged with the mainline just before the Acacia Court Undercrossing, reducing impacts to the eastbound side of the bridge.

Due to low traffic volumes, vehicles that would have exited the eastbound Acacia Court off-ramp would now exit the SR-91 mainline onto the eastbound C-D road and take the eastbound Wilmington Avenue off-ramp. Vehicles would then continue straight through the Wilmington Avenue/Artesia Boulevard intersection towards Acacia Court. This shift in traffic would improve safety by eliminating weaving conflicts between the high volume of vehicles entering at the Wilmington Avenue on-ramp with vehicles that were exiting at the Acacia Court off-ramp. In addition, shifting the traffic would provide added length for vehicles merging from Wilmington Avenue onto the C-D road, which then ties into the merge back onto the SR-91 mainline. To compensate the shift of the Acacia Court peak period vehicles that would be exiting at the Wilmington Avenue off-ramp, a designated left-turn lane would be added to the eastbound Artesia Boulevard and Wilmington Avenue intersection. Adding the left-turn lane on eastbound Artesia Boulevard with adequate space for truck-turning movements will require a queue length reduction of 54.4 feet to the southbound left-turn movement from Wilmington Avenue onto Artesia Boulevard and a queue length reduction of 37.8 feet to the southbound through movement on Wilmington Avenue. The short reduction will not have a significant impact on the existing queue length and, thus, will not worsen the existing operational queuing issue. In addition, traffic operations at this intersection will be optimized to reduce queuing as much as possible and will better serve future demand.

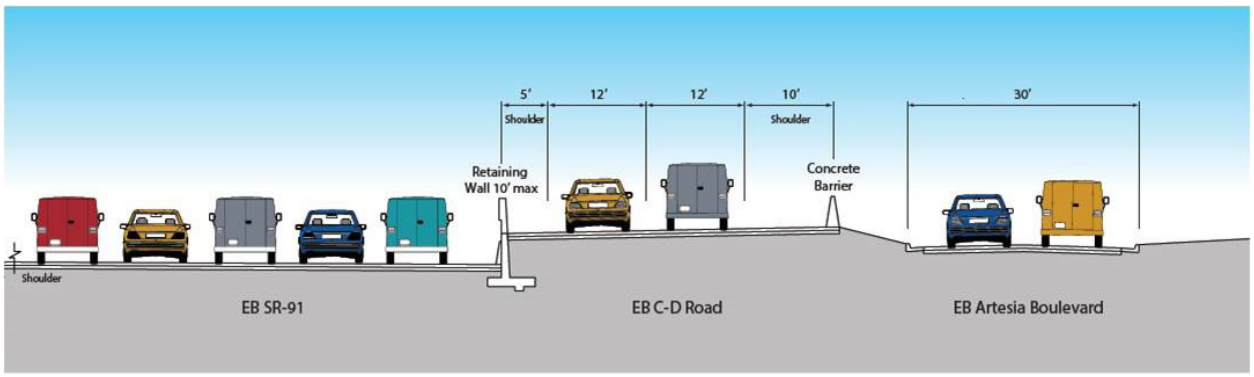

Figure 1.4-3. Proposed C-D Road SR-91 Eastbound (conceptual cross section)

The westbound C-D road would begin west of the existing railroad undercrossing. Westbound SR-91 would be widened to accommodate a single 12-foot auxiliary lane, providing the entrance for the C-D road (see Figure 1.4-4). This would require widening the existing Acacia Court Undercrossing by approximately 12 feet. Approximately 970 feet west of the Acacia Court

Undercrossing, an additional lane would be added to the C-D road, and the concrete barrier separating the freeway mainline from the C-D road would begin. The westbound Acacia Court on-ramp would merge with the westbound C-D road, joining the C-D road as a third, 12-foot auxiliary lane that would run between Acacia Court and Wilmington Avenue, to improve weaving. The auxiliary lane would exit at the Wilmington Avenue off-ramp. The C-D road would continue as two 12-foot lanes through the Wilmington Avenue interchange. The westbound Wilmington Avenue on-ramp would merge with the C-D road, creating a third, 12-foot auxiliary lane between Wilmington Avenue and Central Avenue, exiting at the Central Avenue off-ramp. The two-lane C-D road would continue to merge onto the SR-91 mainline. A 1,000-foot auxiliary lane would be provided to allow additional length for vehicles merging from the C-D road back to the SR-91 mainline. The auxiliary lane would merge with the existing SR-91 mainline approximately 650 feet east of the existing westbound Central Avenue on-ramp.

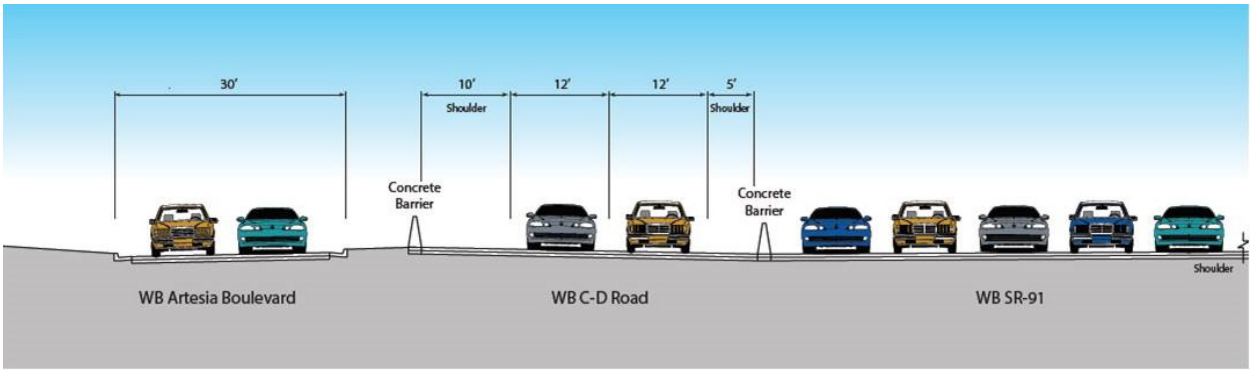

Figure 1.4-4. Proposed C-D Road SR-91 Westbound (conceptual cross section)

The existing elevation differences between the SR-91 mainline and the local roads create a vertical challenge for connecting the SR-91 on- and off-ramps with eastbound and westbound Artesia Boulevard frontage roads. In order to meet the differences in elevation and provide the safest traveled way for drivers, the eastbound C-D road would be raised up to 10 feet above the SR-91 mainline. The C-D road would begin at grade with the SR-91 mainline on the west end of the project limits. As vehicles progress east towards Wilmington Avenue, the C-D road would begin to raise vertically above the mainline to meet the eastbound Wilmington Avenue off-ramp. The eastbound C-D road profile and then would drop under the Wilmington Avenue Overcrossing, providing a standard vertical clearance of 16.5 feet. Once cleared of the overcrossing, the profile would raise again to join the eastbound Wilmington Avenue on-ramp and then would rejoin SR-91 mainline at-grade.

The westbound C-D road would remain at-grade with the SR-91 mainline for the entire length. The westbound Central Avenue and the Wilmington Avenue off-ramps would be realigned to improve vehicle movements when merging onto Artesia Boulevard. Both off-ramps would be shifted east to provide additional weaving length for vehicles to merge and diverge on Artesia Boulevard prior to reaching Central Avenue or Wilmington Avenue intersections. Realigning the westbound off-ramps would allow keeping the westbound C-D road profile at grade with the mainline.

The eastbound Central Avenue and Wilmington Avenue on-ramps are proposed to have two lanes and the eastbound Wilmington Avenue off-ramp would have one lane joining the eastbound C-D road. The westbound Central Avenue off-ramp, Wilmington Avenue on- and off-ramps, and Acacia Court on-ramp would have one lane joining the westbound C-D road. All seven ramps would have standard 12-foot lanes. Standard inside shoulders of 4 feet and standard outside shoulders of 8 feet would be provided on the westbound Central Avenue off-

ramp, westbound Wilmington Avenue on- and off-ramps, and the westbound Acacia Court on-ramp. A standard 4-foot inside shoulder and a nonstandard 6-foot outside shoulder is proposed on the eastbound Wilmington Avenue off-ramp. The eastbound Central Avenue and Wilmington Avenue on-ramps both have standard inside shoulders of 4 feet, but both on-ramps have a portion of nonstandard outside shoulders that range from 2 to 10 feet.

Additional wayfinding signage and pavement markings are proposed, providing lane designations to northbound Wilmington Avenue and Central Avenue right-turn movements to the eastbound C-D road on-ramps and Artesia Boulevard. The benefit is to improve overall mobility to the local road network by reducing traffic conflicts at the intersections.

A free-flowing right-turn lane is proposed on Acacia Court for traffic traveling northbound on Acacia Court and turning right onto Artesia Boulevard. Artesia Boulevard would be widened to account for the heavy truck-turning movements making this turn and would merge back to Artesia Boulevard after the right turn has been completed. The free-flowing right turn would improve the traffic operations on eastbound Artesia Boulevard and keep traffic moving through the intersection.

The proposed widening for the two-lane C-D road would require ground-anchor retaining walls underneath the Wilmington Avenue Overcrossing in both the eastbound and westbound directions. The height of the ground-anchor retaining walls would be approximately 12 feet in the eastbound direction and 13.5 to 14.5 feet in the westbound direction, measured from the finished grade to the top of the ground-anchor wall. In addition, retaining walls separating the freeway mainline from the C-D road lanes would be added in the eastbound direction. The height of these retaining walls would range from 2 to 10 feet, measured from the finished grade to the top of the retaining wall. A new retaining wall is proposed along the eastbound Central Avenue on-ramp and would replace an existing retaining wall in the same location. The existing retaining wall located along the eastbound Wilmington Avenue on-ramp would be protected in place. Retaining walls would also be required along the widened auxiliary lanes in both the eastbound and westbound directions to minimize the grading impacts along SR-91.

High-Occupancy Vehicle (Bus and Carpool) Lanes

There is one existing HOV lane in each direction of SR-91 along the corridor. The limited-access HOV lane is 11 feet wide and a 1-foot buffer is provided between the general-purpose lanes and the HOV lane. Both the No Build and Build alternatives would maintain the existing HOV lane and buffer. An HOV preferential lane is proposed on the eastbound C-D road entrance to SR-91.

The HOV ingress/egress locations would be shifted to accommodate the Build Alternative. In the westbound direction, the HOV ingress/egress would be shifted to the west between Wilmington Avenue and Acacia Court, which would serve as the egress for Avalon Boulevard. In the eastbound direction, the HOV ingress/egress would be shifted further east, past Central Avenue, to optimize the weaving distance for vehicles entering the HOV lane from Avalon Boulevard and exiting at Alameda Street.

Ramp Metering

Ramp metering is proposed to be incorporated into the project. Four separate systems would be constructed. These locations include:

1. Eastbound C-D Road Entrance to SR-91(two metered mixed flow lanes and one metered HOV preferential lane)

2. Eastbound Central Avenue On-Ramp (two metered mixed flow lanes; no HOV preferential)
3. Westbound Wilmington Avenue On-Ramp (one metered mixed flow lane; no HOV preferential)
4. Westbound Acacia Court On-Ramp (one metered mixed flow lane; no HOV preferential)

The ramp metering for the eastbound C-D road on-ramp to eastbound SR-91 would include approximately 1,400 feet of storage length, measured from where the eastbound Wilmington Avenue on-ramp joins the eastbound C-D road. The ramp signal system at the eastbound C-D road entrance to the SR-91 mainline would be functional at the completion of construction.

The ramp meters installed on eastbound Central Avenue, westbound Wilmington Avenue, and westbound Acacia Court on-ramps are proposed to provide flexibility for future improvements that would require ramp metering. The ramp signal system would remain green during all hours, including peak periods, to indicate functionality.

California Highway Patrol Enforcement Areas

New California Highway Patrol (CHP) enforcement areas would be provided at three locations within the project limits: (1) eastbound Central Avenue on-ramp, (2) eastbound C-D road entrance to SR-91, and (3) westbound Wilmington Avenue on-ramp. All proposed enforcement areas are aligned with the proposed ramp metering systems.

Local Roadway Improvements

Truck Turning Radii Options: Being in an industrial area, a large number of trucks use Central Avenue and Wilmington Avenue. Local road geometric improvements have been identified to enhance the truck turning radii at the Central Avenue and Wilmington Avenue intersections. These intersections connect with local frontage roads that serve to direct local traffic to and from the freeway ramps with all lanes being full standard width or more for both truck turning radii options. The following two options are being evaluated:

- Option 1 would widen the left shoulders and lanes within Caltrans ROW on both the eastbound and westbound Artesia Boulevard at the Central Avenue and Wilmington Avenue intersections. This improvement provides additional space for the trucks attempting to make turns to and from eastbound and westbound Artesia Boulevard. This would require shortening all left-turn pocket queue lengths on both the Central Avenue and Wilmington Avenue Overcrossings.
- Option 2 would widen the right shoulders and lanes on both the eastbound and westbound Artesia Boulevard at the Central and Wilmington Avenue intersections, requiring sliver ROW acquisitions from parcels on the northwest and southeast corners of both Central Avenue and Wilmington Avenue intersections. This option would maintain the existing left-turn pocket queue lengths on both the Central Avenue and Wilmington Avenue Overcrossings.

Additional wayfinding signage and pavement markings are proposed, providing lane designations to northbound Wilmington Avenue and Central Avenue right-turn movements to the eastbound C-D road on-ramps and Artesia Boulevard. The benefit is to improve overall mobility to the local road network by reducing traffic conflicts at the intersections.

Jointed Plain Concrete Pavement is proposed to replace the existing asphalt concrete pavement at the following four intersections within the project limits:

- Westbound Artesia Boulevard/Central Avenue Intersection
- Eastbound Albertoni Street/Artesia Boulevard/Central Avenue Intersection
- Westbound Artesia Boulevard/Wilmington Avenue Intersection
- Eastbound Artesia Boulevard/Wilmington Avenue Intersection

The existing pavement at these intersections is asphalt concrete with severe cracking and potholes caused by heavy truck traffic. The proposed rigid pavement would improve the overall ride quality of the transition from the mainline to the local road network and would reduce the overall life cycle cost of ongoing periodic repair of the intersections and ramps by improving the overall strength of pavement and durability.

Complete Streets Features

The following improvements to complete streets are proposed and would improve bicycle, pedestrian, and transit connectivity and accessibility within the project limits:

- A striped Class II buffered bicycle lane with bicycle tolerant drainage grates and conflict zone green paint for better visibility on both eastbound and westbound Artesia Boulevard between Central Avenue and Acacia Court and on Albertoni Street between Lysander Drive and Central Avenue
- Bicycle and Pedestrian signage and light emitting diode (LED) lighting in pedestrian/bicycle accessible areas, where existing lighting is insufficient
- ADA-compliant curb ramps, high-visibility crosswalks and accessible pedestrian signals
- Leading pedestrian interval with countdown displays at eastbound Artesia Boulevard and Wilmington Avenue intersection
- Bridge access and sidewalks on Central and Wilmington Avenues will be provided to eliminate existing gaps between the bridge and intersections between eastbound and westbound Artesia Boulevard.
- A traffic island with a pedestrian refuge area at Acacia Court/Artesia Boulevard intersection in the southeast quadrant, with a marked crosswalk crossing, accessible pedestrian signals, pedestrian change interval countdown displays at the marked crosswalk, and rectangular rapid flashing beacons.
- The existing Metro and Long Beach transit stop (51, 60, 61, 130, 132, 202, and 260) at Artesia Boulevard and Acacia Court will be relocated farther east on Artesia Boulevard and will include improved assets such as a concrete bus pad, a transit shelter, bench, transit information, and pedestrian scale lighting.

It should be noted that the majority of the proposed non-motorized and pedestrian features discussed in this section are within the City of Compton's jurisdiction. The City has provided preliminary approval for the implementation of these improvement, and coordination will be continued through Final Design.

This project contains a number of standardized project measures that are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed project. These measures are listed below (Table 1.4-2) and are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

Table 1.4-2. Standardized Project Measures

Project Feature Number	Description
PF-RW-1	New billboards will be installed prior to the removal of existing billboards
PF-RW-2	Metro will perform any needed ROW acquisitions during final design
PF-UES-1	Early coordination and communication with the utility service providers
PF-TR-1	A TMP will be prepared for the project during final design phase
PF-TR-2	Early coordination with affected transit providers
PF-TR-3	Early coordination with local agencies to optimize traffic signal timing at local intersections
PF-V-1	Landscape design will be consistent with applicable aesthetic corridor plans
PF-CUL-1	If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted
PF-CUL-2	If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area
PF-WQ-1	All applicable construction site BMPs follow the latest edition of the Caltrans Construction Site BMP Manual to address temporary impacts associated with project construction
PF-WQ-2	A SWPPP will be prepared for the project
PF-WQ-3	Permanent design pollution prevention and treatment BMPs will be implemented
PF-GEO-1	A site-specific investigation and subsurface data liquefaction screening and analysis will be performed
PF-PAL-1	If unanticipated paleontological resources are discovered at the job site, do not disturb the resources
PF-HW-1	An ADL survey will be completed during final design
PF-HW-2	During construction, sampling, analysis, removal, and disposal of any traffic striping and pavement materials will be completed
PF-HW-3	An ACM and LBP survey of the Acacia Court bridge (Bridge No. 53.2371) will be required
PF-HW-4	Treated wood waste will be managed
PF-HW-5	CalGEM will be contacted if a plugged oil well is uncovered during future site grading for evaluation
PF-HW-6	Preliminary site investigations (PSIs) will be completed in the vicinity of proposed areas where deep excavations will occur
PF-HW-7	If groundwater is encountered during soil sampling, groundwater samples will be collected and analyzed
PF-AQ-1	Section 14-9-02 of Caltrans' Standard Specifications
PF-AQ-2	SCAQMD Rule 403 – Fugitive Dust

PF-NOI-1	Compliance with Caltrans Standard Specifications Section 14-8.02
PF-BIO-1	Construction in areas with trees or vegetation that may provide nesting habitat for special-status avian species will be reduced
PF-BIO-2	Trimming and removal of vegetation will be minimized and performed outside of the nesting season
PF-BIO-3	If nesting birds are found within 500 feet of the construction area, orange flagging/fencing or similar will be installed and maintained until nesting activity has ended
PF-BIO-4	Following project construction, disturbed areas will be re-vegetated
PF-BIO-5	If the project is constructed during the maternal season for bats, a thorough bat roosting habitat assessment will be conducted
PF-BIO-6	If a maternal colony of bats is found, no work will be conducted within 100 feet
PF- BIO-7	Invasive vegetation removed from the BSA will be treated and disposed of in a manner that will prevent the spread of invasive species on-site or off-site
PF- BIO-8	New landscaping materials, including erosion control seed mixes and other plantings, will be composed of non-invasive plant species
PF-BIO-9	Plants listed in the Pest Ratings of Noxious Weed Species and Noxious Weed Seed will not be used as part of the project
PF-GHG-1	Contractor to comply with Caltrans standard Specification 14-9

Construction

Construction of the project is expected to start in early 2024 with some phased construction to minimize impacts to the SR-91 mainline traffic and consolidation of on and off-ramps. Construction duration is expected to last approximately 24 months. Staging areas used by the contractor to store construction equipment would be limited to public ROW areas within the study area. Staging areas are anticipated to be within available space at interchange ramp areas. As shown in the Draft Project Report (February 2021), the estimated total construction cost (2020 dollars) is approximately $113,338,000.

1.4.1.2 No Build Alternative

The No Build Alternative does not include any planned improvements to SR-91 within the project limits. This alternative would maintain the current configuration of the existing freeway, ramps, and local intersections within the project limits. Although the current configuration would be maintained, travel demand and traffic congestion are expected to increase over time. The No Build Alternative would not address the purpose and need of the proposed project and serves mainly as a baseline to compare with the Build Alternative.

Final Decision-Making Process

Following circulation of the IS/EA, Caltrans will make a final determination of the proposed project's effect on the environment in consideration of the whole record. Based upon the engineering and environmental technical analysis and comments and concerns expressed during the public review period, Caltrans, in cooperation with Metro would identify a preferred alternative.

1.4.1.3 Alternatives Considered but Eliminated from Further Discussion

Alternatives Analysis

An Alternatives Analysis Screening Memo was approved in February 2020. Based on the initial screening, the following alternatives, including the alternatives proposed in the PSR-PDS (refer to Section 1.1), were considered, but eliminated from further discussion

- **Mixed Flow Lane in Each Direction (PSR-PDS)** Although adding a mixed flow lane to SR-91 would increase capacity, it does not address nonstandard weaving lengths and thus would not improve the weaving congestion caused by the closely spaced interchanges within the project limits. For these reasons, this alternative was eliminated.
  - **Single Point Urban Interchange (SPUI) (PSR-PDS)** This alternative would convert the existing diamond interchange to a SPUI at Central Avenue. This alternative would add a new signalized intersection between the two existing intersections at Albertoni Street and Artesia Boulevard and reduce left-turn volumes. This approach could also be applied to Wilmington Avenue. *Constructing a SPUI would require removal and replacement of the existing overcrossing at Central Avenue and Wilmington Avenue and would require partial ROW acquisition. For these reasons, this alternative was eliminated.*
  - **Modified Diverging Diamond Interchange (DDI) (PSR-PDS)** This alternative would convert the existing intersections of Central Avenue at Albertoni Street and Artesia Boulevard to a Modified DDI. A standard DDI would include a two-phase signal at each intersection, but the PSR-PDS alternative would modify the standard by providing a three-phase signal to allow the through movement. *Implementation of the Modified DDI would not meet the divergence angle requirements, potentially reducing safety; would have substantial construction impacts at local intersections; and would require partial ROW acquisitions at all four intersections. For these reasons, this alternative was eliminated.*
- **Split Diamond Interchange (SDI)** This alternative combines the existing two diamond interchanges at Central Avenue and Wilmington Avenue to one interchange by eliminating the Central Avenue eastbound on- and westbound off-ramps and Wilmington Avenue eastbound off- and westbound on-ramps. Elimination of these ramps on SR-91 between Central Avenue and Wilmington Avenue would increase the weave distance to the next ramps merge and diverge points. *This alternative would only partially address the weaving distance issues and provide moderate benefits to freeway operations. For these reasons, this alternative was eliminated.*
- **Braided Ramps** This alternative proposes re-alignment and grade separation of the on- and off-ramps at Central Avenue and Wilmington Avenue. This would eliminate the merge and diverge between the vehicles entering and exiting SR-91 at these two interchanges without eliminating any existing access. The braided ramps provide some challenges associated with construction and would require additional bridge construction at four locations. *This alternative was eliminated because of environmental and substantial construction-related impacts.*

- **Permanent Ramp Closure** Similar to the SDI, this alternative would improve weaving on SR-91 by eliminating selected on- and off-ramps at Central Avenue, Wilmington Avenue, and Acacia Court. For both options, the eliminated freeway access points would be shifted to the next interchange within the project limits, which would be accessible through Albertoni Street and Artesia Boulevard. *This alternative would only partially address the weaving distance issues and provide moderate benefits to freeway operations. For these reasons, this alternative was eliminated.*

- **Switching Ramp Locations** The Switching Ramp Locations Alternative consists of taking the existing on-ramp locations at Central Avenue and Wilmington Avenue and switching them to off-ramps and taking the existing off-ramp locations and switching them to on-ramps. This alternative would also add a mixed flow lane in each direction as well as an auxiliary lane between the ramps. By switching these ramps, the interchange spacing and weaving lengths would be improved. *This alternative would create new nonstandard geometric deficiencies, doesn't meet the project purpose and need, and has several undesirable engineering challenges that would impact the safety, budget, and schedule of the project. For these reasons, this alternative was eliminated.*

Transportation System Management and Transportation Demand Management Alternatives

Transportation System Management (TSM) provides cost-effective improvements that increase transportation system performance without the major expense of capital expansion projects. These programs include minor geometric improvements, bicycle and pedestrian improvements, and other measures such as signal synchronization, motorist information, bus signal priority, and freeway ramp metering. Transportation Demand Management (TDM) provides cost-effective improvements that reduce system demand by eliminating trips or shifting trips out of the peak hour periods to other less-congested time periods during the day, thus increasing transportation system performance without implementing travel restrictions. TDM programs include rideshare programs, employer flex-time, parking pricing, and intermodal improvements that support TDM programs and transfers between modes at key locations. TDM programs are focused on expanding transportation options and changing the behavior of travelers. Some TDM approaches are voluntary, and they motivate participants with incentives.

A TSM/TDM alternative is not considered a viable stand-alone option for the project because it does not fulfill the project's purpose and need. A TSM/TDM alternative on its own would not address the nonstandard weaving lengths and thus would not improve the weaving congestion caused by the closely spaced interchanges within the project limits. TSM and TDM improvements are similar in a number of ways, because they may

- Lessen the number of trips
- Lessen peak-hour travel
- Conserve energy
- Reduce emissions and
- Provide more travel options

Although TSM/TDM measures alone would not satisfy the purpose and need of the project, the following TSM/TDM measures are beneficial and have been incorporated into the Build Alternative for the proposed project (details are discussed in Section 1.4.1.1. Build Alternative)

- Freeway Ramp Metering
- Local Roadway Geometric Improvements/Truck Turning Radii Options
- Motorist Information/Wayfinding
- Pedestrian Improvements

The following improvements are recommended to improve pedestrian connectivity and accessibility at the Central Avenue/Albertoni Street, Central Avenue/Artesia Boulevard, and both Wilmington Avenue/Artesia Boulevard intersections

- ADA-compliant curb ramps, crosswalks, and sidewalks installed at all intersections as needed
- Accessible pedestrian signals and pedestrian change interval countdown displays at the marked crosswalks

Reversible Lanes

To meet the requirements of Assembly Bill (AB) 2542[1], a reversible lane option was considered. Reversible lanes are dedicated freeway lanes that serve directional peak hour period demands. Reversible lanes are meant to use the existing center lanes of the freeway rather than increasing capacity through construction of additional lanes. In assessing this alternative's viability, key parameters such as minimum directional split during peak hour periods of 65/35 percent; effects on non-peak direction; geometric feasibility; and operations and maintenance were taken into consideration. For both the No Build and Build Alternatives, striping or operational modifications are not being proposed within the median, HOV lane, or mixed flow lanes of the mainline.

In response to a Metro board motion in June 2018, an analysis was completed by Caltrans and Metro that determined a moveable barrier system is not feasible for this segment of SR-91 because the existing bridge columns of Central Avenue Overcrossing and Wilmington Avenue Overcrossing, located within the median, also impacts the ability for a facility of reversible lanes to meet the required minimum length of 2 miles. In addition, the bidirectional peak period traffic volumes are less than the 65 percent minimum traffic split in one direction; therefore, operationally reversible lanes would not be feasible for this segment of SR-91. Finally, reversible lanes would not meet the purpose and need for the project because they would not address the nonstandard weaving lengths or improve the weaving congestion caused by the closely spaced interchanges within the project limits. For this reason, reversible lanes are not considered feasible for this project and this alternative was rejected.

1.5 Permits and Approvals Needed

Table 1.5-1 shows the permits, licenses, agreements, and certifications (PLACs) required for project construction

[1] *California Legislative Information; Streets and Highways: reversible lanes. (2015-2016)*

Table 1.5-1. Necessary Permits and Approvals

Agency	PLAC	Status
FHWA	Air Quality Conformity Determination	Request for determination to be submitted following selection of a preferred alternative. The FHWA would make a conformity determination prior to final approval of the MND/FONSI.
City of Compton	Construction Encroachment Permit	Application for a City of Compton construction encroachment permit for temporary access onto public ROW would be submitted prior to construction.
City of Carson	Construction Encroachment Permit	Application for a City of Carson construction encroachment permit for temporary access onto public ROW would be submitted prior to construction.
RWQCB	NPDES General Construction Activity Stormwater Permit	The permits would be submitted to the RWQCB prior to any project construction.
SWRCB	Caltrans Statewide Permit Los Angeles County Municipal Separate Storm Sewer System (MS4) NPDES Permit	The permits would be submitted to the SWRCB prior to any project construction.
Los Angeles County Department of Public Works	Flood Control Permit and Construction Permit	The permit would be submitted to DPW prior to any project construction.
Caltrans and the City of Carson	Existing Maintenance Agreement	Modification may be needed as a result of project improvements.

DPW = Department of Public Works
FHWA = Federal Highway Administration
MND/FONSI = Mitigated Negative Declaration/Finding of No Significant Impact
NPDES = National Pollutant Discharge Elimination System
RWQCB = Regional Water Quality Control
SWRCB = State Water Resources Control Board

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

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

Topics Considered but Determined Not to be Relevant

The environmental analysis presented in this Chapter considers the potential environmental consequences associated with implementation of the two proposed alternatives (the No Build Alternative and the Build Alternative). The project study area established in the technical analyses includes the project footprint, which covers the extent of all proposed project improvements, ground disturbance, staging, and access areas.

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

- **Coastal Zone:** The project is not located within the coastal zone. Therefore, the project would not impact coastal resources.
- **Wild and Scenic Rivers:** There are no wild and scenic rivers in the project area. Therefore, the project would not impact any wild and scenic rivers.
- **Parks and Recreational Facilities:** Of the five park and recreational facilities located within the community impacts study area, Stevenson Park is the only recreational facility located adjacent to the SR-91. Stevenson Park is located about 1,500 feet west of the proposed eastbound SR-91 auxiliary lane approaching Central Avenue. West of the auxiliary lane, only signage improvements are proposed on the roadway at a lower elevation and would be separated from the park by embankments, a 6-foot existing sound wall, trees, and a 4-lane frontage road with a tree-lined median. Due to the park's location, intervening development and topography, the project would have no impact on the park or any park or recreational area protected under Section 4(f).
- **Farmland/Timberlands:** There is no farmland or timberlands within the project area. Therefore, the project would not impact farmland and timberlands.
- **Wildfire**: The project is not located in a high fire hazard zone according to the California Department of Forestry and Fire Protection. Therefore, the project would not exacerbate or increase wildfire risk.

- **Growth**: The first-cut screening presented in the Caltrans Standard Environmental Reference (SER) outlines a step-by-step procedure to determine whether the project has the potential for growth-related impacts. The initial step of the screening process is to determine whether the project has the potential to change accessibility. If the project has the potential, then further analysis is warranted. The next step calls for an analysis of factors, including project type, project location, and growth pressures in the project study area. Based on this information, it is determined whether project-related growth is reasonably foreseeable. If growth is reasonably foreseeable, further analysis is conducted to determine the effect of this additional growth on resources of concern. The proposed C-D road would consolidate mainline access to on/off-ramps on an existing alignment within a highly developed urbanized area and would not create new access to undeveloped areas nor reduce current access and has no potential to influence growth. The pattern and rate of population and housing growth is expected to remain consistent with the population and economic growth anticipated by existing general plans for the area with or without the proposed project. The C-D Road Alternative does not include any change to accessibility that would affect additional growth on resources of concern. Therefore, growth is not reasonably foreseeable as a result of the proposed project. The reduction of congestion on the SR-91 and local roadways improvements would better enable the City of Compton and Carson to accommodate planned growth. Therefore, growth-related impacts are not anticipated.
- **Community Character and Cohesion**: No regional or community level impacts would occur with the C-D Road Alternative. Specifically, no residents or businesses would be displaced and the population or characteristics would not change. The project would not divide neighborhoods or separate the community from existing facilities and would result in no impacts to community character or cohesion.
- **Section 4(f) Resources:** There are no historic sites, parks and recreational resources, wildlife or waterfowl refuges, which meet the definition of a Section 4(f) resource, within the project vicinity. Therefore, the project is not subject to the provisions of Section 4(f) of the Department of Transportation Act of 1996. However, Stevenson Park is a public park protected under Section 4(f) and is the only publicly owned park or recreation area located near the project. Stevenson Park is located about 1,500 feet west of the proposed eastbound SR-91 auxiliary lane approaching Central Avenue. Only signage upgrades are proposed west of the auxiliary lane. Due to intervening development, topography and location within a residential area with no direct access from the proposed improvements, the proposed project would not cause any permanent, temporary, or proximity impacts which would result in a use under Section 4(f).
- **Hydrology and Floodplain:** According to the Federal Emergency Management Agency (FEMA), the project is located in an area of minimal flood hazard (Zone X). There will be no effects to the 100-year floodplain because the project is not located within a 100-year base floodplain. Therefore, the project would have no impact on hydrology and floodplains. See Appendix E for the FEMA Flood Insurance Rate Map.
- **Natural Communities:** According to the *Natural Environment Study (Minimal Impacts)*, there are no special-status natural communities in the biological study area (BSA) based on literature reviews and field survey results. The habitat types present in the area include transportation and developed areas with ornamental landscaping and ruderal areas along

highly disturbed areas such as SR-91 shoulders and on- and off-ramps. Therefore, the project would have no effect on special-status Natural Communities.

- **Wetlands and Other Waters:** According to the *Natural Environment Study (Minimal Impacts)*, there are no wetlands or waters of the United States (U.S.) or state in the BSA; therefore, the project would have no impact on jurisdictional waters.

- **Plant Species:** According to the *Natural Environment Study (Minimal Impacts)*, the habitat types present in the BSA include transportation and developed areas with ornamental landscaping and ruderal areas. These areas are between the eastbound SR-91 sound wall and East Albertoni Street, street medians, and adjacent to residential and commercial development throughout the BSA on both sides of SR-91. Dominant species in these ornamental landscaped areas include (but are not considered special-status plant species):

  1. Western sycamore (Platanus racemose)
  2. Canary Island pine (Pinus canariensis)
  3. Eucalyptus trees (Eucalyptus sp.)

  Within the BSA, ruderal areas are along the shoulders, on-ramps and off-ramps of eastbound and westbound SR-91, and on the southeast corner of Central Avenue and West Artesia Boulevard. Dominant species in these ruderal areas include (but are not considered special-status plant species):

  1. Bristly ox-tongue (*Helminthotheca echiodes*)
  2. Prickly lettuce (*Lactuca serriola*)
  3. Russian thistle (*Salsola tragus*)
  4. Summer mustard (*Herschfeldia incana*)
  5. Tocolote (*Centaurea melitensis*)
  6. Bullthistle (*Cirsium vulgare*)
  7. Canada horseweed (*Erigeron canadensis)*

  Based on habitat requirements and according to the results of the biological field surveys, no special-status plant species have potential to be in the BSA. Therefore, the project would have no effect on special-status plant species.

- **Threatened and Endangered Species:** According to the *Natural Environment Study (Minimal Impacts)* prepared for the project, the BSA does not contain suitable habitat for any threatened or endangered species or their designated critical habitat. The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife have regulatory responsibility for the protection of special-status plant and wildlife species. The official species list obtained from the USFWS on January 30, 2019, and updated on January 19, 2021, indicated that several federally and/or state-listed species have the potential to be in the BSA. However, none of the species were observed during field surveys and there is no suitable habitat for these species in the BSA. Therefore, the project would have no effect on USFWS listed special-status wildlife or plant species or their critical habitat. The National Oceanic and Atmospheric Administration (NOAA) Fisheries Service has regulatory responsibility for the protection of endangered and threatened marine species. This project is located outside of NOAA Fisheries Service jurisdiction; therefore, a NOAA species list is not required and no effects to NOAA species are anticipated.

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HUMAN ENVIRONMENT

2.1 Existing and Future Land Use

This section is based on a review of local planning documents and geographic information systems (GIS) land use data and the *Community Impact Assessment* (CIA) (June 2020).

City of Compton: Based on the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), existing land uses within the City of Compton include residential; mobile homes and trailer parks; general office; commercial and services; facilities; education; industrial; transportation, communications, and utilities; mixed commercial and industrial; mixed residential and commercial; open space and recreational land; agricultural land; and vacant land (Figure 2.1-1). Adjacent to the SR-91 mainline, existing land uses primarily include commercial and services, industrial, education, and vacant land.

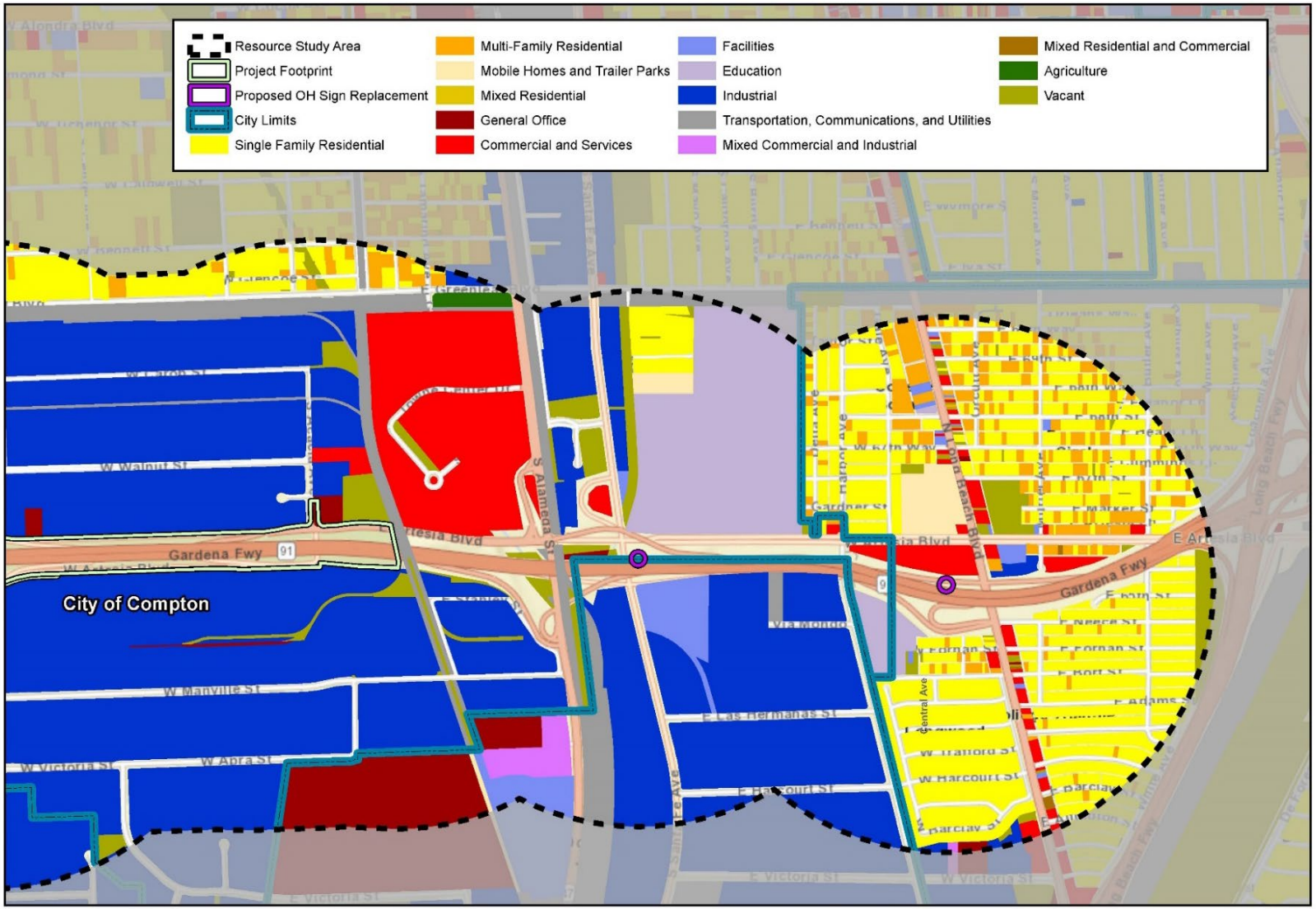
City of Carson: Based on the SCAG RTP/SCS, the existing land uses within the City of Carson include residential; mobile homes and trailer parks; general office; commercial and services; facilities; education; industrial; transportation, communications, and utilities; mixed residential and commercial; open space and recreational land; agricultural land; water; and vacant land (Figure 2.1-2). Adjacent to the SR-91 mainline, existing land uses include commercial and services; residential; general office; transportation, communications, and utilities; and agricultural and vacant land.

2.1.1 Affected Environment

Study Area: The study area for the land use analysis was established approximately 0.5 mile from the proposed project footprint which includes the area that would be directly impacted by project construction and operation. Affected environment includes existing land uses located immediately adjacent to the proposed project and within the study area that have been identified and are based on a field and windshield review, Google Earth survey, and review of regional and local plans in the affected project area.

City of Long Beach: This city is not included in the analysis of land use impacts because the only proposed improvement within the city is associated with the construction of a new overhead sign on SR-91 within California Department of Transportation (Caltrans) right of way (ROW). For these reasons, no impacts on land use are anticipated within the City of Long Beach.

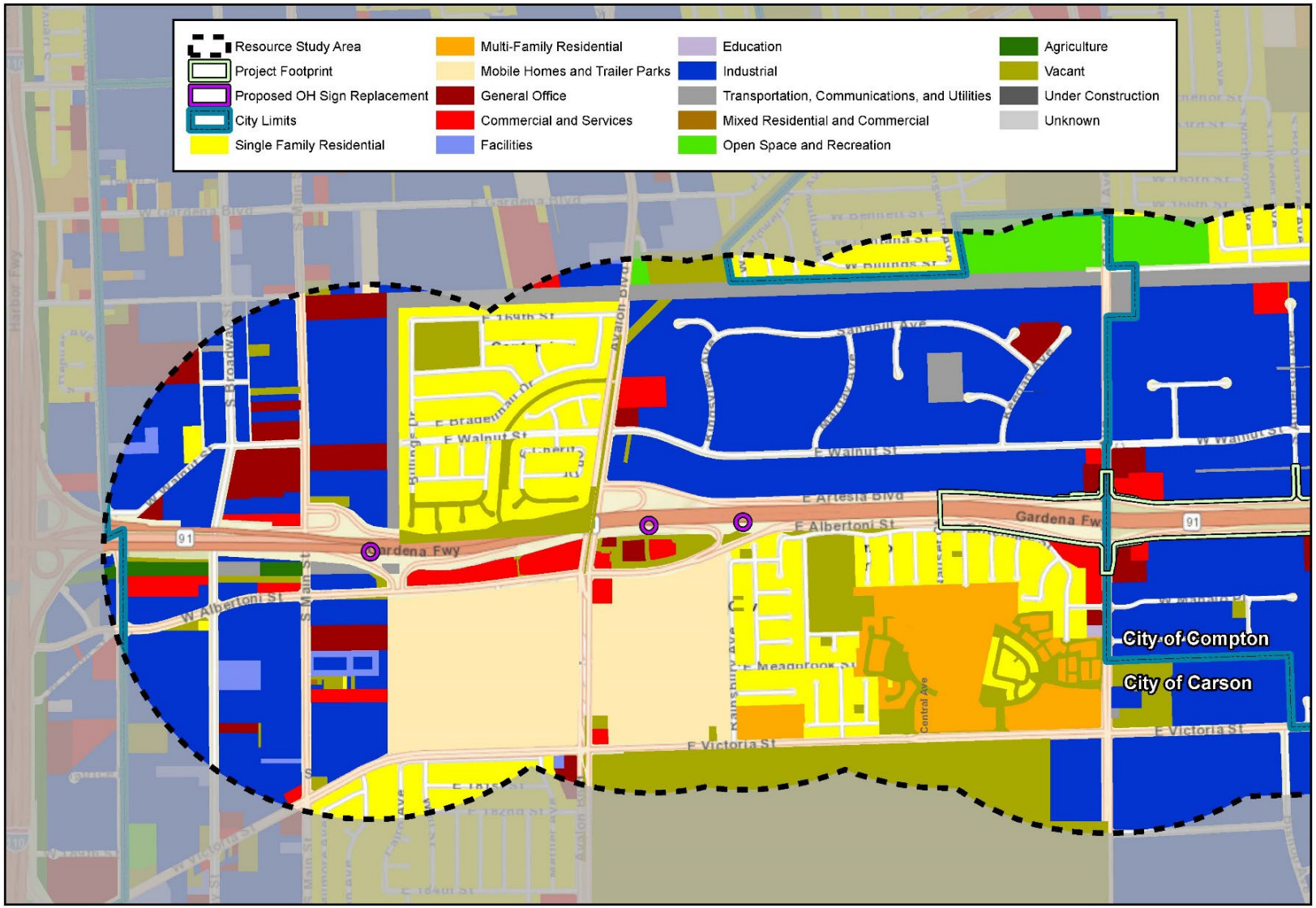
City of Compton: The land use within the study area between Central Avenue and Acacia Court primarily consists of industrial uses with some general office, commercial and services, and vacant land uses interspersed throughout. An In-N-Out Burger and El Pollo Loco occupy the area adjacent to SR-91 near the southeast corner of the Central Avenue eastbound on-ramp. Carl's Jr., Starbucks, and the Willow Tree Inn occupy the area near the SR-91 westbound off-ramp at the northeast corner of Central Avenue. Industrial uses dominate the areas near the SR-91 Wilmington Avenue and Acacia Court on- and off-ramps.



Sources: SCAG 2012; ESRI 2019.

Figure 2.1-1. Land Use – Eastern Most Terminus of Proposed Project Limits

Note: This map is not to scale and represents a 0.5-mile buffer around the project footprint.



Sources: SCAG 2012; ESRI 2019.

Figure 2.1-2. Land Use – Western Most Terminus of Proposed Project Limits
Note: This map is not to scale and represents a 0.5-mile buffer around the project footprint.

City of Carson: The land uses within the study area between Central Avenue and Avalon Boulevard primarily consists of residential, commercial and services, industrial, and vacant land uses. A Chevron gas station and a McDonald's are located near the SR-91 Central Avenue eastbound off-ramp, at the southwest corner of Central Avenue. American Guard Services, Inc., a security protection firm, is located near the SR-91 Central Avenue westbound on-ramp, at the northwest corner of Central Avenue.

Land Use Development: Table 2.1-1 and Figure 2.1-3 show proposed infrastructure and land use development projects within the study area.

Table 2.1-1. Projects in Development within the Study Area

Project Type	Name	Jurisdiction	Proposed Activity/Uses	Status
Land Use Development Project	Brandywine Development (Victoria Street at Cedarbluff Way)	City of Carson	38-unit town home community distributed among six separate three-story buildings.	Under City review
Land Use Development Project	Victoria Greens Development/Carson Landing (East Victoria Street and South Central Avenue)	City of Carson	175-unit residential condominium project	Under City review

Source: Community Impact Assessment (June 2020)

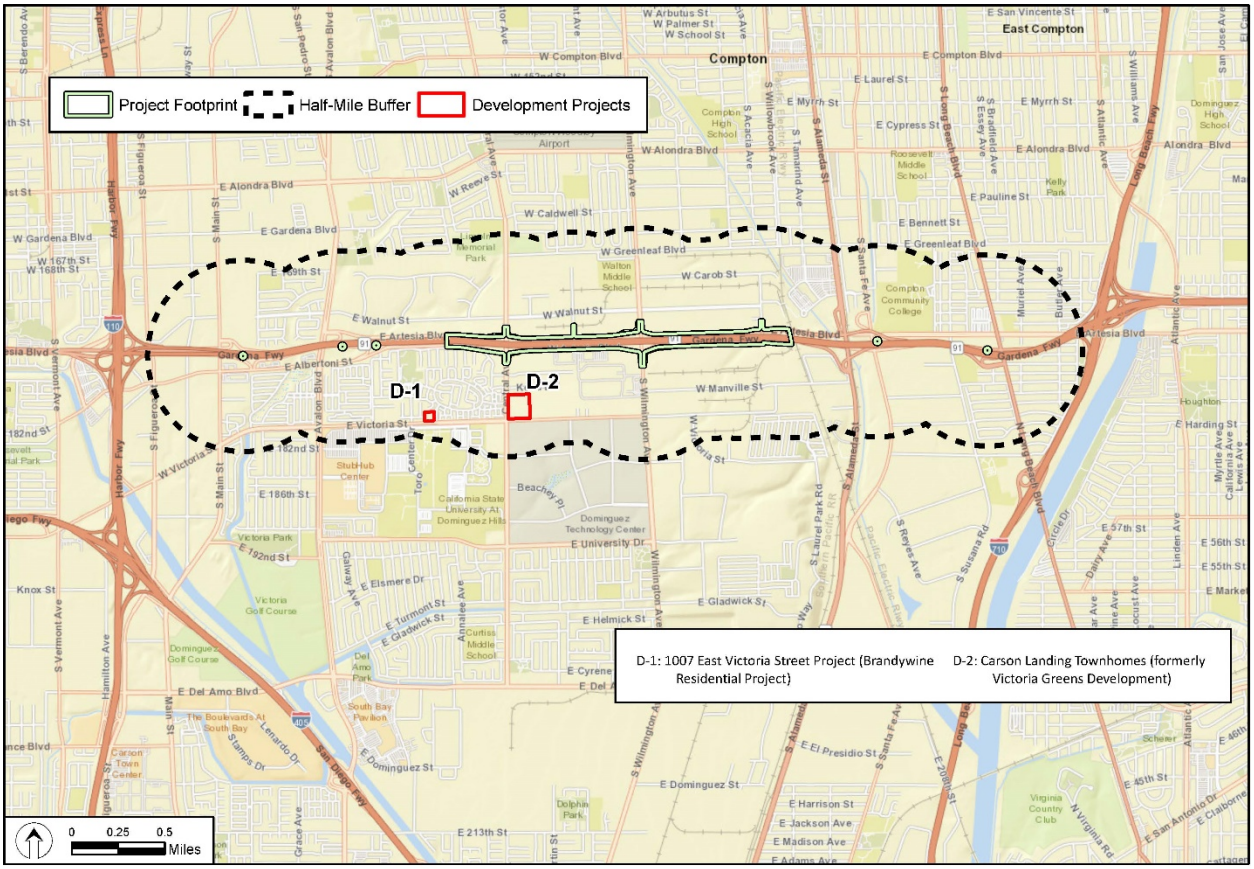


Figure 2.1-3. Proposed Infrastructure and Land Use Development Projects within the Study Area

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

This project is included in the Southern California Association of Governments (SCAG) *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) and the Federal Transportation Improvement Program (FTIP) Amendment 19-12 with Identification Number (ID No.) LA0G1563 (SCAG, 2020). The project description states: "Metro proposes to improve the weaving conflict on SR-91 between Central Avenue to Acacia Court by adding a two-lane C-D road in each direction. The proposed improvements also include enhancements to the truck turning radii at the SR-91 Wilmington Avenue and Central Avenue Interchanges."

Future phases of the SR-91 Central Avenue to Acacia Court Improvement Project are anticipated to be funded by Metro's Measure R half-cent sales tax program. In addition, this Project will be eligible for Federal-aid funding with the approved NEPA document.

Table 2.1-2 provides information on the applicable goals and policies of the *Los Angeles County General Plan, City of Compton General Plan, City of Carson General Plan, Metro and GCCOG SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report, GCCOG Strategic Transportation Plan Final Report, SCAG RTP/SCS, Metro Long-Range Transportation Plan, City of Compton Bicycle Master Plan,* and *City of Carson Bicycle Master Plan* for the project study area.

Table 2.1-2. Consistency with State, Regional, and Local Plans/Programs

Reference	Plan Objective/Policy	Alternatives
Los Angeles County General Plan (2015)	Mobility Element Goals and Policies: • To achieve a transportation networks that minimizes negative impacts to the environment and communities. • To achieve the safe and efficient, movement of goods. • To achieve street designs that incorporate the needs of all users.	**No Build:** Inconsistent. **Build:** Consistent. The C-D Road Alternative would provide a safe and efficient transportation network by eliminating the weaving issues between closely spaced interchanges on the SR-91 mainline. The C-D Road Alternative would implement various "complete" streets improvements to create additional opportunities for non-motorized vehicles and pedestrians such as refuge areas and ADA-compliant curb ramps and sidewalks.
City of Compton General Plan Vision (2010)	Land Use Element: Policy 1.7 (Mid-range): Implement a comprehensive program to improve the condition of city streets.	**No Build:** Inconsistent. **Build:** Consistent. The C-D Road Alternative would improve the Central Avenue and Wilmington Avenue intersections. The C-D Road Alternative would implement various "complete" streets" improvements to create additional opportunities for non-motorized vehicles and pedestrians such as refuge areas and ADA-compliant curb ramps and sidewalks. As part of the C-D Road Alternative, the truck turning radii option(s) would improve local street operations, improving truck-turning movements and queues on local streets. This improvement would lessen the wear and tear on city streets.

Reference	Plan Objective/Policy	Alternatives
City of Compton General Plan Vision (2010)	Circulation Element: • **Goal 1.0 (Long-range):** Provide a street system that meets current and future City needs and that facilitates the safe and efficient movement of people and goods throughout Compton. • **Policy 1.8 (Long-range):** Provide a street system that allows for the safe and efficient movement of traffic.	**No Build:** Inconsistent. **Build:** Consistent. The C-D Road Alternative would improve safety and efficiency of local roads by including pavement markings, roadside signs, and ADA facilities (i.e. sidewalks, curb ramps).
City of Carson General Plan - Chapter 4 (2004)	Transportation and Infrastructure: • **TI-1.3:** Ensure that the City's designated truck routes provide efficient access to and from the I-405, I-110, and Route-91 Freeways, as well as the Alameda Corridor. • **TI-2:** Provide a sustainable, safe, convenient, and cost-effective circulation system to serve the present and future transportation needs of the Carson community. • **TI-2.7:** Provide all residential, commercial, and industrial areas with efficient and safe access to major regional transportation facilities. • **TI-IM-4.14:** Design new streets and major street improvements with the potential for Class I or Class II bicycle routes, as appropriate, to separate automobile, bicycle, and pedestrian movements to the extent feasible. (Implements Policy TI-4.3).	**No Build:** Inconsistent. **Build:** Consistent. The C-D Road Alternative would improve safety and efficiency of the SR-91 freeway operations. To improve bicycle accessibility and connectivity, the following improvements are proposed: • Class II buffered bike lane with Bicycle Tolerant Drainage Grates and Conflict Zone Green Paint on eastbound and westbound Artesia Boulevard between Central Avenue and Acacia Court, and • Bicycle and pedestrian signage and LED lighting in pedestrian/bicycle accessible areas, where existing lighting is insufficient.

Reference	Plan Objective/Policy	Alternatives
Metro and GCCOG SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report (2013)	SR-91/I-605/I-405 Guiding Principles: • Confine new freeway construction, including adding lanes, to existing state ROW in order to preserve and enhance local economies and environments. New construction will not involve double-decking on any part of the freeway. • Address freeway operational deficiencies and relieve freeway congestion "hotspots."	**No Build:** Inconsistent. **Build:** Consistent. The C-D Road Alternative freeway operational improvements would relieve congestion by implementing a concrete-barrier separated system, consolidating multiple access points and redirecting weaving areas from the freeway mainline. This alternative does not include double-decking on any part of the freeway. Proposed freeway operational improvements are within existing state ROW. Sliver ROW acquisitions for Truck Turning Radii Option 2 would be used for street expansion, not freeway expansion.
GCCOG Strategic Transportation Plan Final Report (2016)	Reduce roadway congestion.	**No Build:** Inconsistent. **Build:** Consistent. The implementation of a concrete-barrier separated system would reduce roadway congestion by improving the merge and diverge movements on the freeway mainline while increasing the weaving distance between Avalon Boulevard and Acacia Court. The C-D Road Alternative would improve local road operations by including pavement markings, roadside signs, and ADA facilities (i.e. sidewalks, curb ramps).

Reference	Plan Objective/Policy	Alternatives
GCCOG Guiding Principles (2007)	Confine new freeway construction (including adding lanes) to existing State right-of-way in order to preserve and enhance local economies and environments. New construction will not involve double-decking on any part of the freeway. Address freeway operation deficiencies, relieve freeway congestion "hot-spots" and decrease the impact of truck bypass traffic on communities as soon as possible. Implement additional Intelligent Transportation Systems (ITS) improvements in the SR-91/I-605/I-405 Corridor and advocate a broader regional approach to support this initiative.	**No Build:** Inconsistent. **Build:** Consistent. The implementation of a concrete-barrier separated system within existing State right-of-way would reduce roadway congestion by improving the merge and diverge movements on the freeway mainline while increasing the weaving distance between Avalon Boulevard and Acacia Court. Ramp metering is proposed at four locations and double-decking is not proposed. The C-D Road Alternative proposes to replace pavement at intersections with severe cracking and potholes from heavy truck traffic with a rigid pavement which would improve the overall strength of pavement and durability.
SCAG RTP/SCS (2020-2045)	This project is included in the SCAG 2020-2045 RTP/SCS and Federal Transportation Improvement Program (FTIP) Amendment 19-12 with Identification (ID) Number (No.) LA0G1563 (SCAG, 2020). Metro proposes to improve the weaving conflict on SR-91 between Central Avenue and Acacia Court by adding a two-lane C-D road in each direction. The proposed improvements also include enhancements to the truck turning radii at the SR-91 Wilmington Avenue and Central Avenue interchanges.	**No Build:** Inconsistent. **Build:** Consistent. SR-91 Central Avenue to Acacia Court Project improvements are included in the 2016 RTP/SCS Final Amendment 3, 2019 FTIP.
Metro Long-Range Transportation Plan (2020)	Plan supports efficient and sustainable goods movement to support economic prosperity with equity and environmental sustainability.	**No Build:** Inconsistent. **Build:** Consistent. The C-D Road Alternative would reduce congestion and improve mobility and safety for the transportation of people and goods.

Reference	Plan Objective/Policy	Alternatives
Compton Bicycle Master Plan (2015)	Recommends a Class I shared use path on Artesia Boulevard from Central Avenue to Acacia Court.	**No Build:** Inconsistent. **Build:** Consistent. The proposed Project improvements are primarily on the freeway. A separated Class I shared use path would require road widening and additional ROW acquisition, resulting in greater impacts to the surrounding community. The C-D Road Alternative proposes a striped Class II buffered bike lane on Artesia Boulevard between Central Avenue to Acacia Court and on Albertoni Street between Lysander Drive and Central Avenue. It would not require roadway widening or additional ROW and would not preclude construction of the planned Class I shared use path on Artesia Boulevard from Central Avenue to Acacia Court.
Carson Bicycle Master Plan (2013)	Recommends coordination with the City of Compton for 6-foot-wide bike lanes on Central Avenue from Artesia Boulevard to Albertoni Street.	**No Build:** Inconsistent. **Build:** Consistent. The proposed project improvements are primarily on the freeway. Bike lanes of 6 feet in width would require road widening and additional ROW acquisition, resulting in greater impacts to the surrounding community. The C-D Road Alternative improvements would not impact existing bikeways or preclude construction of planned bike lanes on Central Avenue from Artesia Boulevard to Albertoni Street. Bike lanes of 6 feet in width do not fall within the scope of the proposed project nor is it consistent with the purpose and need. Please refer to Chapter 4 Comments and Coordination for details on ongoing coordination with the City of Carson.

ADA = Americans with Disabilities Act

2.1.3 Environmental Consequences

2.1.3.1 Temporary Impacts

No Build Alternative

The No Build Alternative would not result in the construction of any improvements to the project area; would not convert any existing land uses to transportation uses; and would not have any direct effects on land uses in the study area; therefore, would not result in temporary impacts related to existing and planned land uses.

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

Build Alternative

The Build Alternative would not result in temporary impacts related to existing and planned land uses.

2.1.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not result in the construction of any improvements to the project area; therefore, would not result in permanent impacts related to existing and planned land uses.

The No Build Alternative would maintain the current configurations of SR-91 in the study area. Under the No Build Alternative, the project would not be constructed and would not be consistent with local goals and policies related to improving traffic conditions.

Build Alternative

Construction of the C-D Road Alternative with Truck Turning Radii Option 1 would be constructed within the existing Caltrans or public ROW, and it would not impact existing land uses.

Construction of the C-D Road Alternative with Truck Turning Radii Option 2 would require sliver ROW acquisitions from several parcels on the northwest and southeast corners of both Central Avenue and Wilmington Avenue. The land use subject to ROW acquisition is designated as commercial and industrial, and it may require an amendment to the City of Compton's land use plans to address potential inconsistencies and to be consistent with the permanent use of land for transportation purposes.

The C-D Road Alternative would provide operational benefits to freeway and local road operations, reduce congestion, and improve mobility. It is consistent with the transportation element objectives of the *Los Angeles County General Plan*, *City of Compton General Plan*, *City of Carson General Plan*, *Metro and GCCOG SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report*, *GCCOG Strategic Transportation Plan Final Report*, *SCAG RTP/SCS*, *Metro Long-Range Transportation Plan, City of Compton Bicycle Master Plan*, and *City of Carson Bicycle Master Plan* (Table 2.1-2).

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

2.1.4 Avoidance, Minimization, and/or Mitigation Measures

The C-D Road Alternative is consistent with the state, regional, and local plans/programs; therefore, no avoidance, minimization, and/or mitigation measures are required.

To avoid and minimize impacts on land use, the following measure would be implemented:

- **CIA-1:** If the C-D Road Alternative with Truck Turning Radii Option 2 is selected, coordination with the City of Compton will occur to determine if a land use zoning amendment is required.

2.2 Relocations and Real Property Acquisition

2.2.1 Regulatory Setting

Caltrans' Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

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

2.2.2 Affected Environment

The information in this section is based on the *Relocation Impact Memorandum* (June 2020) and the CIA (June 2020).

As described in Section 2.1.1, existing land uses within the study area along SR-91 include the following:

- City of Compton: Commercial and services, industrial, education, and vacant land
- City of Carson: Commercial and services, residential, general office, transportation, communications, utilities, and agricultural and vacant land

2.2.3 Environmental Consequences

2.2.3.1 Temporary Impacts

Build Alternative

The construction of the C-D Road Alternative with Truck Turning Radii Option 2 may require temporary construction easements (TCEs) for construction of sidewalks and curb ramps at the intersections. After completion of construction, the TCE areas would be restored to their original pre-project conditions to the extent feasible. The project is not expected to cause any temporary closures in front of businesses or impact access to businesses. Most of the adjacent businesses on the frontage roads have multiple access points, and all driveways within the project footprint would be maintained during construction.

2.2.3.2 Permanent Impacts

Build Alternative

Two existing billboards would need to be relocated as part of this project. One billboard is owned and operated by Clear Channel Outdoor. The other billboard is owned and operated by Bulletin Displays, LLC. New billboards would be installed prior to the removal of existing billboards (both located in City ROW) with no loss of revenue. Since the proposed improvements do not require property acquisitions, there would be no loss of property tax revenue for the billboards.

The improvements would occur within Caltrans or City ROW with the exception of partial ROW acquisitions, also referred to as sliver ROW acquisitions, of landscaped areas on industrial and commercial properties for the C-D Road Alternative with Truck Turning Radii Option 2. No

residential or business relocations or driveway access relocations are anticipated. Table 2.2-1 and Figures 1.4-1 and 1.4-2. (See Chapter 1) shows the parcels and anticipated size of sliver ROW acquisitions for the C-D Road Alternative with Truck Turning Radii Option 2.

Table 2.2-1. Sliver ROW Acquisitions for C-D Road Alternative with Truck Turning Radii Option 2

APN	Property Type	Address	Location	Size (sq.ft.)
7319-033-054	Industrial	1253 E. Artesia Boulevard, Carson, CA 90746	NW Central Avenue	7,922
7319-033-055	Commercial	1299 E. Artesia Boulevard, Carson, CA 90746	NW Central Avenue	6,474
7319-024-019	Commercial	1931 W. Artesia Boulevard, Compton, CA 90220	NE Central Avenue	3,565
7319-024-045	Commercial	1929 W. Artesia Boulevard, Compton, CA 90220	NE Central Avenue	1,975
7319-003-102 (former); 7319-003-109 (current)	Commercial	2200 W. Artesia Boulevard, Compton, CA 90220	SE Central Avenue	4,863
7319-003-020	Commercial	1918 W. Artesia Boulevard, Compton, CA 90220	SE Central Avenue	2,251
7319-028-056	Industrial	801 W. Artesia Boulevard, Compton, CA 90220	NW Wilmington Avenue	23,234
7318-002-078	Industrial	700 W. Artesia Boulevard, Compton, CA 90220	SE Wilmington Avenue	30,615
7319-028-057	Industrial	921 W. Artesia Boulevard, Compton, CA 90222	NW Wilmington Avenue	2,311

Source: CIA (June 2020)

APN = Assessor Parcel Number
NE = northeast
NW = northwest
SE = southeast
sq.ft = square feet

The following project features would be incorporated into the project to avoid or reduce relocation impacts:

PF-RW-1: New billboards will be installed prior to the removal of existing billboards (both located in City ROW) with no loss of revenue.

PF-RW-2: Should parcel takes be required, Metro will perform any needed ROW acquisitions during final design. If ROW acquisition is unavoidable, coordination with property owners and acquisition will occur in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 as amended for the Truck Turning Radii Option 2.

2.2.4 Avoidance, Minimization, and Mitigation Measures

With the implementation of Project Features PF-RW-1 and PF-RW-2, no adverse impacts related to relocations would occur; therefore, no avoidance, minimization, and/or mitigation measures are required.

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2.3 Environmental Justice

2.3.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2020, this was $26,200 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964, and related statutes, have also been included in this project. The Department's commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix A of this document.

2.3.2 Affected Environment

This Project has been developed in accordance with Title VI of the Civil Rights Act of 1964, as amended, and Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Title VI states that "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." EO 12898 requires each federal agency (or its designee) to take the appropriate and necessary steps to identify and address "disproportionately high and adverse" effects of federal or federally funded projects on minority and low-income populations.

U.S. DOT Order 5610.2(a) defines a minority as a person who is a member of the following population groups: Black, Hispanic or Latino, Asian American, American Indian and Alaskan Native, and Native Hawaiian and Other Pacific Islander. The U.S. Census Bureau data used for the analysis lists the following race categories: White, Black/African American, American Indian/Alaska Native, Asian, Native Hawaiian/Other Pacific Islander, Some Other Race (i.e., any race not included in the aforementioned race categories), and Two or More Races. According to the U.S. Census Bureau, Hispanic or Latino is an ethnicity, not a race. As such, individuals who self-identify as Hispanic or Latino in the U.S. Census also may self-identify as a member of any of the U.S. Census Bureau's race categories.

U.S. DOT Order 5610.2(a) defines "minority population" to mean "any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed [persons] who will be similarly affected by a proposed DOT program, policy or activity." Minority populations were identified where either:

- the minority population of the affected area exceeds 50 percent, or
- the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis" (Council on Environmental Quality, 1997).

Minority and low income populations have been identified in the project study area. For purposes of this analysis, the most recent census data information from the 2010 U.S. Census and 2014 to 2018 American Community Survey was used for the referenced populations of Los Angeles County and the cities of Compton and Carson. Los Angeles County was used as the community of comparison, and meaningfully greater was conservatively defined as any city within the project study area with a minority population that is 5 percent or greater than that of Los Angeles County.

The City of Long Beach is not included in the analysis of environmental justice impacts because the only proposed improvement within the City of Long Beach is associated with the construction of a new overhead sign on SR-91. For this reason, any temporary impacts related to traffic, noise, or air quality on environmental justice populations are not anticipated within the City of Long Beach.

Table 2.3-1 shows that minority populations account for 72.3 percent of the population in Los Angeles County, with the highest minority concentration being Hispanic (48.5 percent). However, minority population concentrations are meaningfully greater in the study area:

- City of Compton, 99.1 percent (the highest concentration is Hispanic at 68.2 percent)
- City of Carson, 91.1 percent (the highest concentration is Hispanic at 38.8 percent)

Table 2.3-2 shows that the City of Compton has a higher percentage of population below the poverty level than the County, indicating the City has low-income environmental justice populations.

Table 2.3-1. Minority Populations

Area	White Alone, non-Hispanic (Non-minority Population [%])	Two or More Races	Hispanic (Minority Population [%])	African American (Minority Population [%])	Asian (Minority Population [%])	American Indian and Alaska Native (Minority Population [%])	Native Hawaiian and Other Pacific Islander (Minority Population [%])	Total Minority Population
City of Compton	1.2	1.6	**68.2**	**29.5**	0.8	0.3	0.3	99.1
City of Carson	7.3	**4.8**	38.8	**23.5**	**25.6**	0.6	**2.6**	91.1
Los Angeles County	26.3	3.9	48.5	8.2	14.6	0.7	0.3	72.3

Source: CIA (June 2020)

% = percent

Note: Higher percentage of City of Compton and City of Carson minority populations than those in Los Angeles County are shown in bold

Table 2.3-2. Household Income and Poverty Status

Area	Median Household Income ($)	People in Poverty (%)	People below Poverty (18 to 64 years old) (%)	People below Poverty (65 years old and over) (%)
City of Compton	50,507	**21.9**	**18.4**	**20.7**
City of Carson	78,580	10.3	9.1	8.3
Los Angeles County	64,251	16.0	14.3	13.3

Source: CIA (June 2020)

$ = U.S. Dollars

Note: Higher percentage of population below the poverty level than in Los Angeles County shown in bold

2.3.3 Environmental Consequences

2.3.3.1 Temporary Impacts

No Build Alternative

The No Build Alternative would not include any of the proposed improvements. As a result, the No Build Alternative would not result in temporary adverse effects on environmental justice populations. However, the transportation benefits associated with implementation of the project would also not be realized.

Build Alternative

The land use within the study area between Central Avenue and Acacia Court primarily consists of industrial uses with some general office, commercial and services, and vacant land uses interspersed throughout. West of Central Avenue, there is a residential area to the south of eastbound SR-91; however, project improvements adjacent to this area is limited to signage upgrades on the roadway at a lower elevation separated by embankments, a 6-foot existing sound wall, trees, and a -lane frontage road with a tree-lined median. Construction activities adjacent to this area would be temporary and intermittent for up to 12 months and would include all Caltrans standard best management practices to reduce construction related effects.

Environmental justice populations and other populations within the study area would experience short-term effects on access and circulation due to temporary ramp closures and detours; aesthetics due to construction staging and equipment; short-term noise and air quality due to excavation, grading, hauling, and other temporary construction activities. Non-environmental justice populations in the study area would also experience the same short-term effects during construction.

2.3.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not include any of the proposed improvements. As a result, the No Build Alternative would not result in permanent adverse effects on environmental justice populations. However, the transportation benefits associated with implementation of the project would also not be realized.

Build Alternative

The C-D Road Alternative would provide safe access to the freeway by minimizing weaving conflicts and improving mobility which will enhance local roadway operations for all users. The transportation benefits of consolidating multiple access points into a single access point would result in improvements to weaving issues due to closely spaced interchanges in the project area. Other benefits include the addition of landscaping and aesthetic treatments (Section 2.6, Visual/Aesthetics) and complete streets elements to improve bicycle and pedestrian connectivity and accessibility (Chapter 1, Proposed Project and Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities).

The project improvements would be limited to Caltrans ROW with some sliver acquisitions (Truck Turning Radii Option 2) in the landscaped areas of adjacent industrial and commercial properties and would not require incursion into surrounding neighborhoods, would not change existing community relationships, nor would require the displacement or relocation of any persons and businesses.

These improvements would not cause disproportionately high and adverse effects on minority or low-income populations because the impacts would not result in any permanent additional burden to the community. The improvements to transportation facilities would enhance multimodal travel and influence the vitality of the local economy, environmental quality and personal mobility.

2.3.4 Avoidance, Minimization, and Mitigation Measures

Project features included in the Build Alternative would reduce temporary construction traffic, noise, and air quality impacts on all populations in the study area, including low-income and minority populations. Based on the aforementioned and analysis, the Build Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898. No further environmental justice analysis is required.

Project features are included in the Build Alternative that will reduce temporary short-term construction related traffic impacts (Section 2.5); air quality impacts (Section 2.12); and noise impacts (Section 2.13) on all populations in the study area, including low-income and minority populations.

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2.4 Utilities/Emergency Services

2.4.1 Affected Environment

The information in this section is based on the *Utility Impact Memo* (June 2020) and the CIA (June 2020). This section describes the existing utilities and emergency services and providers within the study area. The study area for the evaluation of potential impacts was established approximately 0.50 mile from the proposed project footprint.

2.4.1.1 Utilities

There are a number of publicly and privately-owned utilities within the project study area, including overhead and underground electrical, natural gas, oil and gasoline pipelines, telephone and communication, cable TV, water, and sewer. The locations of utilities were identified during field reviews using as-built drawings.

The following utility owners with facilities are known to exist within the study area:

- AT&T CA, Charter Communications/Spectrum, Verizon Business MCI (cellular/telecom)
- Southern California Edison (electricity)
- AT&T TCA; AT&T Transmission (fiber optic)
- Southern California Gas Company (natural gas)
- Shell, Torrance Pipeline LLC, Union Oil Corp. (gasoline/oil)
- City of Compton, Los Angeles County Sanitation Districts (sewer)
- California Water Service Company, City of Compton, Metropolitan Water District (MWD), Unknown (water)

2.4.1.2 Emergency Services

Fire protection within the study area is provided by the Los Angeles County and Compton fire departments. There are two fire stations within the study area; Compton Fire Station 4 is located at 950 W. Walnut Street, and the Los Angeles County Fire Station 116 is located at 755 E. Victoria Street in the City of Carson.

Police protection is provided by the City of Compton's and the City of Carson's police departments and the Los Angeles County Sheriff's Department. Police and sheriff facilities for both cities are located outside of the project study area.

2.4.2 Environmental Consequences

2.4.2.1 Temporary Impacts

No Build Alternative

The No Build Alternative does not include the construction of any of the improvements in the Build Alternative. Therefore, the No Build Alternative would not result in temporary impacts related to utilities and emergency services.

Build Alternative

The utility facilities that could potentially be affected during construction of the Build Alternative are listed in Table 2.4-1. These include two sewer lines owned by the City of Compton and one water line owned by MWD. If determined to be impacted, the identified utilities would require additional effort to protect them in place due to conflict with the proposed project improvements. Detailed analysis of these utilities, including an updated utility search, potholing, and positive location of high-risk utilities, will be undertaken during the final design phase of the project to determine final dispositions and required actions.

Table 2.4-1. Utilities Potentially Affected During Construction of the Build Alternative

Utility Providers	Facility Impacted
City of Compton	12-inch sewer line in 30-inch casing crossing west of Central Avenue – Protect in Place
City of Compton	12-inch sewer line in 30-inch casing crossing west of Wilmington Avenue – Protect in Place
Metropolitan Water District	73-inch water line – Protect in Place

Emergency service providers may need to use different routes as a result of temporary construction-related impacts anticipated from detours. Short-term impacts to emergency responders are not anticipated as a result of the Build Alternative. Interchanges located within the project limits are closely spaced, thus reducing impact to emergency response services. The consolidation of the Central Avenue, Wilmington Avenue, and eastbound Acacia Court off-ramp would not impact emergency access because the location of the fire station is currently near the Avalon Boulevard on-ramp and would still enter at the same location to use either the C-D road or mainline.

The following project features would be incorporated into the Build Alternative to minimize the potential temporary impacts of the project construction on utilities and emergency services.

PF-UES-1: If protection or relocation of utilities is required, early coordination and communication with the utility service provider will occur so there will be no disruption of services.

PF-TR-1: A Transportation Management Plan (TMP) will be prepared for the project during final design phase to address potential impacts on utilities and emergency services during construction of the project. Section 2.5.3.1 provides additional details pertaining to the TMP.

2.4.2.2 Permanent Impacts

No Build Alternative

No improvements to SR-91 are proposed under the No Build Alternative. The freeway would remain as it exists today, with the exception of other proposed projects that are under development or currently under construction.

Build Alternative

As shown in Table 2.4-1, any effects to utility facilities under the Build Alternative would occur during the construction phase. All existing utility facilities would be anticipated to be protected in place under the Build Alternative. The Build Alternative would not result in increased demand for domestic water services, wastewater facilities, or solid waste disposal. Therefore, the Build Alternative would not result in permanent adverse effects on utility providers or their facilities.

The improvements to the SR-91 mainline and local streets would reduce traffic congestion and result in decreased travel times on SR-91 compared to the No Build Alternative. These improvements in traffic flow are likely to improve emergency response times within the study area. The concrete barrier system that separates the C-D road from the mainline would not impact emergency response times. In addition, California Highway Patrol (CHP) enforcement areas would be provided at three locations within the project limits: eastbound Central Avenue on-ramp, eastbound C-D road entrance to SR- 91, and westbound Wilmington Avenue on-ramp. Therefore, the Build Alternative would not result in adverse effects to emergency services and providers.

2.4.3 Avoidance, Minimization, and Mitigation Measures

With the implementation of Project Features PF-UES-1 and PF-TR-1, no impacts to utilities and emergency services are anticipated; therefore, no avoidance, minimization, and/or mitigation measures are required.

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2.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

This section describes the existing and planned transportation systems within the project study area, including the roadway network, transit services, and bicycle and pedestrian facilities.

2.5.1 Regulatory Setting

The California Department of Transportation (Caltrans) as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 Code of Federal Regulations [CFR] 652). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). The FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

Senate Bill 743 (2013) amended CEQA to allow the Governor's Office of Planning and Research (OPR) to develop new guidelines under CEQA establishing alternative metrics to levels of service (LOS) for the analysis of transportation impacts. On December 28th, 2018, the Office of Administrative Law approved the amendments to the CEQA Guidelines including changes related to Senate Bill 743. The amended CEQA Guidelines adds a new section on determining the significance of transportation impacts, and generally specify vehicle miles traveled (VMT) as the most appropriate measure of transportation impacts. A discussion on VMT and consistency with CEQA guidelines is addressed in Chapter 3 CEQA Evaluation under Transportation.

2.5.2 Affected Environment

A *Traffic Operations Analysis Report* (TOAR, November 2020) and a CIA (June 2020) were completed for the proposed project and were summarized to support the traffic evaluation contained in the following sections. The traffic study area covered the following:

- **Freeway Mainline**: The freeway HOV and mixed flow lanes on SR-91: eastbound SR-91 from the Avalon Boulevard off-ramp to the Santa Fe Avenue on-ramp and westbound SR-91 from the Santa Fe Avenue off-ramp to the Avalon Boulevard on-ramp
- **Freeway Ramps:** The on- and off-ramps at the study interchanges of Avalon Boulevard, Central Avenue, Wilmington Avenue, Acacia Court, Alameda Street, and Santa Fe Avenue
- **Intersections:** The key study intersections – ramp terminal intersections and intersections adjacent to the ramp terminal intersections at Central Avenue/SR-91 westbound and

eastbound ramps, Wilmington Avenue/SR-91 westbound and eastbound ramps, Acacia Court/Artesia Boulevard (See Table 1.3-6 for Existing Peak Period Intersection Operations)

The study scenarios for the traffic operations analysis include the following:

- Existing (2019) Conditions
- Opening Year (2025) No Build Alternative
- Opening Year (2025) Build Alternative
- Design Year (2040) No Build Alternative
- Design Year (2040) Build Alternative

Although Design Year is typically 20 years after Opening Year, a Design Year of 2040 was determined to be consistent with the horizon year of 2040 identified in the 2016 RTP for the SCAG region. An exception to use Design Year 2040 was submitted to Caltrans District Director and Project Delivery Coordinator for approval. The 2040 SCAG model was used to develop model scenarios for the No Build and Build Alternatives.

2.5.2.1 Existing Facility

State Highway

SR-91 is a major east-west facility in the southern portion of Los Angeles County that is primarily used for interstate, interregional, and intraregional travel consisting of people and goods movement through Los Angeles, Orange, Riverside, and San Bernardino Counties. SR-91 is a major facility for goods movement in California, providing access to the Ports of Los Angeles and Long Beach. It also serves one of the largest centers in the Los Angeles Basin for warehousing and transloading, located in the cities of Compton and Carson. SR-91 is part of the National Highway System and Freeway and Expressway System and is a Terminal Access route. Its functional classification is "other Freeway or Expressway".

The project segment of SR-91, west of Interstate 710 (I-710), generally consists of four mixed flow lanes and one HOV lane in both the eastbound and westbound directions, separated by a median barrier. All existing freeway mainline lanes are between 11 and 12 feet wide. Median and outside shoulders are provided; however, the widths of shoulders are nonstandard throughout most of the project area. The median shoulder width is 2 feet in both eastbound and westbound directions. The westbound and eastbound outside shoulders are paved, with widths varying from 10 to 13 feet and 8 to 10 feet, respectively.

Local Roads and Intersections

In the project area, immediately adjacent to SR-91, Artesia Boulevard consists of a pair of two-lane frontage roads, one for westbound traffic and one for eastbound traffic, that parallel SR-91. The westbound frontage road begins at Acacia Court and terminates at Avalon Boulevard. The existing lanes are 12 to 18 feet wide traveling westbound, with 2-foot gutters on both sides. The eastbound frontage road begins at Central Avenue and is a continuation of Albertoni Street, which terminates at Acacia Court. The existing lanes are 12 feet wide with a 6-foot wide outside shoulder and 2-foot wide gutters on either side. East of Acacia Court, Artesia Boulevard continues as a two-way facility on the north side of SR-91.

The frontage roads intersect with Central Avenue, Wilmington Avenue, and Acacia Court within the project area. Central Avenue is a four-lane arterial that runs north-south over SR-91; its travel lanes are 11 to 22 feet wide. Wilmington Avenue is a four-lane arterial that runs north-south over SR-91, and the existing lanes are 11 to 14 feet wide. Acacia Court is a one-way, two-

lane arterial south of West Artesia Boulevard and is a continuation of the eastbound Artesia Boulevard frontage road. It runs under SR-91, and the existing lanes are 11 feet wide. There are heavy truck percentages in the area ranging from 9 percent to 33 percent in the AM peak period and 7 percent to 22 percent in the PM peak period, and as a result, there is pavement degradation at the local road intersections with Central Avenue and Wilmington Avenue. A total of 16 billboards are located on either side of SR-91 within the project limits, adjacent to Caltrans ROW and along Artesia Boulevard. Within the project limits, there are no bicycle lanes, and sidewalks are limited along Central Avenue, Wilmington Avenue, and Acacia Court.

2.5.2.2 Existing Traffic Conditions

The TOAR evaluated existing traffic volumes collected in 2019 from Caltrans using Caltrans Performance Measurement System (PeMS) and field data. Field data was collected in May 2019 for weekday AM/PM peak period volumes on the SR-91 within the project study area. The AM peak period is 6:00 to 9:00 AM and the PM peak period is 4:00 to 7:00 PM. The SR-91 experiences congestion between the Interstate 110 (I-110) and I-710 interchanges in the westbound direction during the AM peak period, and similar eastbound congestion is experienced during the PM peak period due to a downstream bottleneck east of the study area (see Tables 1.3-1 and 1.3-2 for peak period mainline and ramp volumes). Within the project limits, vehicle weaving between the closely spaced interchanges at Central Avenue, Wilmington Avenue, and Acacia Court is the main contributor to traffic congestion. In addition, on the mainline during the peak period, there is 4 to 9 percent truck traffic in the AM peak period and 4 to 6 percent in the PM peak period within the project area (see Table 1.3-3 for peak period truck percentages).

Freeway Levels of Service

Based on the Highway Capacity Manual (HCM), freeway traffic flow can be defined in terms of level of service (LOS) (see Figure 1.3-1 Level of Service for Freeways), LOS A represents free-flowing traffic with adequate capacity. LOS F represents a breakdown in traffic flow due to demand exceeding the facility capacity. The AM and PM peak period LOS was calculated for each study location to evaluate traffic operations. The freeway LOS was determined for each study location based on the density measured by passenger cars per mile per lane. The Caltrans' Guide for the preparation of Traffic Impact Studies, Appendix C-3 (December 2002), states "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS". For the purpose of this study, LOS D is assumed to be the criteria for SR-91 mainline segments, on- and off-ramps, and weaving segments.

The TOAR evaluated freeway segments within the project limits for 2019 conditions. During the AM peak period, all study locations on eastbound SR-91, including mainline, ramps, and HOV lane, operate at LOS D or better conditions. In the westbound direction, the SR-91 mainline experiences substantial congestion during the AM peak period due to heavy commute traffic, resulting in a bottleneck between Long Beach Boulevard and Santa Fe Avenue, which operates at LOS F conditions with a long queue extends back to I-710 and beyond. West of Santa Fe Avenue, there is some slow down on the outside lanes at the weaving segment between the Acacia Court on-ramp and Wilmington Avenue off-ramp and at the westbound off-ramp to I-110. However, those mainline segments, as a whole, still operate at LOS D or better conditions during the AM peak period. The westbound SR-91 HOV access weaving segment between the Santa Fe Avenue off-ramp and Acacia Court on-ramp operates at LOS E. In addition, the westbound HOV lane operates unacceptably at LOS E conditions between Santa Fe Avenue and Acacia Court, and at LOS F west of Acacia Court.

During the PM peak period, all of the study locations on eastbound SR-91, including mainline, ramps and HOV lanes experience substantial traffic congestion and operate at LOS F conditions due to the downstream bottleneck at I-710 and Atlantic Avenue, which results in a substantial eastbound SR-91 queue that extends back to I-110. In the westbound direction, SR-91 has adequate capacity to accommodate traffic demand, and all of the study segments including mainline, ramps, and HOV lanes operate at LOS C or better conditions during the PM peak period (see Tables 1.3-4 and 1.3-5 for existing 2019 peak period freeway operations).

Freeway Ramp Termini Intersection Queuing

Vehicle queues exceed the available storage lengths and extend back to affect operations of the freeway off-ramps at the following locations:

- The westbound left-turn movement at Central Avenue/SR-91 westbound ramps during the AM peak hour
- The eastbound through movement at Central Avenue/SR-91 eastbound ramps during the PM peak hour
- The westbound left-turn movement at Wilmington Avenue/SR-91 westbound ramps during the AM and PM peak hours
- The eastbound through movement at Wilmington Avenue/SR-91 eastbound ramps during the PM peak hour.

Local Roads

Intersection LOS is a congestion rating that varies from LOS A to F. LOS A represents stable flow and very slight delay. LOS E represents unstable flow with high vehicle delay, and LOS F represents forced flow or jammed conditions and is considered over capacity. Per Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002), LOS D is assumed to be the criteria for SR-91 ramp terminal intersections. The *City of Compton's General Plan Circulation Element Master Plan of Streets and Highways* (1991) states, "This plan shows the ultimate circulation system needed to move people and goods within and through the City while maintaining roadway service levels of Level of Service D or better." The *City of Carson's General Plan Transportation and Infrastructure Element* (October 2004) has established that the acceptable LOS should be LOS D or better for intersections under jurisdiction of the City of Carson(see Figure 1.3-2, Level of Service for Intersections with Traffic Signals).

The TOAR evaluated the intersections within the study area for existing (2019) conditions. The AM and PM peak period intersection delay and LOS for weekday AM/PM peak hours are shown in Table 1.3-6. As shown, the majority of the study intersections operate at LOS D or better during AM/PM peak period, except for the Wilmington Avenue/SR-91 Eastbound Ramp intersection, which currently operates at LOS E conditions during the PM peak period. Heavy truck volumes are substantial at the key study intersections ranging from 11 to 20 percent in the AM peak period and 10 to 13 percent in the PM peak period, which result in some slow down especially for turning vehicles, including trucks.

Collision Rates

Historical collision rates were reviewed to determine locations within the study area that experience higher than average collision rates and to identify trends related to when and how collisions occurred. A 3-year collision history between April 1, 2016 and March 31, 2019 was obtained from Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) and used for the collision data analysis. Table 2.5-1 provides the collision data for the SR-91 mainline segments and ramps within the project limits. The table shows the number of fatality and fatality plus injury collisions, total collisions for the freeway mainline segments, and the actual 3-year rates with a comparison to the statewide average collision rates on similar facilities.

A total of 615 collisions occurred on the SR-91 mainline between Avalon Boulevard and Santa Fe Avenue between April 1, 2016 and March 31, 2019. Collision rates at 5 out of the 10 analyzed mainline segments showed a higher than the statewide average.

A total of 82 collisions occurred on the SR-91 ramps between Avalon Boulevard and Santa Fe Avenue between April 1, 2016 and March 31, 2019. Collision rates at 10 ramps (out of the 21 analyzed) were higher than the statewide average for similar facilities.

On the SR-91 mainline, approximately 56 percent of the collisions were rear-end collisions with sideswipes being the second highest (27 percent). Rear-end collisions are typically related to traffic congestion. Sideswipe collisions are associated with required lane changing, which causes weaving from on-ramps to mixed flow lanes and/or the HOV ingress/egress points and vice versa, as well as for vehicles changing lanes. Non-standard lane widths in the study corridor adversely affect traffic safety when vehicles make the lane changes and create higher potential for sideswipe collisions.

In addition, the majority of collisions on the SR-91 mainline segments occurred during the PM peak period (3:00 to 7:00 PM), especially in the eastbound direction. For eastbound SR-91 from Avalon Boulevard to Alameda Street, where collision rates are higher than the statewide average, approximately 46 percent of the collisions occurred during the PM peak period, and 86 percent of the collisions were rear-end (61 percent) and sideswipe (25 percent) collisions, which also indicates that traffic congestion and weaving are two key factors related to collisions.

On the SR-91 ramps, approximately 50 percent of collisions were rear-end collisions, 22 percent of collisions were hit object collisions, and 21 percent of collisions were sideswipe collisions. Most collisions occurred during the AM (33 percent) and PM (24 percent) peak periods.

Table 2.5-1. Summary of Collision Rates on the Freeway Mainline and Ramps within the Study Area (TASAS: April 1, 2016 to March 31, 2019)

Location	Post Mile Limits	Total Collisions	Actual Collision Rate F	Actual Collision Rate F+I	Actual Collision Rate Total	Statewide Average Collision Rate F	Statewide Average Collision Rate F+I	Statewide Average Collision Rate Total
Eastbound SR-91 Avalon Boulevard to Central Avenue (mainline)	R7.426-R8.435	91	**0.018**[a]	0.23	**0.82**[a]	0.002	0.25	0.81
Eastbound SR-91 Central Avenue to Wilmington Avenue (mainline)	R8.435- R9.162	93	0.000	0.42[a]	**1.14**[a]	0.003	0.26	0.84
Eastbound SR-91 Wilmington Avenue to Acacia Court (mainline)	R9.162- R9.798	85	0.000	**0.30**[a]	**1.15**[a]	0.002	0.24	0.80
Eastbound SR-91 Acacia Court to Alameda Street (mainline)	R9.798-R10.271	73	0.000	**0.33**[a]	**1.33**[a]	0.002	0.25	0.83
Eastbound SR-91 Alameda Street to Santa Fe Avenue (mainline)	R10.271-R10.410	13	0.000	0.18	0.80	0.003	0.29	0.93
Westbound SR-91 Santa Fe Avenue to Alameda Street (mainline)	R10.271-R10.410	13	0.000	0.12	0.80	0.003	0.29	0.93
Westbound SR-91 Alameda Street to Acacia Court (mainline)	R9.798-R10.271	21	0.000	0.11	0.38	0.002	0.25	0.83
Westbound SR-91 Acacia Court to Wilmington Avenue (mainline)	R9.162- R9.798	46	**0.014**[a]	0.14	0.62	0.002	0.24	0.80
Westbound SR-91 Wilmington Avenue to Central Avenue (mainline)	R8.435- R9.162	52	0.000	0.12	0.64	0.003	0.26	0.84
Westbound SR-91 Central Avenue to Avalon Boulevard (mainline)	R7.426-R8.435	128	0.000	**0.39**[a]	**1.15**[a]	0.002	0.25	0.81
Eastbound SR-91 Avalon Boulevard Off-Ramp	R7.629	3	0.000	0.00	0.97[a]	0.004	0.30	0.93
Eastbound SR-91 Avalon Boulevard On-Ramp	R7.861	2	0.000	**0.15**[a]	0.3	0.003	0.10	0.28
Eastbound SR-91 Central Avenue Off-Ramp	R8.216	1	0.000	0.00	0.11	0.003	0.09	0.25

Location	Post Mile Limits	Total Collisions	Actual Collision Rate F	Actual Collision Rate F+I	Actual Collision Rate Total	Statewide Average Collision Rate F	Statewide Average Collision Rate F+I	Statewide Average Collision Rate Total
Eastbound SR-91 Central Avenue On-Ramp	R8.635	4	0.000	0.10	**0.38[a]**	0.003	0.10	0.28
Eastbound SR-91 Wilmington Avenue Off-Ramp	R8.935	0	0.000	0.00	0.00	0.003	0.09	0.25
Eastbound SR-91 Wilmington Avenue On-Ramp	R9.352	3	0.000	0.00	0.25	0.003	0.10	0.28
Eastbound SR-91 Acacia Court Off-Ramp	R9.642	1	0.000	**0.67[a]**	**0.67[a]**	0.003	0.09	0.25
Eastbound SR-91 Alameda Street Off-Ramp	R10.108	5	0.000	0.00	**1.4[a]**	0.004	0.32	0.92
Eastbound SR-91 Santa Fe Avenue Off-Ramp	R10.272	4	0.000	0.00	0.81	0.004	0.32	0.92
Eastbound SR-91 Alameda Street On-Ramp	R10.396	5	0.000	**0.27[a]**	**0.68[a]**	0.001	0.23	0.67
Eastbound SR-91 Santa Fe Avenue On-Ramp	R10.565	4	0.000	0.15	**0.61[a]**	0.002	0.21	0.6
Westbound SR-91 Santa Fe Avenue/Alameda Street Off-Ramp	R10.542	5	0.000	0.07	**0.34[a]**	0.002	0.08	0.25
Westbound SR-91 Santa Fe Avenue Off-Ramp Segment	R10.371	5	0.000	0.37	0.93	0.002	0.31	0.92
Westbound SR-91 Alameda Street Off-Ramp Segment	R10.370	1	0.000	0.00	0.11	0.003	0.09	0.25
Westbound SR-91 Acacia Court On-Ramp	R9.607	1	0.000	0.10	0.10	0.003	0.10	0.28
Westbound SR-91 Wilmington Avenue Off-Ramp	R9.294	9	0.000	**0.1[a]**	**0.86[a]**	0.003	0.09	0.25
Westbound SR-91 Wilmington Avenue On-Ramp	R8.962	4	0.000	**0.28[a]**	**0.55[a]**	0.003	0.10	0.28

Location	Post Mile Limits	Total Collisions	Actual Collision Rate F	Actual Collision Rate F+I	Actual Collision Rate Total	Statewide Average Collision Rate F	Statewide Average Collision Rate F+I	Statewide Average Collision Rate Total
Westbound SR-91 Central Avenue Off-Ramp	R8.628	0	0.000	0.00	0.00	0.003	0.09	0.25
Westbound SR-91 Central Avenue On-Ramp	R8.195	16	0.000	**0.62**[a]	**1.97**[a]	0.003	0.10	0.28
Westbound SR-91 Avalon Boulevard Off-Ramp	R7.826	5	0.000	**0.27**[a]	**0.68**[a]	0.003	0.09	0.25
Westbound SR-91 Avalon Boulevard On-Ramp	R7.508	4	0.000	0.00	0.64	0.003	0.23	0.71

Source:Caltrans TASA Report and TOAR (November 2020)

[a] This note and bold text indicates collision rate is higher than the statewide average

F = Fatality collisions
F+I = Fatality and Injury Collisions

2.5.2.3 Public Transportation

The City of Compton is served by the Metro Rail A Line, previously known as Metro Rail Blue Line. This 22-mile light-rail line runs north-south between Downtown Los Angeles and Long Beach, with two stations located in the City of Compton (Compton and Artesia stations). The Artesia Station, located at 1920 S. Acacia Avenue, includes a park-and-ride facility with 269 parking spaces, of which 241 spaces are free. The Compton Station is located outside the 0.5-mile project study area.

A Dial-A-Ride program is offered for senior citizens (55 years and older) and persons with disabilities who reside within the City of Compton. The program offers curb-to-curb transportation service anywhere within the city boundaries and to satellite points outside the city.

The Compton Renaissance Transit has five bus routes operating in the cities of Paramount, West Rancho Dominguez, Willowbrook, Lynwood, Compton, and Carson with 142 bus stops. The bus operates Monday through Friday from 7:30 AM to 3:30 PM and Saturdays from 9:00 AM to 3:00 PM.

Table 2.5-2 lists bus lines that are within the project study area and that are available from the Artesia Station.

Table 2.5-2. Bus Lines within the Project Study Area

Provider	Line(s)
Metro	Local 53, 60, 130, 202, 205, 260; Rapid 760, 762
Long Beach Transit	51, 52, 61, 66
Compton Renaissance Transit	5
Torrance Transit	6
Carson Circuit Transit	Routes A-H

Source: CIA (June 2020)

The Carson Circuit Transit System provides service throughout the City of Carson, including connections to the Metro A Line and regional bus services from Torrance Transit, Metro, Long Beach Transit and Gardena Municipal Bus Lines. The Carson Circuit runs Monday through Friday (5:20 AM to 6:40 PM) and Saturday (10:40 AM to 5:20 PM) with buses every 40 minutes along eight routes.

A Dial-A-Ride program is provided for senior citizens (60 years and older) and persons with disabilities who reside in the City of Carson. The service is available 24 hours a day, seven days a week, including holidays.

2.5.2.4 Pedestrian and Bicycle Facilities

Bikeways

The study area includes the following bikeway classifications:

- Class I: Paved ROW separated from streets
- Class II: Referred to as a bicycle lane; provides striped and stenciled lane
- Class III: Referred to as a bicycle route; provides for shared use with motor vehicle traffic

The existing bikeway network within the City of Compton consists of 13.94 miles of bikeways. Within the City of Carson, there are approximately 10.5 miles of bikeways, mostly in residential areas. Table 2.5-3 provides the Class I and II bikeways located within the project study area.

Table 2.5-3. Bikeways within the Study Area

City	Bikeway
City of Compton	Class I – Compton Creek Bike Path
City of Compton	Class II – Greenleaf Boulevard Bike Lane
City of Compton	Class II – Santa Fe Avenue Bike Lane
City of Carson	Class I – Central Avenue Bike Path

Source: CIA (June 2020)

Pedestrian and Bicycle Counts

Pedestrian and bicycle counts were taken on Wednesday, December 11, 2019. The weather was clear and street and sidewalk surfaces were dry during the count periods. Both pedestrian and bicycle modes had low volumes during all three peak periods measured: morning peak (7:30 to 8:30 AM), midday peak (12:30 to 1:30 PM), and afternoon peak (4:30 to 5:30 PM). No more than 13 pedestrians were counted using crosswalks at any study intersection and no more than seven bicyclists were counted entering any intersection during any of the peak periods. The highest pedestrian volumes were measured at the Acacia Court/Artesia Boulevard intersection, which is consistent with its proximity to the Artesia Station, and at the Central Avenue intersections with SR-91 frontage roads, which is consistent with the cluster of retail stores at these two intersections.

2.5.3 Environmental Consequences

2.5.3.1 Temporary Impacts

No Build Alternative

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

Build Alternative

The Build Alternative would reduce congestion and eliminate weaving on the mainline between Central Avenue, Wilmington Avenue, and Acacia Court and reduce the HOV lane cross-weave effect by providing additional distance to complete lane changes.

Under the Build Alternative, the proposed mainline improvements would have minor effects on the freeway mainline. Temporary impacts due to closures are anticipated at the eastbound Wilmington Avenue and Acacia Court off-ramps and the westbound Wilmington Avenue on-ramp. On local roadways, construction activities are not expected to impact current parking, either on-street or off-street. Temporary street closures are not anticipated; however, vehicles would be temporarily prohibited from making right turns onto Artesia Boulevard from northbound Acacia Court during construction of the free right turn. Construction along Central Avenue and Wilmington Avenue would require temporary traffic detours to the adjacent interchanges. Emergency response to residential and industrial/commercial developments are not anticipated to be affected and existing bicycle and pedestrian access would be maintained during construction.

A Transportation Management Plan (TMP) would be implemented to minimize the effects of construction activities on traffic, access, and pedestrian and bicycle travel within the project study area. The following project feature would be incorporated into the proposed project to avoid or reduce effects to traffic, transportation, bicycle and pedestrian circulation and access:

PF-TR-1: A Transportation Management Plan will be prepared for the project during final design to address short-term traffic and transportation impacts during construction of the project in coordination with local partners as applicable. The objectives of the TMP are to:

- Maintain traffic safety during construction
- Minimize traffic delays and reduce duration of construction activities
- Maintain access for pedestrians and bicyclists

The TMP will contain, but not be limited to, the following elements, which are intended to reduce traveler delay and enhance traveler safety.

- **Public Information Campaign:** The purpose of the public information campaign is to distribute information related to the construction and includes measures that the traveling public may use to avoid anticipated delays due to construction.
- **Motorist Information:** Motorist information strategies are vital to travelers approaching the work zone. Motorist information strategies provide real-time traffic information and allow the motorist to make decisions to avoid potential congestion. Motorist information strategies for this project would include portable changeable message signs and temporary ground mounted signs.
- **Incident Management:** Incident management involves the effective coordination with emergency and utility service providers and management of traffic accidents and timely restoration of traveled ways. The incident management program for this project may include traffic management teams (TMT), surveillance equipment, and dedicated (paid) law enforcement.
- **Construction Strategies:** Construction strategies are procedures used to avoid or minimize traffic disruptions and reduce congestion in the work zone, including the use of construction staging and limiting work areas, and thus, closures.
- **Demand Management:** Demand management strategies are used to reduce or regulate travel demand related to the work zone. Demand management strategy is not applicable to this project, with the exception of existing ramp meters. Ramp metering is used to regulate

the entrance of vehicles to freeway traffic. It is currently administered on all ramps along the project site. The existing ramp metering strategy is anticipated to be maintained during the entire period of construction. Temporary ramp metering installations will be provided where construction activities impact existing facilities.

- **Detours:** Detours allow motorists to avoid work zones by directing the traffic onto detour routes due to roadway or ramp closures. Detours are used to mitigate the impacts of the ramp/local road closure strategy in close coordination with emergency service providers. Detailed detour plans for night and weekend work should be included during the project design stage and these detour plans should be reviewed by the local agencies. The traffic detour plans will be shared with each of the neighboring cities that would be impacted by the proposed detour routes, namely the cities of Carson, Compton, and Long Beach.

2.5.3.2 Permanent Impacts

No Build Alternative

Under the No Build Alternative, none of the improvements proposed under the Build Alternative would be constructed. Under the No Build, the westbound AM peak period traffic would continue to remain congested and operate at unacceptable LOS F conditions. Additionally, congestion from the I-110 and the short weaving distance between the Acacia Court on-ramp and Wilmington Avenue off-ramp would continue to cause slowdowns in the outer lanes. During the PM peak hour, improvements at downstream locations would relieve the congestion on eastbound SR-91 and two locations east of Acacia Court would operate at deficient LOS E conditions.

Slowdowns would continue on local roadways from large truck volumes and from vehicles turning. Pedestrian facilities would remain limited and the following features would not be provided: ADA curb ramp or high visibility crosswalks and sidewalks, bridge access, traffic signal improvements for pedestrians at the Central Avenue/Albertoni Street, Central Avenue/Artesia Boulevard, both Wilmington Avenue/Artesia Boulevard, and Acacia Court/Artesia Boulevard intersections, a Class II bike lane on eastbound and westbound Artesia Boulevard between Central Court and Acacia Court, or transit stop asset improvements.

Build Alternative

Freeway

The Build Alternative would not add lane miles to the freeway mainline, but it would reduce conflicts and enhance safety. The C-D road would consolidate multiple access points from Central Avenue, Wilmington Avenue, and Acacia Court Interchanges into a single access point, which would reduce the number of ingress/egress points on the freeway mainline and redirect the short and nonstandard weaving areas from the freeway mainline to the C-D road. This would improve the merge and diverge movements and traffic congestion on the freeway mainline and increase the weaving distance between Avalon Boulevard and Acacia Court to minimize weaving related issues due to the closely spaced interchanges to avoid traffic backing up onto the freeway. The C-D road would operate at lower speeds and volumes than the mainline and serve to address weaving. The freeway mainline configuration would remain unchanged. The most recent SCAG 2016 financially constrained RTP TransCAD travel demand model was used to develop the traffic forecasts for this project.

2025 (Opening Year) Conditions Eastbound SR-91

The Build Alternative would noticeably improve traffic operations on eastbound SR-91 mainline segments between Central Avenue and Acacia Court (in comparison to the No Build Alternative). LOS conditions would be improved from LOS D or E to C or D conditions, as traffic would be shifted to the C-D road, thereby improving the slowdown on eastbound SR-91 between the Acacia Court off-ramp and the Alameda Street off-ramp. The C-D road would also have sufficient capacity and operate at LOS C conditions or better during the AM peak period and at LOS B or better conditions during the PM peak hour period. This modification would allow traffic, previously stuck in congestion, to travel downstream. However, during the PM peak hour, the following segments would operate at the same LOS E as the No Build Alternative, the Santa Fe Avenue off-ramp, and the Santa Fe Avenue off-ramp to Alameda Street on-Ramp (see Table 2.5-4).

2025 (Opening Year) Conditions Westbound SR-91

The Build Alternative would noticeably improve traffic operations at the westbound SR-91 mainline segments between Acacia Court and Central Avenue by improving LOS C to B conditions compared to the No Build Alternative. The C-D road in the westbound direction would also have sufficient capacity and operate at LOS B or better conditions during the AM/PM peak hour. The HOV access segment on westbound SR-91 HOV segments would improve LOS E to D conditions under the Build Alternative because the managed lane access segment would be relocated to an adjacent mainline segment with the deceleration lane for the C-D Road off-ramp. All other HOV segments on westbound SR-91 would remain at LOS F, which is the same as No Build conditions (see Table 2.5-5).

2025 (Opening Year) Conditions Local Road Intersections

The Build Alternative proposes the following improvements at two intersections, 1) addition of an eastbound left-turn pocket at the Wilmington Avenue/SR-91 eastbound ramps intersection and 2) the addition of a channelized, free northbound right-turn lane at the Acacia Court/Artesia Boulevard intersection. With these improvements, all of the study intersections would operate at LOS D conditions or better during AM/PM peak periods, except for the intersection at Wilmington Avenue and SR-91 eastbound ramps, which would operate at LOS E conditions during the PM peak period under both the No Build and Build Alternatives. The Wilmington Avenue/SR-91 eastbound ramps intersection currently operates with an exclusive pedestrian phase for the crosswalk on the east leg of the intersection. The Build Alternative will replace the exclusive pedestrian phase for the crosswalk on the east leg with a leading pedestrian interval given relatively low pedestrian volumes at the intersection. This project feature will reduce the projected delay from 67 to 57 seconds, which would be better than the No Build Alternative delay of 61 seconds, although both intersections would remain at LOS E conditions. In addition to the operational improvements at this intersection, the project would construct improvements at this intersection that include ADA-compliant curb ramps, high visibility crosswalks at the east, south, and west legs of the intersection; Accessible Pedestrian Signals (APS) with pedestrian change interval countdown displays, installed to provide additional support (see Table 2.5-6).

2025 Ramp Termini Intersection Queuing

Similar to existing conditions, the vehicle queue lengths at the following intersections would spill back to affect freeway operations for both the No Build and the Build Alternatives:

- Westbound left-turn movement at Central Avenue/SR-91 westbound ramps during the AM peak hour
- Eastbound through movement at Central Avenue/SR-91 eastbound ramps during the PM peak hour
- Westbound left-turn movement at Wilmington Avenue/SR-91 westbound ramps during the AM and PM peak hours
- Eastbound through movement at Wilmington Avenue/SR-91 eastbound ramps during the PM peak hour

Compared to the No Build Alternative, the Build Alternative would improve vehicle queue length at the northbound left-turn movement at the Central Avenue/Westbound SR-91 ramps intersection. The Build Alternative will replace the existing pedestrian phase at the Wilmington Avenue/Eastbound SR-91 ramps intersection with a leading pedestrian interval and optimize the traffic signal timing to reduce the queue from 725 to 700 feet. It will also optimize the signal timings at the Wilmington Avenue/westbound SR-91 ramps to reduce vehicle queue for the northbound left-turn and through movement from 550 to 450 feet (same as the No Build) and from 475 to 200 feet, which would be better than the No Build queue of 425 feet.

Table 2.5-4. Opening Year (2025) Eastbound SR-91 Mainline Operations AM/PM Peak Period

No.[a]	Study Location	No Build Alternative (Density/LOS)[b]					Build Alternative (Density/LOS)[b]				
		Segment Type	AM		PM		Segment Type	AM		PM	
			MF[c]	HOV	MF	HOV		MF	HOV	MF	HOV
1	Eastbound SR-91: Avalon Boulevard Off-ramp	Basic	23/C	10/A	24/C	22/C	Basic	23/C	10/A	25/C	23/C
2	Eastbound SR-91: Avalon Boulevard Off-Ramp to Avalon Boulevard On-Ramp	Basic	29/D	10/A	31/D	22/C	Basic	29/D	10/A	31/D	23/C
3	Eastbound SR-91: Avalon Boulevard On-Ramp to Central Off-Ramp	Weaving	32/D	10/A	29/D	22/C	Weaving	32/D	10/A	30/D	23/C
-/4	Eastbound SR-91: Central Avenue Off-Ramp to Central Avenue On-Ramp[d]	Basic (HOV Access)[h]	24/C	24/C	30/D	30/D	Basic	26/D	10/A	31/D	23/C
-/5							Basic	19/C	10/A	22/C	23/C
5/-	Eastbound SR-91: Central Avenue On Ramp to Wilmington Avenue Off-Ramp[e]	Weaving	30/D	10/A	31/D	22/C	Weaving (HOV Access)[h]	20/B	20/B	28/D	28/D
6/7	Eastbound SR-91: Wilmington Avenue Off-Ramp to Wilmington Avenue On-Ramp[e]	Basic	26/C	10/A	33/D	22/C	Basic	20/C	9/A	29/D	21/C
7/7	Eastbound SR-91: Wilmington Avenue On-Ramp to Acacia Off-Ramp[e]	Weaving	29/D	10/A	35/D	22/D					
8	Eastbound SR-91: Acacia Court Off-Ramp to Alameda Off-Ramp[f]	Basic	30/D	10/A	**40/E**	26/D	Weave	28/D	10/A	33/D	23/C
9/8	Eastbound SR-91: Acacia Court Off-Ramp to Alameda Street Off-Ramp Add Lane[f]	Basic	22/C	10/A	28/D	22/C					
10/8	Eastbound SR-91: Alameda Street Off-Ramp[f]	Basic	22/C	10/A	28/D	22/C					
11/9	Eastbound SR-91: Santa Fe Avenue Off-Ramp	Diverge (HOV Access)[g]	33/D	9/A	**36/E**	21/C	Diverge (HOV Access)[g]	34/D[g]	9/A	**37/E**	25/C
12/10	Eastbound SR-91: Santa Fe Avenue Off-Ramp to Alameda Street On-Ramp	Basic (HOV Access)[g]	24/C	9/A	**38/E**	24/C	Basic (HOV Access)[g]	24/C	9/A	**38/E**	25/C

13/11	Eastbound SR-91: Alameda Street On-Ramp	Basic	20/C	10/A	31/D	22/C	Basic	20/C	10/A	31/D	23/C
14/12	Eastbound SR-91: Santa Fe Avenue On-Ramp to Long Beach Boulevard Off-Ramp	Weaving	22/C	10/A	32/D	22/C	Weaving	22/C	10/A	32/D	23/C

Source:TOAR 2020

[a] Study location number indicates No Build Alternative Study Location/Build Alternative Study Location in relation to the Appendix. Study locations with '-' indicate that a separate left- handed weaving analysis was performed; results can be found in Chapter 29 of Appendix E.

[b] Density is reported in passenger cars per hour per lane. Bold font indicates unacceptable LOS E or F conditions.

[c] MF refers to the Mixed Flow (non-HOV) lanes.

[d] Under the Build Alternative, this location will become the eastbound mainline segment between the Central Avenue off-ramp and the C-D road off-ramp.

[e] Under the Build Alternative, this location will become the eastbound mainline segment between the C-D Road off-ramp and on-ramp.

[f] Under the Build Alternative, this location will become the eastbound mainline segment between the C-D Road on-ramp and Alameda Street off-ramp.

[g] Left-handed weaving analysis for the managed lane access segment was conducted for the segment from Central Avenue off-ramp to on-ramp (Central off-ramp to the C-D road off-ramp in the Build Alternative). Weaving analysis was not conducted for segments 11/9 and 12/10 because egress volumes for those segments extend past the study limits.

Table 2.5-5 Opening Year (2025) Westbound SR-91 Mainline Peak Period

No.[a]	Study Location	No Build Alternative (Density/LOS)[b]					Build Alternative (Density/LOS)[b]				
		Segment Type	AM		PM		Segment Type	AM		PM	
			MF[c]	HOV	MF	HOV		MF	HOV	MF	HOV
2	Westbound SR-91: Long Beach Boulevard On-Ramp to Santa Fe Avenue Off-Ramp	Weaving	**DEC[d]/F**	**DEC/F**	22/C	10/A	Weaving	**DEC/F**	**DEC/F**	23/C	10/A
3	Westbound SR-91: Santa Fe Avenue Off-Ramp to Acacia Court On-Ramp[e]	Basic	35/D	**DEC/F**	22/C	10/A	Basic	35/D	**DEC/F**	22/C	10/A
3/4							Basic	18/B	**DEC/F**	16/B	10/A
-	Westbound SR-91: Santa Fe Avenue Off-Ramp to Acacia Court On-Ramp[e]	Weaving (HOV Access)	**36/E**	**36/E**	21/C	21/C	Weaving (HOV Access)	31/D	31/D	18/B	18/B

6	Westbound SR-91: Acacia Court On-Ramp to Wilmington Avenue Off-Ramp[f]	Weaving	23/C	**DEC/F**	26/C	10/A	Basic	18/B	**DEC/F**	18/B	10/A
7/6	Westbound SR-91: Wilmington Avenue Off-Ramp to Wilmington Avenue On-Ramp[f]	Basic	22/C	**DEC/F**	24/C	10/A					
8/6	Westbound SR-91: Wilmington Avenue On-Ramp to Central Avenue Off-Ramp[f]	Weaving	22/C	**DEC/F**	26/C	10/A					
9/6	Westbound SR-91: Central Avenue Off-Ramp to Central Avenue On-Ramp[f]	Basic	22/C	**DEC/F**	23/C	10/A					
10/7	Westbound SR-91: Central Avenue Off-Ramp to Central Avenue On-Ramp (HOV Lane Ends)[g]	Basic	33/D	N/A	20/C	N/A	Merge	26/D	N/A	20/C	N/A
10/8							Basic	33/D		21/C	
11/9	Westbound SR-91: Central Avenue On-Ramp to Avalon Boulevard Off-Ramp	Weaving	33/D		24/C		Weaving	33/D		24/C	
12/10	Westbound SR-91: Avalon Boulevard Off Ramp to Avalon Boulevard On-Ramp	Basic	31/D		20/C		Basic	31/D		21/C	
13/11	Westbound SR-91: Avalon Boulevard On-Ramp	Basic	25/C		18/B		Basic	25/C		18/B	

Source:TOAR (November 2020)

[a] Study location number indicates No Build Alternative Study Location/Build Alternative Study Location in relation to the Appendix. Study locations with '-' indicate that a separate left-handed weaving analysis was performed; results can be found in TOAR Chapter 29 of Appendix E.

[b] Density is reported in passenger cars per hour per lane. Bold font indicates unacceptable LOS E or F conditions.

[c] MF refers to the Mixed Flow (non-HOV) lanes.

[d] DEC refers to Demand Exceeding Capacity conditions, under which LOS F is assigned to the study location.

[e] Under the Build Alternative, this location will become the westbound mainline segment between the Santa Fe Avenue off-ramp and the C-D road off-ramp.

[f] Under the Build Alternative, this location will become the westbound mainline segment between the C-D road off-ramp and on-ramp.

[g] Under the Build Alternative, this location will become the westbound mainline segment between the C-D Road on-ramp and Central Avenue on-ramp.

Table 2.5-6. Opening Year 2025 Peak Period Intersection Operations

No.	Study Intersection		No Build Alternative (LOS/Delay)[a]		Build Alternative (LOS/Delay)[a]	
			AM	PM	AM	PM
1	Avalon Boulevard/Walnut Street	Signal	B/15	C/22	B/15	C/21
2	Avalon Boulevard/SR-91 Westbound Ramps	Signal	B/16	B/13	B/16	B/12
3	Avalon Boulevard/SR-91 Eastbound Ramps/Albertoni Street	Signal	C/34	D/45	C/34	D/44
4	Central Avenue/Walnut Street	Signal	B/21	C/33	B/21	C/33
5	Central Avenue/Driveway south of Walnut Street	Side Street Stop	C/16 (WBR)	C/16 (WBR)	C/16 (WBR)	C/16 (WBR)
6	Central Avenue/SR-91 Westbound Ramps	Signal	C/24	C/24	C/24	C/22
7	Central Avenue/SR-91 Eastbound Ramps	Signal	C/33	C/31	C/31	C/30
8	Wilmington Avenue/Walnut Street	Signal	A/10	C/23	A/10	C/23
9	Wilmington Avenue/SR-91 Westbound Ramps	Signal	D/40	D/47	D/39	D/40
10	Wilmington Avenue/SR-91 Eastbound Ramps[b]	Signal	C/30	**E/61**	D/42	**E/67**
11	Acacia Court/Walnut Street	Side Street Stop	C/20 (EBR)	D/27 (EBR)	C/20 (EBR)	C/24 (EBR)
12	Acacia Court/Artesia Boulevard	Signal	B/19	D/38	B/17	C/22
13	Crystal Casino Entrance/Artesia Boulevard	Signal	B/13	A/7	B/13	A/7
14	Alameda Street Connector/Artesia Boulevard	Signal	C/21	B/16	C/20	B/16
15	Alameda Street/Artesia Boulevard Connector	Signal	B/16	B/14	B/16	B/14
16	Alameda Street/SR-91 Eastbound Ramps	Signal	C/33	B/14	C/33	B/14
17	Santa Fe Avenue/SR-91 Westbound Ramps	Signal	A/8	A/7	A/8	A/7
18	Santa Fe Avenue/Artesia Boulevard	Signal	D/45	D/47	D/45	D/46
19	Santa Fe Avenue/SR-91 Eastbound Ramps	Signal	B/18	B/14	B/18	B/14

Source:TOAR (November 2020)

[a] Delay is reported in seconds per vehicle. Bold font indicates unacceptable LOS E or F conditions.

[b] Intersection #10 was analyzed in the HCM 2000 due to atypical signal phasing.

2040 (Design Year) Conditions Eastbound SR-91

In the AM peak period of the Build Alternative, the C-D road would noticeably improve traffic operations on the eastbound SR-91 mainline segments between Central Avenue and Acacia Court from LOS C to B conditions by shifting the ramp traffic to the C-D road. In the PM peak period, the Build Alternative would noticeably improve traffic operations at the eastbound SR-91 mainline segments between Central Avenue and Acacia Court to LOS D or better conditions by shifting the ramp traffic to the C-D road. Additionally, the Build Alternative would improve the slowdown on eastbound SR-91 between the Acacia Court off-ramp and the Alameda Street off-ramp, allowing traffic previously stuck in congestion to travel downstream. Therefore, downstream segments on eastbound SR-91 would operate at slightly higher density than the No Build Alternative. However, the higher density does not affect freeway locations in the project limits. (see Table 2.5-7).

2040 (Design Year) Conditions Westbound SR-91 Mainline

The Build Alternative would noticeably improve traffic operations at the westbound SR-91 mainline segments between Acacia Court and Central Avenue from LOS C to B conditions. The HOV access segment on westbound SR-91 HOV segments would improve from LOS E to D conditions because the managed lane access segment would be relocated to an adjacent mainline segment with the deceleration lane for the C-D Road off- ramp. The C-D road would operate at a LOS C or better for AM/PM peak periods on both eastbound and westbound SR-91. The westbound SR-91: Central Avenue off-ramp to Central Avenue on-ramp (HOV lane ends) would operate at LOE, which is the same as the No Build. All other HOV segments on westbound SR-91 would remain LOS F, which is the same as the No Build. In the PM peak period, the Build Alternative would improve traffic operations at the westbound SR-91 mainline segments between Acacia Court and Central Avenue from LOS C or better conditions (see Table 2.5-8, 2040 (Design Year) Peak Period Freeway Mainline Westbound SR-91).

2040 (Design Year) Conditions Local Road Intersections

The Build Alternative proposes the following improvements at two intersections: 1) addition of an eastbound left-turn pocket at the Wilmington Avenue/SR-91 eastbound ramps intersection, and 2) the addition of a channelized, free northbound right-turn lane at the Acacia Court/Artesia Boulevard intersection. With these improvements, all of the study intersections would operate at LOS D or better during AM/PM peak periods, except for the intersection at Wilmington Avenue and SR-91 eastbound ramps, which would operate at LOS E conditions during the PM peak period under both the No Build and Build Alternatives (See Table 2.5-9). The Wilmington Avenue/SR-91 eastbound ramps intersection currently operates with a 19-second exclusive pedestrian phase for the crosswalk on the east leg of the intersection. The Build Alternative will replace the exclusive pedestrian phase for the crosswalk on the east leg with a leading pedestrian interval, given relatively low pedestrian volumes at the intersection. This project feature will reduce the projected delay from 67 to 57 seconds, which would be better than the No Build Alternative delay of 61 seconds, although both intersections would remain at LOS E conditions. Most of the study intersections would operate at LOS D conditions or better during both peak periods under the No Build and Build Alternatives, except for the intersections at Wilmington Avenue and SR-91 eastbound ramps and at Avalon Boulevard and SR-91 eastbound ramps, which would both operate at LOS E conditions under Build and No Build Alternatives.

Ramp Intersection Queuing 2040 (Design Year) AM/PM Peak Period

Similar to existing and 2025 conditions, the vehicle queue lengths would spill back to affect freeway operations for both the No Build and the Build Alternatives at the following intersections:

- Westbound left-turn movement at Central Avenue/SR-91 westbound ramps during the AM peak hour
- Eastbound through movement at Central Avenue/SR-91 eastbound ramps during the PM peak hour
- Westbound left-turn movement at Wilmington Avenue/SR-91 westbound ramps during the AM and PM peak hours
- Eastbound through movement at Wilmington Avenue/SR-91 eastbound ramps during the PM peak hour

Compared to the No Build Alternative, the Build Alternative would improve the vehicle queue length at multiple traffic movements at various intersections. At the Wilmington Avenue/Westbound SR-91 ramps intersection, the Build Alternative will replace the existing exclusive pedestrian phase with a leading pedestrian interval and optimize the traffic signal timings to reduce the queue length for the northbound left-turn and through movements at the Wilmington Avenue/Westbound SR-91 ramps intersection from 525 to 425 feet and from 550 to 275 feet, respectively, which would be better than the No Build queues of 450 and 425 feet.

Table 2.5-7. 2040 (Design Year) Peak Period Freeway Mainline Operations - Eastbound SR-91

No.[a]	Study Location	No Build Alternative (Density/LOS)[b]					Build Alternative (Density/LOS)[b]				
		Segment Type	AM		PM		Segment Type	AM		PM	
			MF[c]	HOV	MF	HOV		MF	HOV	MF	HOV
1	EB SR-91: Avalon Boulevard Off-ramp	Basic	24/C	10/A	26/C	23/C	Basic	25/C	10/A	27/D	24/C
2	EB SR-91: Avalon Boulevard Off-Ramp to Avalon Boulevard On-Ramp	Basic	31/D	10/A	33/D	23/C	Basic	32/D	10/A	34/D	24/C
3	EB SR-91: Avalon Boulevard On-Ramp to Central Off-Ramp	Weaving	34/D	10/A	31/D	23/C	Weaving	34/D	10/A	32/D	24/C
-/4	EB SR-91: Central Avenue Off-Ramp to Central Avenue On-Ramp[d]	Weaving (HOV Access)[h]	26/C	26/C	32/D	32/D	Basic	29/D	10/A	34/D	24/C
-/5							Basic	21/C	10/A	24/C	24/C
5/-	EB SR-91: Central Avenue On Ramp to Wilmington Avenue Off-Ramp[e]	Weaving	32/D	10/A	32/D	23/C	Weaving (HOV Access)[h]	22/C	22/C	30/D	30/D
6/7	EB SR-91: Wilmington Avenue Off-Ramp to Wilmington Avenue On-Ramp[e]	Basic	28/D	10/A	35/D	23/C	Basic	23/C	10/A	31/D	24/C
7/7	EB SR-91: Wilmington Avenue On-Ramp to Acacia Off-Ramp[e]	Weaving	31/D	10/A	**36/E**	27/D					
8	EB SR-91: Acacia Court Off-Ramp to Alameda Off-Ramp[f]	Basic	32/D	10/A	**43/E**	27/D	Weave	30/D	10/A	**35/E**	29/C
9/8	EB SR-91: Acacia Court Off-Ramp to Alameda Street Off-Ramp Add Lane[f]	Basic	24/C	10/A	29/D	23/C					
10/8	EB SR-91: Alameda Street Off-Ramp[f]	Basic	24/C	10/A	29/D	23/C					
11/9	EB SR-91: Santa Fe Avenue Off-ramp	Diverge (HOV Access)[h]	35/D	10/A	**37/E**	25/C	Diverge (HOV Access)[h]	**36/E**	10/A	**38/E**	27/C
12/10	EB SR-91: Santa Fe Avenue Off-ramp to Alameda Street On-Ramp	Basic (HOV Access)[h]	26/C	10/A	**40/E**	25/C	Basic (HOV Access)[h]	26/D	10/A	**42/E**	27/C
13/11	EB SR-91: Alameda Street On-ramp	Basic	21/C	10/A	32/D	23/C	Basic	22/C	10/A	33/D	24/C
14/12	EB SR-91: Santa Fe Avenue On-Ramp to Long Beach Boulevard Off-Ramp	Weaving	23/C	10/A	32/D	23/C	Weaving	23/C	10/A	33/D	24/C

Source:TOAR (November 2020)

[a] Study location number indicates No Build Alternative Study Location/Build Alternative Study Location in relation to the Appendix.

[b] Density is reported in passenger cars per hour per lane Bold font indicates unacceptable LOS E or F conditions.

[c] MF refers to the Mixed Flow (non-HOV) lanes.

[d] Under the Build Alternative, this location will become the eastbound mainline segment between the Central Avenue off-ramp and the C-D Road off-ramp.

[e] Under the Build Alternative, this location will become the eastbound mainline segment between the C-D Road off-ramp and on-ramp.

[f] Under the Build Alternative, this location will become the eastbound mainline segment between the C-D Road on-ramp and Alameda Street off-ramp.

[g] Left-handed weaving analysis for the managed lane access segment was conducted for the segment from Central Avenue off-ramp to on-ramp (Central off-ramp to the C-D Road off-ramp in the Build Alternative). Weaving analysis was not conducted for segments 11/9 and 12/10 because egress volumes for those segments extend past the study limits.

Table 2.5-8. 2040 (Design Year) Peak Period Freeway Mainline Operations - Westbound SR-91

No.[a]	Study Location	No Build Alternative (Density/LOS)[b]					Build Alternative (Density/LOS)[b]				
		Segment Type	AM		PM		Segment Type	AM		PM	
			MF[c]	HOV	MF	HOV		MF	HOV	MF	HOV
2	Westbound SR-91: Long Beach Boulevard On-Ramp to Santa Fe Avenue Off-Ramp	Weaving	**DEC[d]/F**	**DEC/F**	23/C	10/A	Weaving	**DEC/F**	**DEC/F**	24/C	11/A
3	Westbound SR-91: Santa Fe Avenue Off-Ramp to Acacia Court On- Ramp[e]	Basic	35/D	**DEC/F**	23/C	10/A	Basic	35/D	**DEC/F**	24/C	11/A
3/4							Basic	18/B	**DEC/F**	18/B	11/A
-	Westbound SR-91: Santa Fe Avenue Off-Ramp to Acacia Court On- Ramp[e]	Weaving (HOV Access)	**36/E**	**36/E**	23/C	23/C	Weaving (HOV Access)	32/D	32/D	20/B	20/B
6	Westbound SR-91: Acacia Court On-Ramp to Wilmington Avenue Off-Ramp[f]	Weaving	23/C	DEC/F	27/C	10/A	Basic	18/B	DEC/F	20/C	11/A
7/6	Westbound SR-91: Wilmington Avenue Off-Ramp to Wilmington Avenue On-Ramp[f]	Basic	22/C	DEC/F	25/C	10/A					
8/6	Westbound SR-91: Wilmington Avenue On-Ramp to Central Avenue Off-Ramp[f]	Weaving	22/C	**DEC/F**	27/C	10/A					

9/6	Westbound SR-91: Central Avenue Off-Ramp to Central Avenue On-Ramp[f]	Basic	22/C	**DEC/F**	24/C	10/A					
10/7	Westbound SR-91: Central Avenue Off-Ramp to Central Avenue On-Ramp (HOV Lane Ends)[g]	Basic	**36/E**	N/A	21/C	N/A	Merge	27/D	N/A	22/C	N/A
10/8							Basic	**35/E**		22/C	
11/9	Westbound SR-91: Central Avenue On-Ramp to Avalon Boulevard Off-Ramp	Weaving	34/D		25/C		Weaving	34/D		26/C	
12/10	Westbound SR-91: Avalon Boulevard Off Ramp to Avalon Boulevard On-Ramp	Basic	32/D		21/C		Basic	33/D		23/C	
13/11	Westbound SR-91: Avalon Boulevard On-Ramp	Basic	26/C		18/C		Basic	27/D		19/C	

Source: TOAR (November 2020)

[a] Study location number indicates No Build Alternative Study Location/Build Alternative Study Location in relation to the Appendix.

[b] Density is reported in passenger cars per hour per lane **Bold font** indicates unacceptable LOS E or F conditions.

[c] MF refers to the Mixed Flow (non-HOV) lanes.

[d] DEC refers to demand exceeding capacity conditions, under which LOS F is assigned to the study location.

[e] Under the Build Alternative, this location will become the westbound mainline segment between the Santa Fe Avenue off-ramp and the C-D Road off-ramp.

[f] Under the Build Alternative, this location will become the westbound mainline segment between the C-D Road off-ramp and on-ramp.

[g] Under the Build Alternative, this location will become the westbound mainline segment between the C-D Road on-ramp and Central Avenue on-ramp.

Table 2.5-9. 2040 (Design Year) Peak Period Intersection Operations

No.	Study Intersection		No Build Alternative (LOS)[a]		Build Alternative (LOS)[a]	
			AM	PM	AM	PM
1	Avalon Boulevard/Walnut Street	Signal	B/18	C/27	B/18	C/27
2	Avalon Boulevard/SR-91 Westbound Ramps	Signal	B/18	B/14	B/17	B/14
3	Avalon Boulevard/SR-91 Eastbound Ramps/Albertoni Street	Signal	D/49	**E/59**	D/48	**E/58**
4	Central Avenue/Walnut Street	Signal	C/21	C/38	C/21	C/38
5	Central Avenue/Driveway south of Walnut Street	Side Street Stop	C/16 (WBR)	C/16 (WBR)	C/16 (WBR)	C/16 (WBR)
6	Central Avenue/SR-91 Westbound Ramps	Signal	CC/28	C/26	C/28	C/25
7	Central Avenue/SR-91 Eastbound Ramps	Signal	D/37	C/34	D/32	C/33
8	Wilmington Avenue/Walnut Street	Signal	B/11	C/32	B/11	C/32
9	Wilmington Avenue/SR-91 Westbound Ramps	Signal	D/47	D/51	D/39	D/44
10	Wilmington Avenue/SR-91 Eastbound Ramps[b]	Signal	D/41	**E/67**	D/47	**E/67**
11	Acacia Court/Walnut Street	Side Street Stop	C/20 (EBR)	D/33 (EBR)	C/20 (EBR)	D/27 (EBR)
12	Acacia Court/Artesia Boulevard	Signal	B/20	D/45	B/17	C/24
13	Crystal Casino Entrance/Artesia Boulevard	Signal	D/45	A/7	D/45	A/7
14	Alameda Street Connector/Artesia Boulevard	Signal	C/22	B/17	C/21	B/17
15	Alameda Street/Artesia Boulevard Connector	Signal	B/18	B/14	B/18	B/14
16	Alameda Street/SR-91 Eastbound Ramps	Signal	D/46	B/14	D/46	B/14
17	Santa Fe Avenue/SR-91 Westbound Ramps	Signal	A/8	A/7	A/8	A/7
18	Santa Fe Avenue/Artesia Boulevard	Signal	D/49	D/54	D/49	D/51
19	Santa Fe Avenue/SR-91 Eastbound Ramps	Signal	B/18	B/14	B/18	B/14

Source: TOAR 2020.

[a] Delay is reported in seconds per vehicle. **Bold font** indicates unacceptable LOS E or F conditions.

[b] Intersection #10 was analyzed in the HCM 2000 due to atypical signal phasing.

2040 (Design Year) VISSIM Simulation Analysis

Traffic simulation analysis was conducted to evaluate the 2040 Design Year systemwide performance measures for the No Build and the Build Alternatives such as travel time, travel speeds, vehicles served by the network, and overall network vehicle delay. During the AM peak period, eastbound SR-91 mixed flow and HOV lanes would operate at free-flow speeds of approximately 60 mph with a slightly higher speed on the HOV lanes, under both the No Build and Build Alternatives. The Build Alternative would address the short-term weaving segment between Central Avenue and Acacia Court on-ramp and Wilmington Avenue off-ramp by introducing the C-D road which would improve the overall operations along westbound SR-91. Travel time on westbound SR-91 mixed flow lanes would be reduced by 40 percent, from 22 minutes to 13 minutes, while the HOV lane travel time would also improve 35 percent, from 17 minutes to approximately 11 minutes. Compared to the No Build Alternative, the Build Alternative would serve 4,200 more vehicles through the study area, with 1,950 vehicle periods of delay savings during the AM peak period.

During the PM peak period, improvements at downstream locations on eastbound SR-91 would relieve traffic congestion and allow traffic demand to shift back from other roadways to eastbound SR-91. Without the bottleneck, eastbound SR-91 would provide adequate capacity to accommodate traffic demand. The Build Alternative travel time for the eastbound SR-91 would serve greater traffic demand, and maintain the travel time and speeds similar to the No Build Alternative. In the westbound direction, the Build Alternative travel time for the westbound SR-91 would operate better than the No Build Alternative. Compared to the No Build, the Build Alternative would serve 2,000 more vehicles through the study area with 300 vehicle hours of delay savings during the PM peak period.

Traffic Safety

The Build Alternative would provide safety benefits to the SR-91 study corridor by relocating ramp access to Central Avenue, Wilmington Avenue, and Acacia Court from the mainline to a parallel C-D road with lower travel speeds. Traffic volumes also decrease on the mainline because vehicles shift to the C-D road.

- Mainline sideswipe collisions related to speeding would be reduced. Weaving to and from the on- and off-ramps would now occur on a lower speed facility.
- Ramp collisions related to speeding would be reduced. Vehicles are now entering and exiting the freeway from a lower speed facility.

The Build Alternative also shifts access to the managed lane downstream of C-D Road Off-Ramp, granting drivers more distance to perform cross-weave maneuvers into and out of the HOV lane. This improvement would also reduce mainline sideswipe collisions.

Pedestrian and Bicycle Facilities

The project would improve pedestrian connectivity and accessibility at the eastbound Central Avenue/Albertoni Street and westbound Central Avenue/Artesia Boulevard, and both Wilmington Avenue/Artesia Boulevard eastbound and westbound intersections and bicycle improvement by constructing the following:

- ADA compliant curb ramps, high visibility crosswalks, and accessible pedestrian signals

- Leading Pedestrian Interval with countdown displays at eastbound Artesia Boulevard and Wilmington Avenue intersection
- Bridge access and sidewalks on Central and Wilmington Avenues will be provided to eliminate existing gaps to the bridge and intersections between eastbound and westbound Artesia Boulevard
- A traffic island with a pedestrian refuge area at Acacia Court/Artesia Boulevard intersection in the southeast quadrant, with a marked crosswalk crossing, accessible pedestrian signals, pedestrian change interval countdown displays at the marked crosswalk, and rectangular rapid flashing beacon
- A Class II buffered bike lane with bicycle tolerant drainage grates and conflict zone green paint on both eastbound and westbound Artesia Boulevard between Central Avenue and Acacia Court and on Albertoni Street between Lysander Drive and Central Avenue
- Bicycle and Pedestrian signage and LED lighting in pedestrian/bicycle accessible areas, where existing lighting is insufficient

Transit

The Build Alternative would improve the merge and diverge movements and traffic congestion on the freeway mainline improving mobility and efficiency for transit using this corridor, allowing for easier access to the transit center. The proposed free right turn at the Acacia Court/Artesia intersection would improve conditions for transit operators accessing the Artesia Metro Rail A Line Station and the transit stop at the Crystal Park Hotel and Casino, about 0.5 mile from SR-91, and would provide more efficient access to the transit center.

The Build Alternative will relocate one bus stop on Acacia Court at West Artesia Boulevard intersection further east on Artesia Boulevard and Acacia Court to accommodate the proposed free flowing right-turn lane from Acacia Court to West Artesia Boulevard and will include improved assets such as a concrete bus pad, a transit shelter, bench, transit information, and pedestrian scale lighting. Transit providers at this bus stop include Metro (lines 60, 130, 202, 260) and Long Beach Transit (lines 51, 61). Coordination with Metro and Long Beach Transit has been initiated regarding potential relocation of the bus stop and would continue throughout the duration of the project. The following project feature would be implemented to reduce impacts to traffic, transportation, and bicycle and pedestrian access.

PF-TR-2: Early coordination with affected transit providers and implementation of a TMP to maintain traffic safety will occur prior to construction to minimize potential disruptions to transit service or relocation of existing bus stop.

PF-TR-3: Early coordination with local agencies will occur to replace the exclusive pedestrian phase for the crosswalk on the east leg of the intersection of Wilmington Avenue/SR-91 eastbound ramps with a leading pedestrian interval and to optimize traffic signal timings at the Wilmington Avenue/Westbound SR-91 ramps.

2.5.4 Avoidance, Minimization, and Mitigation Measures

With the implementation of Project Features PF-TR-1 and PF-TR-2, no adverse effects to transportation/pedestrian and bicycle facilities are anticipated; therefore, no additional avoidance, minimization, or mitigation measures are required.

2.6 Visual/Aesthetics

2.6.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA), in its implementation of NEPA (23 USC 109[h]), directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities" (CA Public Resources Code [PRC] Section 21001[b]).

California Streets and Highways Code Section 92.3 directs Caltrans to use drought resistant landscaping and recycled water when feasible, and incorporate native wildflowers and native and climate-appropriate vegetation into the planting design when appropriate.

2.6.2 Affected Environment

The information in this section is based on the Visual Impact Memorandum (June 2020).

2.6.2.1 Visual Setting

The proposed project is located on State Route (SR)-91 between Central Avenue and Acacia Court in the City of Compton and City of Carson and one overhead sign located near Long Beach Boulevard within the City of Long Beach in Los Angeles County, California. The project is located in an urban area of Southern California, east of the Interstate 110 (I-110) freeway and west of Compton Creek and the I-710 freeway. The landscape is characterized by flat landforms of man-made structures consisting of industrial buildings, frontage roads along SR-91, and the freeway below grade. The sloped landscape along the freeway and frontage roads do not have any trees, shrubs, or groundcover, only scattered brush that remains dry throughout most of the year. On the southwest corner of Acacia Court, there is a bioswale area that has existing trees, boulders, and river rock. The land use within the project corridor is primarily light industrial, manufacturing, warehousing, and some commercial, but also includes residential areas west of Central Avenue and a church at the northeast corner of Acacia Court. The project corridor is defined as the area of land that is visible from, adjacent to, and outside the freeway right of way (ROW), and is determined by topography, vegetation, and viewing distance.

SR-91 is not a designated state scenic highway in this area, nor is it labeled as any other type of view corridor. This portion of SR-91 also does not have any landmark plantings, special rock formations, or other scenic resources that require consideration.

2.6.2.2 Viewers, Viewer Response, Viewer Exposure, Viewer Sensitivity

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

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

Viewer exposure is determined by viewer groups who would be exposed to views of the Build Alternative, with a combination of factors such as the number of viewers, distance from the view, and duration of the view.

Viewer sensitivity is defined both as the viewers' concern for scenic quality and their response to changes in the visual resources that make up the view. The elements that are considered are viewer activity, local values, and cultural significance.

Viewers at Key View 1 consist of motorists driving at high speeds on the freeway to lower speeds, crawling to a stop at traffic lights on the adjacent streets. The duration of views from the road is short, and duration of views to the road are brief. This area also lacks cultural significance and desirable views.

Viewers at Key View 2 consist of motorists passing from high speeds on the freeway. Their duration of view here is brief with limited scenery because the area lacks scenic resources. The sloped landscape stays dry and brown throughout most of the year, and the tree-lined parkway is located along the backside of the buildings.

New landscape may increase viewer sensitivity, but because the overall existing visual setting (primarily commercial and industrial) is low in local values and plans, cultural significance of visual resources, and visual activity and awareness of surroundings, the impact on viewer sensitivity is low. Viewer exposure and viewer sensitivity will be low in response to the Build Alternative. It is anticipated that the average viewer response for all viewer groups will be low.

2.6.2.3 Visual Resources

A field review site investigation was conducted July 17, 2019, to assess existing visual resources within the project area and to determine how these resources would be impacted by the proposed project. The level of visual impact is determined by analyzing the visual resource changes and the potential viewer response to those changes. During analysis of the project area for potential visual impacts of the proposed improvements, key view locations were selected that best represented views towards the proposed project area and potential impacts. Two key view locations were assessed to have potential visual impacts, one on westbound SR-91, and one on the Acacia Court on-ramp, as described in the following subsection.

Key View 1

The existing vantage point in Key View 1 is from the westbound SR-91 and westbound Wilmington off-ramp, looking west towards the Wilmington Avenue overpass (Figure 2.6-1). At this location, SR-91 is below grade from the frontage roads and the barren landscape areas slope upwards with chain link fences at the top. The existing landscape area is full of dry scattered brush with no trees, shrubs, or groundcover. There are 10 lanes of traffic consisting of four general-purpose lanes and one high-occupancy vehicle (HOV) lane in each direction separated by a concrete median barrier. There are some light poles, trees, and buildings in the distance. No billboards are visible from this view. These hardscape elements have strong linear lines that converge in the distance, and a neutral gray color scheme with pops of color from trees are all in proportion to each other, with the roadway being the most prominent. The overpass cuts across the center, above the horizon, but visually connects the landscape areas.

The visual character in this area consists of linear lines that converge in the distance, a simple color scheme, and a proportionate visual scale between the freeway and landscape area. The texture of the scattered brush provides contrast with the fairly smooth texture of the freeway.

Figure 2.6-1. Key View 1 – Existing Conditions from Westbound SR-91 and Westbound Wilmington Off-Ramp as it Joins W. Artesia Boulevard
(Looking west toward Wilmington Avenue overpass)

Key View 2

The existing vantage point in Key View 2 is from the Acacia Court on-ramp, looking west towards westbound SR-91 (Figure 2.6-2). SR-91 is at grade with the frontage roads, and the barren landscape runs adjacent to the chain link fence. There are 12 lanes of traffic consisting of four mixed-flow lanes, one HOV lane, and the on-ramp in each direction separated by a concrete median barrier. The backsides of the buildings have tree-lined parkways that are visible from this area. The trees, freeway lanes, and striping all converge in the distance, and the billboards and light poles complement the vertical lines of the trees.

Figure 2.6-2. Key View 2 – Existing Conditions on Acacia Court On-Ramp
(Looking west toward westbound SR-91)

2.6.3 Environmental Consequences

The visual character of the proposed project would be compatible with the existing visual character of the project corridor at both key view locations.

The overall existing visual quality at these vantage points would slightly be altered by the proposed project but would still remain low. There are no memorable landscape components, the intactness is low, and unity between man-made and natural elements is low. In Key View 1, the view does not change in the distance, but the landscape area is smaller, which contributes to a decrease in intactness and unity because of a greater imbalance of man-made to landscape features. In Key View 2, the proposed features create a more dominate hardscape element, but the overall vividness, intactness, and unity in this area remains low.

Resource change (changes to visual resources as measured by changes in visual character and visual quality) would be low. The resource change from existing to the proposed Build Alternative would be low and the viewer response to those changes would be very low, resulting in an overall low visual impact at both key view locations.

Highway neighbors and highway users would not be affected by the proposed project. The changes are transportation related and compatible with the existing setting and public views to the project site are motorists along SR-91 and motorists from the above grade frontage road, adjacent to the existing freeway.

2.6.3.1 Temporary Impacts

No Build Alternative

The No Build Alternative would not include the construction of any project improvements; therefore, the visual character and quality would remain similar to the existing condition. The No Build Alternative would not result in temporary visual impacts within the study area.

Build Alternative

The proposed Build Alternative would include construction activities. Construction would be temporary and short term, and any visual impacts related to construction would end after construction is completed and would result in no adverse impacts to the existing views.

2.6.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not include the construction of any project improvements; therefore, the visual character and quality would remain similar to the existing condition. The No Build Alternative would not result in permanent visual impacts within the study area.

Build Alternative

The proposed project would cause minimal resource changes from all viewpoints, which would also result in minimal viewer response. Overall, the resulting visual impacts of the proposed Build Alternative would be low throughout the project corridor.

Key View 1. The existing visual character in this area consists of linear lines that converge in the distance, a simple color scheme, and a proportionate visual scale between the freeway and landscape area (Figure 2.6-1). The texture of the scattered brush provides contrast with the fairly smooth texture of the freeway. At this vantage point, the proposed C-D Road Alternative would widen SR-91 westbound, adding a concrete barrier and two additional lanes. On the eastbound side, there would also be two additional lanes added, concrete barrier, and retaining walls (Figure 2.6-3). New lanes, striping, concrete barrier, and retaining walls would cut into the existing landscape but reinforce strong linear lines that converge across the view. The strong linear lines and color scheme of the hardscape elements would be compatible to the existing elements.

Figure 2.6-3. Key View 1 – Visual Simulation of Proposed Improvements
(Eastbound and westbound SR-91 is widened and new concrete barriers, retaining walls, and C-D road are constructed)

The addition of the C-D road means shorter durations and lower viewer exposure because it would address the weaving condition on the mainline and help reduce congestion, and it would not affect the viewer sensitivity in this area.

Key View 2. The backsides of the buildings adjacent to SR-91 have tree-lined parkways that are visible from the roadway in this area. The trees, freeway lanes, and striping all converge in the distance, and the billboards and light poles complement the vertical lines of the trees (Figure 2.6-2). At this vantage point, the two additional proposed lanes for the C-D Road, auxiliary lane, concrete barrier, and retaining walls would be visible in each direction of SR-91. (Figure 2.6-4). The additional lanes would add pavement to the existing fenceline. Since the landscape consists of dry, scattered brush, the new pavement would create a smooth and more continuous view. The freeway lanes, striping, barriers and tree-lined parkways create a strong convergence into the distance. The freeway remains the dominant element, and the view of the trees and buildings remain on the landscaped edges of the freeway.

Figure 2.6-4. Key View 2 – Visual Simulation of Proposed Improvements
(Eastbound and westbound SR-91 is widened with new concrete barriers, and a retaining wall is constructed on the eastbound side)

There would be minimal impacts to viewer exposure and viewer sensitivity since the proposed elements are small in scale and would blend in with the existing landscape.

Viewer exposure and viewer sensitivity for all user groups would be low in response to the Build Alternative.

Under the C-D Road Alternative, there would be no adverse effects on scenic vistas, scenic resources, or existing visual character or quality of the site and its surroundings and there would be no new sources of substantial light or glare that would adversely affect any views within this area. The C-D Road Alternative would not result in adverse visual impacts to visual resources.

Approved aesthetic treatment concepts for retaining walls can be found in Appendix F. The following project feature would be incorporated into the project to avoid or reduce effects to visual resources:

PF-V-1: Landscape design will be consistent with applicable aesthetic corridor plans (i.e. Final Draft SR-91 Corridor Aesthetic Master Plan) and consider context sensitive solutions and project needs, as feasible, and will adhere to Caltrans planting guidelines and any current restrictions or regulations.

2.6.4 Avoidance, Minimization, and/or Mitigation Measures

The following measure would be implemented to avoid and/or minimize impacts related to visual and aesthetic resources:

- **V-1:** The aesthetic design of the structural elements will be consistent with applicable aesthetic corridor plans (i.e. Final Draft SR-91 Corridor Aesthetic Master Plan) and consider context sensitive solutions and project needs, as feasible. For example, retaining walls, and other structural aesthetics will receive a minimum aesthetic treatment such as fractured fin texture.

2.7 Cultural Resources

2.7.1 Regulatory Setting

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

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the ACHP, the California State Historic Preservation Officer (SHPO), and Caltrans went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the ACHP's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA's responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code (PRC) Section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term "tribal cultural resources" to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.

PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires Caltrans to inventory state-owned structures in its rights of way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding (MOU) between Caltrans and SHPO, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 PA will satisfy the requirements of PRC Section 5024.

2.7.2 Affected Environment

Information in this section is based on the *Historic Property Survey Report* (HPSR) (August 2020) and the *Archaeological Survey Report* (ASR) (August 2020) prepared for the proposed project. The ASR is included as an attachment to the HPSR.

2.7.2.1 Area of Potential Effects

The Area of Potential Effects (APE) includes both the direct archaeological study area (Direct APE) and the historic architectural study area (Indirect APE). The archaeological study area consists of the area bounded by the Direct APE, which represents the maximum amount of potential ground disturbances. The vertical APE extends from a maximum height of approximately 30 feet for the proposed signage upgrades to a maximum depth of 50 feet for the piles associated with the proposed widening of the Acacia Court undercrossing and billboard upgrades. Excavation associated with the proposed project would also include widening of SR-91 and installation of retaining walls.

2.7.2.2 Records Search

Records searches of the California Historical Resources Information System (CHRIS) were conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, June 4, 2019 and January 16, 2020.

The purpose of the records search was to identify previously recorded cultural resources and any previously conducted cultural investigations within the APE and within a 1-mile radius of the APE. The SCCIC records search provided mapped locations, Department of Parks and Recreation (DPR) 523 site forms, and all other associated data for each previously recorded cultural resource. In addition, the California State Historic Property data file was examined, which includes the following sources:

- Resources listed on or determined eligible for the NRHP
- Resources listed on or determined eligible for the CRHP
- Resources listed as California Historical Landmarks
- Resources listed as California Points of Historical Interest

In addition, historic maps, historic United States Geological Topographic quadrangles, and historic aerials were reviewed as part of the records search.

2.7.2.3 Field Survey

A windshield survey of the entire APE and a pedestrian survey of accessible and unpaved areas within and immediately adjacent to the APE was conducted July 23, 2019. The areas covered during the survey included the Direct APE along SR-91, Acacia Court interchange, Wilmington Avenue interchange, Central Avenue interchange, billboard locations and frontage roads along SR-91. Unpaved surfaces comprise less than 1 percent of the overall APE and were primarily confined to slopes adjacent to freeway ramps and between the SR-91 and frontage roads.

2.7.2.4 Native American Consultation

Consultation was conducted with several Native American tribes to comply with Section 106 of the NHPA and Assembly Bill (AB) 52. The Native American Heritage Commission (NAHC) was contacted June 24, 2019 to conduct a Sacred Lands File (SLF) search to ascertain the presence of known sacred sites, Native American cultural resources, and/or human remains within the APE. No cultural resources were identified within or adjacent to the APE as a result of the SLF. The NAHC recommended contacting five Native American groups/individuals with ties to the project vicinity as part of the Section 106 and AB 52 consultation requirements.

Chapter 4, Comments and Coordination provides detailed information regarding Native American consultation. The following Native American tribes, groups, and individuals were initially contacted via letter, sent by certified mail April 14, 2020, and additional email and phone outreach occurred in May and June 2020 to each of the five recipients:

- Gabrieleno/Tongva San Gabriel Band of Mission Indians: Anthony Morales
- Gabrielino/Tongva Nation: Sandonne Goad
- Gabrielino Tongva Indians of California Tribal Council: Robert Dorame
- Gabrielino-Tongva Tribe: Linda Candelaria, Charles Alvarez
- Gabrieleño Band of Mission Indians – Kizh Nation: Andrew Salas

No Tribal Cultural Resources were identified as a result of Native American Consultation.

Previous Resources

Two prehistoric archaeological sites and one historic-age archaeological site (i.e. 50 years old or older) were identified during the records search within 1 mile of the APE. However, no archaeological sites were identified within the APE during the pedestrian field survey or the records search. Modern structures and trash were observed within the APE during the field survey. Extensive ground disturbance from freeway construction and associated ramps and bridges were observed during the survey. Unpaved surfaces comprised less than 1 percent of the overall APE and were primarily confined to the unpaved slopes adjacent to the freeway ramps connected to SR-91 and between the SR-91 and frontage roads.

The proposed project is located on the coastal plain of the Los Angeles Basin in the Peninsular Range physiographic province on the north side of the Dominguez Hills, west of the Los Angeles River and bisects a portion of Compton Creek. The central and western portions are along the Dominquez Hills foothills while the far eastern portion exhibits minimal topographic variation making it conducive to prehistoric and historic period occupation. Compton Creek and the Los Angeles River are to the east of the proposed project limits. Both of these prominent waterways would have been important resources and likely influenced prehistoric and historic occupation in the vicinity. It is expected, therefore, that archaeological sensitivity would increase near these waterways.

The natural geology within the APE is comprised of three deposits, young alluvium, young alluvial fan deposits undivided, and old alluvium deposits undivided from east to west. The young alluvial and young alluvial fan deposits are typically late Holocene-age (11,700 years ago to present) at the surface and late Pleistocene-age (126,000 to 11,700 years ago) deposits at depth. The old alluvium deposits are typically late to middle Pleistocene (781,000 to 11,700 years ago). Areas underlain by intact young alluvium and young alluvial fan deposits have a moderate potential to contain buried archaeological resources, while the older geological units (old alluvium deposits) have a low potential. However, much of the APE is heavily disturbed and

developed from freeway construction. These disturbed sediments and fill material have low potential for containing archaeological resources.

A review of historic topographic maps and aerial photographs show much of the area as agricultural with isolated farmhouses and an oil field south of the APE in the early 20th century, as well as a high level of industrial development in the mid to late 20th century. By 1979, according to review of historic aerial photographs, SR-91 was built with heavy industry, including large warehouses and manufacturing buildings on either side of the freeway.

An archaeological sensitivity analysis was conducted to assess the potential of the APE to contain buried archaeological resources. The western and central portions of the APE slopes north and westward from the Dominguez Hills and consists of old alluvium deposits. These areas have a decreased potential for archaeological resources due to the Pleistocene age of the deposit. At the eastern extent of the APE, the topography slopes eastward and levels off in close vicinity of the Compton Creek and Los Angeles River, providing an environment with increased potential to encounter prehistoric archaeological resources.

The overall archaeological sensitivity of the APE is low for buried archaeological resources. The APE is heavily disturbed and developed from freeway construction with associated ramps and bridges. These disturbed sediments and fill material within the APE have low potential to encounter archaeological material. The portions of the alignment that are underlain by young alluvium and young alluvial fan deposits may appear to have a moderate potential to contain buried archaeological resources, while the older geological units (old alluvium) would have a low potential to contain buried archaeological resources. Excavations for the project would not reach soils that may be moderately sensitive for cultural deposits, with the exception at the easternmost end of the APE. However, at this location, project work would consist primarily of upgrades to existing signage. Therefore, the overall potential for the project to encounter subsurface archaeological deposits is relatively low.

2.7.3 Environmental Consequences

2.7.3.1 Section 106 Finding for the Project

Within the APE, there are three state-owned bridges previously determined not eligible for listing in the National Register of Historic Places (NRHP) and nine parcels that meet the criteria for Section 106 Programmatic Agreement Attachment 4 (Properties Exempt from Evaluation). Based upon the assessment, there are no historic properties within the APE and no historic properties would be affected. Therefore, the project would not result in impacts to historic-built environment resources.

Pursuant to Section 106 Programmatic Agreement Stipulation IX.A, and as applicable, Public Resources Code 5024 Memorandum of Understanding Stipulation IX.A.2, a Finding of No Historic Properties Affected has been determined to be appropriate by Caltrans for the proposed project.

2.7.3.2 Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 provides protection for historic properties. As defined in 23 CFR 774.17, a historic site is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. In order to qualify for protection under Section 4(f), a historic site must meet the following criteria: (1) it must be of national, state, or local significance, and (2) it must be on or eligible for listing on the NRHP

(Federal Highway Administration, 2012). Section 4(f) also applies to archaeological sites that are on or eligible for the NRHP and that warrant preservation in place, including those sites discovered during construction.

There are no historic properties present within the APE; therefore, the proposed project would not result in the use of a historic site protected by Section 4(f).

The archaeological survey conducted for the project did not identify archaeological sites within the APE. Therefore, the proposed project would not result in the impact to an archaeological site protected by Section 4(f).

2.7.3.3 Temporary Impacts

No Build Alternative

The No Build Alternative would maintain the existing setting and would not result in improvements to SR-91. Therefore, the No Build Alternative would not result in any temporary impacts to cultural resources in the project study area.

Build Alternative

Construction of the proposed project would not result in temporary impacts on archaeological resources.

2.7.3.4 Permanent Impacts

No Build Alternative

The No Build Alternative would maintain the existing setting and would not result in improvements to SR-91. Therefore, the No Build Alternative would not result in any permanent impacts to cultural resources in the project study area.

Build Alternative

Excavation activities associated with signage upgrades near the eastern extent of the APE would extend to a depth 30 feet below ground surface within soils deemed moderately sensitive for archaeological resources. However, ground disturbance at this location is minimal and, thus, the potential for the project to impact cultural resources is relatively low. These findings have been shared with the concerned tribes, but they remain highly concerned about ground disturbance in the eastern portion of the project area.

Construction of the Build Alternative requires excavation and maximum depths would range from 25 to 40 feet for retaining walls, piles, anchor walls, bridge columns, overhead signs and billboard replacement. Excavation activities will occur within soils deemed to have low sensitivity for archaeological resources. No additional cultural resources work is recommended.

If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological surveys would be needed if the project limits are extended beyond the present survey limits.

There is always a potential for previously undocumented cultural materials or human remains to be unearthed during site preparation, grading, or excavation. In the event of discovery of cultural materials or human remains, those potential effects would be avoided or minimized through project features PF-CUL-1 and PF-CUL-2 described herein.

- **PF-CUL-1**: If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- **PF-CUL-2**: If human remains are discovered, California Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the NAHC, who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Claudia Harbert, Caltrans District 7 Cultural Resources Environmental Branch Chief, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

These project features would be implemented during construction, consistent with State of California Public Resources Code 5097.94, 5097.95, 5097.99, and State of California Health and Safety Code 7050.5.

2.7.4 Avoidance, Minimization, and/or Mitigation Measures

With implementation of Project Features PF-CUL-1 and PF-CUL-2, and the following measure CUL-1, adverse effects on cultural resources are not anticipated.

- **CUL-1**: Metro will implement a limited archaeological and Native American monitoring program with interested Tribes as appropriate prior to and during project construction.

2.8 Water Quality and Storm Water Runoff

2.8.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[1] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCBs) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (U.S. EPA) Section 404 (b)(1) Guidelines (40 *Code of Federal Regulations* [CFR] Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the

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

USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[2] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

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

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The SWRCB has identified the Department as an owner/operator of an MS4 under federal regulations. The Department's MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's MS4 Permit, Order No. 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014), Order No. 2015-0036-EXEC (conformed and effective April 7, 2015), and Order No. WQ 2017-0026-EXEC (effective November 27, 2017) has three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);
2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the maximum extent practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit, Order No. 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of

the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with the Department's SWMP and Standard Specifications, a Water Pollution Control Program (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.8.2 Affected Environment

The information in this section is based on the *Preliminary Drainage Report* (August 2020) and the *Stormwater Data Report* (February 2021) that were prepared for the project.

The proposed project is located within the Compton Creek subwatershed of the lower Los Angeles River watershed and within the Lower Dominguez Channel subwatershed of the Dominguez Channel watershed (Figure 2.8-1). Land uses within the proposed project area consist mostly of industrial with mixed residential and commercial land use. The receiving water bodies are Compton Creek, which drains to the Los Angeles River Reach 2, and Dominguez Channel.

The project would increase the amount of impervious surface by approximately 7.82 acres due to the addition of the C-D Road. Surface runoff would be directed by curbs and gutters and into storm drain inlets throughout the project area. The proposed roadway improvements to SR-91 on- and off-ramps would not alter the existing off-site drainage pattern. The increase of stormwater runoff within the project limits would result in the addition of approximately 15.60 acres of new impervious surface area, with a net new impervious surface area of approximately 7.82 acres.

Figure 2.8-1. Project Watershed Boundaries

Source: Preliminary Drainage Report (August 2020)

2.8.2.1 Climate

The proposed project is located within the cities of Compton and Carson. According to the National Oceanic and Atmospheric Administration, the average annual precipitation within the project area is approximately 14.5 inches. The region has a semi-arid climate, which is generally hot in the summer with warm winters. The majority of the precipitation occurs between October 1 and May 1.

2.8.2.2 Land use and Topography

Current land uses adjacent to the proposed project areas are mostly industrial with mixed residential and commercial land use. East of Central Avenue, the project site generally slopes toward the east and drains toward Compton Creek. West of Central Avenue, the project site generally slopes to the west and drains toward the Dominguez Channel.

2.8.2.3 Drainage

Existing drainage from the project area is conveyed through pipes that outlet into underground storm drain pipes located along East and West Artesia Boulevard.

2.8.2.4 Groundwater

Groundwater depths within the project study area were investigated in the 2010 Corridor Study for SR-91. According to the Corridor Study, no groundwater was found within borings advanced to 41.5 feet below ground surface (bgs) within the project limits. Caltrans as-builts from a previous project near the project limits show groundwater being encountered at 70 feet bgs. Based on the historically highest groundwater map and the well data within the vicinity, the groundwater elevation at the site is considered to be approximately 20 feet bgs (approximately 70 to 108 feet in elevation per NAVD88). This high groundwater is associated with the Los Angeles River and Compton Creek east of the site and the Dominguez Channel west of the site. There are no drinking water reservoirs or groundwater recharge facilities in the vicinity of the project limits. A geotechnical study will be done during final design of the project, which will confirm groundwater elevations.

Clean Water Act Section 303(d)

Segments of the Dominguez Channel (unlined portion), Compton Creek, and Los Angeles River (Reach 2) exceed water quality objectives for various pollutants and have been identified as impaired under Section 303(d) of the CWA. To address these impairments, TMDLs have been established for some pollutants (Table 2.8-1).

Table 2.8-1. 303(d) Listed Pollutants for Each Receiving Water Body

Pollutant	Receiving Water Body
Ammonia	Los Angeles River (Reach 2)
Benthic Community Effects	Dominguez Channel (unlined portion), Compton Creek[a]
Benzo(a)anthracene	Dominguez Channel (unlined portion)
Benzo(a)pyrene (3,4-Benzopyrene -7-d)	Dominguez Channel (unlined portion)
Chlordane (tissue)	Dominguez Channel (unlined portion)
Chrysene	Dominguez Channel (unlined portion)
Copper	Dominguez Channel (unlined portion), Compton Creek, Los Angeles River (Reach 2)
Dichlorodiphenyltrichloroethane (tissue and sediment)	Dominguez Channel (unlined portion)
Dieldrin (tissue)	Dominguez Channel (unlined portion)
Indicator Bacteria	Dominguez Channel (unlined portion)[a], Compton Creek[a], Los Angeles River (Reach 2)
Lead	Dominguez Channel (unlined portion), Compton Creek, Los Angeles River (Reach 2)
Nutrients (Algae)	Los Angeles River (Reach 2)
Oil	Los Angeles River (Reach 2)[a]
Polychlorinated biphenyls	Dominguez Channel (unlined portion)
pH	Compton Creek
Phenanthrene	Dominguez Channel (unlined portion)
Pyrene	Dominguez Channel (unlined portion)
Toxicity	Dominguez Channel (unlined portion)
Trash	Compton Creek, Los Angeles River (Reach 2)
Zinc	Compton Creek

Source: Stormwater Data Report (February 2021)

[a] TMDL required

2.8.3 Environmental Consequences

2.8.3.1 Temporary Impacts

No Build Alternative

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

Build Alternative

The proposed construction for the Build Alternative would include grading, paving, retaining walls, drainage system modifications, and highway landscaping. Excavations for the proposed bridge piles and overhead sign footings are anticipated to be approximately 40 feet bgs and have potential to encounter groundwater at these localized areas. However, it is not anticipated

the proposed project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. The proposed roadway improvements to SR-91 would increase stormwater runoff within the project limits due to an increase of impervious surface with minimal stormwater impacts to downstream receiving waters. Under the Build Alternative, existing drainage inlets and storm drains would be modified or removed to accommodate the proposed widenings and modified ramps to maintain existing off-site flows and drainage patterns. Where existing drainage systems are crossing proposed walls perpendicularly, the walls will be built to accommodate the existing system. When the wall conflicts are parallel, the existing drainage system will be rebuilt to the side. The proposed drainage systems would be implemented to maintain the pavement drainage criteria, as outlined in the Caltrans Highway Design Manual (HDM).

The proposed project spans two watersheds and requires a separated risk level determination for each watershed. The risk level for the Dominguez Channel subwatershed was Risk Level 1. The risk level for the Compton Creek subwatershed was Risk Level 2. Due to the Risk Level 2 for this project, the CGP (Construction General Permit) requires the dischargers to develop a monitoring and reporting program. The requirements for this monitoring and sampling would be provided in the SWPPP.

Construction activities would comply with the CGP and implementation of the SWPPP, Erosion Control Plan, BMPs, and performance standards from Caltrans and the County of Los Angeles' stormwater ordinances and would avoid and minimize the potential for temporary construction-related surface water pollution. Therefore, water quality in the receiving water bodies would not be adversely impacted by erosion, sedimentation, or chemical pollutants during construction. The project would not include any work within jurisdictional waters. Dewatering is not anticipated to be required during construction of the project.

The project is not anticipated to require a Clean Water Act Section 401 certification. The project is subject to the requirements of Caltrans' NPDES permit and Los Angeles County MS4 permit, and applicable project related permits for project related work outside of Caltrans ROW.

The following project features would be incorporated into the project to avoid or reduce effects to water quality and storm water runoff:

PF-WQ-1: During construction, Caltrans' Resident Engineer or designated contractor will ensure that all applicable construction site BMPs follow the latest edition of the Caltrans Construction Site BMP Manual to address temporary impacts associated with project construction (California Department of Transportation, 2017), including those associated with waste management, non-storm water management, tracking controls, and other BMPs as applicable. In addition to applicable BMPs in the Caltrans Construction Site BMP Manual, the following measures will also be implemented:

- Erosion control
- Sediment control

PF-WQ-2: A SWPPP will be prepared for the project and will address all construction-related activities, equipment, and materials that have the potential to affect water quality.

2.8.3.2 Permanent Impacts

No Build Alternative

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

Build Alternative

The proposed Build Alternative would increase the amount of impervious surface by approximately 7.82 acres due to the addition of the C-D road. The additional impervious areas proposed may increase the volume or velocity of the stormwater discharge; however, no substantial hydraulic changes are expected downstream.

The proposed permanent treatment BMP strategy includes two Gross Solids Removal Devices (GSRDs) and bioswales or other potential treatment options, where feasible, that would treat 100 percent of the water quality volume/water quality flow generated from new impervious surfaces within the project area. The location of the bioswales or other treatment options would be determined during final design.

The targeted design constituents include nutrients (nitrogen), copper, zinc, general metal, phosphorus, and lead. Biofiltration swales are being considered for the proposed project and would include irrigation if implemented.

Although the project would increase flows due to the additional impervious area, it would not generate enough flows to impact off-site flood control facilities. Existing off-site drainage patterns would be maintained; therefore, existing off-site drainage systems would be protected in place. Off-site drainage refers to systems outside of Caltrans ROW. These systems are a part of the local (city) roadway network and could potentially be modified if the project affects the local roadway network. Where proposed improvements may impact the existing off-site drainage systems, these systems would be extended or realigned to accommodate the proposed roadway improvements.

PF-WQ-3: Permanent design pollution prevention and treatment BMPs will be implemented to minimize downstream effects, stabilize slopes, control runoff, and treat water quality volume generated from new impervious surface area. During final design, the project would consider the construction and integration of biofiltration swales or other potential treatment options, where feasible, into aesthetics, landscape, and revegetation plans within the project area as feasible.

2.8.4 Avoidance, Minimization, and/or Mitigation Measures

With the implementation of Project Features PF-WQ-1 through PF-WQ-3, no impacts to water quality and stormwater are anticipated; therefore, no avoidance, minimization, and/or mitigation measures are required.

2.9 Geology/Soils/Seismic/Topography

2.9.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act (CEQA).

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Structures are designed using the Department's Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Department's Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

The goals and policies outlined in *The City of Compton General Plan* (2010) guide the planning efforts for seismic hazards, including adopting and maintaining high standards for the seismic performance of new buildings; implementing the City of Compton's seismic hazard abatement program for existing unreinforced buildings and ensuring that retrofit plans are carried out; and, requiring review of soils and geologic conditions in areas with liquefaction potential.

The goals and policies outlined in *The City of Carson General Plan* (2004) include requiring all new development to comply with the most recent standards and city building codes for seismic design and retrofit buildings.

2.9.2 Affected Environment

This section summarizes information provided in the *District Preliminary Geotechnical Report* (DPGR, June 2020) and *Preliminary Materials Information Report* (August 2020). This section discusses the existing geologic and soils conditions within the study area.

2.9.2.1 Geology, Topography, Subsurface Conditions

Regional and Site Geology

The project is located within the Los Angeles physiographic basin. The Los Angeles Basin is bounded on the north by the Santa Monica and San Gabriel Mountains, on the east and southeast by the Santa Ana Mountains and the San Joaquin Hills, and on the west and south by the Pacific Ocean. The Los Angeles Basin represents a down-warped block of basement rock overlain by approximately 31,000 feet of sediment.

The Los Angeles physiographic basin is part of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges extend north to the San Gabriel Mountains and south into Mexico to the tip of Baja California. The Peninsular Ranges Province is characterized by alluviated basins, elevated erosion surfaces, and northwest-trending mountain ranges bounded by northwest-trending faults.

Geological maps obtained from the United States Geological Survey Map View website show that the project area consists of old alluvium.

Climate

The climate in the Los Angeles Basin area is classified as a Mediterranean climate, characterized with dry summers and rainy winters. Summers are warm, hot, and dry, with average temperatures ranging from 65 degrees Fahrenheit (F) to 85 F, although temperatures can exceed 110 F. Winters are mildly cool to warm with average temperatures ranging from 48 to 68 F.

Rainfall is low and mostly occurs during winter and early spring. The average rainfall is approximately 12 to 15 inches per year. Rainfall across the basin is higher in the mountainous areas and lower in the valley regions. The winter wet season normally runs from October through May, while the wettest months generally occur from December through February.

Topography and Soils

SR-91 in this area runs east to west with elevation between 90 feet and 128 feet, according to the North American Vertical Datum of 1988 (NAVD88). The terrain is relatively flat with embankments along the freeway that accommodate the overcrossings and undercrossings. The soils present along SR-91 consists primarily of alternate layers or relatively fine sands, silty sands, sandy silts, and silts. The consistency of fine-grained soils is reported to be predominately medium stiff to very stiff. The shallower layers of sandy soils are medium dense in place and grade to denser condition with increasing depth. The shallower sandy soils within the project area are expected to show moderate rate of infiltration.

Groundwater

The historically highest depth to groundwater in the project area is approximately 20 feet below ground surface (bgs). Based on the historically highest groundwater map and the well data within the vicinity, the groundwater elevation at the site is considered to be approximately 20 feet bgs (approximately 70 to 108 feet in elevation according to NAVD88). This high groundwater is associated with the Los Angeles River and Compton Creek, east of the site, and the Dominguez Channel, west of the site.

2.9.2.2 Geologic Hazards

The primary geotechnical and geological hazards associated with the project are anticipated to be strong seismic shaking due to nearby faults, liquefaction, seismic embankment stability, and settlement.

Seismicity and Fault Rupture

This project is located within a seismically active region because it is located near the active margin between the North American and Pacific tectonic plates. The principal source of seismic activity is movement along the northwest-trending regional faults such as the San Andreas, San Jacinto, Newport-Inglewood, and Whittier-Elsinore fault zones. Fault data for the project vicinity is presented in Table 2.9-1.

Table 2.9-1. Fault Data

Fault Name	Distance from Nearest Fault (in miles)	Magnitude
Newport-Inglewood Fault Zone (North Los Angeles Basin Section)	0.07	7.2
Newport-Inglewood Fault Zone (South Los Angeles Basin Section – Southern)	1.20	7.2

Source: DPGR (2020)

The project is not located within the Alquist-Priolo Earthquake Fault (AP) Zone. The nearest AP Zone is the Newport-Inglewood Fault Zone located approximately 0.07 mile west of the site, and a magnitude 7.2 earthquake has the potential to occur on the Newport-Inglewood Fault. (see Figure 2.9-1). The project may be subject to strong ground motions from nearby earthquake sources and may experience damage from the shaking; however, because the traces of the faults are not within the project boundaries and surface rupture occurs along the traces of faults, surface rupture from movement on the faults would not be a potential geologic hazard within the project boundaries.

Liquefaction

The majority of the project area does not lie within a potential seismic hazard zone. Based upon the highest groundwater depth of 20 feet bgs and the subsurface information obtained from the log of test borings (DPGR, June 2020), liquefaction and liquefaction-induced lateral spreading would not be a potential geologic hazard.

Landslide and Slope Instability

The existing embankments do not exhibit any distress from settlement or stability problems, and the foundations appear stable. The project is not within an Earthquake-Induced Landslide Zone (California Geological Survey, 1999) and the topography is relatively flat. Landslides would not be a potential geologic hazard.

Seismic-Induced (Dry) Settlement

Soils underlying the site predominantly consist of medium dense sands, silty sands, and stiff to very stiff silts. Due to the soils' classification and the in-situ state, seismic-induced (dry) settlement would not be a potential geologic hazard.

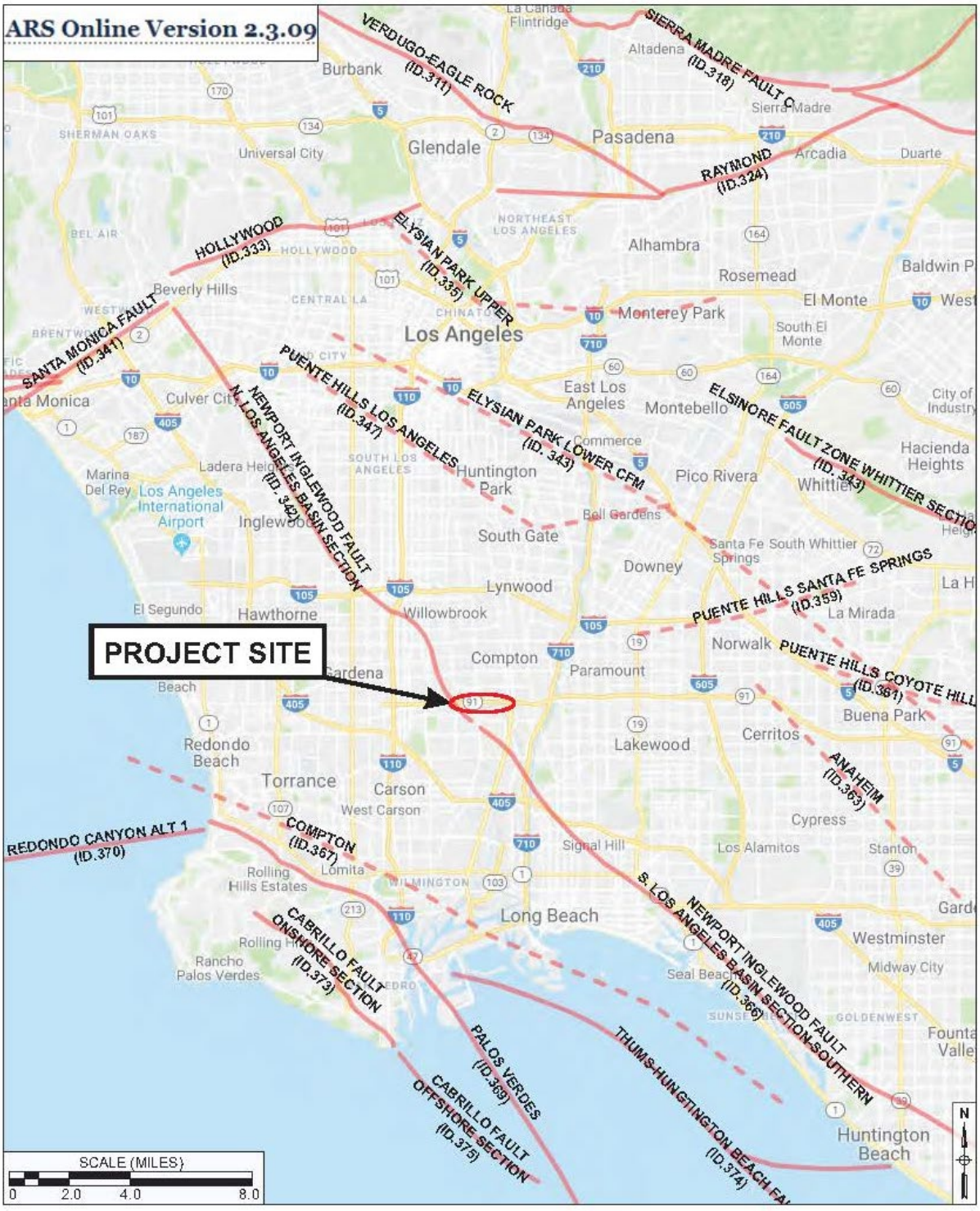

Figure 2.9-1. Fault Activity Map (Caltrans Acceleration Response Spectrum)
Source: DPGR (June 2020)

2.9.3 Environmental Consequences

2.9.3.1 Temporary Impacts

No Build Alternative

Under the No Build Alternative, temporary construction-related impacts would not occur because there would be no construction of the proposed project improvements under this alternative.

Build Alternative

During construction some grading/excavations and alterations to the existing embankment would occur, and the altered parts of the embankments would be backfilled, compacted, and restored.

2.9.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not result in the construction of any of the proposed improvements, and therefore, would not result in any impacts related to geology, soils, seismicity, or topography.

Build Alternative

To allow for the construction of the C-D road, bridge work for the Acacia Avenue Undercrossing (UC) Bridge widening would be done and proposed retaining walls would be placed on the side slopes of the existing freeway embankments of SR-91. The foundations for the new retaining walls would be constructed and embedded into the embankment's slopes.

The existing Acacia Avenue UC Bridge, constructed in 1974, is a three-span, cast-in-place, prestressed concrete box girder with a total length of 148 feet spanning over Acacia Court and a width of 160 feet. The proposed improvement will widen the existing structure's westbound segment to the north by a width of 11.75 feet.

As part of the Project, a 24-foot segment of the existing Retaining Wall No. 128 will be constructed east of Central Avenue, along eastbound SR-91, and adjacent to the existing billboard structure. In addition, two Proposed Sub-Horizontal Ground Anchor (SHGA) Walls, Retaining Wall No. 154 and 155, will provide support for the existing north and south abutment end slopes at Wilmington Avenue. Retaining Wall No. 154 is about 1,175 feet long, with the SHGA segment of the wall being approximately 102 feet long and will be located in front of the southern abutment. Also, Retaining Wall No. 155 is about 990 feet long, with the SHGA part of the wall being about 102 feet long, located in front of the northern abutment.

The more extensive alterations would be from construction of the cuts for retaining walls and fill slopes associated with the ramp and roadway widening. Construction would likely result in alterations of the landform because of grading. Landform alterations may create erosional impacts to the existing terrain.

The following project features would be incorporated into the project to avoid or reduce effects to geology, soils, seismic, and topographical resources:

- **PF-GEO-1:** A site-specific investigation and subsurface data liquefaction screening and analysis will be performed to evaluate the potential stability and settlement characteristics for the proposed retaining walls supported on the embankment compacted fill during the final design phase of the project. Structures will be designed to withstand a defined level of ground acceleration and fault offset, where applicable.
- **PF-WQ-3:** Permanent design pollution prevention and treatment BMPs will be implemented to minimize downstream effects, stabilize slopes, control runoff, and treat water quality volume generated from new impervious surface area. During final design, the project will consider the construction and integration of biofiltration swales into aesthetics, landscape, and revegetation plans within the project area as feasible.

2.9.4 Avoidance, Minimization, and/or Mitigation Measures

With the implementation of Project Features PF-GEO-1 and PF-WQ-3, no adverse impacts to Geology, Soils, Seismic, or Topography are anticipated; therefore, no additional avoidance, minimization, and/or mitigation measures are required.

2.10 Paleontology

2.10.1 Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

Limitation on Federal Participation (23 USC 1.9(a))

23 United States Code (USC) 1.9(a) requires that the use of Federal-aid funds must be in conformity with all federal and state laws.

23 United States Code (USC) 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 above and state law.

California Environmental Quality Act of 1970

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

Local Plans and Policies

The Los Angeles County General Plan, Conservation and Natural Resources Element (Los Angeles County, 2015) contains the following goals and policies that are applicable to the project:

- **Goal C/NR 14:** Protected historic, cultural, and paleontological resources.
  - **Policy C/NR 14**.1: Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.
  - **Policy C/NR 14.2:** Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.
  - **Policy C/NR 14.6**: Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

2.10.2 Affected Environment

The information in this section is based on the *Combined Paleontological Identification and Evaluation Report* (July 2020).

Paleontological Setting

The project is located in the northwestern end of the Peninsular Ranges geomorphic province. The Peninsular Ranges province is distinguished by northwest trending mountain ranges and valleys following faults branching from the San Andreas Fault. The Peninsular Ranges are bound to the east by the Colorado Desert and extend north to the San Bernardino – Riverside county line, west into the submarine continental shelf, and south to the California state line.

The project is located in the central portion of the Los Angeles Basin, an actively subsiding basin, bound by the Santa Monica and San Gabriel Mountains to the north, the Santa Ana Mountains to the east, and the Palos Verdes Hills to the south. This area of the Los Angeles Basin is underlain by over 14,000 feet of sediment deposited in the past 23 million years. Locally, the sediments are dominated by fluvial and alluvial sediments driven by the uplifted Signal Hill area to the south. The uplifted hills not only provide a source for north-flowing alluvial fans, but also slow the flow of the San Gabriel River, causing it to flood and deposit sediment.

According to paleontological record searches performed through the Natural History Museum of Los Angeles County, the University of California Museum of Paleontology, the San Diego Natural History Museum, and other published literature for fossil localities from similar deposits nearby (within 3 miles), two fossil localities are located near the project area. The first locality, in Compton, produced remains of mammoth (*Mammuthus*) at a depth of 5 feet below ground surface (bgs). The second locality, Ballona Creek Wash, produced the remains of mammoth (*Mammuthus*), horse (*Equus*), Western camel (*Camelops*), and human (*H. sapiens*) approximately 3 miles east at an unspecified depth.

Young alluvial fan and valley deposits at the surface are likely of Holocene age, are not old enough to have collected or fossilized significant biologic material, and are therefore assigned a low sensitivity. However, they may transition with depth (assumed to be at 5 feet bgs) into older, Pleistocene-age deposits.

Pleistocene deposits have produced an extensive vertebrate fossil record throughout Southern California. Some of these fossils are endemic, renowned taxa such as mammoths, mastodons, ground sloth, and sabre-tooth cats. By virtue of their geologically young age, these taxa are also contemporaneous with many modern taxa and contribute to the scientific knowledge of their evolutionary history. In addition to vertebrates, microfossils such as warm water diatoms and pollen from Pleistocene deposits have helped reconstruct past climates in the geologic record.

2.10.3 Environmental Consequences

2.10.3.1 Temporary Impacts

No Build Alternative

The No Build Alternative would not result in temporary impacts to paleontological resources.

Build Alternative

Any impact on paleontological resources would be permanent and irreversible; therefore, there would not be temporary impacts under the Build Alternative.

2.10.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not result in permanent impacts on paleontological resources.

Build Alternative

The proposed project improvements are located on the state highway and local streets in a highly developed and disturbed urban area. The project area has been previously disturbed due to past and on-going development activities, and the likelihood of discovering undisturbed paleontological resources is low due to the presence of disturbed sediments and fill material in the project area.

However, there are portions of the project area identified as having potential sensitivity that could result in impacts to paleontological resources for excavation that would extend more than 5 feet below the original ground surface. Construction of the Build Alternative requires excavation, and maximum depths would range from 25 to 40 feet for retaining walls, piles, anchor walls, overhead signs, and billboard replacement. Excavation for these project components may have the potential to impact paleontological resources.

The following project feature would be incorporated into the project to avoid or reduce potential impacts:

PF-PAL-1. Section 14-7.03 of Caltrans' Standard Specifications requires if unanticipated paleontological resources are discovered at the job site, do not disturb the resources and immediately: 1) Stop all work within a 60-foot radius of the discovery; 2) Secure the area; and 3) Notify the Engineer. Caltrans investigates the discovery and modifies the dimensions of the secured area if needed. Do not move paleontological resources or take them from the job site. Do not resume work within the radius of discovery until authorized.

2.10.4 Avoidance, Minimization, and Mitigation Measures

The following mitigation measure would be implemented to avoid and/or minimize impacts related to paleontological resources:

PAL-1. Paleontological Mitigation Plan (PMP). A Qualified Paleontologist shall prepare a PMP following the guidelines in the California Department of Transportation (Caltrans) Standard Environmental Reference (SER), Environmental Handbook, Volume 1, Chapter 8 – Paleontology. The PMP shall be prepared concurrently with final design plans during the Plans, Specifications, and Estimates (PS&E) phase.

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2.11 Hazardous Waste/Materials

2.11.1 Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, and the Resource Conservation and Recovery Act (RCRA) of 1976. The purpose of CERCLA, often referred to as "Superfund," is to identify and cleanup abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

2.11.2 Affected Environment

An *Initial Site Assessment* (ISA) August 2020 was prepared to evaluate the potential for existing presence of hazardous substances and/or petroleum product impacts at the Site that may affect construction of the proposed project improvements or potential parcels off the state highway system proposed for sliver acquisitions.

The ISA included a site reconnaissance and review of historical topographic maps, aerial photographs, regulatory databases, and other site-related record sources and reports for indications of Recognized Environmental Conditions (RECs) that may be encountered during construction or potential parcel sliver acquisitions. The information in the ISA is based upon review of records and a field review conducted in May 2020 and does not represent a comprehensive site characterization. Where applicable, the ISA identifies recommendations for further investigation.

Aerially deposited lead (ADL) exists in soil along major highway routes due to vehicle exhaust containing lead from the combustion of leaded gasoline. The concentration and distribution of ADL in soil is a function of many variables, but in general, highway age and traffic volume appear to be primary factors. Based on the age of the roadways within the project limits and the results of ADL surveys that have been conducted within limited areas of the Site, there is a potential for ADL to be present in exposed soils adjacent to SR-91 and the on and off-ramps.

The project study area lies within the northern limits of the Dominguez Oil Field. Based on correspondence received from the California Department of Conservation, Geologic Energy Management Division (CalGEM)and information available on their website, approximately 33 plugged oil wells are present within 200 feet of the project footprint. The historic oil field operations in the project vicinity, and the presence of plugged oil wells within and in close proximity to the project limits are considered an REC with respect to the project. Additionally, the eight subsurface petroleum pipelines within the project limits represent an additional source of petroleum contamination in soil due to unreported or incidental leaks.

Three bridge structures are present within the project limits and consist of overcrossing structures at Central Avenue (Bridge No. 53.2459) and Wilmington Avenue (Bridge No. 53.1865) and one undercrossing at Acacia Court (Bridge No. 53.2371).

Portions of nine parcels may require potential acquisition to accommodate project improvements. The location of the parcels by APN and the partial acquisition areas are found in Section 2.2, Relocations and Real Property Acquisitions. Three of the nine parcels listed under Potential Parcel Acquisition were identified on the EDR Database and have been identified as “medium” risk (See Table 2.11-1 Map ID #7 (ISuite), #8 (Time Inc., List Logistics), and #9 (Korody-Coyler, DIV Of C R Industries, TJX Compton). Table 2.11-1 lists the potential acquisition parcels as they appear on Figure 2.11-1 (numbered from 1 to 9) and describes the type of potential environmental impact beneath each parcel.

Table 2.11-1. Potential Parcel Acquisitions and Type of Potential Environmental Impact

No.	Assessor’s Parcel Number	Property Name	Address	Type of Potential Environmental Impact beneath the project area
1	7319-033-054	Weld On	1253 E. Artesia Boulevard, Carson, CA 90746	The Site occupies an area that was formerly an active oil field. Oil fields have the potential for contamination from petroleum hydrocarbons, volatile organic compounds, and metals. Therefore, the historic use of the of the Site as oil field is considered an REC. Additionally, the parcel’s proximity to an automotive thoroughfare represents a potential for ADL in shallow soil.

No.	Assessor's Parcel Number	Property Name	Address	Type of Potential Environmental Impact beneath the project area
2	7319-024-019	Carl's Jr.	1931 W. Artesia Boulevard, Gardena, CA 90247	The Site occupies an area that was formerly an active oil field. Oil fields have the potential for contamination from petroleum hydrocarbons, volatile organic compounds, and metals. Therefore, the historic use of the of the Site as oil field is considered an REC. Additionally, the parcel's proximity to an automotive thoroughfare represents a potential for ADL in shallow soil.
3	7319-024-045	Starbucks	1929 W. Artesia Boulevard, Compton, CA 90220	The Site occupies an area that was formerly an active oil field. Oil fields have the potential for contamination from petroleum hydrocarbons, volatile organic compounds, and metals. Therefore, the historic use of the of the Site as oil field is considered an REC. Additionally, the parcel's proximity to an automotive thoroughfare represents a potential for ADL in shallow soil.
4	7319-003-102	Carson Crossroads	2200 W. Artesia Boulevard, Compton, CA 90220	The Site occupies an area that was formerly an active oil field. Oil fields have the potential for contamination from petroleum hydrocarbons, volatile organic compounds, and metals. Therefore, the historic use of the of the Site as oil field is considered an REC. Additionally, the parcel's proximity to an automotive thoroughfare represents a potential for ADL in shallow soil.
5	7319-003-020	El Pollo Loco/ADT	1918 W. Artesia Boulevard, Compton, CA 90504	The Site occupies an area that was formerly an active oil field. Oil fields have the potential for contamination from petroleum hydrocarbons, volatile organic compounds, and metals. Therefore, the historic use of the of the Site as oil field is considered an REC. Additionally, the parcel's proximity to an automotive thoroughfare represents a potential for ADL in shallow soil.
6	7319-028-057	DHL	921 W. Artesia Boulevard, Compton, CA 90220	The Site occupies an area that was formerly an active oil field. Oil fields have the potential for contamination from petroleum hydrocarbons, volatile organic compounds, and metals. Therefore, the historic use of the of the Site as oil field is considered an REC. Additionally, the parcel's proximity to an automotive thoroughfare represents a potential for ADL in shallow soil.

No.	Assessor's Parcel Number	Property Name	Address	Type of Potential Environmental Impact beneath the project area
7	7319-033-055	ISuite	1299 E. Artesia Boulevard, Carson, CA 90746	The Site occupies an area that was formerly an active oil field. Oil fields have the potential for contamination from petroleum hydrocarbons, volatile organic compounds, and metals. Therefore, the historic use of the of the Site as oil field is considered an REC. Additionally, the parcel's proximity to an automotive thoroughfare represents a potential for ADL in shallow soil. The Site also includes an Underground Storage Tank (UST) with unknown status and no records of removal. This facility is a "medium" risk category because of a lack of records for UST removal. The UST has potential to impact groundwater beneath the project footprint due to the common occurrence of leaks associated with USTs.
8	7319-028-056	Time Inc., List Logistics	801 W. Artesia Boulevard, Compton, CA 90220	The Site occupies an area that was formerly an active oil field. Oil fields have the potential for contamination from petroleum hydrocarbons, volatile organic compounds, and metals. Therefore, the historic use of the of the Site as oil field is considered an REC. Additionally, the parcel's proximity to an automotive thoroughfare represents a potential for ADL in shallow soil. The Site is a chemical storage facility with records of hazardous waste disposal. No violations were reported at the facility. The site has low probability of representing a REC with respect to the portion of property planned for acquisition. However, unknown or undocumented releases from this facility have potential to impact groundwater beneath the acquisition area of this parcel. This facility is a "medium" risk category because it is an acquisition parcel with a record of hazardous waste handling and disposal.

No.	Assessor's Parcel Number	Property Name	Address	Type of Potential Environmental Impact beneath the project area
9	7318-002-078	Korody-Coyler, DIV Of C R Industries, TJX Compton	700 W. Artesia Boulevard, Compton, CA 90220	The Site occupies an area that was formerly an active oil field. Oil fields have the potential for contamination from petroleum hydrocarbons, volatile organic compounds, and metals. Therefore, the historic use of the of the Site as oil field is considered an REC. Additionally, the parcel's proximity to an automotive thoroughfare represents a potential for ADL in shallow soil. The facility is classified as a small quantity hazardous waste generator of metals, corrosives, and tetrachloroethene. No violations were reported at the facility. The site has low probability of representing a REC with respect to the portion of property planned for acquisition. However, unknown or undocumented releases from this facility have potential to impact groundwater beneath the acquisition area of this parcel. This facility is a "medium" risk category because it is an acquisition parcel with a record of hazardous waste handling and disposal.

Source: Initial Site Assessment (August 2020)
No. = Figure 2.11-1 Map ID
UST = Underground Storage Tank

Twelve off-site facilities adjacent to the project footprint are categorized as a "medium" risk due to their potential to impact groundwater beneath the project limits. Table 2.11-2 lists the facilities located off-site (less than 0.25 mile) from the project site which have a potential for ground water impacts as they appear on Figure 2.11-1 (numbered from 10 to 21) and describes the type of potential environmental impact beneath each parcel.

Table 2.11-2. Facility Name and Type of Potential Environmental Impacts

No.	Property Name	Address	Type of Potential Environmental Impact beneath the project area
10	Industrial Polychemical Service, IPS Corp.	17109 S. Main Street, Gardena, CA 90248	The facility is an active LUST case for a solvent leak impacting groundwater.
11	Juzora Inc. Arco AM/PM	241 E. Albertoni Street, Carson, CA 90746	The facility is an active service station and hazardous waste generator. The facility handles gasoline and other petroleum products and has received multiple violations.

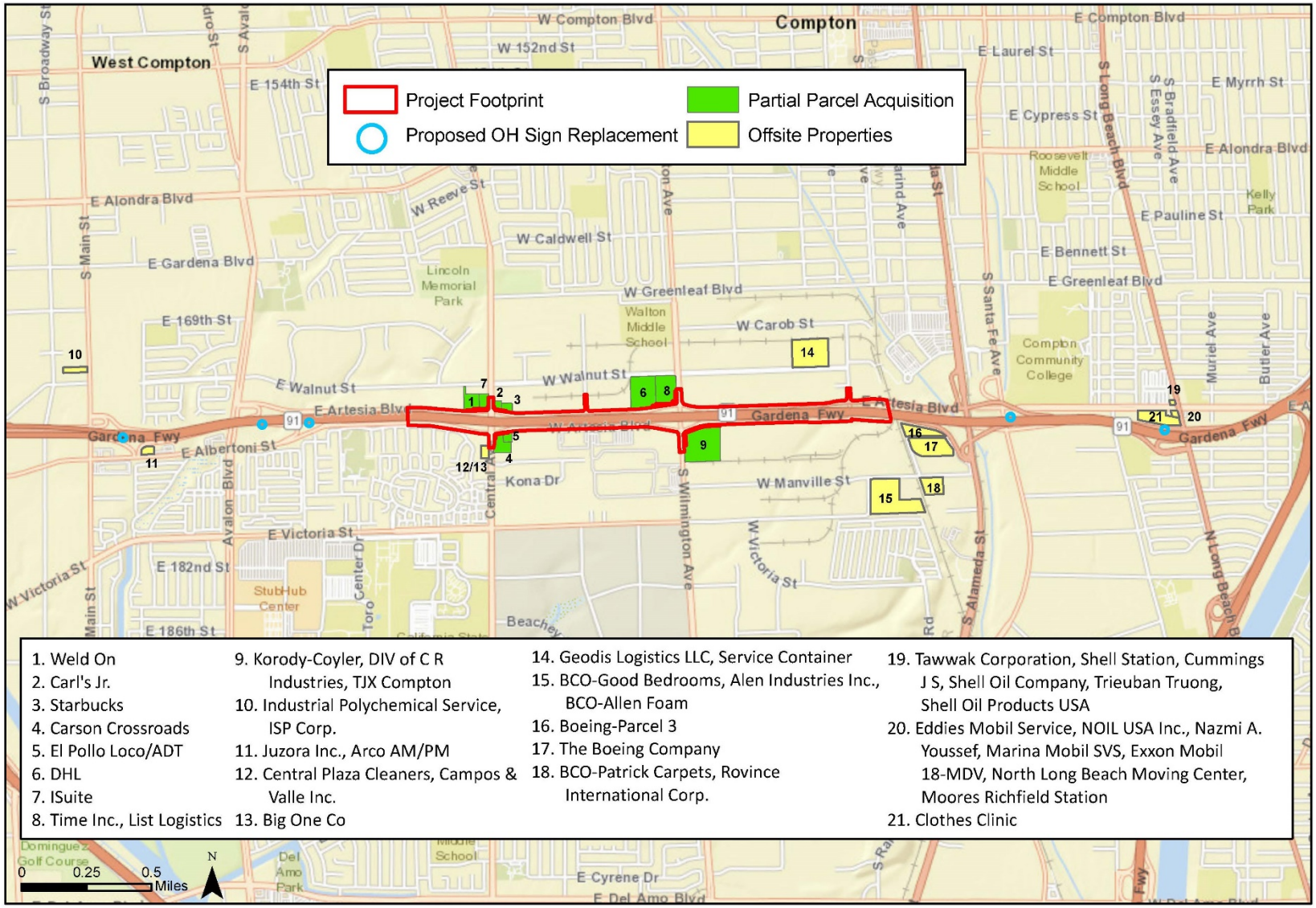
12	Central Plaza Cleaners, Campos & Valle Inc.	17531 Central Avenue, Carson, CA 90746	The facility operated as a dry cleaning establishment from 1992 to 2014 and was a small quantity generator of halogenated and hydrocarbon solvent hazardous waste. The facility received multiple violations.
13	Big One Co	17535 Central Avenue, Carson, CA 90746	The facility operated as a dry cleaning establishment from 1994 to 1995. Dry cleaning solvents were handled at the site.
14	Geodis Logistics LLC, Service Container	301 W. Walnut Street, Gardena, 90248	The facility is a former aviation fuel LUST case that was closed in 1996. The facility is an active large quantity generator of halogenated solvent, oxygenated solvent, corrosive, and metal waste.
15	BCO-Good Bedrooms, Allen Industries Inc., BCO-Allen Foam	175 West Manville Street, Compton, CA 90220	The facility is an RWQCB Site Cleanup Program case for release of petroleum hydrocarbons and volatile organic compounds impacting groundwater. The case was closed in 1996. The facility is an active chemical storage facility and has received violations.
16	Boeing – Parcel 3	157 East Stanley Street, Compton, CA 90220	The facility is an active RWQCB cleanup case for chlorinated hydrocarbons (predominately trichloroethylene and tetrachloroethene) impacting groundwater.
17	The Boeing Company	200 Stanley Way, Compton, CA 90220	The facility is an active RWQCB cleanup case for chlorinated hydrocarbons (predominately trichloroethylene and tetrachloroethene) impacting groundwater.
18	BCO-Patrick Carpets, Rovince International Corp.	172 E. Manville Street, Compton, CA 90220	This facility is an active RWQCB cleanup case for chlorinated hydrocarbons impacting groundwater. The facility has a commingled plume with the Boeing Company facility previously listed.
19	Tawwakac Corporation, Shell Station, Cummings J S, Shell Oil Company, Trieuban Truong, Shell Oil Products USA	6605 Long Beach Boulevard, Long Beach, CA 90805	This facility is an active RWQCB cleanup case for petroleum hydrocarbons impacting groundwater. A groundwater plume is reported to extend to the south of the property.

20	Eddies Mobil Service, NOIL USA Inc., Nazmi A. Youssef, Marina Mobil SVS, Exxon Mobil 18-MDV, North Long Beach Moving Center, Moores Richfield Station	6597 Long Beach Boulevard, Long Beach, CA 90805	The facility is a former LUST case for petroleum hydrocarbons impacting groundwater. The case was closed in 2013.
21	Clothes Clinic	6565 and 6543 Long Beach Boulevard, Long Beach, CA 90805	This facility operated as a cleaning establishment from 1952 to 1963. Dry cleaning solvents were potentially handled at the site.

Source: Initial Site Assessment (August 2020)

No. = Figure 2.11-1 Map ID

LUST = Leaking Underground Storage Tank
RWQCB = Regional Water Quality Control Board



Sources: ESRI 2020.

Figure 2.11-1. Properties with Potential Environmental Concerns

Table 2.11-3 summarizes other potentially hazardous wastes or materials of concern associated with current and past uses within the project limits.

Table 2.11-3. Hazardous Waste/Materials of Concern

Hazardous Waste/Materials of Concern	Description	Occurrence
ACM	Asbestos is a generic commercial description for a group of naturally occurring mineral substances that is used in buildings and manufacturing because of its fire resistance. Asbestos is most hazardous when it is easily crumbled or reduced by hand ("friable"). Prior to 1978, asbestos was commonly used in building materials. Asbestos is still used in building materials today, though its use in uncommon because of the associated hazards. ACMs include fireproofing, acoustic ceiling material, transite pipe, roofing materials, thermal insulation, support piers, expansion joint material in bridges, asphalt, concrete, and other building materials. ACM will typically not release asbestos fibers unless they are disturbed or damaged.	ACMs such as concrete, asphalt, guard rail shims, adhesives/mastic, and joint compound may be present on the bridge structures within the project footprint.
LBP	Regulations have restricted the use of lead in paints and primers and limited the use of paints in areas where consumers would have direct access to painted surfaces in non-industrial facilities. It is presumed that structures constructed prior to 1978 used lead-based paint (LBP). In addition, yellow paints made prior to 1995 may exceed hazardous waste criteria under Title 22 of the California CFR and require disposal to a Class I disposal facility.	There is potential for LBP to be present within or on the existing bridge and on-ramp structures.
Pavement marking materials	Thermoplastic paint and yellow painted traffic stripes and pavement markings may contain lead chromate. Lead chromate was phased out in waterborne traffic paint between 1997 and 2000 and in thermoplastic striping in 2004. It is generally assumed that existing yellow thermoplastic striping markings on state highways contain lead chromate.	Lead or chromium may be present in yellow and white thermoplastic striping paint observed at the project footprint.

Hazardous Waste/Materials of Concern	Description	Occurrence
Treated wood waste	Treated wood is typically treated with preserving chemicals that protect the wood from insect attack and fungal decay during its use. During highway construction periods, treated wood waste may be generated when posts along metal beam guard railing, thrie-mean barrier, piles, utility poles, or roadside signs are removed.	Relocation or replacement of guard rails and roadside signs on wooden posts may generate treated wood waste if the wooden posts are unable to be reused.
ADL	The concentration and distribution of ADL in soil depends on many variables, including traffic volumes and the age of the roadway. Elevated lead concentrations can generally be found approximately within 6 feet of the edge of pavement and within the top 6 inches of soil. However, elevated lead concentrations can be present as deep as 2 to 3 feet bgs.	The presence of an automotive thoroughfare in the project footprint since the late 1950s represents potential for ADL to be present in shallow on-site soil. Based on the age of the roadways within the project footprint and the results of previous ADL surveys, ADL may be present in exposed soils adjacent to SR-91 and the on- and off-ramps.
Petroleum hydrocarbons	Petroleum hydrocarbons are chemical compounds that come from crude oil. Although petroleum hydrocarbon-containing soil is not classified as a hazardous waste, it can impact project cost by limiting soil reuse and disposal options.	According to the CalGEM, approximately 33 plugged oil wells are within 200 feet of the project footprint. The historic oil field operations in the vicinity of the project footprint, and the presence of plugged oil wells within and in close proximity to the project footprint represents potential for petroleum hydrocarbons impacts to soil and groundwater. In addition, eight subsurface petroleum pipelines within the project footprint represent an additional potential source of petroleum contamination in soil due to unreported or incidental leaks.

Source: Initial Site Assessment (August 2020)

Note: Yellow and white thermoplastic striping paint observed at the project site generally has the potential to contain lead or chromium.

ACM = asbestos containing material
bgs = below ground surface
PCB = polychlorinated biphenyls

2.11.3 Environmental Consequences

2.11.3.1 Temporary Impacts

No Build

The No Build Alternative would not include the construction of any project improvements and would not result in any temporary or permanent impacts related to hazardous waste/materials within the study area.

Build Alternative

As shown in Table 2.11-1, RECs related to the storage, handling, or use of hazardous materials and petroleum products and wastes were identified for three of the nine properties (Map ID #7 (ISuite), #8 (Time Inc., List Logistics), and #9 (Korody-Coyler, DIV Of C R Industries, TJX Compton) from which acquisitions are proposed only under the Build Alternative with Truck Turning Radii Option 2. However, it is unlikely that the project would encounter RECs associated with these facilities because they were not identified in the narrow landscaped strips adjacent to the existing city ROW that are proposed for sliver acquisition.

Soil disturbance/excavation activities likely to occur during construction would consist of:

- Surficial removal and re-compaction of new pavement up to 5 feet in depth
- Piles for bridge widening at Acacia Court up to 30 feet in depth
- Footings for new overhead signs up to 30 feet in depth
- Footings for new billboards up to 42 feet in depth
- Footings for new retaining walls, which may include piles up to 30 feet in depth

Based on the depth of excavation proposed for the planned improvements, the majority of the facilities in the vicinity of the project footprint that have stored or used hazardous substances or petroleum products are unlikely to represent a REC at the project footprint or impact project construction. However, as shown in Table 2.11-2, 12 off-site facilities adjacent to the project footprint have been ranked with a “medium” risk potential of affecting the cost, scope, and schedule of the proposed project.

Based on their proximity to the project footprint, reported releases of petroleum hydrocarbons or volatile organic compounds (VOCs) impacting groundwater, the nature of materials handled (such as dry cleaning solvents), and the history of violations, these 12 off-site facilities have the potential to impact groundwater within the project limits. Due to the complicated stratigraphy of the soils underlying the project footprint, there is the potential for groundwater to occur under perched conditions in localized areas at depths that may be reached by the excavations for the proposed bridge piles and overhead sign footings. Driven or drilled piles are the proposed construction methods. Drilled piles would generate excess soil, and potentially, groundwater, whereas, driven piles would not.

Based on the age of the roadways within the project limits and the results of ADL surveys that have been conducted within limited areas of the site, there is a potential for ADL to be present during construction in exposed soils adjacent to SR-91 and at the on- and off-ramps.

Bridge improvements to the Acacia Court Bridge (Bridge No. 53.2371) have the potential to disturb ACMs and LBP. Improvements are not planned for the other two bridge structures within the project limits.

Aerially deposited lead (ADL) from the historical use of leaded gasoline, exists along roadways throughout California. There is the likely presence of soils with elevated concentrations of lead as a result of ADL on the state highway system right-of-way within the limits of the project alternatives. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This ADL Agreement allows such soils to be safely reused within the project limits as long as all requirements of the ADL Agreement are met.

The following project features would be incorporated into the project to avoid or reduce effects from hazardous waste and materials.

- **PF-HW-1:** During the Final Design phase, an ADL survey will be completed to evaluate the potential presence of ADL in surface soils within Caltrans ROW or City ROW that will be disturbed during construction, including any of the nine potential acquisition areas. Based on the results of the ADL survey, management and disposal options will be developed for soil containing potentially hazardous concentrations of lead. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed in accordance with Caltrans Standard Specifications, Section 14-11.08 Material Containing Hazardous Waste Concentrations of Aerially Deposited Lead (2015) and under the July 1, 2016, ADL Agreement between Caltrans and the Department of Toxic Substances Control (DTSC). This ADL Agreement allows such soils to be safely reused within the project limits, as long as all requirements of the ADL Agreement are met.
- **PF-HW-2:** During construction, sampling, analysis, removal, and disposal of any traffic striping and pavement materials will be completed in accordance with the *Construction Program Procedure Bulletin 99-2* Caltrans Standard Specifications, Section 14-11.12; *Removal of Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue;* and Section 36-4 *Residue Containing Lead from Paint and Thermoplastic* (2015). Project construction must be consistent with the requirements within Caltrans Construction Manual, Chapter 7 107E Removing Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue (2017). Before disposal, the contractor is required to sample the removed material for proper waste classification. Yellow traffic stripe and pavement marking that is characterized as hazardous waste requires disposal to a DTSC permitted Class I disposal facility.
- **PF-HW-3:** An ACM and LBP survey of the Acacia Court Bridge (Bridge No. 53.2371) will be required in order to obtain permits from the South Coast Air Quality Management District (SCAQMD). If present, removal and disposal of ACM and LBP will be performed prior to the start of demolition and renovation.
- **PF-HW-4:** Treated wood waste will be managed in accordance with Chapter 34, Title 22 California CFR Sections 67386.1 through 67386.12, "Alternative Management Standards for Treated Wood Waste." All treated wood waste will be properly disposed of at a landfill permitted to accept treated wood waste.
- **PF-HW-5:** CalGEM will be contacted if a plugged oil well is uncovered during future site grading for evaluation. Depending on their evaluation, CalGem may require that the well be abandoned in accordance with current requirements.

- **PF-HW-6:** Preliminary site investigations (PSIs) will be completed in the vicinity of proposed areas where deep excavations will occur and/or where excess soil requiring export is generated including in areas of existing city and Caltrans ROW and acquisition areas where surficial grading will occur. PSIs will be completed to evaluate the potential presence of petroleum constituents resulting from the historic oil field operations and incidental leaks from known subsurface petroleum pipelines. PSIs will also be completed along the alignment of proposed retaining walls and sound walls where excess soil will be generated. Additionally, if drilled piles are chosen during the final design phase, PSIs will be completed at the proposed pile locations for the Acacia Court bridge improvements and at new overhead sign and billboard locations. The PSIs will include collection and analysis of samples to the total proposed depths of the excavations.
- **PF-HW-7:** If groundwater is encountered during soil sampling, groundwater samples will be collected and analyzed.

2.11.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not result in the construction of improvements within the project footprint; therefore, the No Build Alternative would not result in temporary impacts related to hazardous waste and materials.

Build Alternative

Following construction, operation of the proposed project would not introduce new sources of hazardous wastes or materials. Routine maintenance activities could potentially involve the use of hazardous chemicals and the transportation and disposal of hazardous waste. However, routine maintenance activities would be required to follow applicable regulations and requirements with respect to handling and disposing of potentially hazardous materials. Therefore, operation of the Build Alternative would not result in adverse effects related to hazardous wastes and materials.

2.11.4 Avoidance, Minimization, and/or Minimization Measures

With the implementation of Project Features PF-HW-1 through PF-HW-7, potential impacts from hazardous waste and materials to worker health and safety, the public, and the environment are not anticipated; therefore, no additional avoidance, minimization, or mitigation measures are required.

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2.12 Air Quality

2.12.1 Regulatory Setting

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws and related regulations by the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) —which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), Lead (Pb), and sulfur dioxide (SO_2). In addition, state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

Conformity

The conformity requirement is based on FCAA Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plan (SIP) for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: (1) the regional (or planning and programming) level; and (2) the project level. The proposed project must conform to both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has attainment or maintenance areas for all these transportation-related "criteria pollutants" except SO_2 and has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Implementation Plans (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the SIP are met. If the

conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and the FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the proposed project comes from a conforming RTP and TIP; the project has a design concept and scope[1] that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

2.12.2 Affected Environment

This section is based on the *Air Quality Report (AQR)* (January 2021) prepared for the proposed project.

2.12.2.1 Climate, Meteorology and Topography

The project study area is located in Los Angeles County, which is within the South Coast Air Basin (SCAB). The SCAB consists of an approximate 6,600-square-mile area. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area of Riverside County.

The SCAB's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) contribute to its distinctive climate. Primary factors known to influence air quality within the SCAB include topography and meteorology, which can affect pollutant transport and dispersion from sources located inside and outside of the SCAB.

The SCAB is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The mountains serve as a barrier, preventing ready dispersion of pollutant concentrations. Prevailing wind patterns off the ocean carry pollutants eastward across the SCAB, enabling continual photochemical reactions to occur as new emissions are added to existing pollutant concentrations. Intense sunlight, present at the latitude of the SCAB, provides the ultraviolet light necessary to fuel the photochemical reactions that produce O_3.

Average wind speeds in the SCAB are light and primarily from the west. Mild sea breezes slowly carry pollutants inland. In the general vicinity of the project footprint, historical wind flow is predominantly from the northwest and has an average annual wind speed of approximately 6 miles per hour (mph).

The annual average temperature varies slightly throughout the SCAB, averaging approximately 62 degrees Fahrenheit (F). Based on historical data collected from the Long Beach Airport

[1] "Design concept" means the type of facility that is proposed, such as a freeway or arterial highway. "Design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project.

(Daugherty Field), average temperatures range from a January low of approximately 45.6 F to an August high of approximately 83.9 F (Western Regional Climate Center, 2019).

Under normal meteorological conditions, the temperature of the atmosphere decreases with increased altitude. However, when the temperature of the atmosphere increases with altitude, the phenomenon is termed an *inversion*. These inversions can restrict the vertical mixing of air and pollutants, which can contribute to increased ground-level pollutant concentrations.

In the SCAB, two distinct temperature inversion types commonly occur. The first type of inversion typically occurs during the warmer summer months when high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. The second inversion type primarily occurs in the winter, when nights are longer and onshore airflow is weakest. This inversion occurs in conjunction with the nighttime drainage of cool air from the surrounding mountains followed by the seaward drift of this pool of cool air. In general, inversions in the SCAB are lower before sunrise than during the daylight hours. As the day progresses, the mixing height normally increases as the warming of the ground heats the surface air layer. The breakup of inversion layers frequently occurs during mid- to late-afternoon on hot summer days. Winter inversions usually break up by mid-morning (South Coast Air Quality Management District, 1980) (South Coast Air Quality Management District, 2002).

2.12.2.2 Monitored Air Quality

Air pollutant concentrations are measured at several monitoring stations in the SCAB. The nearest representative ambient air quality monitoring station to the project study area is the Compton - 700 North Bullis Road monitoring station, which measures O_3, $PM_{2.5}$, NO_2, and CO. The nearest representative monitoring station providing ambient PM_{10} measurement data is the Long Beach - 2425 Webster Street monitoring station. The locations of the two stations are shown in Figure 2.12.1. Ambient air quality monitoring data for these stations were obtained for the last 5 years of available measurement data (i.e., 2015 through 2019) and are summarized in Table 2.12-1. As depicted, state and federal O_3 standards were exceeded on numerous occasions during the past 5 years. The federal standards for suspended particulates (i.e., PM_{10} and $PM_{2.5}$) have also been exceeded on various occasions during the past 5 years.

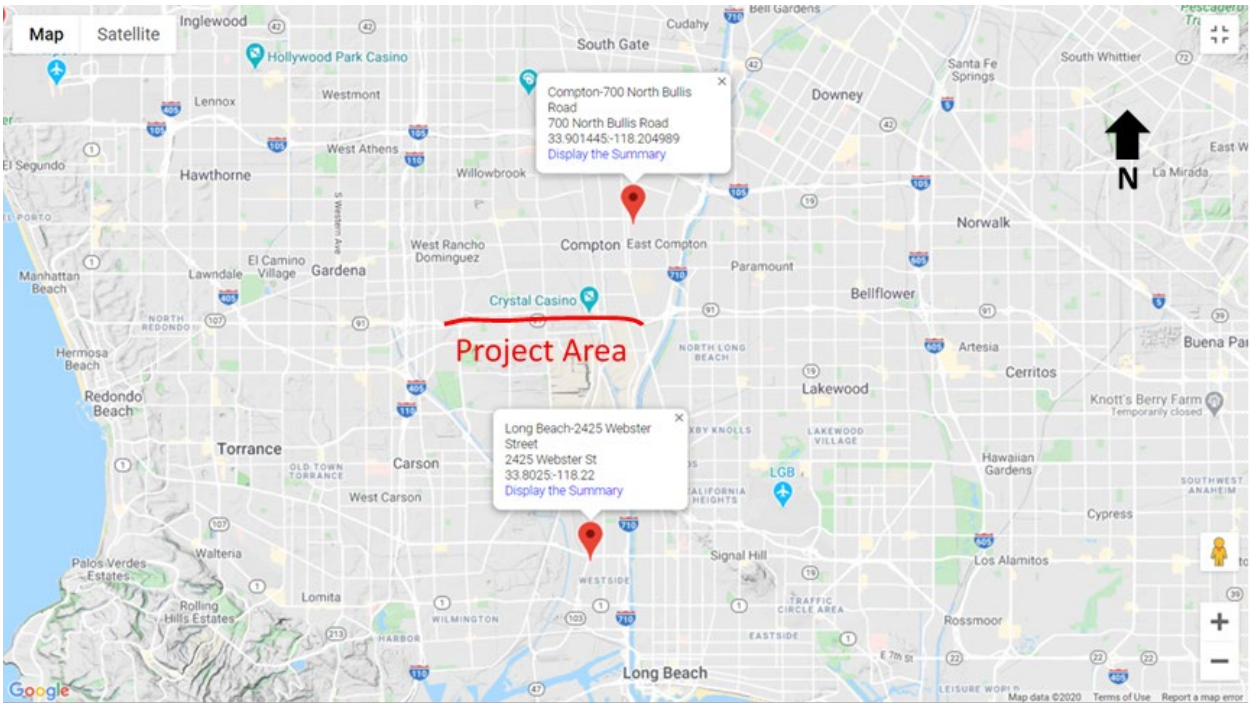

Figure 2.12-1. Air Quality Monitoring Stations Located Near the Proposed Project

Table 2.12-1. Air Quality Concentrations for the Past 5 Years Measured at Compton-700 North Bullis Road and Long Beach-2425 Webster Street Monitoring Stations

Pollutant	Standard	2015	2016	2017	2018	2019
Ozone						
Max 1-hr concentration		0.091	0.098	0.092	0.075	0.100
No. days exceeded: state	0.09 ppm	0	1	0	0	1
Max 8-hr concentration		0.072	0.071	0.076	0.063	0.079
No. days exceeded: state Federal	0.070 ppm 0.070 ppm	1 1	1 1	5 5	0 0	1 1
PM_{10} [1]						
Max 24-hr concentration		80.0	75.0	79.0	84.0	155.8
No. days exceeded: state Federal	50 µg/m^3 150 µg/m^3	6 0	8 0	10 0	4 0	4 1
Annual concentration average		31.5	31.9	33.5	32.7	29.7
No. days exceeded: state	20 µg/m^3	N/A	N/A	N/A	N/A	N/A

Pollutant	Standard	2015	2016	2017	2018	2019
$PM_{2.5}$						
Max 24-hr concentration		41.3	36.3	66.7	49.4	39.5
No. days exceeded: Federal	35 µg/m^3	3	1	5	2	1
Annual concentration average		N/A	N/A	13.3	13.3	10.9
No. days exceeded: state Federal	12 µg/m^3 12.0 µg/m^3	N/A N/A	N/A N/A	N N/A N/A	N/A N/A	N/A N/A
Nitrogen Dioxide						
Max 1-hr concentration		73.6	63.7	99.1	68.3	70.0
No. days exceeded: state Federal	0.18 ppm 100 ppb	0 0	0 0	0 0	0 0	0 0
Annual concentration average		16	15	16	15	14
No. days exceeded: state Federal	0.030 ppm 53 ppb	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A
Carbon Monoxide						
Max 1-hr concentration		4.4	4.3	6.1	4.7	3.8
No. days exceeded: state Federal	20 ppm 35 ppm	0 0	0 0	0 0	0 0	0 0
Max 8-hr concentration		3.3	3.9	4.6	3.5	3.2
No. days exceeded: state Federal	9 ppm 9 ppm	0 0	0 0	0 0	0 0	0 0

[a] Data from Long Beach-2425 Webster Street monitoring station. All other data from Compton-700 North Bullis Road monitoring Station

µg/m^3 = micrograms per cubic meter
hr = hour
N/A = not applicable
ppb = part per billion
ppm = part per million

2.12.2.3 Sensitive Land Uses

Some land uses are considered more sensitive to changes in air quality than others, depending on the demographic characteristics of occupants and users and activities involved. Sensitive land uses include residential areas, hospitals, elder-care facilities, rehabilitation centers, elementary schools, daycare centers, and parks. Residential areas adjacent to the freeway are considered sensitive to air pollution because residents, including children and the elderly, tend to be at home for extended periods of time, resulting in sustained exposure to pollutants. The zone of greatest concern near roadways is within 500 feet. Sensitive land uses adjacent to the freeway within the project study area include residences, restaurants, hotels, a park, a place of worship, schools, commercial facilities, and offices.

2.12.2.4 Criteria Pollutant Attainment/Nonattainment Status

As noted earlier, the six criteria pollutants are O_3, CO, PM (including $PM_{2.5}$ and PM_{10}), NO_2, SO_2, and lead. Table 2.12-2 shows the typical sources of these pollutants, and provides a brief description of the health effects associated with exposure to these pollutants. The NAAQS are two-tiered; the primary purpose is to protect public health and the secondary purpose is to prevent degradation to the environment (e.g., impairment of visibility and damage to vegetation and property).

Table 2.12-2. Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
Carbon Monoxide (CO)	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable Particulate Matter (PM_{10})	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic & other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.
Fine Particulate Matter ($PM_{2.5}$)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic & other aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.
Nitrogen Dioxide (NO_2)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
Sulfur Dioxide (SO_2)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Lead (Pb)	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also, a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.
Sulfates	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
Hydrogen Sulfide (H_2S)	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.
Visibility Reducing Particles (VRP)	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.
Vinyl Chloride	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes

NOx = nitrogen oxide
ROG = reactive organic gases
VRP = visibility reducing particles
VOC = volatile organic compound

Under the CCAA, the ARB is required to designate areas of the state as "attainment", "nonattainment", or "unclassified" with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

Air quality monitoring stations are located through the nation and maintained by the local air districts and state air quality regulation agencies. Data collected at permanent monitoring stations are used by U.S. EPA to identify a regions attainment/nonattainment status. The state and federal criteria air pollutant standards are summarized in Table 2.12-3.

Table 2.12-3. State and Federal Criteria Air Pollutant Standards

Pollutant	Averaging Time	State Standard[i]	Federal Standard[ii]
O_3[iii]	1 hour	0.09 ppm[iv]	N/A
O_3	8 hours	0.070 ppm	0.070 ppm (4^{th} highest in 3 years)
CO[v]	1 hour	20 ppm	35 ppm
CO	8 hours	9.0 ppm	9 ppm
CO	8 hours (Lake Tahoe)	6 ppm	N/A
PM_{10}[vi]	24 hours	50 µg/m^3 [vii]	150 µg/m^3 (expected number of days above standard < or equal to 1)
PM_{10}	Annual	20 µg/m^3	N/A
$PM_{2.5}$[viii]	24 hours	N/A	35 µg/m^3
$PM_{2.5}$	Annual	12 µg/m^3	12.0 µg/m^3
NO_2	1 hour	0.18 ppm	0.100 ppm[ix]
NO_2	Annual	0.030 ppm	0.053 ppm
SO_2[x]	1 hour	0.25 ppm	0.075 ppm (99^{th} percentile over 3 years)
SO_2	3 hours	N/A	0.5 ppm[xi]
SO_2	24 hours	0.04 ppm	0.14 ppm (for certain areas)
SO_2	Annual	N/A	0.030 ppm (for certain areas)
Pb[xii]	Monthly	1.5 µg/m^3	N/A
Pb	Calendar Quarter	N/A	1.5 µg/m^3 (for certain areas)
Pb	Rolling 3-month average	N/A	0.15 µg/m^3 [xiii]
Sulfates	24 hours	25 µg/m^3	N/A
H_2S	1 hour	0.03 ppm	N/A
VRP[xiv]	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	N/A
Vinyl Chloride[xii]	24 hours	0.01 ppm	N/A

Note: Adapted from the California ARB Air Quality Standards chart
N/A = not applicable

Greenhouse Gases and Climate Change: Greenhouse gases do not have concentration standards for that purpose. Conformity requirements do not apply to greenhouse gases.

[I] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and PM (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[ii] Federal standards (other than ozone, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current national policies.

[iii] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. Transportation conformity applies in newly designated nonattainment areas for the 2015 national 8-hour ozone primary and secondary standards on and after August 4th, 2019 (see Transportation Conformity Guidance for 2015 Ozone NAAQS Nonattainment Areas).

[iv] ppm = parts per million

[v] Transportation conformity requirements for CO no longer apply after June 1, 2018, for the following California Carbon Monoxide Maintenance Areas (see U.S. EPA CO Maintenance Letter).

[vi] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[vii] $\mu g/m^3$ = micrograms per cubic meter

[viii] The 65 $\mu g/m^3$ $PM_{2.5}$ (24-hour) NAAQS was not revoked when the 35 $\mu g/m^3$ NAAQS was promulgated in 2006. The 15 $\mu g/m^3$ annual $PM_{2.5}$ standard was not revoked when the 12 $\mu g/m^3$ standard was promulgated in 2012. Therefore, for areas designated nonattainment or nonattainment/maintenance for the 1997 and or 2006 $PM_{2.5}$ NAAQS, conformity requirements still apply, until the NAAQS are fully revoked.

[ix] Final 1-hour NO_2 NAAQS published in the Federal Register February 9, 2010, effective March 9, 2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause re-designation to nonattainment in some areas after 2016.

[x] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[xi] The secondary standard is the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.

[xii] The ARB has identified vinyl chloride and the PM fraction of diesel exhaust as toxic air contaminants. Diesel exhaust PM is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the ARB and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and $PM_{2.5}$ as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations less any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.

[xiii] Lead NAAQS are not considered in transportation conformity analysis.

[xiv] In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

The SCAB is currently designated as a nonattainment area with respect to the state and federal O_3 and $PM_{2.5}$ standards and state PM_{10} standards. In addition, based on monitoring data obtained near a lead acid battery reclamation facility, Los Angeles County is currently designated nonattainment for the federal lead standards. With the exception of Los Angeles County, the remainder of the SCAB is designated attainment for the lead standards. Federal standards designate PM_{10}, CO, and NO_2 as attainment/maintenance. The ARB is designated attainment or unclassified for the remaining state and federal standards.

The state and national attainment status designations pertaining to the SCAB are summarized in Table 2.12-4.

Table 2.12-4. State and Federal Attainment Status

Pollutant	State Attainment status	Federal Attainment status
Ozone (O_3)	Nonattainment (1-hour and 8-hour)	Extreme Nonattainment (8-hour)
Respirable Particulate Matter PM_{10}	Nonattainment	Attainment/Maintenance
Fine Particulate Matter $PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment/Maintenance
Nitrogen Dioxide (NO_2)	Attainment	Attainment/Maintenance
Sulfur Dioxide (SO_2)	Attainment/Unclassified	Attainment/Unclassified
Lead (Pb)	Attainment	Nonattainment (Los Angeles County only)
Visibility-Reducing Particles	Attainment/Unclassified	N/A
Sulfates	Attainment/Unclassified	N/A
Hydrogen Sulfide	Attainment/Unclassified	N/A
Vinyl Chloride	Attainment/Unclassified	N/A

2.12.3 Environmental Consequences

An AQR (January 2021) was prepared to evaluate air quality impacts to the proposed project.

2.12.3.1 Regional Air Quality Conformity

The proposed project is listed in the 2020 RTP/SCS financially constrained Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) which was found to conform by SCAG on May 7, 2020, and FHWA and FTA made a regional conformity determination finding on June 5, 2020. The project is also included in SCAG financially constrained 2019 Federal Transportation Improvement Program (FTIP) Amendment 19-12 with the Identification Number No. LA0G1563. The 2019 FTIP was determined to conform by FHWA and FTA on June 5, 2020. The design concept and scope of the proposed project is consistent with the project description in the 2020 RTP/SCS, 2019 RTIP, and the 2020 RTP/SCS SCAG regional emissions analysis.

2.12.3.2 Project-Level Conformity

The project is located in Los Angeles County, which is designated nonattainment for the federal $PM_{2.5}$ and ozone standards and maintenance for the federal CO and PM_{10} standards (refer to Tables 2.12-3 and 2.12-4). As a result, a project-level hot-spot analysis for PM_{10}, $PM_{2.5}$, and CO is required under 40 CFR 93.109. The project does not cause or contribute to any new localized CO, $PM_{2.5}$, and/or PM_{10} violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other milestones during the timeframe of the transportation plan (or regional emissions analysis).

2.12.3.3 Carbon Monoxide Analysis

In 1997, U.S. EPA approved the *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol) (Institute of Transportation Studies at University of California Davis, 1997) for use as an alternative hot-spot analysis method in California. Statewide and regional interagency consultation groups also reviewed the CO Protocol and approved it for federal air quality conformity use. The CO Protocol provides a screening procedure for determining when a project may be of possible concern regarding potential exceedance of CO ambient air quality standards. For projects that do not pass the screening procedure, the CO Protocol provides additional guidance on conducting a more detailed analysis.

The CO Hot Spot Screening Flow Chart was completed for the project and the CO Protocol Decision Flow Chart inquiry as they pertain to the project is evaluated in more detail in the AQR (January 2021). A summary of the screening decision flow chart demonstrates that the project area receptors at the location under study are at the same distance or farther from the traveled roadway than the receptors at the location where attainment has been demonstrated. The attainment demonstration included evaluation of CO concentrations at the Wilshire Boulevard/Veteran Avenue intersection, which is considered the most congested intersection in Los Angeles County, having an average daily traffic volume of approximately 100,000 vehicles per day. Predicted concentrations for the attainment demonstration modeling were approximately 10 feet from the roadway edge. The nearest receptors in the vicinity of the intersections would be no closer than 10 feet. Traffic lane volumes at the location under study are the same or lower than those at the location where attainment has been demonstrated. Background CO concentrations have declined in recent years and, as a result, background CO concentrations at the location of the study would be lower than the background concentrations used for the attainment demonstration modeling.

Based on the above screening criteria, the project study area intersection would not be suspected of resulting in higher CO concentrations than those existing within the region at the time of attainment demonstration and no further analysis is necessary.

2.12.3.4 Particulate Matter Analysis

Emissions Analysis

PM emissions were estimated for Baseline, No Build Alternative, and the Build Alternative for Opening Year 2025 and Design Year 2040 conditions (refer to Table 2.12-6). Under 2025 conditions, emissions for the No Build Alternative are projected to decrease approximately four percent for $PM_{2.5}$ and increase approximately 4 percent for PM_{10}. relative to existing conditions. Under 2040 conditions, emissions of $PM_{2.5}$ and PM_{10} for the No Build Alternative are projected to increase by approximately 2 percent and 12 percent, respectively, relative to existing conditions. In comparison to No Build Alternative Year 2025 conditions, the proposed Build Alternative is predicted to decrease $PM_{2.5}$ and PM_{10} emissions by approximately 1 percent each.

In comparison to No Build Alternative Year 2040 conditions, the proposed Build Alternative is predicted to have no change for both $PM_{2.5}$ and PM_{10} emissions.

Hot-Spot Analysis

In November 2015, U.S. EPA released an updated version of *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (Guidance) for quantifying the local air quality impacts of transportation projects and comparing them to the PM NAAQS (75 FR 79370). U.S. EPA originally released the quantitative guidance in December 2010 and released a revised version in November 2013 to reflect the approval of EMFAC 2011[2] and U.S. EPA's 2012 PM NAAQS final rule. The November 2015 version reflects MOVES2014[3] and its subsequent minor revisions such as MOVES2014a, to revise design value calculations to be more consistent with other U.S. EPA programs, and to reflect guidance implementation and experience in the field. Note that EMFAC, not MOVES, should be used for project-level hot-spot analysis in California. The Guidance requires a hot-spot analysis to be completed for a project of air quality concern (POAQC).

The final rule in 40 CFR 93.123(b)(1) defines a POAQC as follows:

(i) New or expanded highway projects that have a significant number of or a significant increase in diesel vehicles

(ii) Projects affecting intersections that are at Level of Service (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project

(ii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location

(iii) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location

(iv) Projects in or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ and PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation

The proposed project is not a new or expanded highway that would result in a significant increase in diesel vehicles. The proposed project would not result in significant increases in traffic volumes along area roadways nor would the project result in a significant increase in the number of diesel vehicles operating along area roadways. The Build Alternative is not a new or expanded bus or rail terminal and would not affect locations, areas, or categories of sites identified in PM implementation plans as sites of possible violation. The project-level PM hot-spot analysis was presented to SCAG's Transportation Conformity Working Group (TCWG) review July 28, 2020, for POAQC determination. On July 28, 2020, additional information was requested, and the TCWG determined that the project is not a POAQC on August 19, 2020 (see Appendix B of the AQR (January 2021).

[2] *EMFAC (short for EMission FACtor) is a model that estimates the official emissions inventories of on-road mobile sources in California (California Environmental Protection Agency, Air Resources Board, September 19, 2011).*

[3] *EPA's MOtor Vehicle Emission Simulator (MOVES) is a state-of-the-science emission modeling system that estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, greenhouse gases, and air toxics.*

Construction Conformity

Under the transportation conformity regulations (40 CFR 93.123(c)(5)), construction-related activities that cause temporary increases in emissions are not required in a hot-spot analysis. These temporary increases in emissions are those that occur only during the construction phase and the last 5 years or less at any individual site. Construction activities will not last for more than 5 years at one general location; therefore, construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123(c)(5)).

2.12.3.5 Temporary Impacts

No Build Alternative

The No Build Alternative would not result in construction-related impacts; therefore, would not result in short-term impacts to air quality.

Build Alternative

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site may deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions may vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions depend on soil moisture, silt content of the soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Site preparation and roadway construction would involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and would include CO, NO_X, VOCs, directly emitted PM_{10} and $PM_{2.5}$, and toxic air contaminants, such as diesel exhaust PM. Construction activities are expected to increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Construction emissions modeling was conducted based on off-road equipment requirements and estimated areas to be paved. The emissions represent the maximum daily construction emissions that would be generated by the proposed project.

As summarized in Table 2.12-5, construction of the Build Alternative would generate maximum daily emissions of approximately 7.25 pounds per day (lbs/day) of ROG, 65.74 lbs/day of CO, 71.77 lbs/day of NO_X, 73.00 lbs/day of PM_{10}, and 17.25 lbs/day of $PM_{2.5}$. Total emissions generated during construction would be 1.36 tons of ROG, 13.42 tons of CO, 13.24 tons of NO_X, 16.26 tons of PM_{10}, and 3.76 tons of $PM_{2.5}$. Construction of the proposed project would occur over an approximately 2-year period.

Table 2.12-5. Construction Emissions of Criteria Air Pollutants and Precursors

Construction Phase	ROG (lbs/day)	CO (lbs/day)	NO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Land Clearing/Grubbing	1.77	17.64	24.66	71.01	15.31
Grading/Excavation	7.25	65.74	71.77	73.00	17.25
Drainage/Utilities/Sub-Grade	4.70	50.91	42.69	71.74	16.15
Paving	1.91	28.10	17.24	0.85	0.74
Maximum Per Day	7.25	65.74	71.77	73.00	17.25
Project Total (tons)	1.36	13.42	13.24	16.26	3.76

Source: Air Quality Report (January 2021)

The following project features (PF-AQ-1,PF-AQ-2 and PF-HW-3) will be implemented during construction activities to reduce construction-related fugitive dust and exhaust emissions, and surveys prior to removal and disposal of ACM and LBP. Although these measures are anticipated to reduce construction-related emissions, these reductions cannot be quantified at this time.

PF-AQ-1. Section 14-9-02 of Caltrans' Standard Specifications specifically requires that the contractor comply with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances:

- Water or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions.
- Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.
- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by the CA Code of Regulations Title 17, Section 93114.
- A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely re-vegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.
- Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.
- All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize the emission of dust during transportation.
- Dust and mud deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions.

- To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Mulch will be installed, or vegetation planted as soon as practicable after grading to reduce windblown PM in the area.

PF-AQ-2: SCAQMD Rule 403 – Fugitive Dust. Construction activity sources are required to implement best available control measures for the control of fugitive dust.

PF-HW-3: An ACM and LBP survey of the Acacia Court Bridge (Bridge No. 53.2371) will be required in order to obtain permits from the SCAQMD. If present, removal and disposal of ACM and LBP will be performed prior to the start of demolition and renovation.

Naturally Occurring Asbestos

Asbestos was used in many materials prior to 1978 and may have been used through the early 1980s. ACMs include fireproofing, acoustic ceiling material, transite pipe, roofing materials, thermal insulation, support piers, expansion joint material in bridges, asphalt, concrete, and other building materials. It is of primary concern when it is friable (i.e., material that can be easily crumbled). ACM may be encountered with bridges, undercrossings, or underground utilities.

The project is located in Los Angeles County, which is among the counties listed as containing naturally-occurring asbestos (i.e., serpentine and ultramafic rock). However, the portion of Los Angeles County in which the proposed project lies is not known to contain serpentine or ultramafic rock. Therefore, the impact of naturally occurring asbestos during project construction is not anticipated. However, if naturally occurring asbestos, serpentine, or ultramafic rock is discovered, SCAQMD would be notified, as required by Section 93105, Title 17 of the California Code of Regulations (CCR).

Existing structures constructed prior to the early 1980s, such as bridges, may contain ACM. In addition, the soil surrounding railroad tracks within the project study area may also contain ACMs from disk brake pads used on trains. If not properly identified and mitigated, asbestos fibers could become airborne during the construction of the project, particularly during demolition and site preparation activities.

Lead

Lead is normally not an air quality issue for transportation projects unless the project involves disturbance of soils containing high levels of aerially deposited lead (ADL) or painting or modifying structures with lead-based coatings. The proposed project would not require the demolition of major on-site structures or buildings anticipated to contain lead-based coatings or materials. However, implementation of the proposed improvements may require the removal and disposal of yellow traffic striping and pavement marking materials (paint thermoplastic, permanent tape, and temporary tape). Yellow paints made prior to 1995 may exceed hazardous waste criteria under Title 22 CCR and require disposal in a Class I disposal site. LBP may be encountered with painted curbs and protective bollards. Caltrans Standard Specifications; Section 14-11.08 for ADL and 14-11.12 for removal of Yellow Stripe and Pavement Marking will be followed and a lead compliance plan will be prepared. For more information see Section 2.11 Hazardous Waste PF-HW-1 to PF-HW-3.

Odors

Minor sources of odors would be present during construction. The predominant source of power for construction equipment is diesel engines. Exhaust odors from diesel engines, as well as emissions associated with asphalt paving, may be considered offensive to some individuals. However, because odors would be temporary and would disperse rapidly with distance from the source, construction-generated odors are not expected to result in the frequent exposure of receptors to objectionable odorous emissions.

2.12.3.6 Permanent Impacts

No Build Alternative

The No Build Alternative does not include any planned improvements within the project footprint. As shown in Table 2.12-6, with the exception of PM_{10}, the No Build Alternative criteria pollutant emissions are all less than existing conditions.

Build Alternative

Long-term operational emissions of criteria air pollutants are associated with the operational improvements of the Build Alternative. However, as discussed in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities, implementation of the Build Alternative would not result in substantial changes in traffic volumes for primarily affected roadways or intersections.

Long-Term Regional Vehicle Emissions Impacts

Long-term operational emissions of criteria air pollutants associated with the Build Alternative would be associated with the operation of motor vehicles. Long-term operational emissions were quantified using CT-EMFAC2017 Version 1.0.2[4] computer program based on traffic information provided by the project engineer. Estimated changes in operational emissions are summarized in Table 2.12-6.

Table 2.12-6. Summary of Comparative Operational Emissions Analysis

Scenario/Analysis Year	$PM_{2.5}$ (Tons/Year)[a]	PM_{10} (Tons/Year)[a]	NO_X[a,b] (Tons/Year)	CO (Tons/Year)[a]	ROG (Tons/Year)[a]
Existing – Year 2019	12.3	42.0	103.8	347.5	22.2
No Build Alternative – Opening Year 2025	11.9	43.8	45.1	222.7	14.7
• No Build Alternative 2025 Compared to Existing	-0.4	1.8	-58.8	-124.9	-7.5
• Percent Change	-4%	4%	-57%	-36%	-34%
Build Alternative – Opening Year 2025	11.7	43.2	45.6	220.2	14.7

[4] *EMFAC2017 is the latest update to the EMFAC model for use by California state and local governments to meet Clean Air Act (CAA) requirements.*

Scenario/Analysis Year	$PM_{2.5}$ (Tons/Year)[a]	PM_{10} (Tons/Year)[a]	NO_x[a,b] (Tons/Year)	CO (Tons/Year)[a]	ROG (Tons/Year)[a]
• Build Alternative 2025 Compared to Existing	-0.6	1.1	-58.2	-127.4	-7.5
• Percent Change	-5%	3%	-56%	-37%	-34%
• Build Alternative 2025 Compared to No Build Alternative 2025	-0.2	-0.6	0.5	-2.5	-0.1
• Percent Change	-1%	-1%	1%	-1%	0%
No Build Alternative – Design Year 2040	12.5	47.0	30.1	161.6	9.2
• No Build Alternative 2040 Compared to Existing	0.2	5.0	-73.7	-186.0	-13.0
• Percent Change	2%	12%	-71%	-54%	-59%
Build Alternative – Design Year 2040	12.5	47.2	31.3	162.2	9.3
• Build Alternative 2040 Compared to Existing	0.2	5.2	-72.5	-185.4	-12.9
• Percent Change	2%	12%	-70%	-53%	-58%
• Build 2040 Alternative Compared to No Build Alternative 2040	0.0	0.2	1.2	0.6	0.1
• Percent Change	0%	0%	4%	0%	1%

[a] Emissions were calculated using the CT-EMFAC2017 Version 1.0.2 computer program based, in part, of traffic data provided for this project (TOAR November 2020). Includes exhaust emissions, brake, road, and tire dust. Refer to Appendix F for emissions modeling assumptions and results.

[b] NOx is surrogate for NO_2

Operational emissions were quantified for Existing Year 2019 (baseline) conditions, No Build Alternative and the Build Alternative conditions for Opening Year 2025, and Design Year 2040 conditions. In comparison to No Build Alternative Year 2025 conditions, the Build Alternative is predicted to decrease emissions of $PM_{2.5}$, PM_{10}, and CO by approximately 1 percent, increase NO_x by approximately 1 percent and no change in ROG. In comparison to No Build Alternative Year 2040 conditions, the proposed Build Alternative is predicted to have no change in $PM_{2.5}$, PM_{10} and CO emissions and increase emissions for NO_x by approximately 4 percent and increase ROG by approximately 1 percent.

NO_2

U.S. EPA modified the NO_2 NAAQS to include a 1-hr standard of 100 parts per billion (ppb) in 2010. Currently, there is no federal project-level NO_2 analysis requirement. However, NO_2 is among the near-road pollutants of concern and project analysts would be expected to explain how transportation projects affect near-road NO_2.

NO_X emissions were estimated for Existing Year 2019 (baseline), No Build Alternative, and the Build Alternative for Opening Year 2025 and Design Year 2040 conditions (refer to Table 2.12.6). In comparison to existing conditions, emissions of NO_X in the project study area are projected to decrease by approximately 73 tons per year, or more, by Design Year 2040 for both alternatives. The Build Alternative would not result in substantial changes in traffic volumes along roadway segments within the project study area. However, some roadway segments are projected to change average peak-hour speeds. The proposed project would not affect vehicle mix or result in increased heavy-duty truck operations within the project study area. No meaningful change in NO_2 concentrations along area roadways would be anticipated to occur with the implementation of the Build Alternative. As a result, the Build Alternative is not expected to cause or worsen violations of ambient air quality standards for NO_2.

Mobile-Source Air Toxics

In addition to criteria pollutants for which there are NAAQS, U.S. EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories and refineries).

U.S. EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-hazard contributors from the 2011 National Air Toxics Assessment (NATA). These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel PM, ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While the FHWA considers these the priority mobile source air toxics (MSATs), the list is subject to change and may be adjusted in consideration of future U.S. EPA rules.

The 2007 U.S. EPA rule on the Control of Hazardous Air Pollutants from Mobile Sources requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to FHWA, using U.S. EPA's MOVES2014a model, even if vehicle activity (vehicle-miles traveled or VMT) increases by 45 percent from 2010 to 2050, as forecasted, a combined reduction of 91 percent in the total annual emission rate for the priority MSATs is projected for the same time period.

FHWA released updated guidance in October 2016 (Federal Highway Administration, 2016) for determining when and how to address MSAT impacts in the NEPA process for transportation projects. FHWA identified three levels of analysis:

1. No analysis for exempt projects or projects with no potential for meaningful MSAT effects
2. Qualitative analysis for projects with low potential MSAT effects
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects

Projects with no impacts generally include those that meet the following criteria:

- Qualify as a categorical exclusion under 23 CFR 771.117
- Qualify as exempt under the FCAA conformity rule under 40 CFR 93.126
- Are not exempt but have no meaningful impacts on traffic volumes or vehicle mix

Projects that have low potential MSAT effects are those that serve to improve highway, transit, or freight operations or movement without adding substantial new capacity or creating a facility that is likely to substantially increase emissions. The large majority of projects fall into this category.

Projects with high potential MSAT effects include those that meet the following criteria:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel PM in a single location
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban C-D routes with traffic volumes where the ADT is projected to be in the range of 140,000 to 150,000, or greater, by the design year
- Are proposed to be located in proximity to populated areas, or in rural areas in proximity to concentrations of vulnerable populations (i.e., schools, nursing homes, hospitals)

Project-Level MSAT Analysis

The primary source of MSAT in the project study area is traffic on I-405, I-105, I-110, I-5, SR-60, and I-10. For the Build Alternative, the amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative. Overall, the estimated daily VMT for the Build Alternative is estimated to be lower than the No Build Alternative for Opening Year 2025 with an estimated higher VMT for Design Year 2040 (see Table 2.12-7).

Table 2.12-7 Daily VMT Comparison 2025/2040

Roadway Segment[a]	Nearby Predominant Land Uses[b]	Opening Year 2025				Design Year 2040			
		No-Build VMT	Build VMT	VMT Delta	% Change	No-Build VMT	Build VMT	VMT Delta	% Change
EB SR-91, West of Central Ave	Residential, Commercial, Industrial	167,785	164,465	-3,320	-2%	173,223	172,918	-305	0%
WB SR-91, West of Central Ave	Residential, Industrial	138,854	144,320	5,466	4%	144,783	151,170	6,387	4%
EB SR-91, Central Ave to Santa Fe Ave	Non-Residential (Industrial, Commercial)	247,443	252,926	5,483	2%	254,577	265,342	10,765	4%
WB SR-91, Central Ave to Santa Fe Ave	Non-Residential (Industrial, Commercial)	305,859	283,353	-22,506	-7%	313,111	296,173	-16,938	-5%
EB SR-91, East of Santa Fe Ave	Residential, School, Industrial	73,985	74,334	349	0%	75,886	77,553	1,667	2%
WB SR-91, East of Santa Fe Ave	Residential, College, Commercial	50,373	50,728	354	1%	51,423	52,731	1,308	3%
Total VMT/Percent Change[c]		984,300	970,126	-14,174	-1%	1,013,003	1,015,887	2,884	0.3%

[a] Includes mainline, HOV, and C-D roadways.
[b] Refer to Figure 3-6 for depiction of nearby land uses.
[c] Represents total estimated daily VMT within the project area.

EB = eastbound
WB = westbound

The C-D road, as part of the Build Alternative, would have the effect of moving some traffic closer to nearby land uses. Therefore, under the Build Alternative, there may be localized areas where ambient concentrations of MSAT could be higher relative to the No Build Alternative. However, the magnitude and the duration of these potential increases compared to the No Build Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a highway is widened, the localized level of MSAT emissions for the Build Alternative could be higher, relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT would be lower in other locations when traffic shifts away from them. However, on a regional basis, U.S. EPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions that, in almost all cases, would cause region-wide MSAT levels to be significantly lower than today.

Based on this information, the Project is identified as a Category (2) project; that is, the Project would have a low potential for MSAT effects. As previously discussed, and summarized in Table 2.12-7, estimated VMT associated with the Build Alternative is similar to the No-Build Alternative, with varying increases of approximately four percent, or less. Under the proposed Build Alternative, some segments of SR-91, including EB SR-91, west of Central Ave, and WB SR-91, between Central Ave and Santa Fe Ave, would be projected to experience overall decreases in VMT when compared to the No-Build Alterative. In addition, implementation of the project would also address the declining operational conditions and heavy congestion of project area roadways during peak hours brought about by insufficient vehicular storage. As a result, it is expected that the proposed Build Alternative would not result in an appreciable difference in overall MSAT emissions when compared to the No-Build Alternative. In addition, it is important to note that emissions would likely be lower than present levels in the design year as a result of U.S. EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050. As noted earlier, local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the U.S. EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Information that is Incomplete or Unavailable

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation, rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

U.S. EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. U.S. EPA is the lead authority for administering the FCAA and its amendments and has specific statutory obligations with respect to hazardous air pollutants and MSAT. U.S. EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. It maintains the Integrated Risk Information System, which is a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects. Each report contains assessments of noncancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning, perhaps, an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute. Two Health Effects Institute studies are summarized in Appendix D of FHWA's *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* (October 2016). Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious are the adverse human health effects of MSAT compounds at current environmental concentrations or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling, dispersion modeling, exposure modeling, and then a final determination of health impacts; each step in the process builds on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70-year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways, to determine the portion of time that people are actually exposed at a specific location, and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSATs because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, which is a concern expressed by the Health Effects Institute. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. U.S. EPA and the Health Effects Institute have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

Also, national consensus is lacking on an acceptable level of risk. The current context is the process used by U.S. EPA, as provided by FCAA, to determine whether more stringent controls are required to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards (e.g., benzene emissions from refineries). The decision framework is a two-step process. The first step requires U.S. EPA to determine a safe or acceptable level of risk due to emissions from a source that is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum, individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the United States Court of Appeals for the District of Columbia Circuit upheld U.S. EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts as described, any predicted difference in health impacts between alternatives is likely to be much less than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision-makers, who would need to weigh this information

against project benefits such as reducing traffic congestion, accident rates, and fatalities, plus improved access for emergency response, which are better suited for quantitative analysis. Due to these limitations, incomplete or unavailable information is in accordance with Council on Environmental Quality (CEQ) regulations [40 CFR 1502.22(b)].

2.12.4 Avoidance, Minimization, and/or Mitigation Measures

With the implementation of Project Features (PF-AQ-1 and PF-AQ-2 and PF-HW-1 to PF-HW-3), adverse impacts to air quality are not anticipated; therefore, no additional avoidance, minimization, and/or mitigation measures are required.

2.12.5 Climate Change

Neither U.S. EPA nor FHWA has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. FHWA emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because there have been requirements set forth in the California legislation and EOs on climate change, the issue is addressed in the California Environmental Quality Act (CEQA) chapter of this document. The CEQA analysis may be used to inform the NEPA determination for the proposed project.

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2.13 Noise

2.13.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

2.13.1.1 California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the NEPA/Title 23 Part 772 of the Code of Federal Regulations (23 CFR 772) noise analysis; please see Chapter 3 of this document for further information on noise analysis under CEQA.

2.13.1.2 National Environmental Policy Act and 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA) involvement (and Caltrans, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA/23 CFR 772 analysis.

Table 2.13-1 summarizes NAC corresponding to various land use activity categories used in the NEPA/23 CFR 772 analysis. Activity categories and related traffic noise impacts are determined based on the actual or permitted land use in a given area.

Table 2.13-1. Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, $L_{eq}(h)$[a]	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[b]	67 (Exterior)	Residential.

Activity Category	NAC, Hourly A-Weighted Noise Level, $L_{eq}(h)$[a]	Description of Activity Category
C[b]	67 (Exterior)	Active sport area, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Interior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.

[a] The $L_{eq}(h)$ activity criteria values are for impact determination only are not design standards for noise abatement measures. All values are A-weighted decibels (dBA).
[b] Includes undeveloped lands permitted for this activity category.

$L_{eq}(h)$ = equivalent sound level over 1 hour

Figure 2.13-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

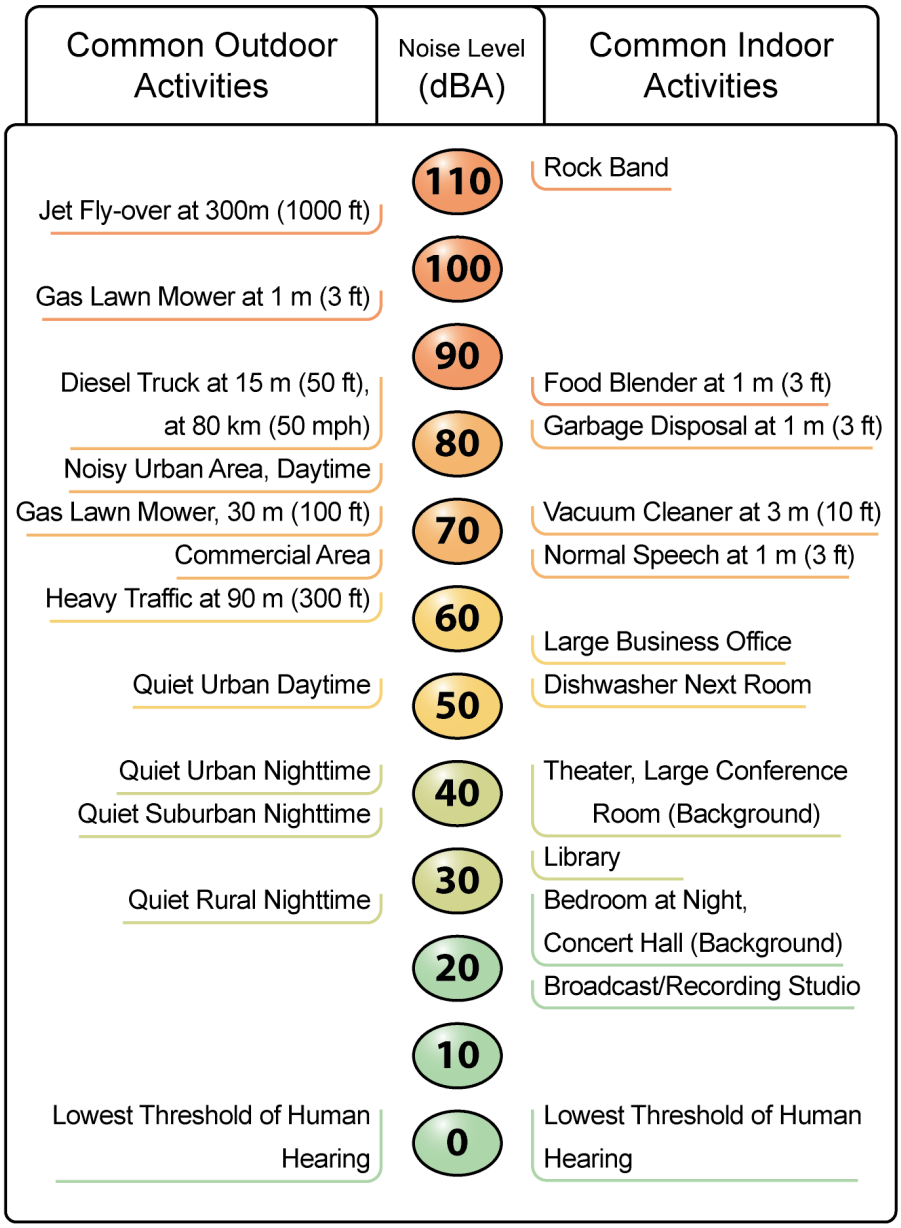

Figure 2.13-1. Noise Levels of Common Activities

According to Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*(Caltrans, 2011), a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more) or when the future noise level with the project approaches or exceeds the NAC. A noise level is considered to approach the NAC if it is within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. Noise abatement must be predicted to reduce noise by at least 5 dB at an impacted receptor to be considered feasible from an acoustical perspective. It must also be possible to design and construct the noise abatement measure for it to be considered feasible. Factors that affect the design and constructability of noise abatement include, but are not limited to, safety, barrier height, topography, drainage, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and maintenance of the abatement measure. The overall reasonableness of noise abatement is determined by the following three factors: 1) the noise reduction design goal of 7 dB at one or more impacted receptors; 2) the cost of noise abatement; and 3) the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

2.13.2 Affected Environment

The information in this section is based on the *Noise Study Report* (October 2020) and the Noise Abatement Decision Report (NADR), which is included in Section 6H in the *Draft Project Report* (DPR) (February 2021) prepared for the proposed project. The NSR followed the Protocol (Caltrans, 2011) and the *Technical Noise Supplement* (Caltrans, 2013).

2.13.2.1 Surrounding Land Use and Receptors

Existing land uses in the project study area were identified during a field investigation and include the following:

- Single-family residences (Activity Category B)
- Parks, places of worship, and schools (Activity Category C – Exterior)
- Places of worship and schools (Activity Category D – Interior)
- Hotels, offices, and restaurants (Activity Category E)
- Commercial retail, agriculture, bus yard, and industrial uses (Activity Category F)

Existing land uses in the project study area have been grouped into a series of analysis areas (Areas A through H) that are shown on Figures 2.13-2 and 2.13-3. Each area is described as follows:

- Area A is located on the northern side of SR-91 east of Main Street and west of Avalon Boulevard. A residential subdivision (Activity Category B), agriculture, and industrial uses (Activity Category F) are located in this area. The area is generally flat and lower than the highway. Backyards face the highway. Two sound barriers with a height of 7 feet are located between SR-91 and the residential area.

- Area B is located on the northern side of SR-91 east of Avalon Boulevard and west of Acacia Court. A hotel, office, restaurant (Activity Category E), and industrial uses (Activity Category F) are located in this area. This area is generally flat and lower than the highway. No sound barriers or topographical shielding occur between the highway and the land uses.

- Area C is located on the northern side of SR-91 east of Acacia Court and west of Santa Fe Avenue. A place of worship (exterior Activity Category C and interior Activity D), park (Activity Category C), hotel, restaurant (Activity Category E), commercial retail, bus yard, and industrial uses (Activity Category F) are located in this area. Developed areas are lower

than the highway. No sound barrier or topographical shielding occurs between the highway and the area.

- Area D is located on the northern side of SR-91 east of Santa Fe Avenue and west of Main Campus Drive. A school (exterior Activity Category C and interior Activity Category D) is located in this area. No sound barrier or topographical shielding occurs between the highway and this area. All of the outdoor use areas are on recreational fields (i.e., baseball, track, and football field). Therefore, exterior areas of frequent human use occur in this area.
- Area E is located on the northern side of SR-91 east of Main Campus Drive and west of Long Beach Boulevard. A residential subdivision (Activity Category B) and commercial retail uses (Activity Category F) are located in this area. This area is generally flat and lower than the highway. Backyards face the highway. No sound barrier or topographical shielding occurs between the highway and this area. Outdoor areas immediately adjacent to the commercial land uses are parking lots. Therefore, no outdoor areas associated with the commercial uses are considered to be areas of frequent human use.
- Area F is located on the southern side of SR-91 east of Main Street and west of Central Avenue. Residential subdivisions (Activity Category B), parks (Activity Category C), hotels, offices, restaurants (Activity Category E), commercial retail, and industrial uses (Activity Category F) are located in this area. This area is generally flat and lower than the highway. Backyards face the highway. A single sound barrier with a nominal height of 4 to 5 feet is located between SR-91 and the residential area.
- Area G is located on the southern side of SR-91 east of Central Avenue and west of Susana Road. Offices, restaurants (Activity Category C), and industrial uses (Activity Category F) are located in this area. This area is generally flat and the same elevation as the highway. No sound barriers or topographical shielding occur between the highway and the land uses.
- Area H is located on the southern side of SR-91 east of Susana Road and west of Long Beach Boulevard. A residential subdivision (Activity Category B), school (exterior Activity Category C and interior Activity Category D), and hotel (Activity Category E) are located in this area. This area is generally flat and lower than the highway. Backyards face the highway. A single sound barrier with a height of 8.5 feet is located between SR-91 and the residential area.

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Figure 2.13-2. Analysis Areas, Noise Monitoring Positions, and Location of Evaluated Noise Barrier (Western Most Terminus)

EB = Eastbound Barrier
LT = long-term
R = receiver
ST = short-term
WB = Westbound Barrier

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Figure 2.13-3. Analysis Areas, Noise Monitoring Positions, and Location of Evaluated Noise Barrier (Eastern Most Terminus)

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2.13.2.2 Existing Noise Level Measurements

The existing noise environment in the project study area is described in the following sections based on short- and long-term noise monitoring that was conducted at representative receptor locations.

Short-Term Monitoring

Short-term (10-minute) monitoring was conducted to document existing noise levels at 37 representative receptor locations in the project study area that included land use Activity Categories B, C, D, E, and F. These locations are shown on Figures 2.13-2 and 2.13-3. Measurements were taken between June 2019 and December 2019. Dominant noise sources were identified and logged. During the short-term measurements, wind speeds typically ranged from 1 to 8 miles per hour (mph). Temperatures ranged from 10–35°C (50–95°F), with relative humidity typically 30–80%.

Table 2.13-2 summarizes the results of the short-term monitoring conducted in the project study area and a description of the noise-monitoring locations. These short-term noise measurements were used to calibrate the noise model and to predict the noise levels at each of the modeled receptors in the project study area.

Table 2.13-2. Short-Term Ambient Noise Monitoring Results

Position	Address	Area	Land Uses	Start Time AM/PM	Measured L_{eq}
ST1.1	17348 Wall Street	A	Residential	6:48 AM	60.6
ST1.2	17317 Crocker Avenue	A	Residential	7:52 AM	60.2
ST1.3	1073 E Artesia Boulevard	B	Industrial	10:20 AM	72.1
ST1.4	1217 W Artesia Boulevard	B	Industrial	6:42 AM	74.3
ST1.5	1201 W Artesia Boulevard	B	Industrial	3:20 PM	76.1
ST1.6	1011 W Artesia Boulevard	B	Industrial	3:00 PM	75.9
ST1.51	335 E Albertoni Street	F	Restaurants	11:40 AM	64.5
ST1.52	401 E Albertoni Street	F	Hotels	10:16 AM	63.2
ST1.53	17701 S Avalon Boulevard	F	Residential	11:15 AM	67.8
ST1.54	501 E Albertoni Street	F	Restaurants	11:00 AM	62.7
ST1.55	637 E Albertoni Street	F	Offices	12:30 PM	63.1
ST1.56	767 E Albertoni Street	F	Hotels	12:10 PM	60.9
ST1.57	767 E Albertoni Street	F	Hotels	6:12 AM	70.6
ST1.58	17700 S Avalon Boulevard	F	Residential	6:29 AM	68.0

Position	Address	Area	Land Uses	Start Time AM/PM	Measured L_{eq}
ST1.59	17403 Lysander Drive	F	Residential	2:19 PM	65.7
ST1.60	17400 Lysander Drive	F	Parks	1:53 PM	62.2
ST1.61	17404 Prondall Court	F	Residential	1:47 PM	68.4
ST1.62	17402 Nauset Court	F	Residential	1:14 PM	67.5
ST1.63	17402 Scudder Court	F	Residential	1:20 PM	70.2
ST1.64	1300 W Artesia Boulevard	G	Industrial	3:30 PM	76.0
ST1.65	1250 W Artesia Boulevard	G	Industrial	3:25 PM	74.7
ST1.66	1200 W Artesia Boulevard	G	Industrial	3:10 PM	74.6
ST2.1	737 W Artesia Boulevard	B	Industrial	2:40 PM	74.3
ST2.2	311 W Artesia Boulevard	B	Industrial	2:20 PM	75.4
ST2.3	303 W Artesia Boulevard	B	Industrial	1:50 PM	76.0
ST2.4	107 W Artesia Boulevard	B	Church	2:05 PM	75.0
ST2.5	107 W Artesia Boulevard	B	Church	2:32 PM	69.6
ST2.6	107 W Artesia Boulevard	B	Church	2:11 PM	34.2
ST2.7	1795 S Alameda Street	C	Restaurants	3:40 PM	63.3
ST2.8	2195 Santa Fe Avenue	D	School	3:01 PM	68.9
ST2.9	239 W Artesia Boulevard	E	Residential	10:00 AM	69.0
ST2.10	6606 Gale Avenue	E	Residential	2:45 PM	67.4
ST2.11	6602 Gale Avenue	E	Residential	9:40 AM	66.4
ST2.51	550 W Artesia Boulevard	G	Industrial	1:25 PM	74.7
ST2.52	400 W Artesia Boulevard	G	Industrial	1:40 PM	77.3
ST2.53	200 E Stanley Street	G	Industrial	9:45 AM	64.9
ST2.54	171 W Bort Street	H	School	7:24 AM	59.0

Source: Noise Study Report (October 2020)

Note: Refer to Figures 2.13-2 and 2.13-3 for measurement locations and area.

Long-Term Monitoring

Long-term (24-hour) monitoring was conducted at nine locations to identify variations in sound levels within the project study area over a 24-hour period (Figures 2.13-2 and 2.13-3). The following is a summary of the long-term measurements at the following locations:

- LT1.1 was located at the residence at 536 East Cassidy Street on the northern side of SR-91, approximately 80 feet from the SR-91 edge-of-pavement. The loudest average hourly sound level measured was 61.0 dBA L_{eq}(h) during the 7:00 AM hour.
- LT1.2 was located south of the industrial land use at 921 West Artesia Boulevard on the northern side of SR-91, approximately 60 feet from the SR- 91 edge-of-pavement. The loudest average hourly sound level measured was 77.5 dBA L_{eq}(h) during the 7:00 AM hour.
- LT1.51 was located at the entrance to mobile homes at 17701 South Avalon Boulevard on the southern side of SR-91, approximately 400 feet from the SR-91 edge-of-pavement. The loudest average hourly sound level measured was 68.0 dBA L_{eq}(h) during the 6:00 PM hour. This is the same location where ST1.53 measurements were taken.
- LT1.52 was located north of the residence at 17403 Lysander Drive on the southern side of SR-91, approximately 50 feet from the SR-91 edge-of-pavement. The loudest average hourly sound level measured was 68.9 dBA L_{eq}(h) during the 6:00 PM hour.
- LT1.53 was located north of the residence at 1212 East Bitterlake Street on the southern side of SR-91, approximately 140 feet from the SR-91 edge-of-pavement. The loudest average hourly sound level measured was 67.3 dBA L_{eq}(h) during the 6:00 PM hour.
- LT2.1 was located south of the industrial land use at 401 West Artesia Boulevard on the northern side of SR-91, approximately 50 feet from the SR- 91 edge-of-pavement. The loudest average hourly sound level measured was 81.3 dBA L_{eq}(h) during the 6:00 AM hour.
- LT2.2 was located south of the commercial land use at 198 West Artesia Boulevard, on the northern side of SR-91, approximately 60 feet from the SR-91 edge-of-pavement. The loudest average hourly sound level measured was 69.5 dBA L_{eq}(h) during the 4:00 PM hour.
- LT2.51 was located north of the industrial land use at 550 West Artesia Boulevard, on the southern side of SR-91, approximately 50 feet from the SR- 91 edge-of-pavement. The loudest average hourly sound level measured was 74.8 dBA L_{eq}(h) during the 7:00 AM hour.
- LT2.52 was located at the school at 171 West Bort Street, on the southern side of SR-91, approximately 360 feet from the SR-91 edge-of-pavement. The loudest average hourly sound level measured was 59.4 dBA L_{eq}(h) during the 6:00 AM hour.

2.13.3 Environmental Consequences

Under 23 CFR 772.7, projects are categorized as Type I, Type II, or Type III. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location, or the physical alteration of an existing highway, which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. Based on the previously described Build Alternative, this project has been deemed to be a Type I project. As such, traffic noise analysis has been conducted for this project in accordance with FHWA protocol for Type I projects.

The traffic noise analysis indicates that the adjacent noise sensitive areas within the project limits will be impacted after project completion under the Build Alternative [i.e. noise levels will approach or exceed FHWA Noise Abatement Criteria (NAC)]. Since traffic noise impacts have been identified, noise abatement has been considered for the impacted noise sensitive land use areas. In order for noise abatement barriers to be installed, construction of such barriers must be "reasonable and feasible" as defined under 23 CFR 772.7.

The overall reasonableness for noise abatement is determined by these factors: acoustical design goal, the cost of abatement, and viewpoints of benefited receptors (including property owners and residents of the benefited receptors). A benefited receptor is a dwelling unit that is predicted to receive a noise reduction of at least 5 dBA from the proposed noise abatement measure. A receptor can be a benefited receptor even if it is not subject to a traffic noise impact. The noise barrier is not required to reduce noise levels to below the NAC for any noise sensitive land uses. Title 23 CFR 722 requires that an acoustical design goal be applied to all noise abatement. Caltrans' acoustical design goal is that a barrier must be predicted to provide at least 7 dBA of noise reduction at one or more benefited receptors. In order for a sound barrier to be considered reasonable, the 7 dBA design goal must be achieved at one or more benefited receptors. This design goal applies to any receptor and is not limited to impacted receptors. Cost considerations in the reasonableness determination of noise abatement are based on a 2019 allowance per benefited receptor of $107,000.

2.13.3.1 Temporary Impacts

No Build Alternative

The No Build Alternative would not result in the construction of improvements within the project study area. Therefore, no temporary noise or vibration impacts would occur.

Build Alternative (includes Design Options)

Construction Noise

During construction, temporary (i.e., short-term) noise impacts from construction activities could intermittently dominate the noise area in the immediate area of construction. Table 2.13-3 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects.

Construction equipment would be expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 2.13-3. Typical Construction Equipment Noise Levels

Type of Equipment	Actual Maximum Sound Levels at 50 Feet (dBA)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80

Type of Equipment	Actual Maximum Sound Levels at 50 Feet (dBA)
Pneumatic Tools	85
Concrete Pump	82

Source: (Federal Transit Administration, 2006) and (FHWA, 2006)

PF-NOI-1: Compliance with Caltrans Standard Specifications Section 14-8.02 will minimize construction noise impacts adjacent to the proposed project. In addition, construction would be limited between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday (except during national holidays), and 8:00 a.m. and 5:00 p.m. on Saturdays adjacent to residential areas.

2.13.3.2 Permanent Impacts

Potential permanent noise impacts associated with operation of the proposed project are solely from traffic noise. Traffic noise was evaluated under existing conditions, design-year no-project conditions, and design-year conditions with the Build Alternative. Loudest-hour traffic volumes, vehicle classification percentages, and traffic speeds under existing and design-year (2040) conditions were provided by the project traffic engineer for input into the traffic noise model. The highest average traffic volumes on SR-91 are predicted to occur during the AM peak hour period; therefore, AM peak hour traffic volumes were used in the model.

Receptor locations associated with existing land uses in Areas A through H were evaluated in the noise model and included agriculture, bus yards, church, hotels, industrial, offices, parks, residential, restaurants, retail, and schools. These locations are shown on Figures 2.13-2 and 2.13-3.

Build Alternative (includes Design Options)

Future traffic noise levels for each of the receptor locations were determined using the worst-case traffic operations or future design-year (2040) conditions during AM peak hour traffic volumes. Table 2.13-4 summarizes the traffic noise modeling results for existing conditions and design-year conditions with and without the proposed project. Predicted design-year traffic noise levels with the proposed project are compared to existing conditions and to design-year no-project conditions. The comparison to existing conditions is included to identify traffic noise impacts as defined under 23 CFR 772. The comparison to no-project conditions indicated the direct effect of the proposed project.

Substantial traffic noise impacts are considered to occur at receptor locations where predicted design-year levels are 12 dB or greater than existing noise levels, or where predicted design-year noise levels approach (within 1 dBA) or exceed the NAC for the applicable activity category. Where traffic noise impacts are identified, noise abatement must be considered.

The following information summarizes the results within each land use area:

- **Area A:** The traffic noise modeling results indicate that traffic noise levels at the agricultural and industrial uses in Area A are predicted to be 63 and 65 dBA $L_{eq}(h)$ in the design-year Build Alternative, respectively. Traffic noise levels at residences in Area A are predicted to be in the range of 58 to 66 dBA $L_{eq}(h)$ in the design-year. The results also indicate that the increase in noise between existing conditions and the design-year is predicted to range from

0 to 1 dB. Because there is no noise abatement criterion for Category F uses in this area, no traffic noise impacts are predicted for agriculture and industrial uses in Area A. However, because the predicted noise levels in the design-year are predicted to approach or exceed the noise abatement criterion at residences (67 dBA L_{eq}[h]), traffic noise impacts are predicted at residences in Area A and noise abatement needs to be considered in this area.

- **Area B:** The traffic noise modeling results indicate traffic noise levels at industrial uses in Area B are predicted to be in the range of 63 to 82 dBA L_{eq}(h) in the design-year Build Alternative. Traffic noise levels at offices, restaurants, and hotels in Area B are predicted to be in the range of 63 to 67 dBA L_{eq}(h) in the design-year. The results also indicate that the increase in noise between existing conditions and the design-year range from 0 to 3 dB. Because there is no noise abatement criterion for Category F uses in this area and because the predicted noise levels in the design-year are not predicted to approach or exceed the noise abatement criterion at offices, restaurants, and hotels (72 dBA L_{eq}[h]) or result in a substantial increase in noise, no traffic noise impacts are predicted to occur in this area and noise abatement does not need to be considered in this area.

- **Area C:** The traffic noise modeling indicate traffic noise levels at bus yard, retail, and industrial uses in Area C are predicted to be in the range of 64 to 69 dBA L_{eq}(h) in the design-year Build Alternative. Traffic noise levels at parks and restaurants in Area C are predicted to be 63 dBA L_{eq}(h) in the design-year. Traffic noise levels at hotels in Area C are predicted to be 59 dBA L_{eq}(h) in the design-year. The results also indicate that the increase in noise between existing conditions and the design-year range from 0 to 1 dB. Because there is no noise abatement criterion for Category F uses in this area and because the predicted design-year noise level does not approach or exceed the 67 dBA L_{eq}(h) NAC for parks or 72 dBA L_{eq}(h) for restaurants and hotels or result in a substantial increase in noise, no traffic noise impacts are predicted. Outdoor use areas at the church that are directly exposed to noise from traffic on SR-91 are parking areas. Parking areas are not considered to be areas of frequent human use that would benefit from a lowered noise level. Exterior noise abatement, therefore, does not apply at the church. Because the church has an interior noise abatement criterion in addition to the exterior criterion, interior noise must be considered at the church. The *FHWA Highway Traffic Noise Analysis and Abatement Guidance* document (Table 6) shows that the building noise reduction factor for standard construction with ordinary windows closed is 20 dB.

Table 2.13-4. Predicted Future Noise and Barrier Analysis for the Build Alternative

Receptor I.D.	Area	Barrier I.D.	Land Use	Number of Dwelling Units	Address	Existing Noise Level $L_{eq}(h)$, dBA	SR-91 Future Worst Hour Noise Levels - $L_{eq}(h)$, dBA																								
							Design Year Noise Level without Project Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project Minus No Project Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receptors (NBR)																		
													6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
													$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
ST1.1	A	WB-3	Residential	-	17348 Wall Street	59	59	59	0	0	B (67)	None[a]	60	0	0	59	0	0	58	2	0	57	2	0	57	3	0	56	3	0
ST1.2	A	WB-3	Residential	-	17317 Crocker Avenue	65	65	65	1	0	B (67)	None[a]	65	0	0	65	0	0	64	1	0	64	1	0	64	1	0	64	1	0
ST1.3	B	-	Industrial	-	1073 E Artesia Boulevard	73	73	73	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.4	B	-	Industrial	-	1217 W Artesia Boulevard	77	77	78	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.5	B	-	Industrial	-	1201 W Artesia Boulevard	77	77	76	0	-2	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.6	B	-	Industrial	-	1011 W Artesia Boulevard	77	78	78	0	1	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LT1.1	A	-	Residential	3	536 E Cassidy Street	60	60	60	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LT1.2	B	-	Industrial	-	921 W Artesia Boulevard	80	80	82	0	1	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.1	A	-	Industrial	-	17310 S Main Street	65	65	65	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.2	A	-	Agriculture	-	201 E Walnut Street	62	63	63	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.3	A	WB-3	Residential	4	17345 Billings Drive	59	60	60	0	0	B (67)	None	60	0	0	60	0	0	59	1	0	59	1	0	58	2	0	58	2	0
R1.4	A	WB-3	Residential	2	17348 Wall Street	65	66	66	0	0	B (67)	A/E	66	0	0	65	0	0	64	1	0	64	2	0	63	3	0	62	3	0
R1.5	A	WB-3	Residential	3	17347 Bonham Avenue	66	66	66	0	0	B (67)	A/E	66	0	0	66	0	0	65	1	0	64	2	0	64	3	0	63	3	0
R1.6	A	WB-3	Residential	3	17341 Towne Court	65	65	65	0	0	B (67)	None	65	0	0	65	0	0	63	2	0	62	3	0	62	3	0	61	4	0
R1.7	A	WB-3	Residential	4	17332 Crocker Avenue	58	58	58	1	0	B (67)	None	58	0	0	58	0	0	57	1	0	57	1	0	57	1	0	57	1	0
R1.8	A	-	Residential	3	516 E Cassidy Street	62	63	63	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.9	A	-	Residential	3	554 E Cassidy Street	61	61	61	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.10	A	-	Residential	1	561 E Cassidy Street	63	64	64	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.11	B	-	Industrial	-	623 E Artesia Boulevard	68	68	68	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.12	B	-	Industrial	-	729 E Artesia Boulevard	62	63	63	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.13	B	-	Industrial	-	821 E Artesia Boulevard	64	65	65	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.14	B	-	Industrial	-	935 E Artesia Boulevard	67	68	68	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.15	B	-	Industrial	-	965 E Artesia Boulevard	72	73	73	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.16	B	-	Industrial	-	1161 E Artesia Boulevard	72	73	73	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.17	B	-	Industrial	-	1225 E Artesia Boulevard	71	71	71	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.18	B	-	Offices	-	1299 E Artesia Boulevard	63	63	63	0	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.19	B	-	Restaurants	-	1931 W Artesia Boulevard	71	71	72	0	1	E (72)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.20	B	-	Restaurants	-	1929 W Artesia Boulevard	67	67	67	0	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.21	B	-	Hotels	-	1919 W Artesia Boulevard	64	64	65	1	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.22	B	-	Industrial	-	1217 W Artesia Boulevard	69	69	68	0	-2	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Receptor I.D.	Area	Barrier I.D.	Land Use	Number of Dwelling Units	Address	Existing Noise Level $L_{eq}(h)$, dBA	SR-91 Future Worst Hour Noise Levels - $L_{eq}(h)$, dBA																						
							Design Year Noise Level without Project Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project Minus No Project Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receptors (NBR)																
													6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
													$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
R1.23	B	-	Industrial	-	1121 W Artesia Boulevard	76	76	76	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.51	F	-	Restaurants	-	335 E Albertoni Street	64	65	65	1	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.52	F	-	Hotels	-	401 E Albertoni Street	65	66	66	1	0	E (72)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.53	F	-	Residential	-	17701 S Avalon Boulevard	62	63	63	1	0	B (67)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.54	F	-	Restaurants	-	501 E Albertoni Street	62	63	63	1	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.55	F	-	Offices	-	637 E Albertoni Street	66	66	66	1	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.56	F	-	Hotels	-	767 E Albertoni Street	68	69	69	1	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.57	F	-	Hotels	-	767 E Albertoni Street	70	71	71	1	0	E (72)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.58	F	EB-1b	Residential	-	17700 S Avalon Boulevard	65	66	66	1	0	B (67)	None[a]	66	0	0	66	0	0	65	1	0	65	1	0	65	1	0	65	1	0
ST1.59	F	EB-1b	Residential	-	17403 Lysander Drive	68	69	69	1	0	B (67)	None[a]	69	0	0	68	1	0	68	1	0	68	1	0	68	1	0	68	1	0
ST1.60	F	EB-2	Parks	-	17400 Lysander Drive	69	70	70	1	0	C (67)	A/E	69	1	0	69	1	0	69	1	0	68	2	0	68	2	0	68	2	0
ST1.61	F	EB-2	Residential	-	17404 Prondall Court	70	70	70	1	0	B (67)	None[a]	70	0	0	70	1	0	69	1	0	69	1	0	69	1	0	69	1	0
ST1.62	F	-	Residential	-	17402 Nauset Court	68	69	69	1	0	B (67)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.63	F	-	Residential	-	17402 Scudder Court	72	73	73	0	0	B (67)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.64	G	-	Industrial	-	1300 W Artesia Boulevard	78	78	77	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.65	G	-	Industrial	-	1250 W Artesia Boulevard	75	75	75	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST1.66	G	-	Industrial	-	1200 W Artesia Boulevard	76	76	75	0	-1	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LT1.51	F	-	Residential	-	17701 S Avalon Boulevard	62	63	63	1	0	B (67)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LT1.52	F	-	Residential	-	17403 Lysander Drive	81	81	82	0	0	B (67)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LT1.53	F	-	Residential	-	1212 E Bitterlake Street	72	73	73	0	0	B (67)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.51	F	-	Retail	-	17500 S Main Street	65	66	66	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.52	F	-	Retail	-	145 E Albertoni Street	66	67	67	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.53	F	-	Industrial	-	155 E Albertoni Street	68	69	69	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.54	F	-	Retail	-	17600 S Main Street	65	65	66	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.55	F	-	Residential	1	17701 S Avalon Boulevard	61	62	62	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.56	F	-	Residential	18	17701 S Avalon Boulevard	59	60	60	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.57	F	-	Residential	1	17701 S Avalon Boulevard	62	62	62	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.58	F	-	Retail	-	241 E Albertoni Street	65	66	66	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.59	F	-	Restaurants	-	319 E Albertoni Street	64	65	65	1	0	E (72)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.60	F	-	Retail	-	335 E Albertoni Street	64	64	64	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.61	F	-	Retail	-	481 E Albertoni Street	63	64	64	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Receptor I.D.	Area	Barrier I.D.	Land Use	Number of Dwelling Units	Address	Existing Noise Level $L_{eq}(h)$, dBA	SR-91 Future Worst Hour Noise Levels - $L_{eq}(h)$, dBA																						
							Design Year Noise Level without Project Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project Minus No Project Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receptors (NBR)																	
													6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
													$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
R1.62	F	-	Restaurants	-	17401 S Avalon Boulevard	64	65	65	1	0	E (72)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.63	F	-	Restaurants	-	17420 S Avalon Boulevard	65	66	66	1	0	E (72)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.64	F	-	Offices	-	17450 S Avalon Boulevard	64	65	65	1	0	E (72)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.65	F	-	Restaurants	-	17504 S Avalon Boulevard	64	65	65	1	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.66	F	-	Residential	1	17700 S Avalon Boulevard	59	59	60	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.67	F	-	Residential	3	17700 S Avalon Boulevard	57	58	58	0	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.68	F	-	Residential	7	17700 S Avalon Boulevard	60	61	61	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.69	F	EB-1a	Residential	7	17700 S Avalon Boulevard	64	64	64	1	0	B (67)	None	64	1	0	64	1	0	63	1	0	63	1	0	63	1	0	63	1	0
R1.70	F	EB-1a	Residential	1	17700 S Avalon Boulevard	67	67	67	0	0	B (67)	A/E	65	3	0	64	3	0	64	3	0	64	4	0	64	4	0	63	4	0
R1.71	F	EB-1a	Residential	2	803 E Haxby Court	64	65	65	1	0	B (67)	None	63	2	0	63	2	0	62	2	0	62	3	0	62	3	0	62	3	0
R1.72	F	EB-1a	Residential	2	17407 Sandlake Avenue	64	65	65	0	0	B (67)	None	63	2	0	63	2	0	62	3	0	62	3	0	62	3	0	62	3	0
R1.73	F	EB-1a	Residential	2	17402 Sandlake Avenue	66	66	66	1	0	B (67)	A/E	63	3	0	63	3	0	63	4	0	62	4	0	62	4	0	62	4	0
R1.74	F	EB-1a	Residential	2	17403 Lysander Drive	63	63	63	0	0	B (67)	None	61	2	0	60	3	0	60	3	0	60	4	0	60	4	0	60	4	0
R1.70	F	EB-1b	Residential	1	17700 S Avalon Boulevard	67	67	67	0	0	B (67)	A/E	67	0	0	67	0	0	66	2	0	64	3	0	64	4	0	63	4	0
R1.71	F	EB-1b	Residential	2	803 E Haxby Court	64	65	65	1	0	B (67)	None	65	0	0	64	1	0	63	2	0	63	2	0	63	2	0	63	2	0
R1.72	F	EB-1b	Residential	2	17407 Sandlake Avenue	64	65	65	0	0	B (67)	None	65	0	0	64	1	0	63	2	0	63	2	0	63	2	0	63	2	0
R1.73	F	EB-1b	Residential	2	17402 Sandlake Avenue	66	66	66	1	0	B (67)	A/E	65	1	0	64	3	0	63	4	0	62	4	0	63	4	0	63	4	0
R1.74	F	EB-1b	Residential	2	17403 Lysander Drive	63	63	63	0	0	B (67)	None	64	-1	0	63	1	0	61	3	0	60	3	0	60	3	0	60	4	0
R1.75	F	EB-1b	Parks	-	17400 Lysander Drive	64	65	65	1	0	C (67)	None	65	0	0	65	0	0	64	0	0	65	0	0	64	0	0	64	0	0
R1.75	F	EB-2	Parks	-	17400 Lysander Drive	64	65	65	1	0	C (67)	None	64	0	0	64	1	0	64	1	0	64	1	0	63	1	0	63	1	0
R1.76	F	EB-2	Parks	-	17400 Lysander Drive	66	66	66	0	0	C (67)	A/E	66	0	0	65	1	0	65	1	0	65	1	0	65	2	0	65	2	0
R1.77	F	EB-2	Parks	-	17400 Lysander Drive	67	67	67	1	0	C (67)	A/E	67	1	0	66	1	0	66	1	0	66	2	0	65	2	0	65	2	0
R1.78	F	EB-2	Residential	1	17403 Prondall Court	68	68	68	1	0	B (67)	A/E	68	1	0	66	2	0	66	3	0	65	3	0	65	4	0	65	4	0
R1.79	F	EB-2	Residential	2	17404 Prondall Court	61	62	62	1	0	B (67)	None	62	0	0	61	1	0	61	1	0	61	1	0	61	1	0	61	1	0
R1.80	F	-	Residential	2	17402 Merimac Court	62	63	63	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.81	F	-	Residential	2	17404 Bauchard Court	62	63	63	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.82	F	-	Residential	2	17405 Wellfeet Avenue	62	63	63	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.83	F	-	Residential	2	17404 Wellfeet Avenue	64	65	65	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.84	F	-	Residential	2	17404 Keene Avenue	64	65	65	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.85	F	-	Residential	1	17402 Scudder Court	61	62	62	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.86	F	-	Residential	3	17503 Harwick Court	60	61	61	1	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Receptor I.D.	Area	Barrier I.D.	Land Use	Number of Dwelling Units	Address	Existing Noise Level $L_{eq}(h)$, dBA	SR-91 Future Worst Hour Noise Levels - $L_{eq}(h)$, dBA																						
							Design Year Noise Level without Project Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project Minus No Project Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receptors (NBR)																	
													6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
													$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
R1.87	F	-	Residential	3	17502 Harwick Court	55	55	55	0	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.88	F	-	Residential	1	17504 Amantha Avenue	55	56	56	0	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.89	F	-	Retail	-	17531 S Central Avenue	59	60	59	1	-1	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.90	F	-	Parks	-	17455 S Central Avenue	67	68	68	0	0	C (67)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.91	G	-	Restaurants	-	17455 S Central Avenue	67	67	67	0	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.92	G	-	Restaurants	-	2200 S Central Avenue	59	60	58	1	-1	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.93	G	-	Restaurants	-	2232 S Central Avenue	63	63	61	0	-2	E (72)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.94	G	-	Industrial	-	1900 W Artesia Boulevard	75	75	73	0	-2	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1.95	G	-	Offices	-	1100 W Artesia Boulevard	64	65	62	0	-3	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.1	B	-	Industrial	-	737 W Artesia Boulevard	78	78	78	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.2	B	-	Industrial	-	311 W Artesia Boulevard	69	70	72	0	2	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.3	B	-	Industrial	-	303 W Artesia Boulevard	74	74	75	0	1	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.4	C	-	Church	-	107 W Artesia Boulevard	71	71	67	0	-4	C (67)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.5	C	-	Church	-	107 W Artesia Boulevard	70	71	66	0	-4	C (67)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.6	C	-	Church	-	107 W Artesia Boulevard	50	51	46	0	-4	D (52)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.7	C	-	Restaurants	-	1795 S Alameda Street	62	63	63	1	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.8	D	WB-2	School	-	2195 Santa Fe Avenue	67	67	67	0	0	C (67)	None[a]	64	3	0	63	4	0	63	5	0	62	5	0	62	6	0	61	6	0
ST2.9	E	WB-2	Residential	-	239 W Artesia Boulevard	64	64	64	0	0	B (67)	None[a]	61	3	0	60	4	0	60	4	0	59	5	0	59	5	0	58	6	0
ST2.10	E	WB-2	Residential	-	6606 Gale Avenue	63	63	64	0	0	B (67)	None[a]	63	1	0	62	2	0	61	2	0	61	3	0	60	3	0	60	4	0
ST2.11	E	WB-2	Residential	-	6602 Gale Avenue	59	60	60	0	0	B (67)	None[a]	58	2	0	57	3	0	56	4	0	56	4	0	56	4	0	55	5	0
ST2.10	E	WB-1	Residential	-	6606 Gale Avenue	63	63	64	0	0	B (67)	None[a]	61	3	0	60	3	0	60	3	0	60	3	0	60	4	0	60	4	0
ST2.11	E	WB-1	Residential	-	6602 Gale Avenue	59	60	60	0	0	B (67)	None[a]	60	0	0	59	0	0	59	1	0	59	1	0	59	1	0	59	1	0
LT2.1	B	-	Industrial	-	401 W Artesia Boulevard	81	81	82	0	1	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LT2.2	E	WB-2	Retail	-	198 W Artesia Boulevard	67	67	68	0	0	F (None)	None	62	6	0	62	6	0	61	6	0	61	7	0	60	7	0	60	8	0
R2.1	B	-	Industrial	-	801 W Artesia Boulevard	66	66	69	0	3	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.2	B	-	Industrial	-	745 W Artesia Boulevard	71	72	71	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.3	B	-	Industrial	-	401 W Artesia Boulevard	68	69	69	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.4	B	-	Industrial	-	203 W Artesia Boulevard	65	65	64	0	-2	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.5	C	-	Bus Yards	-	1920 S Acacia Avenue	65	66	65	0	-1	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.6	C	-	Hotels	-	123 E Artesia Boulevard	58	59	59	0	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.7	C	-	Parks	-	1781 Alameda Street	63	63	63	0	0	C (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Receptor I.D.	Area	Barrier I.D.	Land Use	Number of Dwelling Units	Address	Existing Noise Level $L_{eq}(h)$, dBA	SR-91 Future Worst Hour Noise Levels - $L_{eq}(h)$, dBA																						
							Design Year Noise Level without Project Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project Minus No Project Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receptors (NBR)																
													6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
													$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
R2.8	C	-	Industrial	-	2100 Alameda Street	63	64	64	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.9	C	-	Retail	-	2195 Santa Fe Avenue	64	64	64	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.10	D	-	School	-	2195 Santa Fe Avenue	61	62	62	0	0	C (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.11	D	-	School	-	2195 Santa Fe Avenue	62	62	62	0	0	C (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.12	D	-	School	-	2195 Santa Fe Avenue	61	62	62	1	0	C (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.13	D	WB-2	School	-	2195 Santa Fe Avenue	64	64	64	0	0	C (67)	None	64	0	0	64	1	0	63	1	0	63	1	0	63	1	0	63	1	0
R2.14	E	WB-2	Residential	1	6625 Delta Avenue	63	63	64	0	0	B (67)	None	61	3	0	60	3	0	60	4	0	59	5	1	59	5	1	58	5	1
R2.15	E	WB-2	Residential	2	6626 Delta Avenue	65	65	66	0	0	B (67)	A/E	61	4	0	61	5	2	60	6	2	59	6	2	59	7	2	58	7	2
R2.16	E	WB-2	Retail	-	1205 E Artesia Boulevard	62	63	63	0	0	F (None)	None	60	3	0	60	3	0	59	4	0	59	4	0	58	5	0	58	5	0
R2.17	E	WB-2	Residential	8	223 W Artesia Boulevard	61	61	62	0	0	B (67)	None	58	3	0	57	4	0	57	5	8	56	5	8	56	6	8	56	6	8
R2.18	E	WB-2	Residential	6	College Square	58	58	58	0	0	B (67)	None	57	1	0	56	2	0	56	2	0	56	2	0	56	2	0	56	3	0
R2.19	E	WB-2	Residential	6	College Square	66	66	66	1	0	B (67)	A/E	66	1	0	65	1	0	65	1	0	65	2	0	64	2	0	64	2	0
R2.18	E	WB-1	Residential	6	College Square	58	58	58	0	0	B (67)	None	57	1	0	57	1	0	57	1	0	57	1	0	57	1	0	58	0	0
R2.19	E	WB-1	Residential	6	College Square	66	66	66	1	0	B (67)	A/E	66	1	0	65	2	0	64	2	0	64	2	0	63	3	0	63	3	0
R2.20	E	WB-1	Retail	-	6605 Long Beach Boulevard	63	63	64	0	0	F (None)	None	60	3	0	60	4	0	59	5	0	58	5	0	58	6	0	58	6	0
R2.21	E	WB-2	Retail	-	6597 Long Beach Boulevard	68	69	69	0	0	F (None)	None	68	0	0	68	1	0	68	1	0	68	1	0	67	1	0	67	2	0
R2.22	E	WB-2	Retail	-	198 W Artesia Boulevard	70	70	70	0	0	F (None)	None	69	1	0	69	1	0	68	2	0	67	3	0	66	4	0	65	5	0
R2.21	E	WB-1	Retail	-	6597 Long Beach Boulevard	68	69	69	0	0	F (None)	None	66	3	0	65	4	0	64	5	0	64	5	0	63	5	0	63	6	0
R2.22	E	WB-1	Retail	-	198 W Artesia Boulevard	70	70	70	0	0	F (None)	None	67	3	0	66	4	0	66	5	0	65	5	0	65	5	0	65	5	0
ST2.51	G	-	Industrial	-	550 W Artesia Boulevard	78	78	76	0	-2	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.52	G	-	Industrial	-	400 W Artesia Boulevard	79	79	79	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.53	G	-	Industrial	-	200 E Stanley Street	67	67	67	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST2.54	H	EB-3	School	-	171 W Bort Street	61	61	61	0	0	C (67)	None[a]	60	1	0	60	1	0	59	2	0	59	2	0	59	2	0	59	2	0
LT2.51	G	-	Industrial	-	550 W Artesia Boulevard	80	80	79	0	-1	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LT2.52	H	EB-3	School	-	171 W Bort Street	60	60	60	0	0	C (67)	None	60	1	0	59	1	0	59	1	0	59	1	0	59	1	0	59	2	0
R2.51	G	-	Industrial	-	800 W Artesia Boulevard	63	63	63	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.52	G	-	Industrial	-	700 W Artesia Boulevard	69	70	68	0	-1	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.53	G	-	Industrial	-	660 W Artesia Boulevard	73	73	69	0	-4	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.54	G	-	Industrial	-	300 W Artesia Boulevard	74	75	74	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.55	G	-	Industrial	-	250 W Artesia Boulevard	68	69	69	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.56	G	-	Industrial	-	135 E Stanley Street	64	65	65	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Receptor I.D.	Area	Barrier I.D.	Land Use	Number of Dwelling Units	Address	Existing Noise Level $L_{eq}(h)$, dBA	SR-91 Future Worst Hour Noise Levels - $L_{eq}(h)$, dBA																						
							Design Year Noise Level without Project Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project Minus No Project Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receptors (NBR)																	
													6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
													$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
R2.57	C	-	Industrial	-	2201 S Santa Fe Avenue	69	69	69	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.58	G	-	Industrial	-	17515 S Santa Fe Avenue	69	69	69	0	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.59	G	-	Offices	-	17600 S Santa Fe Avenue	69	69	69	1	0	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.60	G	-	Industrial	-	3000 E Vía Mondo	69	70	70	1	0	F (None)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.61	G	EB-3	Industrial	-	3111 E Vía Mondo	70	71	71	1	0	F (None)	None	68	3	0	66	5	0	65	6	0	64	7	0	63	8	0	63	8	0
R2.62	H	EB-3	School	-	171 W Bort Street	68	68	68	1	0	C (67)	A/E	64	4	0	64	5	1	62	6	1	61	7	1	61	7	1	60	8	1
R2.63	H	EB-3	School	-	171 W Bort Street	65	65	66	1	0	C (67)	A/E	63	3	0	62	4	0	61	5	1	60	5	1	60	6	1	59	6	1
R2.64	H	EB-3	School	-	171 W Bort Street	64	65	65	1	0	C (67)	None	62	3	0	61	3	0	61	4	0	60	4	0	60	5	1	59	5	1
R2.65	H	EB-3	School	-	171 W Bort Street	56	57	57	0	0	C (67)	None	55	2	0	54	3	0	54	3	0	53	4	0	53	4	0	53	4	0
R2.65	H	EB-3	School	-	171 W Bort Street	36	37	37	0	0	D (52)	None	35	2	0	34	3	0	34	3	0	33	4	0	33	4	0	33	4	0
R2.66	H	EB-3	School	-	171 W Bort Street	58	59	59	0	0	C (67)	None	58	1	0	57	2	0	57	2	0	57	2	0	56	3	0	56	3	0
R2.67	H	EB-3	Residential	6	153 W Forhan Street	58	58	58	0	0	B (67)	None	58	1	0	57	1	0	57	1	0	57	1	0	57	2	0	57	2	0
R2.68	H	-	Residential	6	125 W Forhan Street	59	60	60	0	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.69	H	-	Residential	4	45 W Forhan Street	61	62	62	0	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.70	H	-	Residential	2	6441 Long Beach Boulevard	61	61	61	0	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R2.71	H	-	Hotels	-	6431 Long Beach Boulevard	62	63	63	1	0	E (72)	None[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

[a] Receiver location has no exterior area where frequent human use occurs.
-- indicates not applicable
A/E = Future noise conditions approach or exceed the Noise Abatement Criteria
I.L. = Insertion Loss
NBR = number of benefited receptors

The interior noise level in the church in the design-year is therefore predicted to be 46 dBA L_{eq}(h). Because this predicted design-year noise level does not exceed the interior NAC of 52 dBA L_{eq}(h), no interior traffic noise impacts are predicted at the church, and noise abatement does not need to be considered in this area.

Area D: The traffic noise modeling results indicate traffic noise levels at outdoor use areas (i.e., baseball, track, and football field) at the school in Area D is predicted to be in the range of 62 to 64 dBA L_{eq}(h) in the design-year Build Alternative, and that the increase in noise will be in the range of 0 to 1 dB in the design-year. Because the predicted noise levels in the design-year are not predicted to approach or exceed the exterior noise abatement criterion at the school (67 dBA L_{eq}[h]) or result in a substantial increase in noise, no traffic noise impacts are predicted. Because the school has an interior noise abatement criterion in addition to the exterior criterion, interior noise must be considered at the school. Table 6 in the *FHWA Highway Traffic Noise Analysis and Abatement Guidance* document shows that the building noise reduction factor for standard construction with ordinary windows closed is 20 dB. The interior noise level at the school in the design-year is therefore predicted to be less than 42 dBA L_{eq}(h). Because this predicted design-year noise level does not exceed the interior NAC of 52 dBA L_{eq}(h), no interior traffic noise impacts are predicted at the school, and noise abatement does not need to be considered in this area.

Area E: The traffic noise modeling results indicate traffic noise levels at retail uses in Area E are predicted to be in the range of 63 to 70 dBA L_{eq}(h) in the design-year Build Alternative. Traffic noise levels at residences in Area E are predicted to be in the range of 58 to 66 dBA L_{eq}(h) in the design-year. The results also indicate that the increase in noise between existing conditions and the design-year range from 0 to 1 dB. Because there is no noise abatement criterion for Category F uses in this area, no traffic noise impacts are predicted for retail uses in Area E. However, because the predicted noise levels in the design-year are predicted to approach or exceed the noise abatement criterion at residences (67 dBA L_{eq}[h]), traffic noise impacts are predicted at residences in Area E and noise abatement needs to be considered in this area.

Area F: The traffic noise modeling results indicate traffic noise levels at industrial and retail uses in Area F are predicted to be in the range of 59 to 69 dBA L_{eq}(h) in the design-year Build Alternative. Traffic noise levels at residences in Area F are predicted to be in the range of 55 to 68 dBA L_{eq}(h) in the design-year. Traffic noise levels at parks in Area F are predicted to be in the range of 65 to 70 dBA L_{eq}(h). Traffic noise levels at restaurants, offices, and hotels in Area F are predicted to be in the range of 63 to 69 dBA L_{eq}(h) in the design-year. The results also indicate that the increase in noise between existing conditions and the design-year range from 0 to 1 dB. Because there is no noise abatement criterion for Category F uses in this area, no traffic noise impacts are predicted for industrial and retail uses in Area F. However, because the predicted noise levels in the design-year are predicted to approach or exceed the noise abatement criterion at residences and parks (67 dBA L_{eq}[h]), traffic noise impacts are predicted to occur in this area and noise abatement needs to be considered in this area.

Area G: The traffic noise modeling results indicate traffic noise levels at the industrial uses in Area G is predicted to be in the range of 63 to 79 dBA L_{eq}(h) in the design-year Build Alternative. Traffic noise levels at restaurants and offices in Area G is predicted to be in the range of 58 to 69 dBA L_{eq}(h). The results also indicate that the increase in noise between existing conditions and the design-year range from 0 to 1 dB. Because there is no noise abatement criterion for Category F uses in this area and because the predicted noise levels in the design-year are not predicted to approach or exceed the noise abatement criterion at restaurants and offices (72 dBA L_{eq}[h]) or result in a substantial increase in noise, no traffic noise impacts are predicted in Area G and noise abatement does not need to be considered in this area.

Area H: The traffic noise modeling results indicate traffic noise levels at residences in Area H are predicted to be in the range of 58 to 62 dBA L_{eq}(h) in the design-year Build Alternative. Exterior traffic noise levels at the school in Area H is predicted to be in the range of 57 to 68 dBA L_{eq}(h) in the design-year. The results also indicate that the increase in noise between existing conditions and the design-year range from 0 to 1 dB. Because the predicted noise levels in the design-year are predicted to approach or exceed the exterior noise abatement criterion at the school (67 dBA L_{eq}[h]), traffic noise impacts are predicted to occur in this area and noise abatement needs to be considered in this area. Because the school has an interior noise abatement criterion in addition to the exterior criterion, interior noise must be considered at the school as well. Table 6 in the *FHWA Highway Traffic Noise Analysis and Abatement Guidance* document shows that the building noise reduction factor for standard construction with ordinary windows closed is 20 dB. The interior noise level in the school in the design-year is therefore predicted to be 37 dBA L_{eq}(h). Because this predicted design-year noise level does not exceed the interior NAC of 52 dBA L_{eq}(h), no interior traffic noise impacts are predicted at the school. Outdoor use areas at the hotel that are directly exposed to noise from traffic on SR-91 are parking areas. Parking areas are not considered to be areas of frequent human use that would benefit from a lowered noise level. Exterior noise abatement, therefore, does not apply at the hotel.

As shown in Table 2.13-5, the receptor locations would be or would continue to be exposed to noise levels that approach or exceed the NAC (67 dBA L_{eq}[h]) under the Build Alternative.

Table 2.13-5. Analysis Areas Predicted to Approach or Exceed NAC

Analysis Area	Receptors	Abatement Considered
Area A (WB)	26 residences	Yes
Area E (WB)	23 residences	Yes
Area F (EB)	68 residences	Yes
Area H (EB)	1 school	Yes

2.13.4 Avoidance, Minimization, and/or Abatement Measures

Because the proposed project will incorporate the project features and noise abatement described above in Section 2.13.3.1, no adverse impacts related to temporary construction noise impacts would occur.

Noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. According to 23 CFR 772(13)(c) and 772(15)(c), federal funding may be used for the following abatement measures:

1. Construction of noise barriers, including acquisition of property rights, either within or outside the highway ROW
2. Traffic management measures, including, but not limited to, traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations
3. Alteration of horizontal and vertical alignments

4. Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development, which would be adversely impacted by traffic noise
5. Noise insulation of Activity Category D land use facilities listed in Table 2.13-1

Build Alternative (including Design Options)

Noise barriers were the only form of noise abatement considered to shield receptors within the project study area where noise impacts are predicted. The noise barriers considered for each land use area are shown in Figures 2.13-2 and 2.13-3. The design of the proposed noise barriers, including physical location, length, and height is preliminary and would be finalized during the final project design. Barrier heights in the range of 6 to 16 feet were evaluated in 2-foot increments. The results of the noise barrier analysis at receptor locations is shown in Table 2.13-4 and are summarized as follows:

- **Area A:** Receptors represent a total of 26 residences in Area A. Detailed modeling analysis was conducted for one barrier (Westbound [WB]-3) located at the edge of shoulder of the freeway (Figure 2.13-2).
- **Area E:** Receptors represent a total of 23 residences in Area E. Detailed modeling analysis was conducted for two barriers (WB-1 and WB-2) located at the edge of shoulder of the freeway (Figure 2.13-3).
- **Area F:** Receptors represent a total of 68 residences in Area F. Detailed modeling analysis was conducted for three barriers (Eastbound [EB]-1a, EB-1b, and EB-2) located at the edge of the shoulder of the freeway (Figure 2.13-2).
- **Area H:** Detailed modeling analysis for the school was conducted for one barrier (EB-3) located at the edge of shoulder of the freeway (Figure 2.13-3).

Feasibility and Reasonable Allowance

Where traffic noise impacts are identified, noise abatement must be considered for reasonableness and feasibility as required by 23 CFR 772 and the Protocol.

Noise Barrier Feasibility

According to the Protocol, abatement measures are considered acoustically feasible if a minimum noise reduction of 5 dB at impacted receptor locations is predicted with implementation of the abatement measures. In addition, barriers should be designed to intercept the line-of-sight from the exhaust stack of a truck to the first tier of receptors, as required by the *Highway Design Manual*, Chapter 1100. Other factors that affect feasibility include topography, access requirements for driveways and ramps, presence of local cross streets, utility conflicts, other noise sources in the area, and safety considerations.

Noise barriers were the only form of noise abatement considered for this project. Seven proposed noise barriers were evaluated for feasibility based on achievable noise reductions. Table 2.13-6 summarizes the feasibility of the modeled noise barriers. Two barriers (WB-2 and EB-3) were determined feasible and five barriers (WB-1, WB-3, EB-1a, EB-1b, and EB-2) were determined not feasible because they would not reduce noise levels by 5 dB or more at impacted receptor locations. These results are detailed as follows:

- **WB-1 (Area E):** The barrier did not achieve the minimum 5 dB reduction at the heights evaluated.
- **WB-2 (Area E):** The barrier achieved the minimum 5 dB reduction at a minimum height of 8 feet.
- **WB-3 (Area A):** The barrier did not achieve the minimum 5 dB reduction at the heights evaluated.
- **EB-1a (Area F):** The barrier did not achieve the minimum 5 dB reduction at the heights evaluated.
- **EB-1b (Area F):** The barrier did not achieve the minimum 5 dB reduction at the heights evaluated.
- **EB-2 (Area F):** The barrier did not achieve the minimum 5 dB reduction at the heights evaluated.
- **EB-3 (Area H):** The barrier achieved the minimum 5 dB reduction at a minimum height of 8 feet.

Noise Barrier Reasonableness

Caltrans' acoustical design goal is that a barrier must be predicted to provide at least 7 dB of noise reduction at one benefited receptor. This design goal applies to any receptor and is not limited to impacted receptors.

The Protocol defines the procedure for assessing reasonableness of noise barriers from a cost perspective. Based on 2019 construction costs, an allowance of $107,000 is provided for each benefited receptor (i.e., receptors that receive at least 5 dB of noise reduction from a noise barrier). The total allowance for each barrier is calculated by multiplying the number of benefited receptors by $107,000. The barrier is considered reasonable from a cost perspective if the estimated construction cost of a barrier is less than the total calculated allowance for the barrier. The estimated noise barrier construction cost for each barrier was developed by the project engineer.

Two noise barriers (EB-3 and WB-2) were found to be acoustically feasible and evaluated for reasonableness under the Build Alternative. EB-3 is generally located along eastbound SR-91 near the South Susana Road Overpass and was evaluated to address impacted receptors at the recreational field located at Jordan Plus High School, which is located adjacent to and south of SR-91. WB-2 is generally located along westbound SR-91 near the South Susana Road Overpass and was evaluated to address impacted receptors at the residences located north of SR-91 near West Artesia Boulevard.

Table 2.13-6 summarizes the abatement reasonableness factors for the two feasible barriers, WB-2 and EB-3, respectively, and includes the barrier heights, acoustic feasibility, number of benefited receptors, and total reasonable allowance. The design goal of 7 dB reduction would be met at a minimum barrier height of 12 feet for EB-3 and 14 feet for WB-2.

Table 2.13-6. Summary of Noise Abatement Feasibility and Reasonableness of Noise Barriers WB-2 and EB-3

Noise Barrier	Location	Limits/ Length of Barrier	Barrier Height (feet)	Acoustically Feasible?	Number of Benefited Receptors	Total Reasonable Allowance
WB-2	Area E	WB SR-91 between Santa Fe Avenue and Long Beach Boulevard (2,119 feet)	6	No	0	$0
WB-2	Area E	WB SR-91 between Santa Fe Avenue and Long Beach Boulevard (2,119 feet)	8	Yes	2	$214,000
WB-2	Area E	WB SR-91 between Santa Fe Avenue and Long Beach Boulevard (2,119 feet)	10[a]	Yes	10	$1,070,000
WB-2	Area E	WB SR-91 between Santa Fe Avenue and Long Beach Boulevard (2,119 feet)	12	Yes	11	$1,177,000
WB-2	Area E	WB SR-91 between Santa Fe Avenue and Long Beach Boulevard (2,119 feet)	14[b]	Yes	11	$1,177,000
WB-2	Area E	WB SR-91 between Santa Fe Avenue and Long Beach Boulevard (2,119 feet)	16	Yes	11	$1,177,000
EB-3	Area H	EB SR-91 between Santa Fe Avenue and Long Beach Boulevard (1,748 feet)	6	No	0	$0
EB-3	Area H	EB SR-91 between Santa Fe Avenue and Long Beach Boulevard (1,748 feet)	8	Yes	1	$107,000
EB-3	Area H	EB SR-91 between Santa Fe Avenue and Long Beach Boulevard (1,748 feet)	10	Yes	2	$214,000

Noise Barrier	Location	Limits/ Length of Barrier	Barrier Height (feet)	Acoustically Feasible?	Number of Benefited Receptors	Total Reasonable Allowance
EB-3	Area H	EB SR-91 between Santa Fe Avenue and Long Beach Boulevard (1,748 feet)	12[a,b]	Yes	2	$214,000
EB-3	Area H	EB SR-91 between Santa Fe Avenue and Long Beach Boulevard (1,748 feet)	14	Yes	3	$321,000
EB-3	Area H	EB SR-91 between Santa Fe Avenue and Long Beach Boulevard (1,748 feet)	16	Yes	3	$321,000

Source: Noise Study Report (October 2020)

[a] Minimum height needed to break the line of sight between an 11.5-foot truck stack and first row receptor.
[b] Minimum height needed to achieve at the 7 dB reduction design goal.

Table 2.13-7 summarizes the preliminary noise abatement decision for Area E and H for the barrier height that met the feasibility criteria and achieved the Caltrans noise reduction design goal of 7 dB. Noise barrier construction cost estimates are based on typical Caltrans masonry walls in accordance with Caltrans' standard plans and specifications. Cost estimates are based on Caltrans' Cost Database (Caltrans, 2020), which tabulates average unit costs of construction-related items from recent state transportation projects. The cost calculations for the noise barrier included all items appropriate and necessary for the construction of the noise barrier, including estimated costs for retaining walls, bridge modifications, clearing and grubbing, and demolition. The determination of reasonableness for each noise barrier was evaluated from a cost perspective.

Noise Barrier WB-2 would be masonry-block constructed along the edge of the shoulder of SR-91 between Santa Fe Avenue and Long Beach Boulevard in the westbound direction. Noise abatement would benefit a residential subdivision. The noise barrier would be approximately 2,119 feet long, and the sound reduction design goal would be met at a height of 14 feet. The estimated total construction cost of the recommended 14-foot-high noise barrier would be $12,585,020, exceeding the total reasonable allowance of $1,177,000. Therefore, construction of this noise barrier would not be reasonable.

Table 2.13-7. Summary of Noise Abatement of Noise Barriers WB-2 and EB-3

Noise Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Units/Receptors	Total Reasonable Allowance	Estimated Construction Cost	Cost Less than Allowance?
WB-2	14	Yes	11	$1,177,000	$12,585,020	No
EB-3	12	Yes	2	$214,000	$8,780,412	No

Noise Barrier EB-3 would be masonry-block constructed along the edge of the shoulder of SR-91 between Santa Fe Avenue and Long Beach Boulevard in the eastbound direction. Noise abatement would benefit Jordan Plus High School. The noise barrier would be approximately 1,748 feet long, and the sound reduction design goal would be met at a height of 12 feet. The estimated total construction cost of the recommended 12-foot-high noise barrier would be $8,780,412, exceeding the total reasonable allowance of $214,000. Therefore, construction of this noise barrier would not be reasonable.

With consideration of cost and acoustic benefit, the two proposed noise barriers are determined not to be reasonable; therefore, noise barriers are not recommended for this project.

Non-acoustical Factors Relating to Feasibility

Based on the preliminary project and abatement design, no non-acoustical factors related to feasibility have been identified that would be considered out of the ordinary for noise barrier construction. The non-acoustical factors considered were geometric standards (e.g. minimum sight distances), safety, maintenance, security, geotechnical issues, and utility relocations. Some of these non-acoustical factors, including geotechnical issues, would be investigated and confirmed during final design. If pertinent parameters change substantially during the final project design, the preliminary noise abatement decision may be changed or eliminated from the final project design. A final decision to construct noise abatement is based on the NADR prepared for the project and would be made upon completion of the project design.

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BIOLOGICAL ENVIRONMENT

2.14 Animal Species

2.14.1 Regulatory Setting

Many state and federal laws regulate impacts on wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. There are no species listed or proposed for listing as threatened or endangered with potential to be within the Biological Study Area (BSA)[1] (see Figure 2.14-1). All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 through 1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

2.14.2 Affected Environment

The following section summarizes the results of the Natural Environment Study (NES) Minimal Impacts (MI) completed for this project in February 2020.

The BSA is in an urban area of Los Angeles County surrounded by commercial, industrial, and residential land uses. The BSA encompasses approximately 171 acres; extends approximately 100 feet beyond the project limits; and includes portions of eastbound and westbound SR-91, East and West Artesia Boulevard, East Albertoni Street, Central Avenue, Wilmington Avenue, South Acacia Court, other local streets, and areas that could be directly and indirectly impacted by the project, either temporarily or permanently. The vegetation communities and cover classes within the BSA include Ornamental, Ruderal, Developed, and Unvegetated. There are no natural communities or water features within the BSA. The vegetated areas within the BSA consist of:

- Ornamental areas between the eastbound SR-91 sound wall and East Albertoni Street in the western portion of the BSA, within street medians, and adjacent to residential and commercial development throughout the BSA on both sides of SR-91.

[1] The BSA is defined in Section 2.14.2.

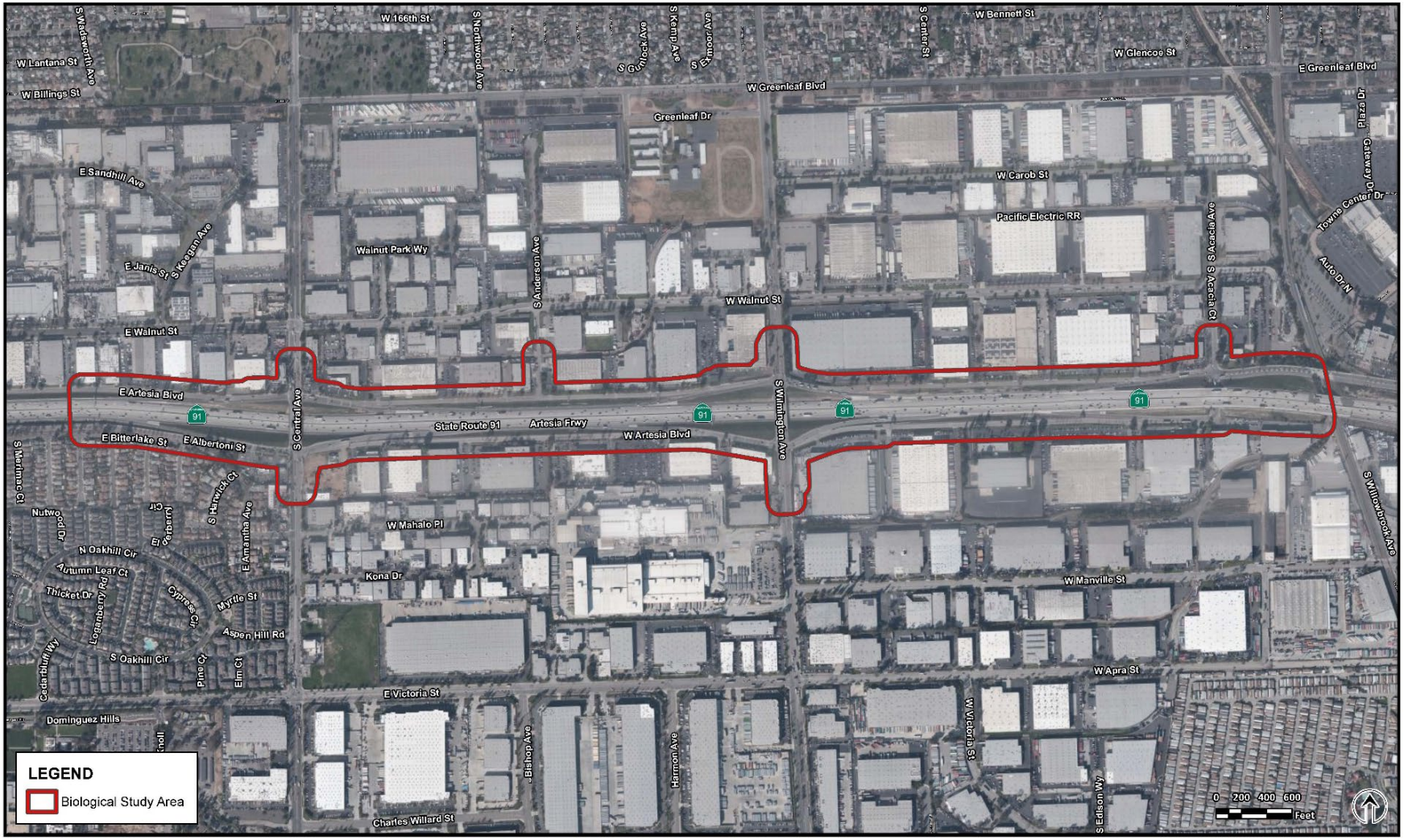

Figure 2.14-1 Biological Study Area

- Ruderal areas are along the shoulders, on-ramps and off-ramps of eastbound and westbound SR-91, and on the southeast corner of Central Avenue and West Artesia Boulevard. Developed areas within the BSA include eastbound and westbound SR-91, East and West Artesia Boulevard, East Albertoni Street, Central Avenue, Wilmington Avenue, South Acacia Court, sidewalks, commercial development, and residential properties.

Unvegetated areas within the BSA are along both sides of Wilmington Avenue between West Artesia Boulevard and West Walnut Street.

Habitat within the BSA consists of disturbed, ruderal vegetation and mature landscaped trees adjacent to the paved areas that could support birds and bats. There is the potential for migratory birds to nest and forage within the trees and vegetation in the BSA. In addition, there is potential for bat roosting habitat in buildings; trees; and bridge expansion joints, crevices, and weep holes in the BSA. Wildlife species observed during the biological surveys are those commonly found in developed areas, including American crow (*Corvus brachyrhynchos*), barn swallow (*Hirundo rustica*), house finch (*Haemorhous mexicanus*), and mockingbird (*Mimus polyglottos*).

The following lists were obtained to identify special-status wildlife with the potential to be in the BSA, based on their recorded geographical distribution and are included in Appendix G:

- California Natural Diversity Database (CNDDB) species lists – obtained July 30, 2019, October 21, 2019, and January 19, 2021 (CDFW CNDDB, 2019)
- California Native Plant Society (CNPS) species lists – obtained July 30, 2019, October 21, 2019 and January 19, 2021 (CNPS, 2019)
- NOAA Fisheries species list – obtained July 30, 2019, October 21, 2019 and January 19, 2021 (NOAA Fisheries, 2019)
- USFWS species list – obtained July 30, 2019, and updated December 10, 2019 and January 19, 2021 (USFWS, 2019)

According to the CNDDB, USFWS, and NOAA Fisheries searches, 86 special-status wildlife species have the potential to be in the BSA, based on recorded geographical distribution. Based on literature reviews regarding habitat requirements and the August 1, 2019 field survey results, four special-status wildlife species have potential to be in the BSA, including the California gull (*Larus californicus*) (CDFW S4), Cooper's hawk (*Accipiter cooperi*) (CDFW S4), rufous hummingbird (*Selasphorus rufus*) (CDFW S1S2), and western mastiff bat (*Eumops perotis californicus*) (CDFW SSC) (see Table 2.14-1).

After reviewing the results of the database queries to determine the potential for protected species to be in the BSA, a biological survey of the BSA was conducted August 1, 2019. The BSA was visually surveyed on foot, to the extent feasible, and all plant and wildlife species encountered were identified. Nomenclature for common, widespread plants and wildlife conforms to the Jepson eFlora (Jepson eFlora Project, 2019), Sibley Guide to Birds (Sibley, 2016), and the CNDDB (CDFW CNDDB, 2019). Additional references and regional field guides consulted included Calflora (CNPS, 2019) and A Californian's Guide to the Trees Among Us (Ritter, 2011). No special-status animal species were observed in the BSA during the biological survey, but the BSA did contain suitable habitat for the California gull, Cooper's hawk, rufous hummingbird, and western mastiff bat.

Table 2.14-1. Special-Status Species with Potential to be in the BSA

Species Type	Common and Scientific Names	Federal USFWS Status	State CDFW Status	General Habitat Requirements	Habitat Present/Absent	Rationale for Species Presence/Absence
Bird	Accipiter cooperi Cooper's hawk[a]	--	S4, WL	The Cooper's hawk is found in cismontane woodland; riparian forest; riparian woodland; and upper montane coniferous forest, in wooded habitats from deep forests to leafy subdivisions and backyards. This species has more recently been found in suburbs and cities where there are tall trees for nesting. The Cooper's hawk nests mainly in riparian growths of deciduous trees, often in canyon bottoms on river floodplains, and will also nest in live oaks.	HP (Nesting) HP (Foraging)	Although the Cooper's hawk was not observed during the biological surveys there are large trees adjacent to eastbound and westbound SR-91 that could provide suitable nesting and foraging habitat in the BSA. Therefore, there is potential for this species to forage and nest in the BSA.
Bird	Larus californicus California gull[a]	--	S4, WL	The California gull is a fairly common nester at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades. This species is an abundant visitor to coastal and interior lowlands in the nonbreeding season. Inland, this species frequents lacustrine, riverine, and cropland habitats, landfill dumps, and open lawns in cities. The California gull requires undisturbed, isolated islands for nesting.	A[a] (Nesting) HP (Foraging)	Although the California gull was not observed during the biological surveys there are open areas that could provide suitable foraging habitat in the BSA, but there is no suitable nesting habitat; therefore, though not expected, there is potential for this species to forage in the BSA.

Species Type	Common and Scientific Names	Federal USFWS Status	State CDFW Status	General Habitat Requirements	Habitat Present/Absent	Rationale for Species Presence/Absence
Bird	Selasphorus rufus Rufous hummingbird[a]	--	S1S2	The rufous hummingbird is a common migrant and uncommon summer resident in California. In California, this species is known to breed in the Trinity Mountains of Trinity and Humboldt Counties. However, breeding range in the state may extend from the Transition life zone (6,000 to 9,000 feet) of the northwest coastal area at the Oregon border to southern Sonoma County. This species nests in old growth and north coast coniferous forest habitats in berry tangles, shrubs, and conifers. The rufous hummingbird prefers to forage in locations with a high density of nectar producing flowers.	A (Nesting) HP (Foraging)	Although the rufous hummingbird was not observed during the biological surveys there are ornamental trees and shrubs with nectar producing flowers in the BSA along eastbound and westbound SR-91 that could be used as foraging habitat, but there is no suitable nesting habitat. Therefore, though there is potential for this species to forage in the BSA, it is not expected to nest in the BSA.
Mammal	Eumops perotis californicus Western mastiff bat	--	SSC	The western mastiff bat is found in many open, semi-arid and arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. This species has been recorded throughout Central and Southern California, with a concentration in southern California. This species roosts in crevices on high vertical cliffs or surfaces (including buildings), trees, or tunnels. Because of their large size, they typically require a larger drop distance from roosting sites.	HP	Although the western mastiff bat was not observed during the biological surveys, there are bridge expansion joints, crevices, and weep holes; buildings; and trees in the BSA that could provide suitable roosting habitat for this species. Therefore, there is potential for this species to be in the BSA.

Notes:

Sources: Information for the habitat requirements was obtained from the following sources: (CDFW CNDDB, 2019), (California Herps, 2019), (Cornell Lab of Ornithology, 2019), (iNaturalist, 2019), (National Audubon Society, 2019), and (USFWS, 2019).

[a] Unprocessed Data; Unprocessed CNDDB data is data that has been submitted to CNDDB. The record of this data has been created but a thorough review by a CNDDB biologist has yet to be conducted. This data will be reviewed and incorporated into CNDDB, if appropriate. Unprocessed CNDDB data should be used with caution as the data has not been quality controlled.
-- = not applicable
A = absent (plant species/vegetation community or habitat requirements were not observed in the BSA during the biological survey)
HP = habitat present (there is habitat present within the BSA)
S1 = Critically Imperiled; extreme rarity (often five or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from California
S2 = Imperiled; rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or California
S4 = Apparently Secure; uncommon but not rare; some cause for long-term concern due to declines or other factors
SR-91 = State Route 91
SSC = State Species of Special Concern
WL = Watch List

2.14.3 Environmental Consequences

2.14.3.1 Temporary Impacts

Avian Species

No Build Alternative

The No Build Alternative would not include the construction of any project improvements. Therefore, the No Build Alternative would not result in temporary impacts on special-status birds species.

Build Alternative

The Build Alternative could result in temporary impacts on special-status bird if they were nesting within or are adjacent to the construction area. Construction would include vehicle movement, demolition of pavement and concrete, excavation, grading, paving, and vegetation removal that could result in temporary impacts including habitat loss and disturbance from noise, vibration, and human activity. Vegetation would be removed from the Acacia Court/Artesia Boulevard intersection, the center median on Artesia Boulevard, the road verge on Acacia Court, and from the slopes of the mainline where the C-D road will be located. The following project features (PF-BIO-1 through PF-BIO-4), would be incorporated into the project to avoid or reduce impacts on special-status avian species:

- **PF-BIO-1:** Construction in areas with trees or vegetation that may provide nesting habitat for special-status avian species will be reduced to the maximum extent feasible.
- **PF-BIO-2:** Trimming and removal of vegetation will be minimized and performed outside of the nesting season (typically February 1 to September 1) to the extent feasible. If construction is scheduled to begin during the bird nesting season, nesting bird surveys will be completed by a qualified biologist no more than 72 hours prior to construction, or as determined by the qualified biologist, to determine if nesting birds or active nests are present within the construction area. Surveys will be conducted within 150 feet for songbirds, 300 feet for shorebirds, and 500 feet for raptors, or as otherwise determined by the biologist. Surveys will be repeated if construction activities are suspended for 3 days or more.
- **PF-BIO-3:** If nesting birds are found within 500 feet of the construction area, orange flagging/fencing or similar (typically 150 feet for songbirds, and 500 feet for raptors, or as directed by a qualified biologist) will be installed and maintained until nesting activity has ended, as determined in coordination with the project biologist and regulatory agencies, as appropriate.
- **PF-BIO-4:** Following project construction, disturbed areas will be re-vegetated according to the conceptual landscape plan and in accordance with Caltrans' planting guidelines. The conceptual landscape plan includes planting new trees, shrubs, and groundcover.

2.14.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not include the construction of any project improvements. Therefore, the No Build Alternative would not result in permanent impacts on special-status bird species.

Build Alternative

The Build Alternative could result in permanent impacts on special-status bird species if they were nesting within the construction area. Construction activities, including vehicle movement, demolition of pavement and concrete, excavation, grading, paving, and vegetation removal, could result in permanent impacts such as bird mortality and/or nest destruction. Vegetation would be removed from the Acacia Court/Artesia Boulevard intersection, the center median on Artesia Boulevard, the road verge on Acacia Court, and from the slopes of the mainline where the C-D road will be located. However, with implementation of Project Features PF-BIO-1 through PF-BIO-4, adverse impacts on special-status bird species are not anticipated.

2.14.3.3 Temporary Impacts

Mammals

No Build Alternative

The No Build Alternative would not include the construction of any project improvements. Therefore, the No Build Alternative would not result in temporary impacts on the western mastiff bat.

Build Alternative

The Build Alternative could result in temporary impacts on western mastiff bat if they were roosting within or are adjacent to the construction area. Construction activities, including vehicle movement, demolition of pavement and concrete, excavation, grading, paving, and vegetation removal, could increase noise and vibration levels, which could result in impacts on pups and roost abandonment if a maternal colony were to be near the construction area. Vegetation would be removed from the Acacia Court/Artesia Boulevard intersection, the center median on Artesia Boulevard, the road verge on Acacia Court, and from the slopes of the mainline where the C-D road will be located. The following project features (PF-BIO-5 and PF-BIO-6), would be incorporated into the project to avoid or reduce impacts on the western mastiff bat:

- **PF-BIO-5:** If the project is constructed during the maternal season for bats (typically late March through mid-September), a thorough bat roosting habitat assessment will be conducted for all potential roosting habitat within 100 feet of construction activities. The survey will include a visual inspection to identify signs of roosting and if needed, emergence surveys will be conducted, to confirm presence or absence of bats.
- **PF-BIO-6:** If a maternal colony of bats is found, no work will be conducted within 100 feet of the maternal roosting site until the maternal season is finished or the bats have left the site, or as otherwise directed by a qualified biologist. The site will be designated as a sensitive area and protected as such until the bats have left the site. No activities will be authorized adjacent to the roosting site. Combustion equipment, such as generators, pumps, and vehicles, will not be parked or operated under or adjacent to the roosting site. Construction personnel will not be authorized to enter areas beneath the colony, especially during the evening exodus (typically, approximately 15 minutes prior to sunset and 1 hour following sunset).

2.14.3.4 Permanent Impacts

No Build Alternative

The No Build Alternative would not include the construction of any project improvements. Therefore, the No Build Alternative would not result in permanent impacts on the western mastiff bat.

Build Alternative

The Build Alternative would not include work on structures or require tree removal; therefore, permanent impacts on the western mastiff bat are not expected.

2.14.4 Avoidance, Minimization, and/or Mitigation Measures

With implementation of Project Features PF-BIO-1 through PF-BIO-6, adverse impacts on special-status avian species and the western mastiff bat are not anticipated; therefore, no additional avoidance, minimization, and/or mitigation measures are required.

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2.15 Invasive Species

2.15.1 Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999, directs the use of the state's invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

2.15.2 Affected Environment

This section summarizes the results of the NES MI (February 2020).

Twenty-two invasive plant species were observed growing in the BSA[2] that are listed by the Invasive Species Council of California as invasive to California (California Invasive Plant Council, 2019), including:

- Australian saltbush (*Atriplex semibaccata*)
- Bermuda grass (*Cynodon dactylon*)
- Bristly ox-tongue (*Helminthotheca echioides*)
- Bullthistle (*Cirsium vulgare*)
- Canary Island date palm (*Phoenix canariensis*)
- Crown daisy (*Glebionis coronaria*)
- Edible fig (*Ficus carica*)
- Crimson fountain grass (*Pennisetum setaceum*)
- Lantana (*Lantana camara*)
- Mediterranean grass (*Schismus* sp.)
- Mexican fan palm (*Washingtonia robusta*)
- Narrow leaved plantain (*Plantago lanceolata*)
- Olive (*Olea europaea*)
- Peruvian pepper tree (*Schinus molle*)
- Red stemmed filaree (*Erodium cicutarium*)
- Russian thistle (*Salsola tragus*)
- Slender oat (*Avena barbata*)
- Summer mustard (*Hirschfeldia incana*)
- Tocolote (*Centaurea melitensis*)
- Tree of heaven (*Ailanthus altissima*)
- Tree tobacco (*Nicotiana glauca*)
- Upright veldt grass (*Ehrharta erecta*)

[2] The BSA is defined in Section 2.14.2.

2.15.3 Environmental Consequences

2.15.3.1 Temporary Impacts

No Build Alternative

The No Build Alternative would not include the construction of any project improvements. Therefore, the No Build Alternative would not result in the spread of invasive plant species within the BSA.

Build Alternative

The Build Alternative would not result in temporary impacts from the spread of invasive plant species within the BSA.

2.15.3.2 Permanent Impacts

No Build Alternative

The No Build Alternative would not include the construction of any project improvements. Therefore, the No Build Alternative would not result in the spread of invasive plant species within the BSA.

Build Alternative

Construction activities including vehicle movement, demolition of pavement and concrete, excavation, grading, paving, and vegetation removal could result in a permanent spread of invasive plant species into areas within the BSA that do not contain invasive plant species. Vegetation would be removed from the Acacia Court/Artesia Boulevard intersection, the center median on Artesia Boulevard, the road verge on Acacia Court, and from the slopes of the mainline where the C-D road will be located. However, with implementation of the following project features (PF-BIO-7 through PF-BIO-9), adverse impacts from the spread of invasive plant species is not anticipated.

- **PF- BIO-7:** Invasive vegetation removed from the BSA will be treated and disposed of in a manner that will prevent the spread of invasive species on-site or off-site.
- **PF- BIO-8:** New landscaping materials, including erosion control seed mixes and other plantings, will be composed of non-invasive plant species and will be clear of weed seeds, and all erosion control and landscape planting will be conducted in a manner that will not result in the spread of invasive plant species.
- **PF- BIO-9:** Plants listed in the Pest Ratings of Noxious Weed Species and Noxious Weed Seed (United States Department of Agriculture, 2003) will not be used as part of the project.

2.15.4 Avoidance, Minimization, and/or Mitigation Measures

With the implementation of Project Features PF-BIO-7 through PF-BIO-9, the spread of invasive plant species is not anticipated; therefore, no additional avoidance, minimization, or mitigation measures are required.

2.16 Cumulative Impacts

2.16.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR) Section 1508.7.

2.16.2 No Build Alternative

Under the No Build Alternative, no construction would occur within the project footprint. Existing conditions would be perpetuated, and the impacts associated with the Build Alternative would not occur. Based on this, no cumulative impacts are anticipated under this alternative.

2.16.3 Build Alternative

2.16.3.1 Methodology

The Build Alternative's cumulative impact analysis followed the Caltrans 8-step process established in the *Guidance for Preparers of Cumulative Impact Analysis Approach and Guidance* (2005) as follows:

Step 1: Identify and define the project-specific resources to include in the cumulative impact analysis.

Step 2: Define the geographic boundary or resource study area (RSA) for each resource to be addressed in the cumulative impact analysis.

Step 3: Describe the current health and the historical context of each resource.

Step 4: Identify the direct and indirect impacts of the proposed project that may result in a cumulative impact on the identified resources.

Step 5: Identify other current and reasonably foreseeable future actions or projects and associated environmental impacts.

Step 6: Assess potential cumulative impacts.

Step 7: Report cumulative impact analysis results in the environmental document.

Step 8: Assess the need for avoidance, minimization, and/or mitigation measures and/or recommendations for actions by other agencies to address a cumulative impact.

As specified in the Caltrans guidance, a proposed project would not contribute to a cumulative impact of a resource if that project does not result in a direct or indirect impact to a resource. A cumulative analysis is automatically required for resources with significant impacts. In addition, a cumulative analysis is required for resources with a less than significant impact on resources in poor health, declining health, or at risk.

2.16.3.2 Evaluated Resources

Based on the analysis presented in Chapters 2 and 3, the following resources would not be directly or indirectly impacted by the Build Alternative: aesthetics, agriculture and forest resources, biological resources, cultural resources, energy, geology and soils (not paleontological resources), land use and planning, minerals, noise, population and housing, public services, and recreation.

The Build Alternative would not result in any significant impacts, but would impact several resources at a less than significant level under the following resource topics: Air quality, paleontological resources, hazards and hazardous materials, water quality, transportation, tribal cultural, and utilities/service systems. These topics are discussed below. Consistent with Caltrans guidelines, air quality, water quality, transportation, and paleontological resources will be analyzed in more detail.

Tribal Cultural: Consultation was conducted with the NAHC and several Native American tribes to comply with AB52. The results of the tribal consultation indicated that tribal cultural resources are not anticipated to be found within the project footprint (see Section 2.7, Cultural Resources and Chapter 4 Comments and Coordination). Excavation activities associated with signage upgrades near the eastern extent of the APE would extend to a depth 30 feet below ground surface. However, ground disturbance at this location is minimal and it is unlikely that ground disturbance would uncover tribal cultural resources; thus, the potential for the project to impact cultural resources is relatively low. These findings have been shared with the interested tribes, but they remain concerned about ground disturbance in the eastern portion of the project area. As a result, Metro would implement a limited archaeological and Native American monitoring program with interested tribes, as appropriate, prior to and during project construction.

Hazards and Hazardous Materials: The Build Alternative does not represent a significant hazard for the public or environment. As noted in Section 2.11, Hazardous Waste/Materials, existing hazardous contamination could be encountered within the project footprint. Any discovered hazardous material would be handled safely and securely according to applicable local, state, and federal laws. Testing during the design phase would identify the extent of contamination, if any. Since hazardous contamination (and its extent) is not confirmed, the health of this resource could not be classified as in poor health, declining health, or at risk. As a result, there is expected to be a less than significant impact on hazards/hazardous materials and a cumulative analysis is not warranted at this time.

Utilities/Service Systems: As noted in Section 2.4, Utilities/Emergency Services, the Build Alternative would not result in operational (long-term) impacts to utilities. Construction-related impacts could occur if utilities are relocated or protected in place, but would not result in service

disruptions. There was no indication that existing utility networks within the project footprint were in poor health, declining health, or at risk. Because of this, a cumulative analysis was not warranted. Project features would require coordination with affected utility companies to minimize any disruptions. As a result, there is expected to be a less than significant impact on utilities further supporting that a cumulative analysis is not warranted at this time.

As previously mentioned, the cumulative analysis for air quality, water quality, transportation, and paleontological resources are discussed below in Section 2.16.4.

2.16.3.3 Resource Study Areas

An RSA corresponds to a geographic area cumulative impacts to a particular resource can be analyzed within. Only active projects, defined as currently under construction or planned, were considered within each RSA. Active projects were identified using information obtained from city, county, and agency websites within each RSA. While this list of active projects was not exhaustive, it included major projects that could contribute to cumulative impacts.

The RSA includes active projects located within the cities of Compton, Carson, and adjacent projects in Long Beach. However, the only proposed improvements in the City of Long Beach would be associated with the construction of a new overhead sign on SR-91 within Caltrans ROW. Impacts on traffic and transportation/pedestrian and bicycle facilities are not anticipated within the City of Long Beach. Therefore, the cumulative analysis focuses on impacts primarily within the cities of Compton and Carson.

2.16.4 Resources Evaluated for Cumulative Impacts

The information in this section is presented by environmental resource area. The reasonably foreseeable projects and respective actions considered in this analysis are presented in Table 2.16-1 and shown on Figure 2.16-1.

Table 2.16-1 includes the major transportation and development projects that are relevant to the proposed project but does not include a comprehensive list of projects. It was not feasible to identify all current and reasonably foreseeable future actions within some of the larger RSAs, (e.g., Dominguez Channel and Los Angeles River watersheds, Central Sub-basin of the Coastal Plain of Los Angeles Groundwater Basin, SCAB, and SCAG planning region). General planning documents such as the SCAG *2016-2040 RTP/SCS* and general and specific land use plans, were referenced to project the cumulative effects on resources with large RSAs.

Information on proposed transportation projects was obtained from Metro, Caltrans, and SCAG. Information on proposed developments was obtained from the cities of Compton and Carson, Los Angeles County, and the State of California Office of Planning and Research. In general, the listed transportation projects would improve existing facilities rather than construct new facilities, and the listed development projects are in-fill projects.

Table 2.16-1. Reasonably Foreseeable Actions and Projects

ID Number	Project Name	Lead Agency/Status	Location	Description	Relevant Environmental Factors
T-1	Eastbound State Route 91 (SR-91) Atlantic Avenue to Cherry Avenue Auxiliary Lane Improvement Project	Caltrans Draft Initial Study/Environmental Assessment is being prepared.	Along approximately 1.4-mile segment of Eastbound SR-91 from the southbound Interstate 710 (I-710) interchange connector to Eastbound SR-91, to Cherry Avenue	Addition of auxiliary lane on Eastbound SR-91 from the Atlantic Avenue on-ramp to the Cherry Avenue off-ramp and bridge modifications and restriping to accommodate improvements	**Less than Significant:** Air Quality, Biological Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Public Services, Transportation and Utilities and Service Systems. **Less than Significant with Mitigation:** Noise and Geology and Soils.
T-2	I-710 Corridor Project	Caltrans Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement was released in July 2017. Final Environmental Impact Report/Environmental Impact Statement is being prepared.	Along approximately 19 miles of I-710 from State Route 60 (SR-60) to Ocean Boulevard in the City of Long Beach	Addition of general purpose lane capacity to I-710 as well as geometric design improvements	**Less than Significant with Mitigation:** Aesthetics, Air Quality, Biological Resources, Cultural and Paleontological Resources, Geology and Soils, Hazards and Hazardous Materials, Noise, Public Services, Parks and Recreation, Utilities and Service Systems **Significant and Unavoidable:** Land Use and Planning, Population and Housing, Transportation and Traffic

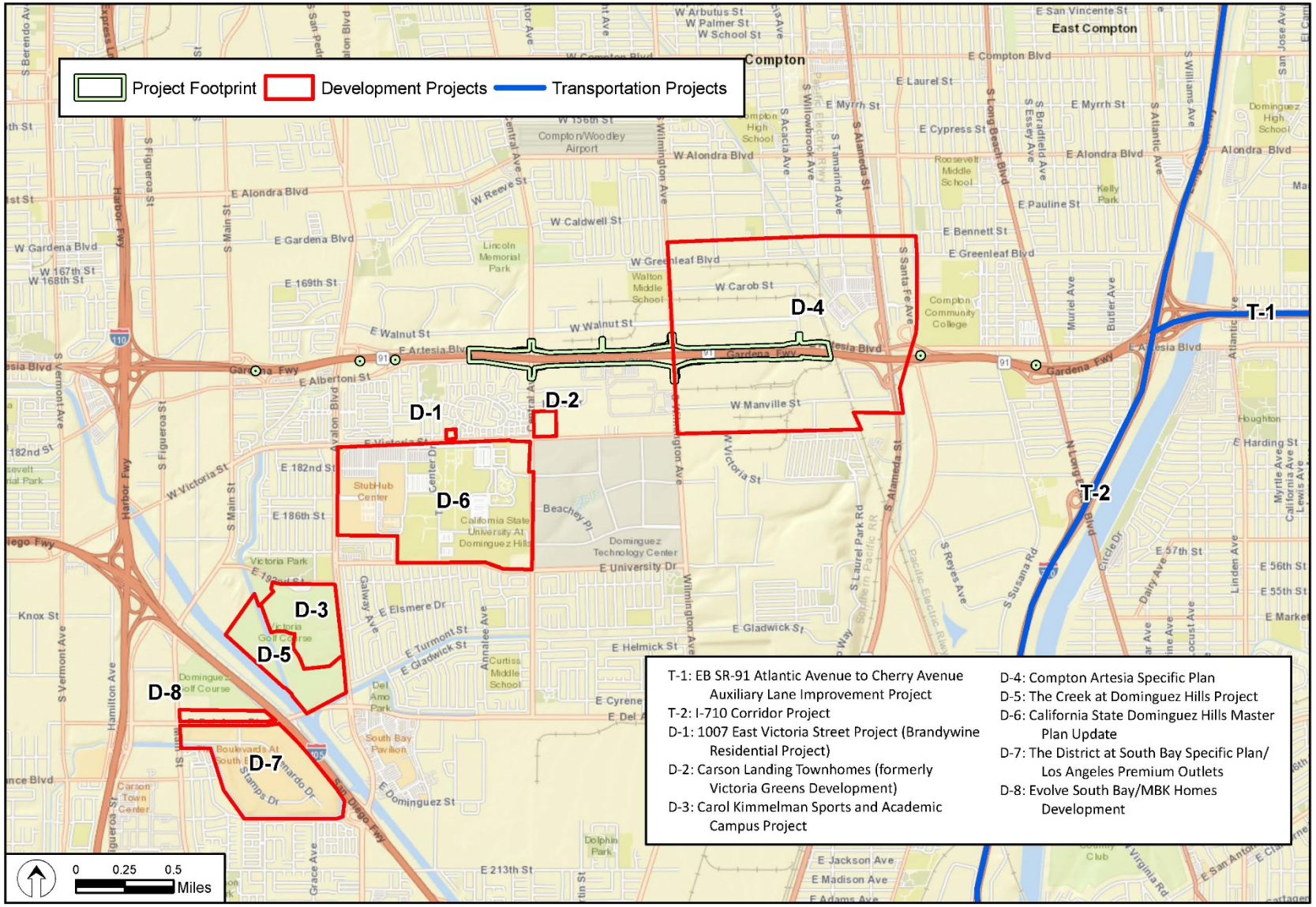
ID Number	Project Name	Lead Agency/Status	Location	Description	Relevant Environmental Factors
D-1	1007 East Victoria Street Project (Brandywine Residential Project)	City of Carson Final Initial Study/Mitigated Negative Declaration was circulated in November 2019. Under City Review.	Victoria Street at Cedarbluff Way, City of Carson	38-unit town home community distributed among six separate three-story buildings	**Less than Significant:** Aesthetics, Air Quality, Energy, Greenhouse Gas Emissions, Land Use and Planning, Population and Housing, Public Services, Recreation, Transportation, Utilities and Service Systems **Less than Significant with Mitigation:** Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Tribal Cultural Resources
D-2	Carson Landing Townhomes (formerly Victoria Greens Development)	City of Carson Final Initial Study/Mitigated Negative Declaration was circulated in June 2019. City Council approved in August 2019.	East Victoria Street and South Central Avenue, City of Carson	175-unit residential condominium project	**Less than Significant:** Aesthetics, Geology and Soils, Greenhouse Gas Emissions, Hydrology and Water Quality, Land Use and Planning, Population and Housing, Public Services, Recreation, Transportation/Traffic, Utilities and Service Systems **Less than Significant with Mitigation:** Air Quality, Cultural Resources, Hazards and Hazardous Materials, Noise, Tribal Cultural Resources

ID Number	Project Name	Lead Agency/Status	Location	Description	Relevant Environmental Factors
D-3	Carol Kimmelman Sports and Academic Campus Project	City of Carson Draft Environmental Impact Report was circulated in May 2019.	Avalon Boulevard at Martin Luther King Boulevard, City of Carson	Approximately 80 acres of sports facilities and academic campus	**Less than Significant:** Biological Resources, Cultural Resources and Tribal Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Utilities and Service Systems **Significant and Unavoidable:** Air Quality, Noise, Transportation
D-4	Compton Artesia Specific Plan	City of Compton Draft Environmental Impact Report was circulated in October 2019.	Bound by Wilmington Avenue, Bennet Street, South Tartar Lane, and Victoria Street, City of Compton	A transit core area of approximately 1 million sq.ft. of new development, including housing units, retail, cultural facilities, and offices	**Less than Significant:** Aesthetics, Tribal Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Energy, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Population and Housing **Less than Significant with Mitigation:** Biological Resources, Paleontological Resources, Noise, Public Services, Utilities and Service Systems **Significant and Unavoidable:** Air Quality, Cultural Resources, Transportation

ID Number	Project Name	Lead Agency/Status	Location	Description	Relevant Environmental Factors
D-5	The Creek at Dominguez Hills Project	City of Carson Draft Environmental Impact Report was circulated in May 2019 Final Environmental Impact Report is being prepared.	Avalon Boulevard at Turmont Street, City of Carson	87-acre sports and recreation facility located northwest of the intersection of East Del Amo Boulevard and South Avalon Boulevard	**Less than Significant:** Aesthetics, Greenhouse Gas Emissions, Hydrology and Water Quality, Land Use and Planning, Population and Housing, Public Services, Utilities and Service Systems, Energy **Less than Significant with Mitigation:** Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Tribal Cultural Resources **Significant and Unavoidable:** Air Quality, Noise, Recreation, Traffic
D-6	California State University Dominguez Hills Master Plan Update	California State University Board of Trustees Final Environmental Impact Report was circulated in September 2019.	Victoria Street, Central Avenue, University Drive, and Avalon Boulevard, City of Carson	Entails development of new and expanded facilities to accommodate growth from current enrollment of 11,000 full-time equivalent students to maximum enrollment of 20,000 full-time equivalent students	**Less than Significant:** Biological Resources, Cultural Resources **Significant and Unavoidable:** Air Quality, Greenhouse Gas Emissions, Noise, Traffic and Circulation, Utilities and Service Systems

ID Number	Project Name	Lead Agency/Status	Location	Description	Relevant Environmental Factors
D-7	The District at South Bay Specific Plan/Los Angeles Premium Outlets	City of Carson Final Supplemental Environmental Impact Report was circulated in January 2018.	Del Amo Boulevard between Avalon Boulevard and Main Street, City of Carson	Proposed revisions are to only the commercially zoned land located south of Del Amo Boulevard, approximately 157 acres	**Less than Significant:** Land Use and Planning **Less than Significant with Mitigation:** Geology and Soils, Noise, Utilities and Service Systems **Significant and Unavoidable:** Visual/Aesthetics, Traffic/Circulation/Parking, Air Quality
D-8	Evolve South Bay/MBK Homes Development	City of Carson Under Construction.	20330 South Main Street, Carson, CA 90745	300 multi-family residential units; 12,925 sq.ft. of lease, amenity, co-commercial space; and 95,200 sq.ft. of open space	Impacts were analyzed as part of the District at South Bay Specific Plan referenced above

Source: (City of Carson, 2018; City of Carson, 2019b; Cal State University, Dominguez Hills , 2019; City of Carson, 2019c; City of Carson, 2019a; County of Los Angeles Department of Public Works, 2019; HNTB, 2020a; Los Angeles County Parks & Recreation, 2019; City of Compton, 2019; California Department of Transportation and Los Angeles County Metropolitan Transportation Authority, 2017)



Sources: ESRI 2020.

Figure 2.16-1. Reasonably Foreseeable Actions and Projects

2.16.4.1 Air Quality

Resource Study Area

The RSA for permanent cumulative impacts on air quality includes the South Coast Air Basin (SCAB). The SCAB includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The RSA for temporary cumulative impacts on air quality includes the project footprint. The majority of the project footprint consists of approximately 1.85 miles on SR-91 between approximately 0.3 mile west of Central Avenue to the west and South Willowbrook Avenue to the east. Signage upgrades are also proposed within Caltrans ROW on SR-91 between South Main Street and Long Beach Boulevard. The RSA is in the cities of Compton, Carson, and Long Beach.

Project Impacts

As discussed in Section 2.12, the SCAB is currently designated as a nonattainment area with respect to the state and federal O_3 and $PM_{2.5}$ standards and state PM_{10} standards. In addition, Los Angeles County is the only county within SCAB that is currently designated nonattainment for the federal Pb standard. The proposed project would result in short-term degradation of air quality due to the release of exhaust emissions from construction equipment and fugitive dust emissions from excavation, grading, hauling, and other activities. Construction of the proposed project would be required to comply with Caltrans' Standard Specifications, as well as SCAQMD rules and regulations (PF-AQ-1 and PF-AQ-2). In addition, construction emissions would be short-term and intermittent. Therefore, the proposed project's contribution to cumulative effects on air quality during construction would be minor.

Once operational, the proposed project would contribute to long-term emissions of criteria air pollutants associated with the use of motor vehicles on the transportation facility. When compared to existing conditions, emissions of criteria air pollutants are anticipated to decrease or marginally increase under proposed project conditions, as summarized in Section 2.12.

The proposed project is listed in the 2020-2045 RTP/SCS financially constrained Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) which was found to conform by SCAG on May 7, 2020, and FHWA and FTA made a regional conformity determination finding on June 5, 2020. The project is also included in SCAG financially constrained 2019 Federal Transportation Improvement Program (FTIP) Amendment 19-12 with the Identification Number No. LA0G1563. The 2019 FTIP was determined to conform by FHWA and FTA on June 5, 2020. The design concept and scope of the proposed project is consistent with the project description in the 2020-2045 RTP/SCS, 2019 RTIP, and the "open to traffic assumptions of the 2016-2040 RTP/SCS SCAG regional emissions analysis.

On August 19, 2020, the Transportation Conformity Working Group (TCWG) determined the project is not a project of air quality concern (POAQC). In addition, the proposed project would have low potential for mobile source air toxics effects. Furthermore, the proposed project would not contribute to air pollutant concentrations that would exceed federal or state standards. Therefore, the proposed project's contribution to cumulative effects on air quality during operation would be minor.

Current and Reasonably Foreseeable Future Actions

Current and reasonably foreseeable actions in the RSA include transportation improvement and in-fill development projects (see Table 2.16-1). The construction of transportation projects included in the SCAG *2020/2045 RTP/SCS* would contribute to temporary increases in air pollutant emissions that would be spread over the 25-year planning horizon. These projects

would be required to implement measures to reduce air pollutant emissions in compliance with Section 14-9 of Caltrans' Standard Specifications and SCAQMD rules and regulations. Therefore, the contribution to cumulative effects on air quality from construction of these transportation projects would be minor.

As discussed above, SCAG's *2020-2045 RTP/SCS* and *2019 FTIP*, which take regionally significant projects into account, were determined to conform to the state implementation plan for attaining and maintaining the NAAQS. In addition, long-term air pollutant emissions associated with transportation projects in combination with the proposed project are anticipated to be reduced in the future because of implementation of fuel regulations, improved fleet average fuel economy, and the gradual removal of older vehicles from the roads.

Development projects listed in Table 2.16-1, including the Compton Artesia Specific Plan (D-1), Creek at Dominguez Hills Project (D-2), Carol Kimmelman Sports and Academic Campus Project (D-3), and other development projects that are included in specific and general plans within the RSA would contribute to short-term increases in air pollutant emissions during their construction that would exceed SCAQMD's thresholds. Therefore, construction emissions from development projects could be cumulatively considerable. However, construction emissions would be relatively short term and minimized to the greatest extent feasible with construction BMPs. In addition, construction activities would be spread out among the planning horizons for the specific and general plans governing the jurisdictions within the RSA. As stated above, the proposed project's contribution to cumulative effects on air quality during construction would be minor, and construction of the proposed project would incorporate all Caltrans' Standard Specifications, as well as SCAQMD rules and regulations (PF-AQ-1 and PF-AQ-2) in addressing construction air quality concerns.

Development projects are anticipated to increase populations in the RSA and contribute to increased long-term air pollutant emissions associated with increased vehicle trips. However, as mentioned above, the proposed project's contribution to cumulative effects on air quality during operation would be minor, and in combination, long-term air pollutant emissions associated with vehicle trips are anticipated to be reduced in the future because of implementation of fuel regulations, improved fleet average fuel economy, and the gradual removal of older vehicles from the roads. Furthermore, the Compton Artesia Specific Plan would enhance transit-oriented development and, therefore, contribute to regional goals related to improving air quality.

Conclusion of Cumulative Impacts

The RSA is a nonattainment area for several criteria air pollutants. Although in consideration with other current and reasonably foreseeable actions, the proposed could contribute to cumulative effects on air quality within the RSA, the proposed project's contribution to effects on air quality is anticipated to be relatively minor and minimized to the greatest extent feasible. Therefore, the proposed project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to air quality and mitigation would not be required.

2.16.4.2 Water Quality

Resource Study Area

The RSA for surface water quality and storm water runoff is the Dominguez Channel and Los Angeles River watersheds. The Dominguez Channel watershed encompasses approximately 85,120 acres and approximately 81 percent of the watershed is developed[1].

[1] Los Angeles County Department of Public Works, n.d. Dominguez Watershed. *https://dpw.lacounty.gov/wmd/watershed/dc/*

The Los Angeles River watershed covers approximately 527,360 acres and approximately 61 percent of the watershed is developed[2].

The RSA for groundwater quality is the Central Subbasin of the Coastal Plain of Los Angeles Groundwater Basin. The Central Subbasin of the Coastal Plain of Los Angeles Groundwater Basin covers approximately 177,000 acres.

Project Impacts

Receiving water bodies from the project footprint include Compton Creek, which drains to the Los Angeles River, and Dominguez Channel, which ultimately outlets to the Pacific Ocean. These water bodies are impaired water bodies on the Clean Water Act (CWA) Section 303(d) list, as provided in the 2014/2016 California Integrated Report[3]. The pollutants affecting these water bodies include, but are not limited to, benthic community effects, indicator bacteria, copper, lead, pH, trash, zinc, toxicity, oil, ammonia, and nutrients (algae). Because the RSA is heavily urbanized and developed, water quality is substantially degraded.

Proposed project construction could degrade water quality of downstream surface waters or ground water through the use of chemicals, such as diesel fuel, as well as earthwork activities resulting in sedimentation. Proposed project construction would comply with all applicable permit requirements, including the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit, Caltrans National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit, and Construction General Permit (CGP) (PF-WQ-1 and PF-WQ-2). BMPs and a Stormwater Pollution Prevention Plan (SWPPP) would be required, which would identify construction site BMPs to reduce potential for erosion, sedimentation, and other water quality impacts. If required, dewatering and discharges to the storm drain system would comply with all federal, state, and local permits and regulations. Therefore, the proposed project's contribution to cumulative effects on water quality and storm water runoff during construction would be minor.

Once operational, the proposed project would result in the addition of approximately 7.82 acres of new impervious surface area. The increase in impervious surface area would be relatively minor, when compared to the size of the Dominguez Channel and Los Angeles River Watersheds and the Central Subbasin. The proposed project would include permanent water quality treatment BMPs, such as infiltration trenches and biofiltration swales, that would be designed and implemented to reduce the discharge of pollutants from the Caltrans storm drain system to the maximum extent practicable (PF-WQ-3) Permanent design pollution prevention and treatment BMPs will be implemented to minimize downstream effects, stabilize slopes, control run-off, and treat water quality volume generated from new impervious surface area. During final design, the project would consider the construction and integration of biofiltration swales into aesthetics, landscape, and revegetation plans within the project as feasible Therefore, the proposed project's contribution to cumulative effects on water quality and storm water runoff during operation would be minor.

[2] State Water Resources Control Board, n.d. Los Angeles River Watershed. *https://www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/Water_Quality_and_Watersheds/los_angeles_river_watershed/la_summary.shtml*

[3] State Water Resources Control Board, 2017. 2014 and 2016. California Integrated Report Clean Water Act Sections 303(d) and 305(b). *Impaired Water Bodies.* October 3, 2017. *https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml*

Current and Reasonably Foreseeable Future Actions

Current and reasonably foreseeable actions in the RSA include transportation improvement and in-fill development projects (see Table 2.16-1). The projects listed in Table 2.16-1 and other transportation and development projects proposed within the Dominguez Channel and Los Angeles River watersheds and the Central Subbasin could temporarily degrade water quality during their construction. However, these projects would be required to obtain all applicable permits related to water quality prior to construction activities. Projects that disturb greater than one acre of soil area would be required to develop SWPPPs and implement construction site BMPs to reduce construction-related impacts on water quality. In addition, projects that create more than one acre of new impervious surface area would be required to implement low impact development practices and permanent water quality BMPs to reduce long-term impacts on water quality. Therefore, the contribution to cumulative effects on water quality from these projects would be minor.

Cumulative Impacts

Past urbanization has contributed to degradation of water quality within the RSA. The proposed project's effects on water quality and storm water runoff would be relatively minor. Other current and reasonably foreseeable actions would contribute to minor effects on water quality and storm water runoff within the RSA. Therefore, the proposed project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to water quality and storm water runoff and mitigation would not be required.

2.16.4.3 Transportation

Resource Study Area

The RSA for traffic and transportation/pedestrian and bicycle facilities includes the SR-91 between the I-110 and the I-710 in the cities of Compton, Carson, and Long Beach. Impacts on traffic and transportation/pedestrian and bicycle facilities are not anticipated within the City of Long Beach. Therefore, the cumulative analysis focuses on impacts within the cities of Compton and Carson.

Project Impacts

Proposed project construction may require short-term ramp closures. Only one on-ramp would be closed at any time. A traffic management plan would be implemented to minimize traffic delays and emergency service providers would be notified of any lane closures and detours prior to construction activities to minimize potential delays or disruptions to emergency response. (PF-TR-1). In addition, project improvements would be constructed prior to closing the existing eastbound Acacia Court off-ramp. Therefore, the project's contribution to cumulative effects on traffic and transportation facilities during construction would be minor.

Impacts on existing bicycle and pedestrian facilities are not anticipated. However, the Build Alternative may require relocation of one bus stop on Acacia Court and West Artesia Boulevard, which is served by Metro and Long Beach Transit. Early coordination with affected transit providers and implementation of a traffic management plan to maintain traffic safety would occur prior to construction to minimize potential disruptions to transit service and minimize impacts associated with relocation of the existing bus stop (PF-TR-2).

Following construction, the proposed project is anticipated to improve freeway and local road operations by increasing weaving distances within the project footprint. Therefore, the proposed project's contribution to cumulative effects on traffic and transportation and bicycle and pedestrian facilities during operation would be beneficial.

Current and Reasonably Foreseeable Future Actions

Current and reasonably foreseeable actions in the RSA include transportation improvement and in-fill development projects (see Table 2.16-1). The I-710 Corridor Project (T-2) would require temporary road closures and detours that could affect traffic circulation within the RSA. However, as required by Caltrans, a transportation management plan would be developed to minimize permanent and cumulative effects on the transportation system. Therefore, the I-710 Corridor Project's contribution to cumulative effects on traffic and transportation and bicycle and pedestrian facilities in the RSA would be minor.

The transportation plans governing the RSA, such as the SCAG *2020-2045 RTP/SCS*, include long-term goals to improve the existing circulation system by upgrading existing transportation infrastructure and encouraging alternative modes of transportation. The I-710 Corridor Project would result in traffic impacts at some locations throughout the I-710 corridor. However, the I-710 Corridor Project proposes modernization of the SR-91 interchange, which could improve traffic and transportation within the RSA. Therefore, transportation projects would contribute to cumulatively beneficial effects on traffic and transportation and bicycle and pedestrian facilities in the RSA.

The Compton Artesia Specific Plan (D-1), 1007 East Victoria Street Project (D-4), and Carson Landing Townhomes (D-5) would increase population density within the RSA. However, these development projects would be aligned with the cities of Compton's and Carson's goals and policies for promoting transit-oriented development and encouraging alternative modes of transportation. In addition, the Compton Artesia Specific Plan includes mitigation to offset cumulative traffic impacts. Therefore, the contribution to cumulative effects on traffic and transportation and bicycle and pedestrian facilities from these development projects in the RSA would be minor.

Cumulative Impacts

Overall, the circulation system experiences substantial congestion due to increasing travel demand. The proposed project's contribution to cumulative effects on traffic and transportation and pedestrian and bicycle facilities would be minor during construction and beneficial during operation. Other current and reasonably foreseeable actions would contribute to minor or beneficial cumulative effects on traffic and transportation and bicycle facilities. Therefore, the proposed project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to traffic and transportation and bicycle facilities and mitigation would not be required.

2.16.4.4 Paleontological Resources

Resource Study Area

The RSA for paleontological resources is limited to the area of maximum disturbance within the project study area. The project is located in the central portion of the Los Angeles Basin, an actively subsiding basin, bound by the Santa Monica and San Gabriel Mountains to the north, the Santa Ana Mountains to the east, and the Palos Verdes Hills to the south. This area of the Los Angeles Basin is underlain by over 14,000 feet of sediment deposited in the past 23 million years. Geological maps indicate the project area is located on alluvial fan deposits. According to paleontological record searches performed through the Natural History Museum of Los Angeles County, the University of California Museum of Paleontology, the San Diego Natural History Museum, and other published literature for fossil localities from similar deposits nearby (within 3 miles), two fossil localities are located near the project area. The first locality, in the City of Compton, produced remains of mammoth (*Mammuthus*) at a depth of 5 feet below ground

surface (bgs). The second locality, Ballona Creek Wash, produced the remains of mammoth (*Mammuthus*), horse (*Equus*), Western camel (*Camelops*), and human (*H. sapiens*) approximately 3 miles east at an unspecified depth.

Young alluvial fan and valley deposits at the surface are likely of Holocene age, are not old enough to have collected or fossilized significant biologic material, and are therefore assigned a low sensitivity. However, they may transition with depth (assumed to be at 5 feet bgs) into older, Pleistocene-age deposits.

Project Impacts

The proposed project improvements are located on the state highway and local streets in a highly developed and disturbed urban area. The project area has been previously disturbed due to past and on-going development activities, and the likelihood of discovering undisturbed paleontological resources is low due to the presence of disturbed sediments and fill material in the project area.

However, there are portions of the project area identified as having potential sensitivity that could result in impacts to paleontological resources for excavation that would extend more than 5 feet below the original ground surface. Construction of the Build Alternative requires excavation, and maximum depths would range from 25 to 40 feet for retaining walls, piles, anchor walls, overhead signs, and billboard replacement. To avoid or minimize impacts, excavation for these project components are limited with the implementation of project feature PF-PAL-1 and mitigation measure PAL-1.

Current and Reasonably Foreseeable Future Actions

Current and reasonably foreseeable actions in the RSA include transportation improvement and in-fill development projects (see Table 2.16-1).

The Compton Artesia Specific Plan (D-1), 1007 East Victoria Street Project (D-4), and Carson Landing Townhomes (D-5) would increase population density within the RSA. However, these development projects would be aligned with the cities of Compton's and Carson's goals and policies for protecting paleontological resources. In addition, the Compton Artesia Specific Plan includes a paleontological mitigation plan to offset cumulative paleontological impacts.

The Eastbound State Route 91 (SR-91) Atlantic Avenue to Cherry Avenue Auxiliary Lane Improvement Project proposes to enhance safety, reduce congestion and improve freeway operations and includes a paleontological mitigation plan to reduce potential impacts to paleontological resources.

Cumulative Impacts

The project study area may have paleontological sensitivity for Pleistocene sediments despite extensive disturbance from past and ongoing development activities. The proposed Project's adverse effects on paleontological resources would be reduced with implementation of mitigation measures. Other current and reasonably foreseeable actions (see Table 2.16-1 above) would be required to implement similar measures, such that impacts on paleontological resources would be substantially reduced. Therefore, the proposed Project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to paleontology with implementation of project feature PF-PAL-1 and mitigation measure PAL-1.

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Chapter 3 California Environmental Quality Act (CEQA) Evaluation

3.1 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features can include both design elements of the project and standardized measures applied to all or most Caltrans projects. These include Best Management Practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions and are an integral part of the project and have been considered prior to any significance determinations documented under each resource heading; see Chapters 1 and 2 for a detailed discussion of these features.

The discussion below each resource of this checklist are summaries of information contained in Chapter 2 and provide the reader with the rationale for the following significance determinations:

- No Impact
- Less than Significant Impact
- Less than Significant Impact with Mitigation
- Potentially Significant Impact

For a more detailed discussion of the nature and extent of impacts, see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.1.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

Question	CEQA Determination
a) Have a substantial adverse effect on a scenic vista?	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	No Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	No Impact

CEQA Significance Determinations for Aesthetics

a) No Impact. The proposed project is not located near or within a scenic vista.

b) No Impact. The proposed project is not located near or within an officially designated scenic highway.

c) No Impact. The proposed project is in an urbanized area. The project study area is zoned transportation, communication, utilities, commercial and services, and industrial and would not conflict with applicable zoning or other regulations governing scenic quality.

d) No Impact. The proposed project improvements would not include the addition of new sources of light or glare.

3.1.2 Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

Question	CEQA Determination
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No Impact

CEQA Significance Determinations for Agriculture and Forest Resources

a) No Impact. According to the California Department of Conservation's Farmland Mapping and Monitoring Program, there are no lands near or within the project study area that are designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (California Department of Conservation, 2017).

b) No Impact. There are no parcels under a Williamson Act contract within the project limits.

c, d) No Impact. There are no forest or timberlands within the project limits.

e) No Impact. The proposed project would not involve changes in the existing environment that could result in the conversion of Farmland to nonagricultural use or the conversion of forest land to non-forest land use.

3.1.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

Question	CEQA Determination
a) Conflict with or obstruct implementation of the applicable air quality plan?	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?	Less Than Significant Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	Less Than Significant Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less Than Significant Impact

CEQA Significance Determinations for Air Quality

a) No Impact. The proposed project is listed in the 2020-2045 RTP/SCS financially constrained Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) which was found to conform by SCAG on May 7, 2020, and FHWA and FTA made a regional conformity determination finding on June 5, 2020. The project is also included in SCAG financially constrained 2019 Federal Transportation Improvement Program (FTIP) Amendment 19-12 with the Identification Number No. LA0G1563. The 2019 FTIP was determined to conform by FHWA and FTA on June 5, 2020. The design concept and scope of the proposed project is consistent with the project description in the 2020-2045 RTP/SCS, 2019 RTIP, and the "open to traffic assumptions of the 2016-2040 RTP/SCS SCAG regional emissions analysis. The proposed project is included in SCAG's most recent RTP and RTIP and would not conflict with or obstruct implementation of the applicable air quality plan. Therefore, there would be no impact.

b, c) Less Than Significant Impact. The SCAB is currently designated as a nonattainment area with respect to the state and federal O_3 and $PM_{2.5}$ standards and state PM_{10} standards (Air Quality Report, January 2021). Federal standards designate PM_{10}, CO, and NO_2 as attainment/maintenance. The proposed project was submitted to SCAG Transportation Conformity Working Group (TCWG) on July 28, 2020, for review of PM hot-spot conformity. The TCWG committee determined that the proposed project is not considered a project of air quality concern (POAQC) on August 19, 2020. This determination was made because the project would not significantly increase traffic volumes along area roadways or the number of diesel vehicles within the project area. Furthermore, the proposed project would not contribute to existing or projected future mobile-source CO concentrations that would be projected to exceed federal or state CO standards.

As discussed in Section 2.12, long-term operational emissions of criteria air pollutants associated with the proposed project would be associated with the operation of motor vehicles. Estimated changes in operational emissions are summarized in Table 2.12-6. Operational emissions were quantified for existing conditions, No Build Alternative, and the Build Alternative (proposed project) conditions for Opening Year 2025 and Design Year 2040 conditions. In comparison to No Build Alternative year 2025 conditions, the proposed Build Alternative is predicted to decrease emissions by approximately one percent for $PM_{2.5}$ and PM_{10}, CO increase NO_x by approximately one percent and no change to ROG. In comparison to No Build Alternative Year 2040 conditions, the proposed Build Alternative is predicted to have no change in $PM_{2.5}$ and PM_{10} emissions and increase emissions for NO_x, CO and ROG by approximately 3 percent, 1 percent, and 1 percent, respectively. PM_{10} emissions would increase under the No Build and the Build Alternative Year 2040 when compared to existing conditions however, there would be no change in percentage in comparison to the No Build Therefore, project operation would not increase criteria pollutants or expose sensitive land uses adjacent to the freeway to substantial pollutant concentrations.

During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and would include CO, NO_x, volatile organic compounds, directly emitted PM_{10} and $PM_{2.5}$, and toxic air contaminants such as diesel particulate matter. Construction activities are expected to temporarily increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions would be temporary and limited to the immediate area surrounding the construction site. Compliance with SCAQMD rules and regulations during construction would reduce construction-related air quality impacts from fugitive dust emissions, construction equipment emissions, asbestos, and lead to less-than-significant levels. Therefore, the project's impact on regional air quality emissions would be less than significant. Therefore, project operation would not result in a cumulatively considerable net increase of any criteria pollutants or expose sensitive land uses adjacent to the freeway to substantial pollutant concentrations.

d) Less Than Significant Impact. Temporary construction activities could generate fugitive dust and emissions from the operation of construction equipment. The proposed project would comply with construction standards adopted by SCAQMD and Caltrans' standardized procedures for minimizing air pollutants during construction and would not adversely affect a substantial number of people; therefore, impacts would be less than significant.

3.1.4 Biological Resources

Would the project:

Question	CEQA Determination
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact

CEQA Significance Determinations for Biological Resources

a) No Impact. The proposed project would have no effect on USFWS listed species or their critical habitat. In addition, no NOAA fisheries service listed species or EFH have the potential to be in the BSA. The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, USFWS, or NOAA Fisheries.

Based on habitat requirements and the survey results, there is no potential for special-status natural communities or special-status plants to be in the BSA; however, there is potential for special-status avian species and mammals to be in the BSA. Construction activities could result in temporary impacts on special-status avian species; however, permanent impacts are not anticipated (see Section 2.14 Animal Species).

b, c) No Impact. There are no riparian habitat, wetlands, or sensitive natural communities within the BSA; therefore, there would be no impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS. In addition, there would be no impact on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means.

d) No Impact. The proposed project would not affect any migratory wildlife corridors; the movement of any native resident or migratory fish or wildlife species; or impede the use of native wildlife nursery sites.

e) No Impact. The proposed project would not conflict with local policies or ordinances protecting biological resources.

f) No Impact. The project is not within the limits of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; therefore, there would be no conflict.

3.1.5 Cultural Resources

Would the project:

Question	CEQA Determination
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	No Impact

CEQA Significance Determinations for Cultural Resources

a) No Impact. As discussed in Section 2.7 Cultural Resources, no historic resources were identified within the APE. Therefore, there would be no impact.

b) No Impact. As mentioned in Section 2.7 Cultural Resources, no archaeological sites were identified within the APE.

c) No Impact. In the event of discovery of human remains, standard measures would be implemented during construction, consistent with State of California Public Resources Code 5097.94, 5097.95, 5097.99, and State of California Health and Safety Code 7050.5.

3.1.6 Energy

Would the project:

Question	CEQA Determination
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact

CEQA Significance Determinations for Energy

a) No Impact. The proposed project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

b) No Impact. The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.1.7 Geology and Soils

Would the project:

Question	CEQA Determination
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact
ii Strong seismic ground shaking?	No Impact
iii Seismic-related ground failure, including liquefaction?	No Impact
iv Landslides?	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less Than Significant with Mitigation Incorporated

CEQA Significance Determinations for Geology and Soils

a)(i)(ii)(iii)(iv) No Impact. The proposed project is not within an Alquist-Priolo Earthquake Fault Zone, and would be constructed to meet Caltrans Seismic Design Criteria (California Department of Transportation, 2019). Therefore, the proposed project would not directly or indirectly cause potential substantial adverse effects, such as the risk of loss, injury; or death involving rupture of a known earthquake fault; substantial adverse effects involving strong seismic ground shaking; or seismic-related ground failure, including liquefaction or landslides.

b) No Impact. Construction activities could result in temporary disturbance of soils within the project study area but would not result in substantial soil erosion or the loss of topsoil (see Section 2.9 Geology/Soils/Seismic/Topography).

c) No Impact. The project area is not within a state designated landslide zone. The proposed project would be constructed to meet American Society for Testing and Materials (ASTM) Standard D4819 and would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

d) No Impact. On-site soils are anticipated to vary from non-expansive to low expansive. The proposed project would be designed and constructed to meet all applicable ASTM Standard D4819 requirements for construction on expansive soils and would not create substantial direct or indirect risks to life or property.

e) No Impact. The proposed project is in a developed area that is supported by waste and wastewater disposal systems. The proposed project would not involve changes to the existing sewer system, and it would not require the installation of any new septic tanks or alternative wastewater disposal systems.

f)Less than Significant with Mitigation Incorporated. The project footprint and adjacent areas are developed and were previously disturbed during development activities. Therefore, the likelihood of discovering undisturbed paleontological resources is low. However, there are portions of the project area identified as having potential sensitivity that could result in impacts to paleontological resources for excavation that would extend more than 5 feet below the original ground surface. Construction of the Build Alternative requires excavation, and maximum depths would range from 25 to 40 feet for retaining walls, piles, anchor walls, overhead signs and billboard replacement. Excavation for these project components may have the potential to impact paleontological resources. A Paleontological Monitoring Plan (PMP) will be prepared to avoid impacts to undiscovered paleontological resources. See Section 2.10 for more detailed information. The proposed project would adhere to the PMP and would not destroy a unique paleontological resource, site, or geologic feature.

3.1.8 Greenhouse Gas Emissions

Would the project:

Question	CEQA Determination
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less Than Significant Impact
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less Than Significant Impact

CEQA Significance Determinations for Greenhouse Gas Emissions

a) Less Than Significant Impact. Long-term operational greenhouse gas (GHG) emissions associated with the proposed project would be associated with the operation of motor vehicles along area roadways. Motor vehicle operational emissions were quantified for existing, Opening Year 2025 and Design Year 2040 conditions. Emissions were quantified using the CT-EMFAC2017 Version 1.0.2 computer program based, in part, on traffic data provided for the proposed project. In September 2019 the U.S. EPA and NHTSA issued the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One and subsequently the Final SAFE Rule in April 2020, which relaxed federal GHG emissions. In June 2020, CARB released a document with scalar factors for CO_2 to be applied to CT-EMFAC2017 values to more accurately reflect the fleet mix of future years (ARB, 2020). CO_2 and $MTCO_2e$ values have been scaled based on CARB's adjustment factors. Estimated annual operational mobile-source GHG emissions and traffic conditions for the project study area are summarized in Section 3.1.22 Climate Change. Existing mobile-source GHG emissions within the project study area total approximately 118,450 metric tons of carbon dioxide equivalent per year ($MTCO_2e$/year). The No Build Alternative is predicted to result in 108,587 $MTCO_2e$/year by Opening Year 2025 and 97,400 $MTCO_2e$/year by Design Year 2040. In comparison to existing conditions, the No Build Alternative would result in an approximately 8 percent decrease in mobile-source GHG emissions under 2025 conditions and an approximately 18 percent decrease under Design Year 2040 conditions. In comparison to existing conditions, the proposed Build Alternative is predicted to decrease mobile-source GHGs by approximately 9 percent by Opening Year 2025 and 17 percent by Design Year 2040 consistent with statewide GHG reduction goals.

The proposed project would be constructed in approximately 24-months. Construction would generate approximately 2,804 $MTCO_2e$ (see Section 3.1.22 Climate Change) of construction-generated GHG emissions. The emissions would be less than existing conditions, and along with construction GHG reduction measures, would reduce the impact to a less-than-significant level.

b) Less Than Significant Impact. The proposed project would be consistent with plans related to the reduction of GHG for the region. The following plans discuss the reduction of GHG and are pertinent to the proposed project:

- California Transportation Plan 2040 (adopted June 2016)
- Gateway Cities Air Quality Action Plan (adopted June 2013)
- County of Los Angeles Community Climate Action Plan 2020 (adopted August 2015)
- Los Angeles County Metropolitan Transportation Authority Long Range Transportation Plan (adopted September 2020)
- Los Angeles Countywide Sustainability Plan (adopted April 2019)

The proposed project would not conflict with applicable plans, policies or regulations adopted for the purposes of reducing the emissions of GHG emissions (Section 3.1.22 Climate Change).

3.1.9 Hazards and Hazardous Materials

Would the project:

Question	CEQA Determination
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less Than Significant Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less Than Significant Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Less Than Significant Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No Impact

CEQA Significance Determinations for Hazards and Hazardous Materials

a, b, c) Less Than Significant Impact. During construction, there is a potential to encounter hazardous materials in soils and existing road and materials such as ADL, ACM, LBP, petroleum hydrocarbons in soil and groundwater, and structural materials (lead chromate and treated wood waste). The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. In addition, the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The proposed project would not generate new sources of hazardous emissions or handle hazardous materials within 0.25 mile of an existing or proposed school.

d) Less Than Significant Impact. One property from which a potential partial acquisition would occur (Assessor's Parcel Number [APN] 7319-033-055) is included on the Cortese List pursuant to Government Code 65962.5 for Truck Turning Radii Option 2. This parcel is included in the Underground Storage Tank database and has an unknown status (see Section 2.11, Hazardous Waste/Materials). However, soil disturbance/excavation activities likely to occur during construction would consist of: surficial removal and re-compaction of new pavement up to 5 feet in depth, based on the limited depth of excavation during construction at this location, it is not anticipated that the proposed project would create a significant hazard to the public or the environment.

e) No Impact. The Compton-Woodley Airport is approximately 1 mile north of the project footprint. The project footprint is not within the airport's noise impact area (65 community noise equivalent level contour) (City of Compton General Plan, 2030, Noise Element (2011)). Therefore, the proposed project would not result in a safety hazard or excessive noise for people residing or working within the project footprint.

f) No Impact. Project construction may require short-term ramp closures; however, the proposed project is anticipated to improve freeway and local road operations and would not impair implementation of or physically interfere with an adopted emergency response plan or evacuation plans.

g) No Impact. The project footprint is within a developed urban area and is not in proximity to wildlands. According to the County of Los Angeles' Fire Department Fire Hazard Severity Zones (FHSZ) map, the project footprint is not within a state responsibility area or an area classified as very high fire hazard severity (California Department of Forestry and Fire Protection, 2011). Therefore, the proposed project would not expose people or structures directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

3.1.10 Hydrology and Water Quality

Would the project:

Question	CEQA Determination
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Less Than Significant Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	Less Than Significant Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i result in substantial erosion or siltation on- or off-site;	Less Than Significant Impact
ii substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	Less Than Significant Impact
iii create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	Less Than Significant Impact
iv impede or redirect flood flows?	Less Than Significant Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No Impact

CEQA Significance Determinations for Hydrology and Water Quality

a) Less Than Significant Impact. Project construction could degrade the water quality of downstream surface waters or groundwater through the use of diesel fuel chemicals and sedimentation, resulting from earthwork activities. Surface runoff from the project footprint is collected in storm drain inlets and conveyed through pipes that outlet into underground storm drain pipes along East and West Artesia Boulevard. Discharges from the project footprint would be subject to the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit, Order No. R4-2012-0175-A01. Because the proposed project would disturb more than 1 acre of soil area, a SWPPP would be required.

Based on the historically highest groundwater map and the well data within the vicinity, the groundwater elevation at the site is considered to be approximately 20 feet bgs (approximately 70 to 108 feet in elevation per NAVD88). Excavations for the proposed bridge piles and overhead signage upgrades are anticipated to extend up to 40 feet bgs, and billboard footings are anticipated to be approximately 40 feet bgs and would have potential to encounter groundwater. A geotechnical study will be performed during the PS&E phase of the project that will confirm groundwater elevations.

The proposed project construction would comply with all applicable permit requirements, including the Los Angeles County MS4 Permit, Caltrans NPDES Statewide Storm Water Permit, and U.S. EPA Construction General Permit. Therefore, the proposed project construction would not violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality. In addition, project construction would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Once operational, the project would result in the addition of approximately 15.60 acres of new impervious surface area, with a net new impervious surface area of approximately 7.82 acres Because the proposed project would result in an increase of more than 1 acre of impervious surface, permanent water quality treatment BMPs would be required. Proposed bioswales or other potential treatment options, where feasible, within the project would treat the additional 7.82 acres of net new impervious surface. The locations of the bioswales or other potential treatment options will be finalized during the PS&E phase of the project. Therefore, the proposed project operation would not violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality. In addition, project operation would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

b) Less Than Significant Impact. Based on the historically highest groundwater map and the well data within the vicinity, the groundwater elevation at the site is considered to be approximately 20 feet bgs (approximately 70 to 108 feet in elevation per NAVD88). (see Section 2.8 Water Quality and Storm Water Runoff). Excavations for the proposed bridge piles and overhead sign footings are anticipated to be approximately 40 feet bgs and have potential to encounter groundwater at these localized areas. However, it is not anticipated the proposed project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

c)(i-iv) Less Than Significant Impact. The majority of the project footprint drains to Compton Creek. The portions of the project footprint west of Central Avenue drain into the Dominguez channel. As discussed under Response (a) and (e), the proposed project would result in the addition of approximately 15.60 acres of new impervious surface area, with a net new impervious surface area of approximately 7.82 acres. Based on the Preliminary Drainage Report (PDR, 2020), the increase in impervious surfaces would moderately increase stormwater runoff within the project footprint. Existing drainage inlets and storm drains would be modified, removed, or new inlets added in accordance with the Caltrans Highway Design Manual Seventh Edition (HDM, July 2020) to accommodate the proposed widenings, modified ramps, and proposed C-D road. The increase in impervious surface area would not generate enough flows to impact off-site flood control facilities.

The proposed project would not alter the existing off-site drainage pattern. Off-site drainage systems would be protected in place to the maximum extent possible. Any existing off-site drainage systems that are impacted by the proposed project would be extended or realigned to accommodate the proposed roadway improvements.

Based on the previous information, the proposed project would not substantially alter the existing drainage pattern of the project footprint in a manner that would result in substantial erosion or siltation; substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site; create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows.

d) No Impact. The project footprint is not within the 100-year base floodplain or a flood hazard zone. The project study area is not in proximity to large bodies of water that are susceptible to tsunami or seiche zones and would not risk release of pollutants due to project inundation. Please refer to Appendix E for the FEMA FIRM map.

e) No Impact. The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.1.11 Land Use and Planning

Would the project:

Question	CEQA Determination
a) Physically divide an established community?	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No Impact

CEQA Significance Determinations for Land Use and Planning

a) No Impact. The proposed project would not include physical features that would physically divide an established community.

b) No Impact. The C-D Road Alternative would provide operational benefits to freeway and local road operations, reduce congestion, and improve mobility. It is consistent with the transportation and mobility element objectives of the following plans and reports (also, see Section 2.1 Land Use):

- Los Angeles County General Plan (2015)
- City of Compton General Plan (2010)
- City of Carson General Plan (2004)
- Metro and GCCOG SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report (2013)
- GCCOG Strategic Transportation Plan Final Report (2016)
- SCAG 2020-2045 RTP/SCS
- Metro Long-Range Transportation Plan (2020)
- City of Compton Bicycle Master Plan (2015)
- City of Carson Bicycle Master Plan (2013)

Therefore, the proposed project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigation an environmental effect.

3.1.12 Mineral Resources

Would the project:

Question	CEQA Determination
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No Impact

CEQA Significance Determinations for Mineral Resources

a, b) No Impact. The project footprint is in a highly urbanized area within the cities of Carson and Compton and is not within an area classified as Mineral Resource Zone-2 (California Department of Conservation, 1982). The proposed project would not result in the loss of availability of known mineral resources that would be of value to the region and residents of the state. The proposed project would not result in the loss of availability of a locally-important mineral resource recovery site as defined in a local, general, specific, or other land use plan.

3.1.13 Noise

Would the project result in:

Question	CEQA Determination
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	No Impact
b) Generation of excessive groundborne vibration or groundborne noise levels?	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact

CEQA Significance Determinations for Noise

a) No Impact. Noise-impacted receptors in the vicinity of the project footprint include schools, parks, places of worship, residences, and hotels. Existing noise levels within the project footprint range from approximately 36 to 82 dBA, as summarized in Section 2.13 Noise. Ambient noise levels were largely influenced by vehicle traffic on SR-91 and local arterial streets.

Based on Caltrans' Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects (California Department of Transportation, 2011), 3 dBA differences in noise levels are generally perceptible to the human ear. A substantial noise increase occurs when a project's predicted worst-hour design-year noise level exceeds the existing worst-hour noise level by 12 dBA or more.

Construction equipment often associated with road development projects would generate ground vibration levels of approximately 0.21 in/sec peak particle velocity (ppv) (94 velocity decibels [VdB]), or less, at 25 feet. The highest vibration levels from project construction would be associated with the use of vibratory rollers. However, vibration levels associated with vibratory rollers would not occur for an extended duration at any one location and would operate in excess of 25 feet from nearby buildings. Because groundborne vibration levels decrease at increasing distances from the source, construction-generated vibration levels at nearby land uses are not expected to exceed FTA's recommended groundborne vibration criteria of 0.5 in/sec ppv (102 VdB) for structural damage or 0.2 in/sec ppv (94 VdB) for human annoyance. Therefore, there would be no construction impacts related to groundborne vibration and noise.

Predicted design-year noise levels for land use in the project area would range from 37 to 82 dBA under the Build Alternative. When compared to existing conditions, the Build Alternative would result in increases in noise levels up to 1 dBA at noise-sensitive areas. Increases of 1 dBA would be barely perceptible and would not be substantial. Therefore, under CEQA, no noise impact would occur as a result of the proposed project, and no mitigation would be required. However, noise abatement would need to be considered under NEPA and 23 CFR 772 because the noise levels approach or exceed the noise abatement criteria of 67 dBA at noise-Impacted receptors.

b) No Impact. On-road vehicles are typically not considered to be significant sources of ground vibration that would cause structural damage or increased levels of annoyance to nearby land uses. As a result, long-term operational activities associated with the proposed project would not involve the use of any equipment or processes that would result in excessive groundborne vibration or groundborne noise levels.

The Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment Manual (May 2006) defines thresholds for construction vibration damage criteria with a range from 0.2 inches per second (in/sec) peak particle velocity (ppv) (94 vibration velocity decibels [VdB]) for non-engineered structures to 0.5 in/sec ppv (102 VdB) for engineered/reinforced structures. No land uses that would be considered extremely susceptible to groundborne vibration, such as recording studios and concert halls, have been identified near the project footprint. Therefore, there would be no impacts related to groundborne vibration and noise.

c) No Impact. The Compton-Woodley Airport is approximately 1 mile north of the project footprint. The project footprint is not within the airport's noise impact area (65 community noise equivalent level contour) (City of Compton General Plan 2020, Noise Element, 2011). Therefore, the proposed project would not expose people residing or working in the project study area to excessive noise levels

3.1.14 Population and Housing

Would the project:

Question	CEQA Determination
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact

CEQA Significance Determinations for Population and Housing

a) No Impact. The first-cut screening presented in the Caltrans Standard Environmental Reference (SER) outlines a step-by-step procedure to determine whether the project has the potential for growth-related impacts. The initial step of the screening process is to determine whether the project has the potential to change accessibility. If the project has the potential, then further analysis is warranted. The next step calls for an analysis of factors, including project type, project location, and growth pressures in the project study area. Based on this information, it is determined whether project-related growth is reasonably foreseeable. If growth is reasonably foreseeable, further analysis is conducted to determine the effect of this additional growth on resources of concern. The proposed project's modifications to accessibility occur within a highly developed urbanized area. The pattern and rate of population and housing growth is expected to remain consistent with the population and economic growth anticipated by existing general plans for the area with or without the proposed project. Therefore, growth is not reasonably foreseeable as a result of the proposed project. The reduction of congestion on the SR-91 and local roadways improvements would better enable the City of Compton and Carson to accommodate planned growth. Therefore, growth-related impacts are not anticipated.

b) No Impact. The proposed project would not result in residential or business displacement necessitating the construction of replacement housing elsewhere.

3.1.15 Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

Question	CEQA Determination
a) Fire protection?	No Impact
b) Police protection?	No Impact
c) Schools?	No Impact
d) Parks?	No Impact
e) Other public facilities?	No Impact

CEQA Significance Determinations for Public Services

a, b) No Impact. The proposed project does not involve the acquisition or displacement of any police or fire stations. As previously stated in Chapter 2, Topics Considered but Determined Not to be Relevant, project operation would not contribute to population growth resulting in an increased demand for police or fire protection services. Project operation would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental, police, or fire protection facilities in order to maintain acceptable service ratios or response times.

c, d, e) No Impact. The proposed project includes improvements to existing infrastructure, including roadways and freeway on- and off-ramps. As previously stated in the Population and Housing section, proposed project operation would not contribute to population growth in the project footprint that would result in an increased demand for existing schools, parks or other public facilities (e.g., libraries and community centers). Therefore, the proposed project would not require new or physically altered governmental facilities to maintain acceptable service ratios or other performance objectives for any of these public services.

3.1.16 Recreation

Question	CEQA Determination
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact

CEQA Significance Determinations for Recreation

a) No Impact. The proposed project includes improvements to existing infrastructure, including roadways, ramp terminal intersections, and freeway on- and off-ramps. As previously stated in the Population and Housing section, project operation would not contribute to population growth within the project footprint such that substantial physical deterioration of existing neighborhood and regional parks or other recreational facilities would occur or be accelerated.

b) No Impact. The proposed project improvements to existing transportation infrastructure does not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

3.1.17 Transportation

Would the project:

Question	CEQA Determination
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No Impact
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	Less Than Significant Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No Impact
d) Result in inadequate emergency access?	Less Than Significant Impact

CEQA Significance Determinations for Transportation

a) No Impact. The C-D Road Alternative would provide operational and safety benefits to freeway, ramp termini intersections, and local road operations and proposes to provide the following complete streets features:

- Class II buffered bike lane with Bicycle Tolerant Drainage Grates and Conflict Zone Green Paint on eastbound and westbound Artesia Boulevard between Central Avenue and Acacia Court and on Albertoni Street between Lysander Drive and Central Avenue
- LED lighting in pedestrian/bicycle accessible areas, where existing lighting is insufficient.
- ADA compliant curb ramps
- High-visibility cross walks and accessible pedestrian signals; leading pedestrian interval with countdown displays at eastbound Artesia Boulevard and Wilmington Avenue intersection
- Bridge access and sidewalks on Central and Wilmington Avenues will be provided to eliminate existing gaps to the bridge and intersections between eastbound and westbound Artesia Boulevard
- A traffic island with a pedestrian refuge area at Acacia Court/Artesia Boulevard intersection in the southeast quadrant, with a marked crosswalk crossing, accessible pedestrian signals, pedestrian change interval countdown displays at the marked crosswalk and rectangular rapid flashing beacons

- The existing Metro and Long Beach transit stop (routes 51, 60, 61, 130, 132, 202, and 260) at Artesia Boulevard and Acacia Court to be relocated farther east on Artesia Boulevard and to include improved assets such as a concrete bus pad, a transit shelter, bench, transit information and pedestrian scale lighting

As stated in Section 2.1 Land Use, the proposed project would be consistent with the following programs, plans, and policies addressing the overall transportation network and circulation system:

- Los Angeles County General Plan (mobility element objectives) (2015)
- City of Compton General Plan (2010)
- City of Carson General Plan (2004)
- Metro and GCCOG SR-91/I-605/I-405 Congestion Hot Spots Feasibility Report (2013)
- GCCOG Strategic Transportation Plan Final Report (2016)
- GCCOG Guiding Principles (2007)
- SCAG 2020-2045 RTP/SCS
- Metro Long-Range Transportation Plan (2020)
- City of Compton Bicycle Master Plan (2015)
- City of Carson Bicycle Master Plan (2013)

Therefore, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

b) Less Than Significant Impact. The purpose of the C-D road is to reduce weaving and the number of entrance and exit points on the freeway mainline. The C-D road Alternative would not add lane miles to the freeway mainline, but it would reduce conflicts and enhance safety. The C-D road would consolidate access to minimize weaving related issues resulting from the closely spaced interchanges. The freeway mainline configuration would remain unchanged. The C-D road would operate at lower speeds and volumes than the mainline and serve to address weaving. The C-D road would enhance safety by eliminating the nonstandard weaving on the mainline between Central Avenue and Acacia Court by reducing the high-occupancy vehicle lane cross-weave effect by providing additional distance to complete lane changes consistent with the proposed project's purpose and need.

According to the SR-91 Transportation Concept Report (TCR) (Caltrans 2013), the SR-91 is a transit facility and a multimodal system which includes carpooling, express transit service, interregional and intraregional travel and a shipping route. Some of the existing transit service providers for this route include: Metro Transit, Long Beach Transit, Torrance Transit, Norwalk Transit and Los Angeles Department of Transportation (LADOT) Commuter Express. The C-D Road Alternative would improve the merge and diverge movements and traffic congestion on the freeway mainline improving mobility and efficiency for transit using this corridor including easier access to the Harbor Gateway Transit Center.

The proposed free right-turn at the Acacia Court/Artesia intersection would improve conditions for transit operators accessing the Artesia Metro Rail A Line Station and the transit stop at the Crystal Park Hotel and Casino about 0.5 mile from the SR-91 and provide more efficient access to the transit center. Based on the purpose of C-D roads and the TCR's identification of the SR-91 as a multimodal transit facility as described above, the proposed improvements would improve conditions for transit and provide ADA compliant access for pedestrians.

In addition, Section 3.1 of the Caltrans Final Implementation Timing Memo (April 13, 2020) provides guidance that most projects on the SHS are non-capacity increasing and provides a list of types of projects not likely to lead to a substantial increase in vehicle travel and are not anticipated to have significant transportation impacts under CEQA, stating generally, these types of project would not require quantitative VMT analysis or mitigation. The C-D Road Alternative falls under the following type of project listed: The addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and if applicable, transit". Therefore, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), is not anticipated to increase VMT substantially throughout the project footprint and VMT analysis requirements under Senate Bill 743 are not required.

c) No Impact. The purpose of the proposed project is to reduce weaving and the number of entrance and exit points on the freeway mainline. The C-D road Alternative would reduce conflicts and enhance safety. The C-D road would improve operations by consolidating access to minimize weaving related issues resulting from the closely spaced interchanges. The freeway mainline configuration would remain unchanged. The C-D road would enhance safety by eliminating the nonstandard weaving on the mainline between Central Avenue and Acacia Court, and ramp intersection termini would operate at the same or better conditions than the No Build. Therefore, the proposed project would not increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

d) Less than Significant Impact. Project construction may require short-term ramp closures. To maintain safety during construction, a TMP will be prepared in coordination with emergency service providers and local partners for the project during final design. The TMP will address the short-term traffic and transportation impacts during construction of the project as applicable. Advanced signage and detours will be provided to allow motorists to avoid work zones by directing the traffic onto detour routes due to roadway or ramp closures. The proposed project is anticipated to improve freeway and local road operations and would not result in inadequate emergency access. For more information, please see Section 2.4, Utilities/Emergency Services and Section 2.5, Traffic, Transportation, Pedestrian and Bicycle Facilities.

3.1.18 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

Question	CEQA Determination
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	No Impact
b) A resource determined by the lead agency, in its discretion, and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less Than Significant Impact

CEQA Significance Determinations for Tribal Cultural Resources

a) No Impact. Record searches completed for the proposed project indicate that there are no listed or eligible tribal cultural resources for listing in the California Register of Historical Resources, or in a local register of historical resources, present in the APE.

b) Less Than Significant Impact. Consultation was conducted with the NAHC and several Native American tribes to comply with AB52. The results of the tribal consultation indicated that tribal cultural resources are not anticipated to be found within the project footprint (see Section 2.7 Cultural Resources and Chapter 4 Comments and Coordination). Excavation activities associated with signage upgrades near the eastern extent of the APE would extend to a depth 30 feet bgs. However, ground disturbance at this location is minimal and it is unlikely that ground disturbance would uncover tribal cultural resources; thus, the potential for the project to impact cultural resources is relatively low. These findings have been shared with the interested tribes, but they remain concerned about ground disturbance in the eastern portion of the project area. As a result, Metro would implement a limited archaeological and Native American monitoring program with interested tribes, as appropriate, prior to and during project construction.

3.1.19 Utilities and Service Systems

Would the project:

Question	CEQA Determination
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less Than Significant Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No Impact
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No Impact

CEQA Significance Determinations for Utilities and Service Systems

a) Less Than Significant Impact. There are a number of utilities in the project footprint, including overhead and underground electrical, natural gas, oil and gasoline pipelines, telephone and communication, cable television, water, and sewer (see Section 2.4 Utilities). The proposed project would not require the acquisition or displacement of any utility providers. However, the proposed project may potentially require the temporary relocation or protection-in-place of various utilities. Potentially, two sewer lines owned by the City of Compton and one water line owned by the Metropolitan Water District during project construction. However, this would not result in the construction of new or expanded facilities that could cause significant environmental effects.

b) No Impact. The California Water Service Company, City of Compton Water Department, and Metropolitan Water District serve as water utility providers within the project footprint. The Urban Water Management Plans for these suppliers account for projected growth in the region. At this time, the Plans do not identify water capacity issues and anticipate that existing water supply sources will continue to meet projected demands (California Water Service, 2016; City of Compton, 2010; Metropolitan Water District of Southern California, 2016). Project construction would require water usage for activities such as cleaning surfaces, mixing concrete, and suppressing dust, and electricity and natural gas to power equipment and vehicles. Water and energy usage would be relatively minor, limited to the construction periods (approximately 24 months), and would be served by existing utility service providers. The relatively minor water supply needed for project construction and operation would leave sufficient water supplies available for other reasonably foreseeable future development during normal, dry, and multiple dry years.

c) No Impact. Any wastewater generated from construction activities, such as water containing diesel and oil, paint, solvents, cleaners, chemicals, and debris would be collected, screened, and discharged in accordance with the SWPPP. Construction activities would result in temporary and minimal wastewater generation. Proposed project operation would not include activities that would generate wastewater. Therefore, the wastewater treatment provider that serves the project footprint would have adequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments.

d) No Impact. Proposed project construction would include removal of existing soils, pavement, wood poles, and other debris, which would generate small amounts of solid waste. The solid waste generated during project construction could be accommodated by existing nearby landfills that have no known capacity issues. Therefore, the proposed project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

e) No Impact. Solid waste generated during project construction and operation would be characterized and recycled or disposed of in accordance with federal, state, and local regulations at a licensed solid waste disposal facility. Therefore, the proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

3.1.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Question	CEQA Determination
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact

a-d) No Impact. According to the County of Los Angeles' Fire Department FHSZ map, the project study area is not within a state responsibility area or an area classified as very high fire hazard severity (California Department of Forestry and Fire Protection, 2011); therefore, the proposed project is not susceptible to high fire hazard severity and is not considered relevant to this environmental analysis.

CEQA Significance Determinations for Wildfire

a-d) No Impact. According to the County of Los Angeles' Fire Department FHSZ map, the project study area is not within a state responsibility area or an area classified as very high fire hazard severity (California Department of Forestry and Fire Protection, 2011); therefore, there would be no impact.

3.1.21 Mandatory Findings of Significance

Question	CEQA Determination
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Less Than Significant Impact

CEQA Significance Determinations for Mandatory Findings of Significance

a) No Impact. The proposed project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

b) No Impact. The Build Alternative would be located in a highly developed urban area and reasonably foreseeable transportation projects within the project study area are general maintenance projects that propose improvements to existing facilities rather than the construction of new facilities. Therefore, the impacts of the Build Alternative would not be cumulatively considerable.

c) Less than Significant Impact. The proposed project would not have environmental effects that would cause direct or indirect substantial adverse effects on human beings. The Build Alternative would result in improved operating conditions for SR-91 from Central Avenue to Acacia Court for all users.

3.1.22 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

3.1.22.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (Federal Highway Administration, 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability" (Federal Highway Administration, n.d.). Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the CAFE program based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) is responsible for setting GHG emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. Fuel efficiency standards directly influence GHG emissions.

State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

Assembly Bill (AB) 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (ARB) create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code [H&SC] Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

EO S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

Senate Bill (SB) 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

SB 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under AB 32.

EO B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

EO B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$).[1] Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

SB 1386, Chapter 545, 2016, declared "it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state's

[1] GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.

greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

AB 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

SB 743, Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state's goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

SB 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires ARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

EO B-55-18 (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

EO N-19-19 (September 2019) advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This EO also directs ARB to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

3.1.22.2 Environmental Setting

The proposed project is in an urban area of Los Angeles County with a well-developed road and street network. The project area is predominately industrial with some residential and commercial and industrial land uses. Traffic congestion during peak hours is not uncommon in the project study area. The 2020-2045 RTP/SCS by SCAG guides transportation and housing development in the project study area. The *Los Angeles Countywide Sustainability Plan* addresses GHGs in the project study area (County of Los Angeles, 2019).

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. U.S. EPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4.

3.1.22.3 National GHG Inventory

The U.S. EPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO_2, CH_4, N_2O, HFCs, perfluorocarbons, SF_6, and nitrogen

trifluoride. It also accounts for emissions of CO_2 that are removed from the atmosphere by "sinks" such as forests, vegetation, and soils that uptake and store CO_2 (carbon sequestration). The 1990–2016 inventory found that of 6,511 $MMTCO_2e$ GHG emissions in 2016, 81 percent consist of CO_2, 10 percent are CH_4, and 6 percent are N^2O; the balance consists of fluorinated gases (U.S. Environmental Protection Agency, 2018a). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5 percent of U.S. GHG emissions (Figure 3.1-1).

3.1.22.4 State GHG Inventory

ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2019 edition of the GHG emissions inventory found total California emissions of 424.1 $MMTCO_2e$ for 2017, with the transportation sector responsible for 41 percent of total GHGs (see Figure 3.1-2). It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (California Air Resources Board, 2019a). (See Figure 3.1-3).

AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. ARB adopted the first scoping plan in 2008. The second updated plan, California's 2017 Climate Change Scoping Plan, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions.

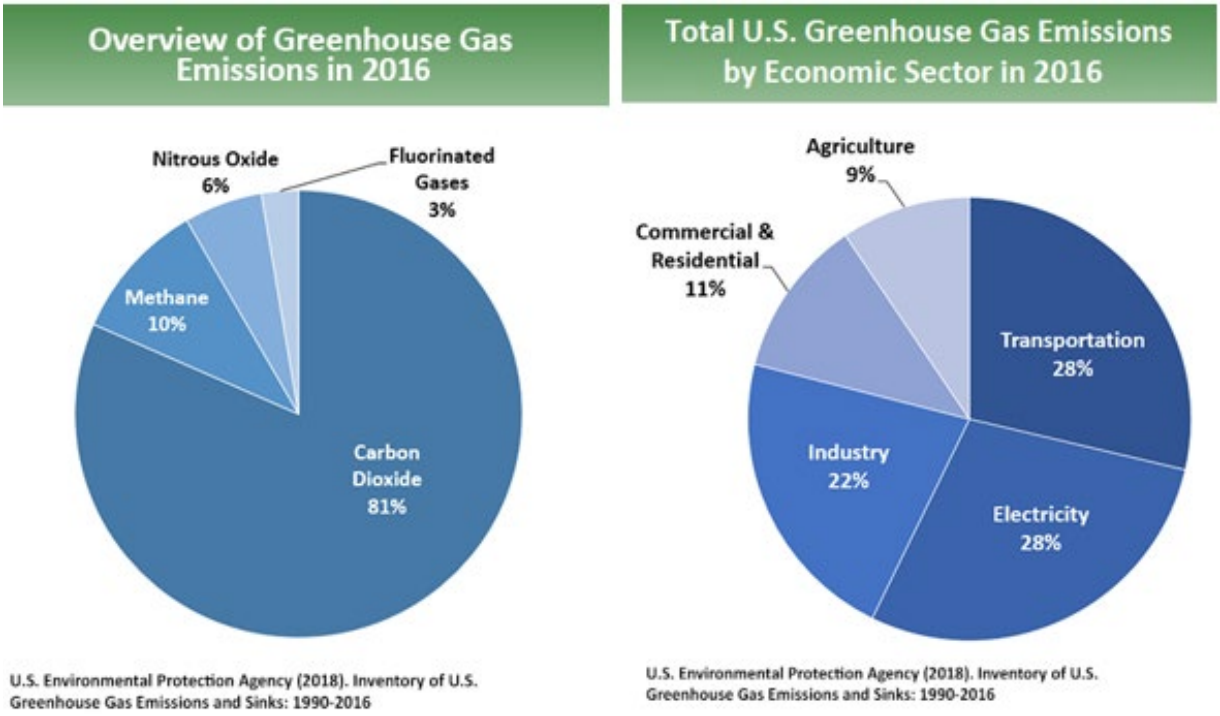

Figure 3.1-1. U.S. 2016 Greenhouse Gas Emissions

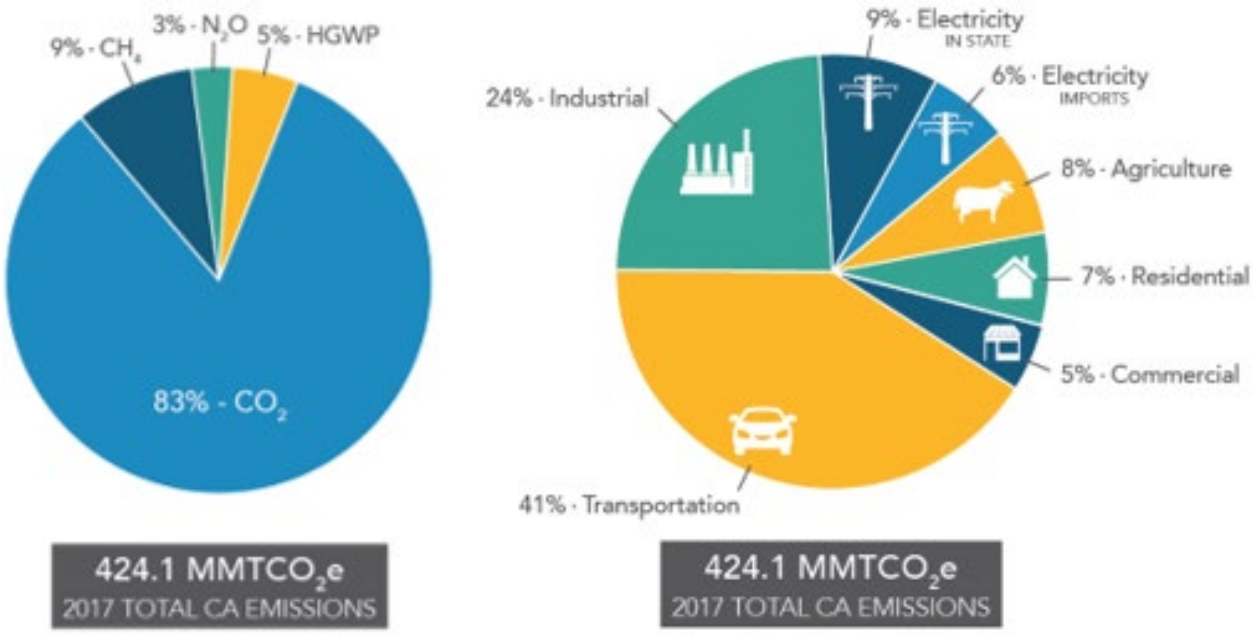

Figure 3.1-2. California 2017 Greenhouse Gas Emissions

CH_4 = Methane

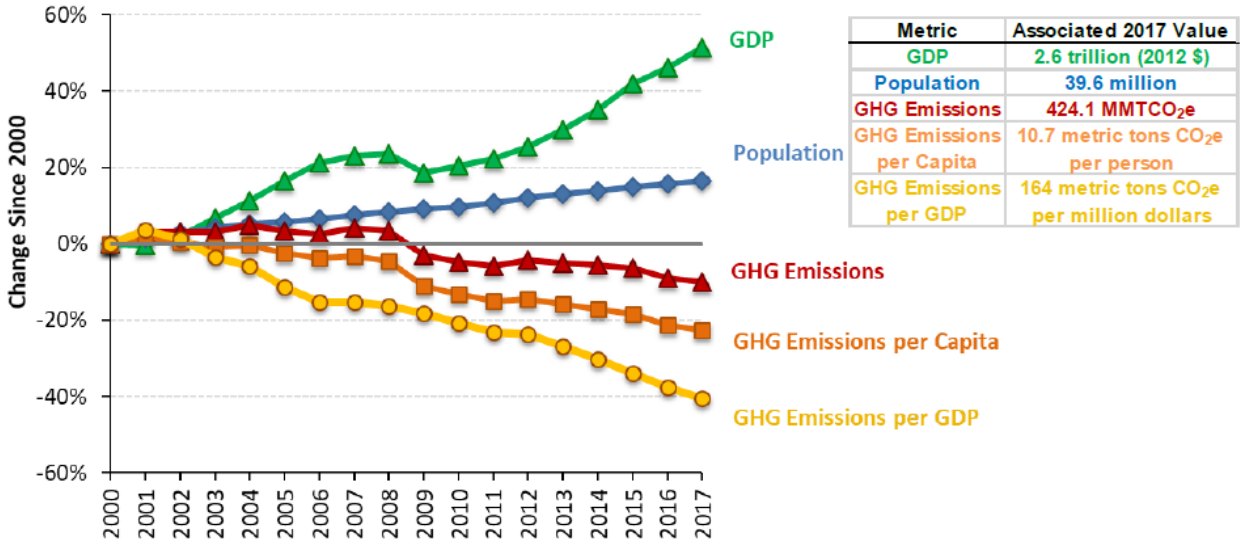

Figure 3.1-3. Climate Change in California GDP, Population, and GHG Emissions since 2000 (California Air Resources Board, 2019b)

GDP = gross domestic product

3.1.22.5 Regional Plans

ARB sets regional targets for California's 18 MPOs to use in their RTP/SCS to plan future projects that will cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The proposed project is included in the 2020-2045 RTP/SCS for SCAG. For the SCAG region, the ARB has set GHG reduction targets at 8 percent by 2020, and 13 percent by 2035 (California Air Resources Board, SB 375 Regional Plan Climate Targets, 2019). Table 3.1-1 shows other relevant plans, policies, and goals that relate to reducing GHG emissions.

Table 3.1-1. Regional and Local Greenhouse Gas Reduction Plans

Plan	GHG Reduction Policies or Strategies
California Transportation Plan 2040 (adopted June 2016)	• Improve highways and roads through integrated multimodal corridor management and new technologies. • Secure revenue from transportation users to fund transportation improvements.
Southern California Association of Governments 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (adopted May 7, 2020)	• Invest in adding capacity and improving critical road conditions. • Invest in long-term emission-reduction investments for trucks and rail. • Implement technology and mobility innovations. • Expand regional express lanes. • Reduce GHG emissions from reduced congestion.
Gateway Cities Air Quality Action Plan (adopted June 2013)	• Implement best management practices to reduce road dust form construction. • Require low-emission equipment for public construction contracts. • Enforce anti-idling regulations. • Reduce exposure of sensitive receptors to diesel exhaust.
County of Los Angeles Community Climate Action Plan 2020 (adopted August 2015)	• Expand bicycle, pedestrian, and transit networks. • Travel demand management. • Efficient goods movement.
Metro's Long Range Transportation Plan (adopted 2020)	• Support local and regional projects that decrease GHG emissions or reduce single-occupant vehicle (SOV) trips. • Implement projects identified in the Energy Conservation Project Portfolio. • Decarbonize Metro's energy and fuel supply. • Implement a Scheduled Maintenance Program for stationary and mobile emissions sources to reduce emissions.
City of Carson Climate Action Plan (Adopted December 2017)	• Accelerate the market for electric vehicles. • Encourage ride sharing. • Encourage transit usage. • Adopt active transportation initiatives.

	• Develop parking strategies that incentivize the use of other modes of transportation and reduce the number of vehicles. • Implement telecommuting and alternative work schedule policies to reduce the VMT. • Implement traditional land use strategies that include smart growth, transit oriented development strategies, and neighborhood oriented development.
Los Angeles Countywide Sustainability Plan (adopted 2019)	• Provide a convenient, safe, clean, and affordable transportation system that enhances mobility and quality of life while reducing car dependency. • Implement the county's Vision Zero Action Plan within unincorporated communities and work with local jurisdictions to implement transportation safety enhancements that reduce traffic injuries and deaths. • Develop and implement plans for active transportation that are inclusive of and accessible to all levels of physical ability, built to be comfortable, inviting, and safety-enhancing, and work collaboratively with cities to ensure continuity of active transportation networks between jurisdictions.

3.1.22.6 Project Analysis

GHG emissions from transportation projects can be divided into those produced during operation of the SHS and those produced during construction. The primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH_4 and N_2O are emitted during fuel combustion. In addition, a small amount of HFC emissions are included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 21083(b)(2)). As the California Supreme Court explained, “because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself.” (Cleveland National Forest Foundation v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.) In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

CO_2 accounts for 95 percent of transportation GHG emissions in the U.S. The largest sources of transportation-related GHG emissions are passenger cars and light-duty trucks, including sport utility vehicles, pickup trucks, and minivans. These sources account for over half of the emissions from the sector. The remainder of GHG emissions comes from other modes of transportation, including freight trucks, commercial aircraft, ships, boats, and trains, as well as

pipelines and lubricants. Because CO_2 emissions represent the greatest percentage of GHG emissions it has been selected as a proxy within the following analysis for potential climate change impacts generally expected to occur.

The highest levels of CO_2 from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 3.1-4). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, GHG emissions, particularly CO2, may be reduced.

Four primary strategies can reduce GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity, (3) transitioning to lower GHG-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued concurrently.

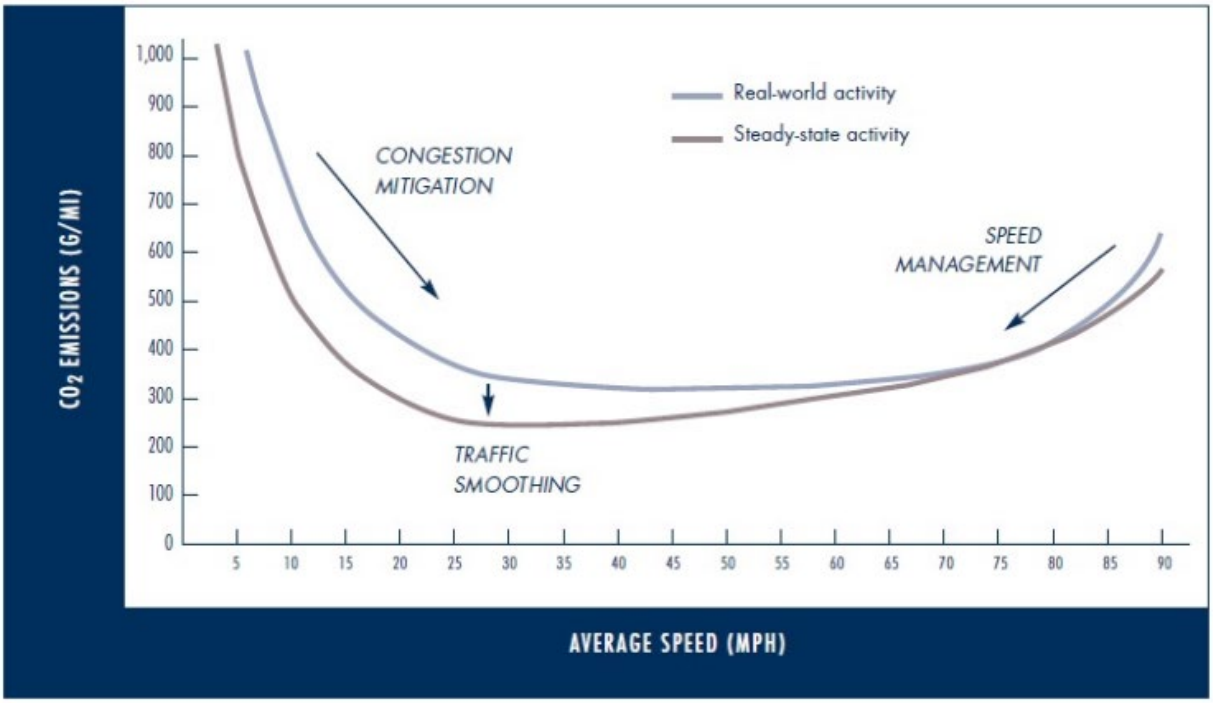

Figure 3.1-4. Possible Use of Traffic Operation Strategies in Reducing On-road CO2 Emissions (Matthew & Boriboonsomsin, 2010)

SCAG is required by federal law to prepare and update a long-range (minimum of 20 years) RTP. California Senate Bill 375 requires that the RTP also include an SCS, which outlines growth strategies that better integrate land use and transportation planning and help reduce the state's greenhouse gas emissions from cars and light trucks (California Government Code §65080 (b)(2)(B). For the SCAG region, the ARB has set greenhouse gas reduction targets at 8 percent below 2005 per capita emissions levels by 2020, and 13 percent below 2005 per capita emissions levels by 2035. The 2020-2045 RTP/SCS will meet or exceed these targets, lowering greenhouse gas emissions (below 2005 levels) by 8 percent by 2020; 18 percent by 2035; and 21 percent by 2040 (Southern California Association of Governments, 2016).

The proposed project is included in the regional emissions analysis conducted by SCAG for the *2020 RTP/SCS* and the *2019 FTIP.* The proposed project is listed in the 2020 RTP/SCS financially constrained Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The project is also included in SCAG's financially constrained 2019 Federal Transportation Improvement Program (FTIP) Amendment 19-12 with the Identification Number No. LA0G1563. The design concept and scope of the proposed project is consistent with the project description in the 2020 RTP/SCS, 2019 RTIP, and the open to traffic assumptions of the 2020 RTP/SCS SCAG regional emissions analysis.

Transit-only and multi-modal alternatives were not considered for this project because they would not meet the project purpose and need. However, the purposed project would include the following complete streets design improvements:

- Class II buffered bike lane with Bicycle Tolerant Drainage Grates and Conflict Zone Green Paint on eastbound and westbound Artesia Boulevard between Central Avenue and Acacia Court and on Albertoni Street between Lysander Drive and Central Avenue
- Bicycle and pedestrian signage and LED lighting in pedestrian/bicycle accessible areas, where existing lighting is insufficient
- ADA-compliant curb ramps high-visibility crosswalks and accessible pedestrian signals
- Leading pedestrian interval with countdown displays at the eastbound Artesia Boulevard and Wilmington Avenue intersection
- Bridge access and sidewalks on Central and Wilmington Avenues will be provided to eliminate existing gaps to the bridge and intersections between eastbound and westbound Artesia Boulevard
- A traffic island with a pedestrian refuge area at Acacia Court/Artesia Boulevard intersection in the southeast quadrant, with a marked crosswalk crossing, accessible pedestrian signals, pedestrian change interval countdown displays at the marked crosswalk and rectangular rapid flashing beacon
- The existing Metro and Long Beach transit stop (routes 51, 60, 61, 130, 132, 202, and 260) at Artesia Boulevard and Acacia Court to be relocated farther east on Artesia Boulevard and will include improved assets such as a concrete bus pad, a transit shelter, bench, transit information and pedestrian scale lighting

These design improvements would enhance safety for bicyclists and pedestrians and support these alternative modes of transportation at the marked crosswalks for pedestrians and bicyclists at the Central Avenue/Albertoni Street, Central Avenue/Artesia Boulevard, both Wilmington Avenue/Artesia Boulevard, and Acacia Court/Artesia Boulevard intersections.

Long-term GHG Emission Analysis

Long-term operational GHG emissions associated with the Build Alternative would be associated with the operation of motor vehicles along area roadways. Motor vehicle operational emissions were quantified for existing, Opening Year 2025, and Design Year 2040 conditions. Emissions were quantified using the CT-EMFAC2017 version 1.0.2 computer program based, in part, on traffic study area and data for this project (TOAR, November 2020). In September 2019, the U.S. EPA and NHTSA issued the SAFE Vehicles Rule Part One and subsequently the Final

SAFE Rule in April 2020, which relaxed federal GHG emissions. In June 2020, CARB released a document with scalar factors for CO_2 to be applied to CT-EMFAC2017 values to more accurately reflect the fleet mix of future years (ARB, 2020). CO_2 and $MTCO_2e$ values have been scaled based on CARB's adjustment factors. Estimated annual operational mobile-source GHG emissions and traffic conditions for the Project's traffic study area are summarized in Table 3.1-2.

As depicted in Table 3.1-2, existing mobile-source GHG emissions within the traffic study area total approximately 118,450 $MTCO_2e$/year. Under No Build Alternative Opening Year 2025 and Design Year 2040 conditions, mobile-source GHG emissions within the traffic study area are predicted to total approximately 108,587 $MTCO_2e$/year and 97,400 $MTCO_2e$/year, respectively. The No Build Alternative would result in an 8 percent decrease in mobile source GHG emissions under 2025 conditions and an approximately 18 percent decrease under Design Year 2040 conditions. Compared to existing conditions, the Build Alternative is predicted to decrease mobile source GHG by approximately 9 percent in Opening Year 2025 and 17 percent in Design Year 2040 (AQR, January 2021).

Table 3.1-2 Summary of Modeled Annual CO_2e Emissions and Vehicle Miles Traveled

Scenario/Analysis Year	Total Daily VMT	$MTCO_2e$/Year[a] (% Change)
Existing – Year 2019	931,551	118,449.6
No Build Alternative – Opening Year 2025	984,300	108,587.3
No Build Alternative 2025 Compared to Existing:		-9,862.4 (-8%)
Build Alternative – Opening Year 2025	970,126	107,501.7
Build Alternative Compared to Existing:		-10,947.9 (-9%)
Build Alternative Compared to No Build Alternative 2025:		-1,085.6 (-1%)
No Build Alternative – Design Year 2040	1,013,003	97,400.2
No Build Alternative 2040 Compared to Existing:		-21,049.4 (-18%)
Build Alternative – Design Year 2040	1,015,887	98,303.0
Build Alternative 2040 Compared to Existing:		-20,146.6 (-17%)
Build Alternative 2040 Compared to No Build Alternative 2040:		902.8 (1%)

$MTCO_2e$ = metric tons of carbon dioxide equivalents

VMT = vehicle miles traveled
Note: Refer to Appendix F for emission modeling assumptions and results
[a] Emissions were quantified using CT EMFAC2017 emission factors and traffic data provided for this project.

According to the TOAR (November 2020), in comparison to the No Build Alternative conditions, the Build Alternative would decrease vehicle delay at primarily affected intersections and result in relatively small (1 percent to 4 percent) increases in traffic volumes along the study corridor in 2025 and 2040. Despite increases in traffic volumes along the study corridor, due to operational improvements and fleet turnover GHG emissions are predicted to decline. This is attributed to the built-out context of the project area, anticipated increased transit use, future land use changes, and planned infrastructure improvements in Los Angeles, Orange, and Riverside counties. Eastbound SR-91 is expected to absorb some PM peak-hour traffic from improvements to downstream bottlenecks at I-710 and Atlantic Avenue.

While CT-EMFAC has a rigorous scientific foundation and has been vetted through multiple stakeholder reviews, its GHG emission rates are based on tailpipe emission test data. Moreover, the model does not account for factors such as the rate of acceleration and vehicle aerodynamics, which influence the amount of emissions generated by a vehicle. GHG emissions quantified using CT-EMFAC are, therefore, estimates and may not reflect actual physical emissions. Though CT-EMFAC is currently the best available tool for calculating GHG emissions from mobile sources, it is important to note that the GHG results are only useful for a comparison among alternatives.

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

Construction GHG emissions were estimated using SMAQMD's Road Construction Emissions Model, Version 9.0.0. While the model was developed for Sacramento conditions in terms of fleet emission factors and other modeling assumptions, the model is considered adequate for estimating road construction emissions in the SCAB and is used for that purpose in this project analysis. Emissions modeling was conducted based on off-road equipment requirements and estimated areas to be paved provided by the project engineer. All other construction activity assumptions, including on-road vehicle travel distances, were based on the default parameters contained in the model. The emissions presented are based on the best information available at the time of calculations.

Construction-generated GHG emissions are summarized in Table 3.1-3. Construction of the Build Alternative would occur over an approximate 24-month period and would generate a total of approximately 2,804 $MTCO_2e$. Emissions modeling assumptions and results are included in Appendix F of the Air Quality Report (January 2021).

Table 3.1-3. Construction-Generated GHG Emissions

Construction Phase	$MTCO_2e$
Land Clearing/ Grubbing	211.17
Grading/Excavation	1,668.47
Drainage/Utilities/Sub-Grade	759.97
Paving	164.03
Maximum/Phase	1,668.47
Project Total	2,803.63

Note: Construction emissions were estimated using the SMAQMD's Road Construction Emissions Model, Version 9.0.0 based, in part, on project-specific information provided by the project engineer. While the model was developed for Sacramento conditions in terms of fleet emission factors and other modeling assumptions, the model is considered adequate for estimating road construction emissions in the SCAB and is used for that purpose in this Project analysis. Refer to Appendix F for emissions modeling assumptions and results.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7 1.02C Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all ARB emission reduction regulations; and Section 14-9.02, Air Pollution Control (PF-AQ-1), which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

3.1.22.7 CEQA Conclusion

While the proposed project would result in GHG emissions during construction, it is anticipated that the project would not result in an increase in operational GHG emissions compared to existing conditions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction GHG-reduction measures, the impact would be less than significant.

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

3.1.22.8 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, Safeguarding California (see Figure 3.1-5).

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). A key state goal for reducing greenhouse gas emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California, 2019).

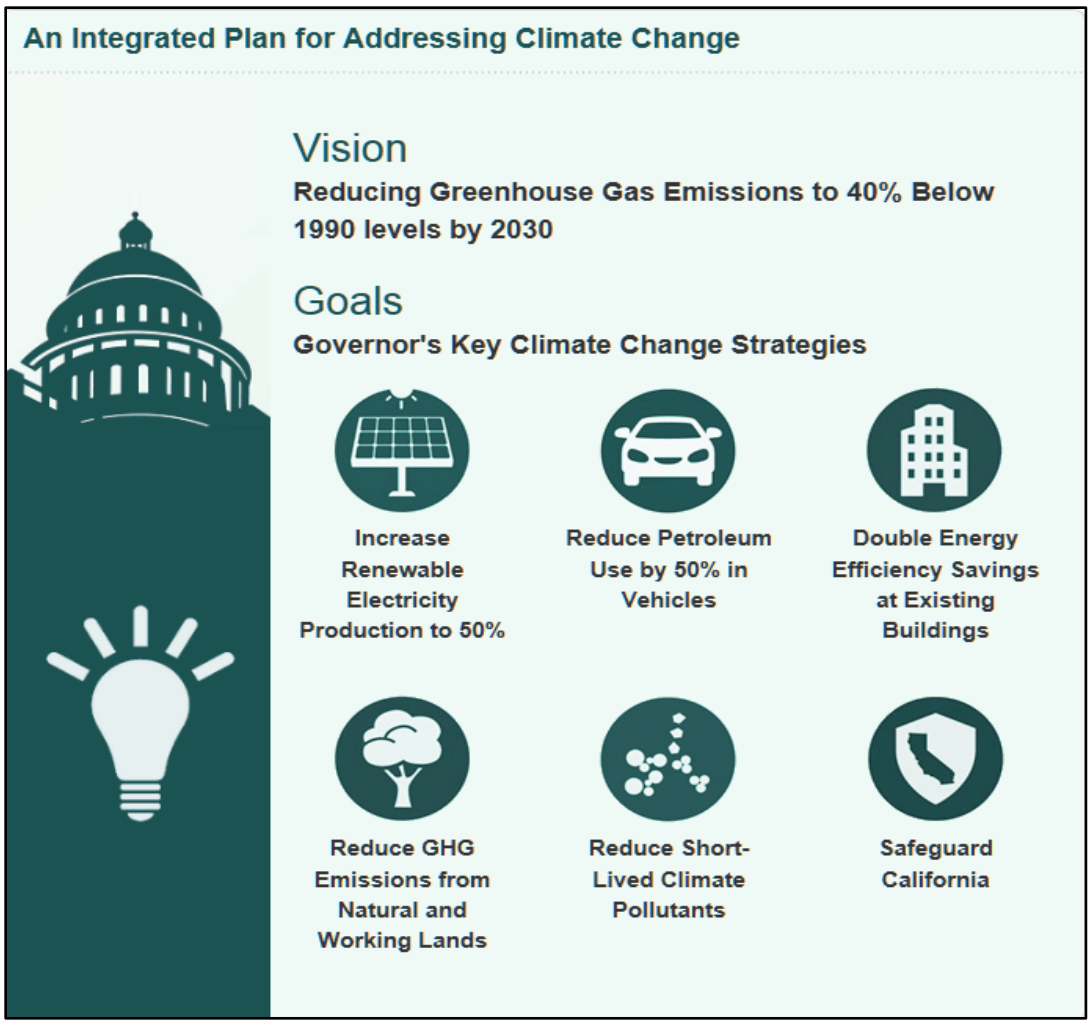

Figure 3.1-5. California Climate Strategy

In addition, SB 1386 (Wolk, 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set an interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. In 2016, Caltrans completed the California Transportation Plan 2040, which establishes a new model for developing ground transportation systems, consistent with CO2 reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 (Liu, 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., Safeguarding California).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

The following actions included in PF-AQ-1 and PF-TR-1 will be implemented in the project to reduce GHG emissions and reduce potential climate change impacts from project construction. Operational strategies to improve bicycle and pedestrian facilities that would support non-motorized transportation are also included.

- Contractor to comply with Caltrans standard Specification 14-9 which requires contractor to comply with all laws applicable to the project and to certify they are aware of and will comply with ARB emission reduction regulations for generators and on-road equipment including emissions and performance requirements and idling. Certain regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions including but not limited to:
  - Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by the CA Code of Regulations Title 17, Section 93114.
- To the extent feasible, construction traffic will be schedule and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Complete streets components are proposed and would improve bicycle, pedestrian, and transit connectivity and accessibility within the project limits.

3.1.22.9 Adaptation

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program (USGCRP) delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 U.S.C. ch. 56A § 2921 et seq). The Fourth National Climate Assessment, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime" (USGCRP, 2018).

The U.S. DOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions" (U.S. DOT, 2011).

FHWA order 5520 (Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events, December 15, 2014) established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA, 2019).

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. California's Fourth Climate Change Assessment (2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- *Resilience* is the "capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience". Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate "sea-level rise (SLR) projections into planning and decision making for projects in California" in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update in 2018*.

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of EO B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (Quirk, 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- Exposure – Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- Consequence – Determine what might occur to system assets in terms of loss of use or costs of repair.
- Prioritization – Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

Sea Level Rise

The proposed project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.

Floodplains

According to the Federal Emergency Management Agency Flood Insurance Rate Maps, the project footprint is entirely within Zone X (Federal Emergency Management Agency, 2008). The majority of freeway improvements would be within areas determined to be outside the 0.2 percent annual chance floodplain. The proposed signage upgrades on SR-91 east of Alameda Street are within an area with reduced flood risk due to levee. The Caltrans District 7 Climate Change Vulnerability Assessment estimates that changes in the 100-year storm precipitation event depth would be less than 5 percent over the next 65 years (2085) for the project area; one of the portions of Los Angeles County least affected by changing storm events.

The proposed project would not change hydrology or drainage patterns within the project study area. Infiltration trenches, bioswales or other potential treatment options would be implemented to enhance storm water infiltration in the project study area (HNTB Corporation, 2020). The treatment area would treat over 100 percent of the net new impervious surface area. Accordingly, the project would be resilient to effects of increased precipitation intensity under climate change conditions.

Wildfire

As discussed under Wildfire above, according to the County of Los Angeles Fire Department FHSZ map, the project study area is not within a state responsibility area or an area classified as a very high fire hazard severity zone (California Department of Forestry and Fire Protection, 2011). Therefore, the proposed project is not in a location vulnerable to wildfire. Furthermore, Caltrans 2018 revised Standard Specification 7-1.02M(2) mandates fire prevention procedures during construction, including a fire prevention plan. The project is not anticipated to exacerbate the risk or impacts of wildfires intensified by climate change.

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Chapter 4 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the scope of environmental documentation, determine the level of analysis required, and identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public notices, and project development team (PDT) meetings, consisting of technical experts from various Caltrans functional units, members of local agencies and consultant team that ensure all aspects related to the project were adequately addressed. This chapter summarizes the results of Metro's and Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

4.1 Scoping and Notice to Initiate Studies

Caltrans uses the scoping process to conduct its initial outreach and notify the public and public agencies about proposed projects. CEQA and NEPA encourage public participation; however, there is no formal scoping requirement for an IS/EA. The degree of public participation and the means of soliciting public input are determined case-by-case, considering the results of public participation efforts at the planning and programming stages and the degree of public interest or controversy [23 CFR 771.119(b)]. Where controversy may occur, informal environmental scoping may help define environmental impacts, alternatives, and issues of concern to the community. Therefore, Caltrans conducted informal environmental scoping for the project to address any potential areas of controversy or concerns from the general public and agencies in the early stages of project development.

On October 21, 2019, approximately 500 notices were sent to the residents, property owners, and affected stakeholders within 0.5 mile of the project limits to inform them that environmental studies for the improvement of State Route 91 (SR-91) were being initiated and that an IS/EA would be prepared. Sixty-six notices were also distributed to appropriate local, regional/county, state and federal agencies and elected officials. The notice included the project description and history, the purpose and need, a project location map, and a description of potential environmental impacts associated with the proposed improvements. The notice encouraged recipients to send written comments and/or suggestions concerning possible alternatives or potential environmental impacts to Caltrans by November 22, 2019. All comments received during notice to initiate studies are part of the project record. The list of local, regional/county, state and federal agencies and elected officials can be found in Chapter 6, Distribution List.

Five written comments were received from the following agencies and interested individuals:

- California Department of Conservation/Division of Oil, Gas, and Geothermal Resources
- Los Angeles County Sanitation District
- Metropolitan Water District (MWD)
- City of Carson
- Frontier Communications

The notice to initiate studies is included in the attachments at the end of this chapter.

4.1.1 Public Agency Notice to Initiate Studies Comments

Table 4.1-1 summarizes written comments received from the public agencies in response to the notice to initiate studies.

Table 4.1-1. Written Comments Received from Public Agencies

Public Agency	Comment
California Department of Conservation/Division of Oil, Gas, and Geothermal Resources (Division)	The project area is in Los Angeles County and lies within the mostly abandoned Dominguez oil field. Although the project lies outside the main area of the field, Division records indicate that approximately 15 plugged oil and gas wells are in proximity to the project area (the commenter provided links for more information and for information on individual well records). If any wells, including any plugged, abandoned, or unrecorded wells, are damaged or uncovered during excavation or grading, the Division must be notified, as remedial plugging operations may be required. Although the possibility for future problems from oil and gas wells that have been plugged, abandoned, or re-abandoned are remote, a diligent effort should be made to avoid building over any plugged or abandoned well.
Los Angeles County Sanitation District	The Sanitation Districts' facilities are directly under, and/or cross directly beneath, the proposed alignment. The Sanitation District cannot issue a detailed response or permit construction of the proposed project until project plans and specifications that incorporate the Sanitation Districts' facilities are submitted for review.
Metropolitan Water District	MWD's Middle Feeder South, an approximately 73-inch inside-diameter pipeline, is located along Acacia Court within the street easement ROW along the eastern boundary. MWD must have access at all times to maintain its facilities. Any future design plans for activity near MWD's pipelines or facilities must be submitted for review and approval to MWD's Substructures Team. MWD encourages water conservation, reclaimed water use, groundwater recharge programs, water-efficient fixtures, and drought-tolerant landscaping.
City of Carson	The City of Carson requests the following: • A Class II bike lane on Albertoni Street and Artesia Boulevard from Avalon Boulevard to Central Avenue to provide alternate transportation. • A ground-level or elevated sound wall with landscaped screening to reduce noise on surrounding land uses. • Irrigation (using reclaimed water) and landscaping consisting of trees, vines, shrubs, and so forth to mitigate visual impacts and improve air quality. The City of Carson will work with Caltrans on design and maintenance of the landscaping.

4.1.2 Public Comments

Table 4.1-2 presents the single comment received from the public during notice to initiate studies activities.

Table 4.1-2. Written Comments Received from the Public

Public Entity	Comment
Frontier Communications (Ray Roundtree, Manager)	Frontier has nothing to add concerning your request.

4.2 Interagency Coordination and Consultation

The following sections summarize the coordination and consultation completed as part of this project.

4.2.1 Coordination with Local Agencies

Pre-scoping project kick-off meetings were held with the City of Compton on June 20, 2019, and the City of Carson on July 16, 2019, with a commitment to ongoing coordination throughout the environmental process. A project overview was presented to both cities. Additional coordination meetings were held with the City of Compton to provide project updates on February 3, 2020, and August 26, 2020. A presentation on the project was given to the Compton City Council on January 19, 2021, where council members and staff were given the opportunity to ask questions about the project.

GCCOG are invited to the monthly PDT meetings conducted by Metro and Caltrans for the SR-91/Central Avenue to Acacia Court Improvement Project. The PDT meetings cover a wide range of topics related to the proposed project, including development and evaluation of alternatives, engineering considerations, environmental issues, and the environmental document and documentation process.

4.2.2 Native American Consultation

Consultation with Native American Tribes (groups and/or individuals) was conducted April 14, 2020, in compliance with Section 106 of the National Historic Preservation Act (NHPA) and Assembly Bill (AB 52), which amended the California Environmental Quality Act (CEQA) to require consultation with Native American Tribes, effective July 1, 2015. A Sacred Lands File Search was requested from the Native American Heritage Commission (NAHC) June 8, 2019. The search results were received June 24, 2019 and concluded no presence of Native American cultural sites within the project vicinity. However, the NAHC identified five Native American contacts who may have knowledge of cultural resources in or close to the project vicinity. The five Native American contacts identified through the NAHC and their responses to the consultation efforts are summarized in Table 4.2-1. NAHC and Native American correspondence are included in the attachments at the end of this chapter. No archaeological or Tribal Cultural Resources were identified as a result of Native American Consultation.

Table 4.2-1. Summary of Native American Consultation

Native American Group/Individual	Consultation	Coordination Dates and Results of Follow-Up
Charles Alvarez/Chairperson Gabrielino-Tongva Tribe	Section 106	**April 14, 2020:** Request to initiate consultation was sent by certified mail. **May 21, 2020:** Follow-up request was sent via email. **June 10, 2020:** Follow-up request was conducted by phone. Left message. **June 10, 2020:** Return call was received from Mr. Alvarez. The Project overview and recommendation of archaeological and Native American monitoring within the eastern portion of the project alignment was outlined for Mr. Alvarez. Mr. Alvarez requested the Gabrielino-Tongva Tribe be involved in the Native American monitoring efforts.
Robert Dorame/Chairperson Gabrielino Tongva Indians of California Tribal Council	Section 106	**April 14, 2020:** Request to initiate consultation was sent by certified mail. **May 21, 2020:** Follow-up request was sent via email. **June 10, 2020:** Follow-up request was conducted by phone. The Project overview and recommendation of archaeological and Native American monitoring within the eastern portion of the project alignment was outlined for Mr. Dorame. Mr. Dorame requested that the Gabrielino Tongva Indians of California be notified in the event that cultural resources, such as artifacts, patrimonial items, and grave goods were identified. Mr. Dorame also requested that Gabrielino Tongva Indians of California be notified should human remains be identified, regardless of the designated MLD.
Sandonne Goad/Chairperson Gabrielino/Tongva Nation	Section 106	**April 14, 2020:** Request to initiate consultation was sent by certified mail. **May 21, 2020:** Follow-up request was sent via email. **June 10, 2020:** Follow-up request was conducted by phone. Left message. No reply to date.
Anthony Morales/Chairperson Gabrieleno/Tongva San Gabriel Band of Mission Indians	AB 52 Section 106	**April 14, 2020:** Request to initiate consultation was sent by certified mail. **May 21, 2020:** Follow-up request was sent via email. **June 10, 2020:** Follow-up request was conducted by phone. Left message. No reply to date.
Andrew Salas/Chairperson Gabrieleño Band of Mission Indians – Kizh Nation	AB 52 Section 106	**April 14, 2020:** Request to initiate consultation was sent by certified mail. **May 21, 2020:** Follow-up request was sent via email. **June 10, 2020:** Follow-up request was conducted by phone. Mr. Salas stated that he believes that the project was discussed during a previous month consultation discussion with Caltrans. He stated that the area is sensitive for archaeological material and human remains. Mr. Salas requested that the Gabrieleño Band of Mission Indians – Kizh Nation be involved in the Native American monitoring efforts.

AB 52 = Assembly Bill 52
Caltrans = California Department of Transportation
MLD = most likely descendants
project = SR-91/Central Avenue to Acacia Court Improvement Project

4.2.3 Transportation Conformity Working Group

The particulate matter (PM) Conformity Hot Spot Analysis Project Summary Form (see attachments at the end of this Chapter) was presented to SCAG's TCWG for discussion and review July 28, 2020. Additional information and a more detailed map were requested and submitted on July 28, 2020.

On August 19, 2020, the TCWG determined the proposed project is not considered a project of air quality concern (POAQC) for PM because it does not meet the definition of a POAQC as defined in the U.S. Environmental Protection Agency's (EPA's) Transportation Conformity Guidance.

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Attachments
(Correspondence)

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Notice to Initiate Studies

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Making Conservation a California Way of Life.

October 21, 2019

<Mr./Ms./The Honorable Name >
<Title>
<Organization>
<Address>
<City, ST ZIP>

File: 07-LA-91 PM 7.00/11.04
From Central Avenue to Acacia Court
EA 07-35920
EFIS: 0719000201

Dear <Mr./Ms./Senator/Secretary>:

This notice is to advise you that the California Department of Transportation (Caltrans) and the Los Angeles County Metropolitan Transportation Authority (Metro) are initiating environmental studies for the improvement of State Route 91 (SR-91) from postmiles 7.00 to 11.04, in the cities of Carson, Compton, and Long Beach in Los Angeles County.

The proposed work includes mainline and ramp improvements from Central Avenue to Acacia Court and signage upgrades throughout the project limits. The Project would improve congestion between Central Avenue and Acacia Court and at the local interchanges of Central Avenue and Wilmington Avenue. SR-91 experiences congestion between the SR-110 and I-710 interchanges in the westbound direction during morning peak hours, and similar eastbound congestion during afternoon peak hour periods. A major contributor to the inefficient traffic operation is due to closely-spaced interchanges causing motorist weaving conflicts. The proposed project aims to reduce congestion and improve mobility and safety of the mainline, ramps, and local roadway operations. Existing signage will be upgraded west of Central Avenue and east of Acacia Court to the end of the project limits.

Preliminary environmental resource studies indicate a joint Initial Study/Environmental Assessment will be prepared pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), respectively, to evaluate the anticipated environmental effects, and is anticipated to result in a Mitigated Negative Declaration/Finding of No Significant Impact. Caltrans is the lead agency under CEQA and NEPA.

Potential impacts associated with the project may involve minor property acquisition (i.e. landscaped areas, parking) to improve the truck turning radii for the local intersections at Central Avenue and Wilmington Avenue. There is potential for temporary construction noise, air quality, and traffic and transportation-related impacts, and hazardous materials.

Caltrans welcomes your comments or suggestions concerning possible alternatives or potential environmental impacts as they pertain to the proposed project. All information and opinions will be carefully considered and included as part of the project record that will also provide valuable input for our environmental and design personnel.

Please send written comments by **Friday, November 22, 2019** to:
Ronald Kosinski, Deputy District Director
Caltrans Division of Environmental Planning – SR-91 (Central to Acacia)
100 South Main Street, MS 16A
Los Angeles, CA 90012

Thank you for your interest and participation in this important transportation project. If you have further questions, please contact Ron Kosinski, Deputy District Director, Environmental Planning Division at (213) 897-0703, or by email: ron.kosinski@dot.ca.gov.

Sincerely,

JOHN C. BULINSKI
District Director

Enclosure: Project Location Map

DEPARTMENT OF TRANSPORTATION
DISTRICT 7
100 S. MAIN STREET, SUITE 100
LOS ANGELES, CA 90012
PHONE (213) 897-0362
FAX (213) 897-0360
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

October 21, 2019

Agencies, Organizations,
and Individuals interested
in the SR-91 Central Avenue
to Acacia Court Improvement Project

File: 07-LA-91 PM 7.00/11.04
From Central Avenue to Acacia Court
EA 07-35920
EFIS: 0719000201

This notice is to advise you that the California Department of Transportation (Caltrans) and the Los Angeles County Metropolitan Transportation Authority (Metro) are initiating environmental studies for the improvement of State Route 91 (SR-91) from postmiles 7.00 to 11.04, in the cities of Carson, Compton, and Long Beach in Los Angeles County.

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Caltrans welcomes your comments or suggestions concerning possible alternatives or potential environmental impacts as they pertain to the proposed project. All information and opinions will be carefully considered and included as part of the project record that will also provide valuable input for our environmental and design personnel.

Please send written comments by November 22, 2019 to:

Lourdes Ortega, Senior Environmental Planner
Caltrans Division of Environmental Planning – SR-91 (Central to Acacia)
100 South Main Street, MS 16A
Los Angeles, CA 90012

Thank you for your interest and participation in this important transportation project. If you have further questions, Ms. Ortega can be reached at lourdes.ortega@dot.ca.gov or at (213) 897-9572.

Sincerely,

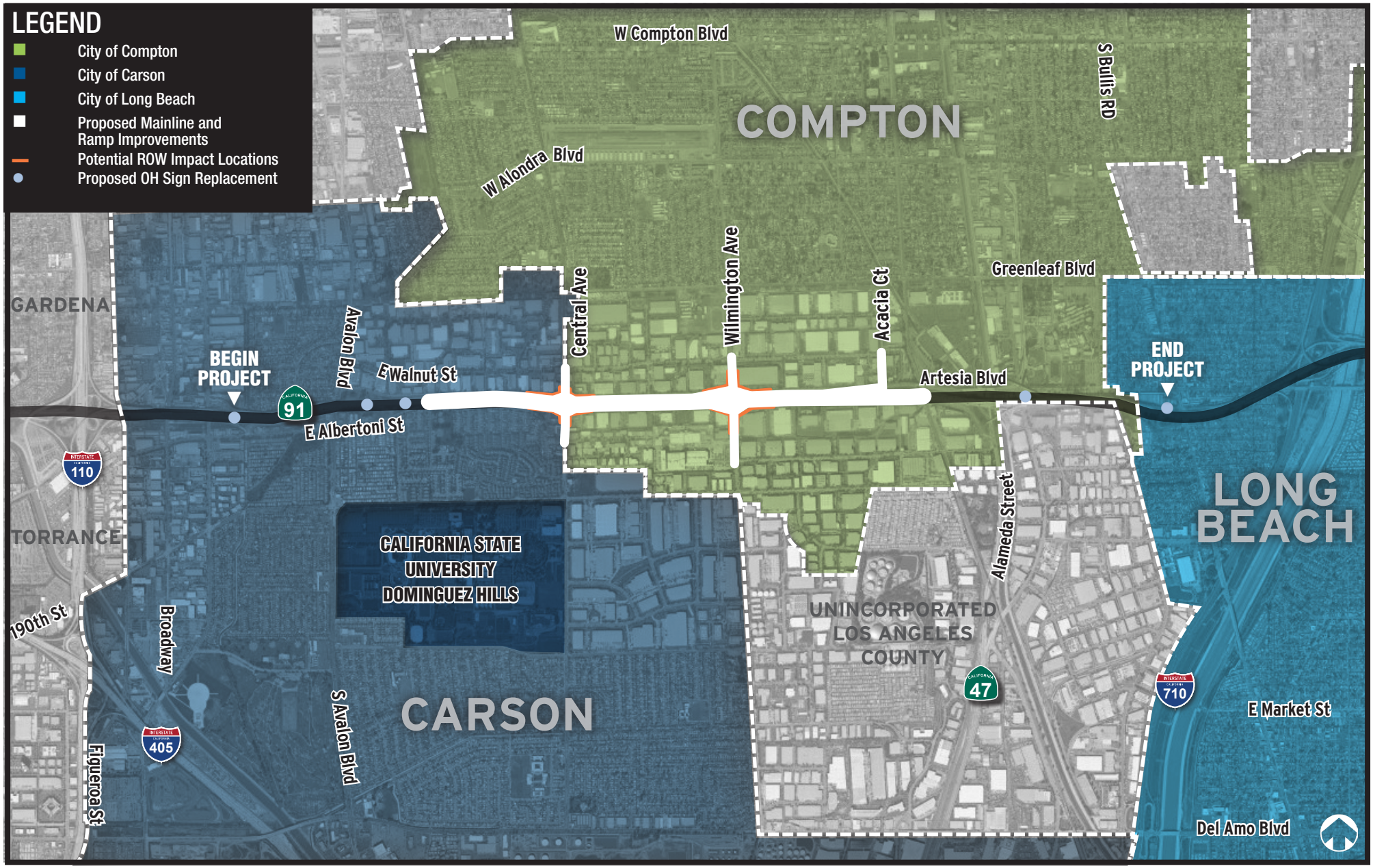
Ronald Kosinski

Ronald Kosinski
Deputy District Director
Environmental Planning, Caltrans District 7

Enclosure: Project Location Map

SR-91 IMPROVEMENT PROJECT

Central Avenue to Acacia Court



NAHC and Native American Correspondence

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

June 24, 2019

Liz Denniston
Paleo Solutions

VIA Email to: liz@paleosolutions.com

RE: SR 91 / Acacia Court to Central Avenue Improvements Project, Los Angeles County

Dear Ms. Denniston:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Los Angeles County
6/24/2019

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed SR 91 / Acacia Court to Central Avenue Improvements Project, Los Angeles County.

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, Division of Environmental Planning
100 S. MAIN STREET, SUITE 100, MS 16A
LOS ANGELES, CA 90012
PHONE (213) 897-9016
FAX (213) 897-0685
TTY 711
www.dot.ca.gov

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April XX, 2020

NAME
TITLE
TRIBE
ADDRESS
ADDRESS 2

Dear *NAME*:

The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the California Department of Transportation (Caltrans) and Gateway Cities Council of Governments (GCCOG), proposes to improve a portion of the State Route 91 (SR-91) corridor between Central Avenue and Acacia Court located in the Cities of Compton and Carson and one overhead sign located near Long Beach Boulevard within the City of Long Beach in Los Angeles County, California (Attachment A: Project Overview Maps). Please consider this letter and preliminary project information as the initiation of Section 106 consultation for the project pursuant to the National Historic Preservation Act and formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) 21080.3.1. Please respond within 30 days, pursuant to PRC 21080.3.1(d) if you would like to consult on this project. Please provide a designated lead contact person if you haven't provided that information to us already.

The purpose of the project is to reduce congestion, improve mobility and safety of the freeway (both mainline and ramps) on SR-91 between approximately Central Avenue and Acacia Court, and enhance local roadway operations. The proposed alternatives include the No-Build Alternative and the Collector-Distributor (C-D) Road Alternative with the Truck Turning Radii Option. The proposed work includes mainline and ramp improvements from Central Avenue to Acacia Court and signage upgrades throughout the project limits. The proposed project would improve congestion between Central Avenue and Acacia Court and at the local interchanges of Central Avenue and Wilmington Avenue. The project aims to improve mobility and safety of the SR-91 freeway (both mainline and ramps) and local roadway operations. The area of potential effect (APE) for the project is illustrated in Attachment B.

Caltrans has received the results of a record search and the Native American Heritage Commission's (NAHC's) Sacred Lands File (SLF) search. The records search at the South Central Coastal Information Center (SCCIC) conducted in June 2019 and January 2020, resulted in the identification of 22 previously recorded cultural resources, none of which overlap the

Project area. The 22 resources within the 1-mile records search buffer include 18 historic-era (i.e., 50 years or older) elements of the built environment, two historic-era sites, and two prehistoric sites. The prehistoric sites consist of one shell midden with lithic flakes and mano fragments (CA-LAN-000088/P-19-000088) and one deposit of lithic flakes, tools, faunal remains, and a stone bowl fragment (CA-LAN-000794/P-19-000794). Three of the 22 resources are California State Historical Resources: Dominguez Ranch Adobe (SHL No. 152), a Plaque for the Site of the Initial United States Air Meet (SHL 718), and the Mojave Road (SHL 963). The SLF results returned by the NAHC were negative.

Caltrans would appreciate any input you may provide regarding the presence of sensitive Native American cultural resources within the project locations and/or vicinity. Early identification of heritage sites or other concerns will ensure their consideration and protection to the maximum extent feasible.

Paleo Solutions, Inc. (Paleo Solutions) has been tasked with conducting the cultural studies for the State Route 91 (SR-91) Central Avenue to Acacia Court Improvement Project. If you know of any cultural resources that could be impacted by the proposed project, or if you would like additional information, please do not hesitate to contact Liz Denniston at liz@paleosolutions.com or by phone at (626) 205-5444. If you wish, you may also contact me by email at dustin.kay@dot.ca.gov or by phone at (213) 897-1090.

Thank you in advance for your time and involvement in our consultation efforts.

Sincerely,

Dustin Kay
Associate Environmental Planner (Archaeology)

Enclosure: Attachment A: Project Overview Maps
Attachment B: The area of potential effect (APE) Maps for the project

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, Division of Environmental Planning
100 S. MAIN STREET, SUITE 100, MS 16A
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Making Conservation
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April XX, 2020

NAME
TITLE
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ADDRESS 2

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Sincerely,

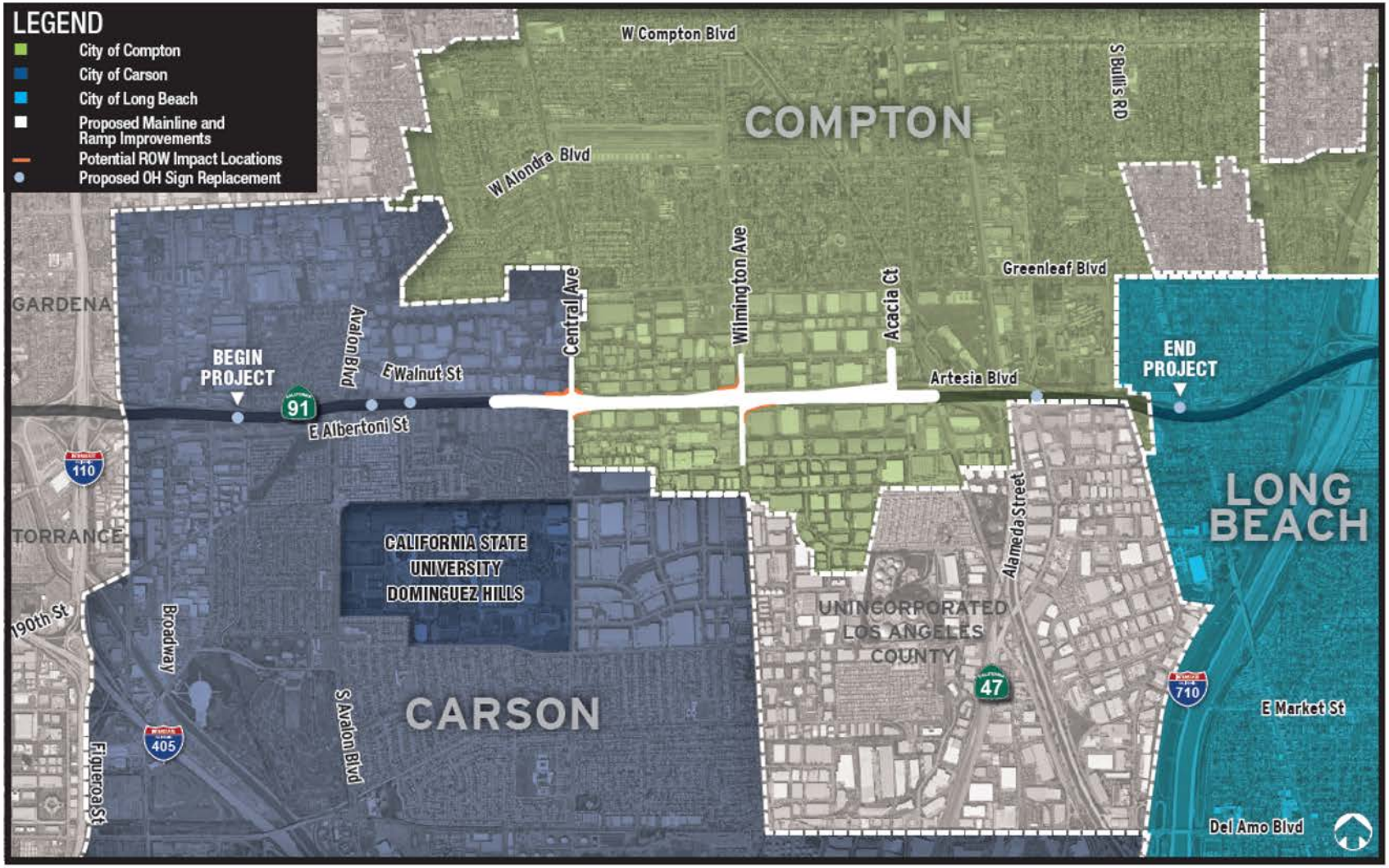
Dustin Kay
Associate Environmental Planner (Archaeology)

Enclosure: Attachment A: Project Overview Maps
Attachment B: The area of potential effect (APE) Maps for the project

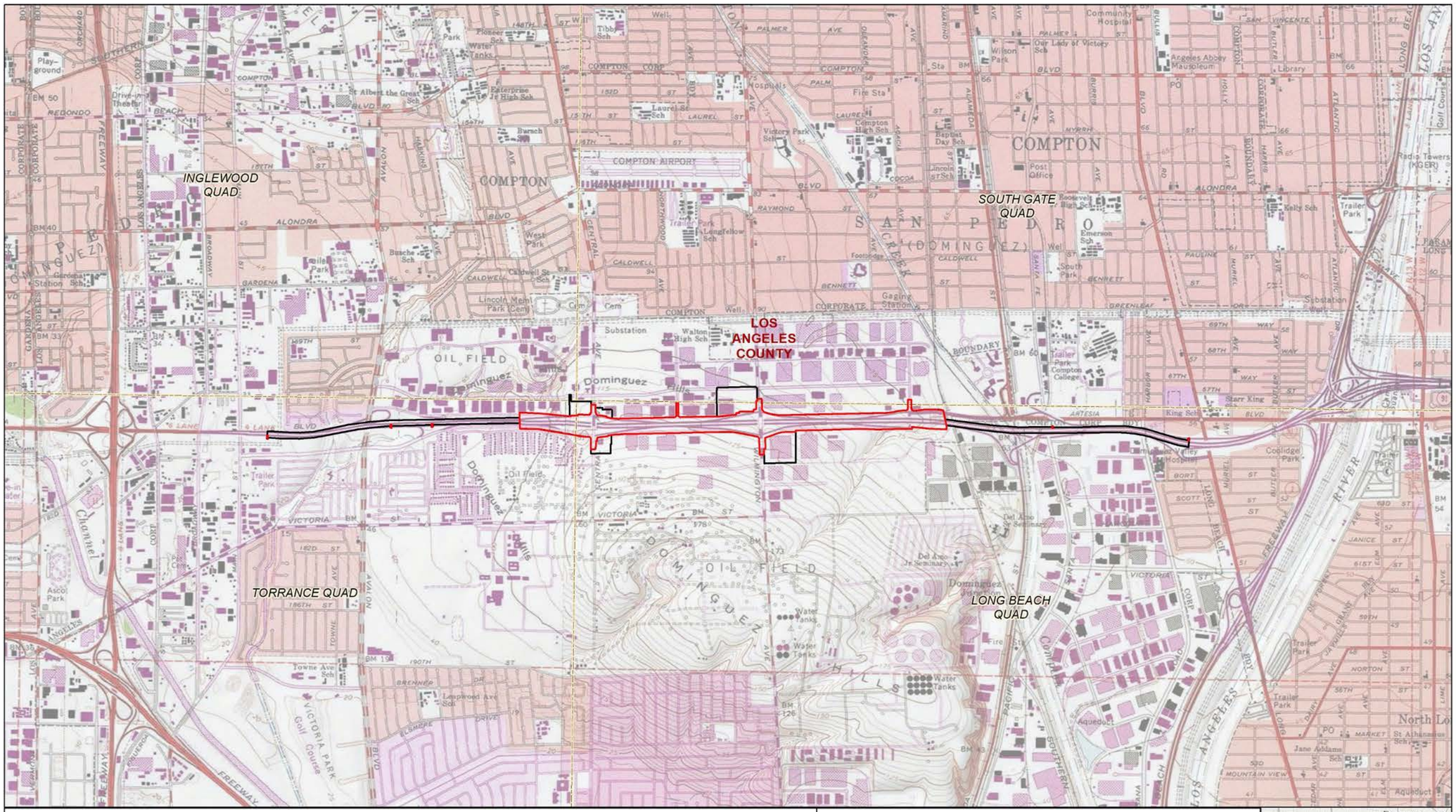
ATTACHMENT A
PROJECT OVERVIEW MAPS

SR-91 IMPROVEMENT PROJECT

Central Avenue to Acacia Court



Project Study Area Map



Project Study Area Map – Topographic Overview

TCWG PM Conformity Hot Spot Analysis

RTIP ID# *(required)* LA0G1563

TCWG Consideration Date: July 28, 2020

Project Description *(clearly describe project)*

The proposed Build Alternative includes construction of a Collector-Distributor (C-D) Road. The C-D Road Alternative implements a concrete-barrier-separated system that would run parallel to the SR-91 mainline, connecting Central Avenue and Wilmington Avenue on- and off-ramps. This alternative would consolidate multiple access points from the Central Avenue and Wilmington Avenue interchanges into a single access point, halving the number of ingress/egress points on the freeway mainline and redirecting the short and non-standard weaving areas from the freeway mainline to the C-D road. This would improve the merge and diverge movements and traffic congestion on the freeway mainline while increasing the weaving distance between Acacia Court and Avalon Boulevard. The C-D Road Alternative would have minimal ROW impacts because it would be constructed within existing Caltrans ROW.

The EB C-D road would begin approximately 1,000 feet east of the existing EB Central Avenue off-ramp. EB SR-91 would be widened to accommodate a single 12-foot auxiliary lane, providing the entrance for the C-D road. Approximately 650 feet east of the Central Avenue overcrossing, a concrete barrier separating the freeway mainline from the C-D road would begin and the existing EB Central Avenue on-ramp would merge with the C-D road as a second auxiliary lane. The C-D road would remain two lanes through the Wilmington Avenue interchange and would merge into one lane east of the existing Acacia Court off-ramp, which would continue to merge onto the SR-91 mainline at the approximate location of the existing Alameda Street auxiliary lane entrance. Due to the low volumes exiting at the existing EB Acacia Court off-ramp, this ramp would be removed to eliminate weaving issues between the high volume of vehicles entering the C-D road at Wilmington Avenue with those exiting at Acacia Court. In addition, elimination of the ramp would provide additional length for vehicles merging onto the C-D road from Wilmington Avenue as well as the merge of C-D road from two lanes to one lane.

The WB C-D road would begin approximately 750 feet east of Acacia Court Undercrossing and approximately 170 feet west of the existing railroad undercrossing. WB SR-91 would be widened to accommodate a single 12-foot auxiliary lane, providing the entrance for the C-D road. This would require widening the existing Acacia Court undercrossing by approximately 10 feet. Approximately 966 feet west of the Acacia Court undercrossing, an additional off-ramp lane would be added to the C-D road and the concrete barrier separating the freeway mainline from the C-D road would begin. In addition, a 12-foot auxiliary lane is proposed between Wilmington Avenue and Acacia Court to provide additional capacity and improve weaving. The C-D road would continue as two 12-foot lanes through the Wilmington Avenue interchange, at which point one lane would drop at the existing Central Avenue off-ramp and the other lane would continue to merge onto the SR-91 mainline approximately 1,000 feet east of the existing Central Avenue on-ramp.

The proposed widening for the two-lane C-D road would require tie-back retaining walls underneath the Wilmington Avenue overcrossing in both the EB and WB directions. The height of the tie-back retaining walls would be approximately 12 feet. In addition, retaining walls separating the freeway mainline from the C-D road lanes would be added in both the EB and WB directions. The height of these retaining walls would range from 2 to 12 feet.

The project study area and limits are depicted in the attached Figure 1 and Figures 2-1 through 2-9.

Type of Project *(use Table 1 on instruction sheet)*
Change to Existing State Highway

County	**Narrative Location/Route & Postmiles:**
Los Angeles	SR-91; PM R7.00 to R11.04 **Caltrans Projects – EA#** 35920

Lead Agency: Caltrans District 7

Contact Person	**Phone#**	**Fax#**	**Email**
Andrew Yoon, P.E.	213.897.6117	213.897.1634	Andrew.yoon@dot.ca.gov

Hot Spot Pollutant of Concern *(check one or both)* *x* **PM2.5** x **PM10**

Federal Action for which Project-Level PM Conformity is Needed *(check appropriate box)*

Categorical Exclusion (NEPA)	X	**EA or Draft EIS**	**FONSI or Final EIS**	**PS&E or Construction**	**Other**

Scheduled Date of Federal Action: 2020

NEPA Assignment – Project Type *(check appropriate box)*

Exempt	**Section 326 –Categorical Exemption**	x **Section 327 – Non-Categorical Exemption**

Current Programming Dates *(as appropriate)*

	PE/Environmental	**ENG**	**ROW**	**CON**
Start	2019	2021	2022/2023	2023
End	2020/2021	2022/2023	2023	2025

Project Purpose and Need (Summary): *(attach additional sheets as necessary)*

Purpose

The purpose of the project is to reduce congestion, improve mobility and safety of the freeway (both mainline and ramps) on SR-91 between approximately Central Avenue and Acacia Court, and enhance local roadway operations.

Need

The SR-91 corridor currently experiences congestion, which is exacerbated by increased traffic volumes and closely spaced freeway entrance and exit ramps. The short distance between the closely spaced interchanges at Acacia Court, Wilmington Avenue and Central Avenue causes congestion and weaving issues on the mainline. There is also a high concentration of collisions throughout the corridor.

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*

Nearby land uses consist of a mix of land uses, including commercial, industrial, public, and residential uses. The nearest residential land uses are generally located adjacent to and north of SR-91, west of S. Avalon Boulevard. Residential land uses are also located adjacent to and south of E. Albertoni Street, south of SR-91, between S. Avalon Boulevard and S. Central Avenue. Residential land uses, as well as, Jordan Plus High School are also located adjacent to and south of the SR-91 eastbound Long Beach Boulevard off-ramp. Diesel truck traffic in the area is predominantly generated by nearby industrial land uses. The proposed project would not significantly affect truck traffic volumes. Nearby land uses are depicted in Figure 1.

Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility Opening Year LOS data for the SR-91 mainline build and no build conditions are summarized in Table 1. The AADT, including truck AADT and truck percentages, for the affected roadway segments for Opening Year of the proposed facility are summarized in Table 3.
RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility Horizon Year/Design Year LOS data for the SR-91 mainline build and no build conditions are summarized in Table 2. The AADT, including truck AADT and truck percentages, for the affected roadway segments for the Horizon Year/Design Year of the proposed facility are summarized in Table 4.
Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build Intersection AADT, % and # trucks, truck AADT Design Year LOS data for intersections affected by the proposed project are summarized in Table 5. The proposed project would not result in significant increases in overall traffic or truck volumes at intersections.
RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT Design Year LOS data for intersections affected by the proposed project are summarized in Table 5. The proposed project would not result in significant increases in overall traffic or truck volumes at intersections.
Describe potential traffic redistribution effects of congestion relief *(impact on other facilities)* The project would include operational improvements to SR-91 and would not result in significant increases in overall traffic or truck volumes.

Table 1. SR-91 Segment Levels of Service – Opening Year 2025

Mainline Segment	AM Peak Hour				PM Peak Hour			
	No Build (Density/LOS)		Build Alternative (Density/LOS)		No Build (Density/LOS)		Build (Density/LOS)	
EB SR-91 GP: West of Avalon Off	23	C	23	C	25	C	25	C
EB SR-91 GP: Avalon Off to On	29	D	29	D	32	D	32	D
EB SR-91 GP: Avalon On to Central Off	32	D	32	D	30	D	30	D
EB SR-91 GP: Central Off to On	26	D	19	C	32	D	23	C
EB SR-91 GP: Central On to Wilmington Off	30	D	20	C	31	D	30	D
EB SR-91 GP: Wilmington Off to On	26	C	20	C	34	D	30	D
EB SR-91 GP: Wilmington On to Acacia Off	29	D	20	C	35	E	30	D
EB SR-91 GP: Acacia Off to Alameda Off	22	C	29	D	28	D	35	D
EB SR-91 GP: Alameda Off to Santa Fe Off	28	D	28	D	35	E	36	E
EB SR-91 GP: Santa Fe Off to Alameda On	23	C	23	C	39	E	40	E
EB SR-91 GP: Alameda On to Santa Fe On	20	C	20	C	31	D	32	D
EB SR-91 GP: West of Santa Fe On	21	C	21	C	32	D	32	D
WB SR-91 GP: East of Santa Fe Off	>43	F	>43	F	23	C	23	C
WB SR-91 GP: Santa Fe Off to Acacia On	35	D	35	D	22	C	22	C
WB SR-91 GP: Acacia On to Wilmington Off	23	C	18	B	26	C	18	C
WB SR-91 GP: Wilmington Off to On	22	C	18	B	24	C	18	C
WB SR-91 GP: Wilmington On to Central Off	22	C	18	B	27	C	18	C
WB SR-91 GP: Central Off to On	34	D	34	D	21	C	21	C
WB SR-91 GP: Central On to Avalon Off	34	D	33	D	24	C	24	C
WB SR-91 GP: Avalon Off to On	33	D	32	D	21	C	21	C
WB SR-91 GP: West of Avalon On	26	D	26	D	18	C	18	C
EB SR-91 HOV: West of Avalon to Central Off	9	A	10	A	22	C	23	C
EB SR-91 HOV: Central Off to Santa Fe Off	9	A	10	A	22	C	23	C
EB SR-91 HOV: West of Santa Fe Off	9	A	10	A	22	C	23	C
WB SR-91 HOV: East of Santa Fe Off to Acacia On	>43	F	33	D	10	A	9	B
WB SR-91 HOV: Acacia On to Central Off (HOV Lane Ends)	>43	F	26	D	10	A	9	B
EB SR-91 CD Road: SR-91 Off to Central On	--	--	--	--	--	--	--	--
EB SR-91 CD Road: Central On to Wilmington Off	--	--	11	B	--	--	11	B
EB SR-91 CD Road: Wilmington Off to On	--	--	6	A	--	--	6	A
EB SR-91 CD Road: Wilmington On to SR-91 On	--	--	10	B	--	--	10	B
WB SR-91 CD Road: SR-91 Off to Acacia On	--	--	10	A	--	--	10	A
WB SR-91 CD Road: Acacia On to Wilmington Off	--	--	15	B	--	--	16	B
WB SR-91 CD Road: Wilmington Off to On	--	--	15	B	--	--	17	B
WB SR-91 CD Road: Wilmington On to Central Off	--	--	13	B	--	--	17	B
WB SR-91 CD Road: Central Off to SR-91 On	--	--	--	--	--	--	--	--

Source:. Fehr & Peers 2020

Table 2. SR-91 Segment Levels of Service – Design Year 2040

Mainline Segment	AM Peak Hour				PM Peak Hour			
	No Build (Density/LOS)		Build Alternative (Density/LOS)		No Build (Density/LOS)		Build (Density/LOS)	
EB SR-91 GP: West of Avalon Off	24	C	24	C	26	C	27	D
EB SR-91 GP: Avalon Off to On	30	D	32	D	33	D	35	D
EB SR-91 GP: Avalon On to Central Off	33	D	34	D	31	D	32	D
EB SR-91 GP: Central Off to On	27	D	20	C	33	D	24	C
EB SR-91 GP: Central On to Wilmington Off	31	D	22	C	33	D	32	D
EB SR-91 GP: Wilmington Off to On	27	D	22	C	35	E	32	D
EB SR-91 GP: Wilmington On to Acacia Off	30	D	22	C	36	E	32	D
EB SR-91 GP: Acacia Off to Alameda Off	23	C	30	D	29	D	37	E
EB SR-91 GP: Alameda Off to Santa Fe Off	29	D	30	D	36	E	37	E
EB SR-91 GP: Santa Fe Off to Alameda On	24	C	25	C	41	E	43	E
EB SR-91 GP: Alameda On to Santa Fe On	20	C	21	C	32	D	34	D
EB SR-91 GP: West of Santa Fe On	22	C	22	C	33	D	34	D
WB SR-91 GP: East of Santa Fe Off	>43	F	>43	F	24	C	25	C
WB SR-91 GP: Santa Fe Off to Acacia On	35	D	35	D	23	C	24	C
WB SR-91 GP: Acacia On to Wilmington Off	23	C	18	B	27	C	20	C
WB SR-91 GP: Wilmington Off to On	22	C	18	B	25	C	20	C
WB SR-91 GP: Wilmington On to Central Off	22	C	18	B	27	C	20	C
WB SR-91 GP: Central Off to On	38	E	36	E	22	C	22	C
WB SR-91 GP: Central On to Avalon Off	34	D	35	D	25	C	26	C
WB SR-91 GP: Avalon Off to On	34	D	34	D	22	C	23	C
WB SR-91 GP: West of Avalon On	27	D	27	D	19	C	20	C
EB SR-91 HOV: West of Avalon to Central Off	10	A	10	A	23	C	24	C
EB SR-91 HOV: Central Off to Santa Fe Off	10	A	10	A	23	C	24	C
EB SR-91 HOV: West of Santa Fe Off	10	A	10	A	23	C	24	C
WB SR-91 HOV: East of Santa Fe Off to Acacia On	>43	F	35	E	10	A	9	A
WB SR-91 HOV: Acacia On to Central Off (HOV Lane Ends)	>43	F	27	D	10	A	9	A
EB SR-91 CD Road: SR-91 Off to Central On	--	--	--	--	--	--	--	--
EB SR-91 CD Road: Central On to Wilmington Off	--	--	22	C	--	--	11	B
EB SR-91 CD Road: Wilmington Off to On	--	--	12	B	--	--	6	A
EB SR-91 CD Road: Wilmington On to SR-91 On	--	--	13	B	--	--	10	B
WB SR-91 CD Road: SR-91 Off to Acacia On	--	--	10	A	--	--	10	A
WB SR-91 CD Road: Acacia On to Wilmington Off	--	--	15	B	--	--	16	B
WB SR-91 CD Road: Wilmington Off to On	--	--	15	B	--	--	17	B
WB SR-91 CD Road: Wilmington On to Central Off	--	--	13	B	--	--	17	B
WB SR-91 CD Road: Central Off to SR-91 On	--	--	--	--	--	--	--	--

Source:. Fehr & Peers 2020

Table 3. SR-91 Average Daily Traffic & Truck Volumes - Opening Year 2025								
Segment	Average-Daily Traffic Volumes							
	No-Build			Build			Change from No-Build	
	Total	Truck	Percent Truck	Total	Truck	Percent Truck	Total	Truck
EB SR-91 GP: West of Avalon Off	114,060	10,040	8.8%	114,920	10,110	8.8%	860	70
EB SR-91 GP: Avalon Off to On	107,190	9,510	8.9%	108,050	9,580	8.9%	860	70
EB SR-91 GP: Avalon On to Central Off	113,520	10,880	9.6%	114,380	10,950	9.6%	860	70
EB SR-91 GP: Alameda Off to Santa Fe Off	112,030	11,280	10.1%	112,810	11,240	10.0%	780	(40)
EB SR-91 GP: Santa Fe Off to Alameda On	106,020	10,730	10.1%	106,800	10,690	10.0%	780	(40)
EB SR-91 GP: Alameda On to Santa Fe On	116,480	11,970	10.3%	117,270	11,930	10.2%	790	(40)
EB SR-91 GP: East of Santa Fe On	123,440	13,300	10.8%	124,220	13,260	10.7%	780	(40)
WB SR-91 GP: East of Santa Fe Off	120,000	9,890	8.2%	120,780	10,030	8.3%	780	140
WB SR-91 GP: Central On to Avalon Off	125,760	9,560	7.6%	126,630	9,640	7.6%	870	80
WB SR-91 GP: Avalon Off to On	120,230	8,280	6.9%	121,170	8,360	6.9%	940	80
WB SR-91 GP: West of Avalon On	120,680	8,650	7.2%	126,090	9,040	7.2%	5,410	390
EB SR-91 HOV: East of Santa Fe Off	13,150	-	0.0%	13,330	-	0.0%	180	-
EB SR-91 GP: Central Off to On	99,920	9,370	9.4%					
EB SR-91 GP: Central On to Wilmington Off	109,920	10,510	9.6%					
EB SR-91 GP: Wilmington Off to On	102,340	9,630	9.4%					
EB SR-91 GP: Wilmington On to Acacia Off	117,030	11,930	10.2%					
EB SR-91 GP: Acacia Off to Alameda Off	115,000	11,750	10.2%					
WB SR-91 GP: Santa Fe Off to Acacia On	109,220	8,340	7.6%					
WB SR-91 GP: Acacia On to Wilmington Off	119,530	9,750	8.2%					
WB SR-91 GP: Wilmington Off to On	112,030	8,160	7.3%					
WB SR-91 GP: Wilmington On to Central Off	119,060	9,220	7.7%					
WB SR-91 GP: Central Off to On	107,190	7,830	7.3%					
EB SR-91 HOV: West of Avalon to Central Off	11,230	-	0.0%					
EB SR-91 HOV: Central Off to Santa Fe Off	12,100	-	0.0%					
WB SR-91 HOV: West of Santa Fe Off to Acacia On	14,170	-	0.0%					
WB SR-91 HOV: Acacia On to Central Off (HOV Lane Ends)	11,930	-	0.0%					
EB SR-91 GP: Central Off to CD Road Off				100,780	9,440	9.4%		
EB SR-91 GP: CD Road Off to On				87,340	7,860	9.0%		
EB SR-91 GP: CD Road On to Alameda Off				115,780	11,710	10.1%		
WB SR-91 GP: Santa Fe Off to CD Road Off				109,920	8,470	7.7%		
WB SR-91 GP: CD Road Off to On				90,780	5,520	6.1%		
WB SR-91 GP: CD Road On to Central On				107,890	7,900	7.3%		
EB SR-91 HOV: West of Avalon to CD Road Off				11,360	-	0.0%		

Table 3. SR-91 Average Daily Traffic & Truck Volumes - Opening Year 2025 (Continued)								
Segment	Average-Daily Traffic Volumes							
	No-Build			Build			Change from No-Build	
	Total	Truck	Percent Truck	Total	Truck	Percent Truck	Total	Truck
EB SR-91 HOV: CD Road Off to Santa Fe Off				12,280	-	0.0%		
WB SR-91 HOV: East of Santa Fe Off to CD Road Off				14,290	-	0.0%		
WB SR-91 HOV: CD Road Off to Central Off (HOV Lane				12,100	-	0.0%		
EB SR-91 CD Road: SR-91 Off to Central On				9,610	1,170	12.2%		
EB SR-91 CD Road: Central On to Wilmington Off				20,700	2,450	11.8%		
EB SR-91 CD Road: Wilmington Off to On				11,090	1,370	12.4%		
EB SR-91 CD Road: Wilmington On to SR-91 On				25,780	3,640	14.1%		
WB SR-91 CD Road: SR-91 Off to Acacia On				19,380	2,990	15.4%		
WB SR-91 CD Road: Acacia On to Wilmington Off				29,460	4,360	14.8%		
WB SR-91 CD Road: Wilmington Off to On				21,960	2,780	12.6%		
WB SR-91 CD Road: Wilmington On to Central Off				28,990	3,830	13.2%		
WB SR-91 CD Road: Central Off to SR-91 On				17,110	2,440	14.3%		

Table 4. SR-91 Average Daily Traffic & Truck Volumes – Design Year 2040								
Segment	Average-Daily Traffic Volumes							
	No-Build			Build			Change from No-Build	
	Total	Truck	Percent Truck	Total	Truck	Percent Truck	Total	Truck
EB SR-91 GP: West of Avalon Off	117,500	12,240	10.4%	120,470	12,550	10.4%	2,970	310
EB SR-91 GP: Avalon Off to On	110,630	11,710	10.6%	113,590	12,020	10.6%	2,960	310
EB SR-91 GP: Avalon On to Central Off	117,270	13,170	11.2%	120,230	13,480	11.2%	2,960	310
EB SR-91 GP: Alameda Off to Santa Fe Off	115,230	13,510	11.7%	118,200	13,700	11.6%	2,970	190
EB SR-91 GP: Santa Fe Off to Alameda On	109,220	12,960	11.9%	112,190	13,150	11.8%	2,970	190
EB SR-91 GP: Alameda On to Santa Fe On	119,690	14,200	11.9%	122,660	14,390	11.8%	2,970	190
EB SR-91 GP: East of Santa Fe On	126,560	15,510	12.3%	129,530	15,700	12.2%	2,970	190
WB SR-91 GP: East of Santa Fe Off	122,500	11,690	9.6%	125,550	12,020	9.6%	3,050	330
WB SR-91 GP: Central On to Avalon Off	128,940	11,380	8.8%	132,400	11,680	8.8%	3,460	300
WB SR-91 GP: Avalon Off to On	123,360	10,130	8.2%	126,950	10,440	8.2%	3,590	310
WB SR-91 GP: West of Avalon On	128,750	10,890	8.5%	132,340	11,200	8.5%	3,590	310
EB SR-91 HOV: East of Santa Fe Off	13,520	-	0.0%	13,950	-	-	430	-
EB SR-91 GP: Central Off to On	103,360	11,620	11.2%					
EB SR-91 GP: Central On to Wilmington Off	113,360	12,760	11.3%					

Table 4. SR-91 Average Daily Traffic & Truck Volumes – Design Year 2040 (Continued)

Segment	Average-Daily Traffic Volumes							
	No-Build			Build			Change from No-Build	
	Total	Truck	Percent Truck	Total	Truck	Percent Truck	Total	Truck
EB SR-91 GP: Wilmington Off to On	105,470	11,840	11.2%					
EB SR-91 GP: Wilmington On to Acacia Off	120,310	14,170	11.8%					
EB SR-91 GP: Acacia Off to Alameda Off	118,200	13,980	11.8%					
WB SR-91 GP: Santa Fe Off to Acacia On	111,720	10,140	9.1%					
WB SR-91 GP: Acacia On to Wilmington Off	122,190	11,580	9.5%					
WB SR-91 GP: Wilmington Off to On	114,690	9,990	8.7%					
WB SR-91 GP: Wilmington On to Central Off	121,880	11,080	9.1%					
WB SR-91 GP: Central Off to On	110,000	9,690	8.8%					
EB SR-91 HOV: West of Avalon to Central Off	11,540	-	0.0%					
EB SR-91 HOV: Central Off to Santa Fe Off	12,410	-	0.0%					
WB SR-91 HOV: West of Santa Fe Off to Acacia On	14,460	-	0.0%					
WB SR-91 HOV: Acacia On to Central Off (HOV Lane Ends)	12,220	-	0.0%					
EB SR-91 GP: Central Off to CD Road Off				106,330	11,930	11.2%		
EB SR-91 GP: CD Road Off to On				92,580	10,250	11.1%		
EB SR-91 GP: CD Road On to Alameda Off				121,170	14,170	11.7%		
WB SR-91 GP: Santa Fe Off to CD Road Off				114,840	10,480	9.1%		
WB SR-91 GP: CD Road Off to On				95,700	7,530	7.9%		
WB SR-91 GP: CD Road On to Central On				113,130	9,980	8.8%		
EB SR-91 HOV: West of Avalon to CD Road Off				11,980	-	0.0%		
EB SR-91 HOV: CD Road Off to Santa Fe Off				12,840	-	0.0%		
WB SR-91 HOV: East of Santa Fe Off to CD Road Off				14,880	-	0.0%		
WB SR-91 HOV: CD Road Off to Central Off (HOV Lane				12,560	-	0.0%		
EB SR-91 CD Road: SR-91 Off to Central On				10,000	1,220	12.2%		
EB SR-91 CD Road: Central On to Wilmington Off				21,090	2,500	11.8%		
EB SR-91 CD Road: Wilmington Off to On				11,090	1,370	12.4%		
EB SR-91 CD Road: Wilmington On to SR-91 On				25,930	3,670	14.2%		
WB SR-91 CD Road: SR-91 Off to Acacia On				19,380	2,990	15.4%		
WB SR-91 CD Road: Acacia On to Wilmington Off				29,610	4,390	14.8%		
WB SR-91 CD Road: Wilmington Off to On				22,110	2,800	12.7%		
WB SR-91 CD Road: Wilmington On to Central Off				29,300	3,900	13.3%		
WB SR-91 CD Road: Central Off to SR-91 On				17,420	2,500	14.4%		

Table 5. Intersection Levels of Service (LOS/Vehicle Delay)

Intersection	Control Type	Existing		Opening Year No-Build		Opening Year Build		Design Year No-Build		Design Year Build	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1. Avalon Blvd/Walnut St	Signal	B / 14	B / 19	B / 15	C / 22	B / 15	C / 21	B / 18	C / 27	B / 18	C / 27
2. Avalon Blvd/Artesia Blvd	Signal	B / 15	B / 12	B / 16	B / 13	B / 16	B / 12	B / 18	B / 14	B / 17	B / 14
3. Avalon Blvd/Albertoni St	Signal	C / 29	D / 36	C / 34	D / 45	C / 34	D / 44	D / 49	**E / 59**	D / 48	**E / 58**
4. Central Ave/Walnut St	Signal	B / 19	C / 31	B / 21	C / 33	B / 21	C / 33	C / 21	C / 38	C / 21	C / 38
5. Central Ave/Carl's Jr. Drwy	Side Street Stop	C / 15 (WBR)	C / 15 (WBR)	C / 16 (WBR)	C / 16 (WBR)	C / 16 (WBR)	C / 16 (WBR)	C / 16 (WBR)	C / 16 (WBR)	C / 16 (WBR)	C / 16 (WBR)
6. Central Ave/Artesia Blvd	Signal	C / 23	C / 23	C / 24	C / 24	C / 24	C / 22	C / 28	C / 26	C / 28	C / 25
7. Central Ave/Albertoni St	Signal	C / 32	C / 29	C / 33	C / 31	C / 31	C / 30	D / 37	C / 34	D / 32	C / 33
8. Wilmington Ave/Walnut St	Signal	A / 9	C / 20	A / 10	C / 23	A / 10	C / 23	B / 11	C / 32	B / 11	C / 32
9. Wilmington Ave/Artesia Blvd	Signal	D / 39	D / 47	D / 40	D / 47	D / 39	D / 48	D / 47	D / 51	D / 39	D / 44
10. Wilmington Ave/Albertoni St	Signal	C / 29	**E / 58**	C / 30	**E / 61**	D / 42	**E / 67**	D / 41	**E / 67**	D / 47	**E / 67**
11. Acacia Ave/Walnut St	Side Street Stop	C / 19 (EBR)	C / 23 (EBR)	C / 20 (EBR)	D / 27 (EBR)	C / 20 (EBR)	C / 24 (EBR)	C / 20 (EBR)	D / 33 (EBR)	C / 20 (EBR)	D / 27 (EBR)
12. Acacia Ave/Artesia Blvd	Signal	B / 17	C / 35	B / 19	D / 38	B / 17	C / 22	B / 20	C / 45	B / 17	C / 24
13. Crystal Casino Drwy/Artesia Blvd	Signal	A / 6	A / 3	B / 13	A / 7	B / 13	A / 7	D / 45	A / 7	D / 45	A / 7
14. Alameda St Connector/Artesia Blvd	Signal	B / 20	B / 16	C / 21	B / 16	C / 20	B / 16	C / 22	B / 17	C / 21	B / 17
15. Alameda St/Alameda St Connector	Signal	B / 16	B / 14	B / 16	B / 14	B / 16	B / 14	B / 18	B / 14	B / 18	B / 14
16. Alameda St/SR 91 EB Ramps	Signal	C / 31	B / 14	C / 33	B / 14	C / 33	B / 14	D / 46	B / 14	D / 46	B / 14
17. Santa Fe Ave/SR 91 WB Off-ramp	Signal	A / 7	A / 7	A / 8	A / 7	A / 8	A / 7	A / 8	A / 7	A / 8	A / 7
18. Santa Fe Ave/Artesia Blvd	Signal	D / 44	D / 45	D / 45	D / 47	D / 45	D / 46	D / 49	D / 54	D / 49	D / 51
19. Santa Fe Ave/SR 91 EB Ramps	Signal	B / 17	B / 13	B / 18	B / 14	B / 18	B / 14	B / 18	B / 14	B / 18	B / 14

Comments/Explanation/Details *(attach additional sheets as necessary)*

Under 40 CFR 93.123(b)—PM10 and PM2.5 Hot Spots—the following criteria are utilized to determine the potential for the proposed project to qualify as a Project of Air Quality Concern (POAQC):

(i) *New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;*

The project would not significantly increase the number of diesel vehicles operating within the project study area. As noted in Tables 3 and 4, the proposed build alternative would not result in an increased percentage of truck volumes along existing roadways.

(ii) *Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;*

In comparison to no-build conditions, proposed build improvements would improve overall vehicle congestion along SR-91. As noted in Table 5 and in comparison to no-build conditions, the proposed build alternative would not result in decreased level of service at intersections projected to operate at LOS D, or worse, for either opening year or future design year conditions. In addition, as noted in Table 3 and Table 4, the project would not result in significant increases in traffic volumes, nor would the project result in a significant increase the number of diesel vehicles operating within the project study area. As a result, the project would not adversely impact nearby intersections that are at LOS D, or worse, and that have a significant number of diesel vehicles.

(iii) *New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;*

The project is not a new or expanded bus or rail terminal, nor would the project adversely impact transfer points that have a significant number of diesel vehicles congregating at a single location.

(iv) *Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and*

The project is not a new or expanded bus or rail terminal, nor would the project adversely impact transfer points that have a significant number of diesel vehicles congregating at a single location.

(v) *Projects in or affecting locations, areas, or categories of sites which are identified in the PM10 or PM2.5 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation*.

The proposed build alternative is not in nor does it affect locations, areas, or categories of sites that are identified in the $PM_{2.5}$ and PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

For the reasons noted above, the proposed project would not be considered a POAQC.

Figure 1. Project Limits & Nearby Land Uses

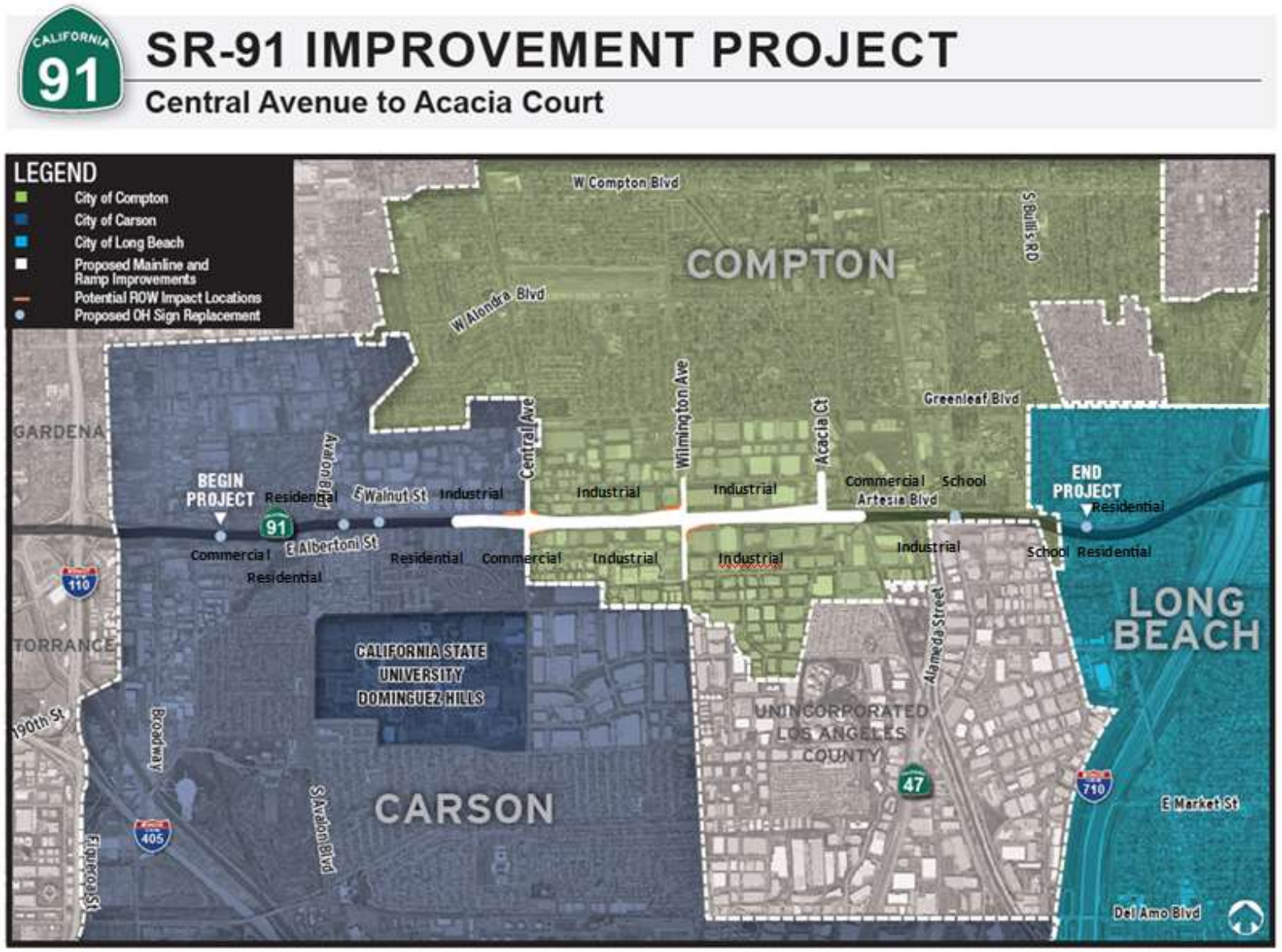


Figure 2-1. Proposed Project Limits & Improvements

Figure 2-2. Proposed Project Limits & Improvements

Figure 2-3. Proposed Project Limits & Improvements

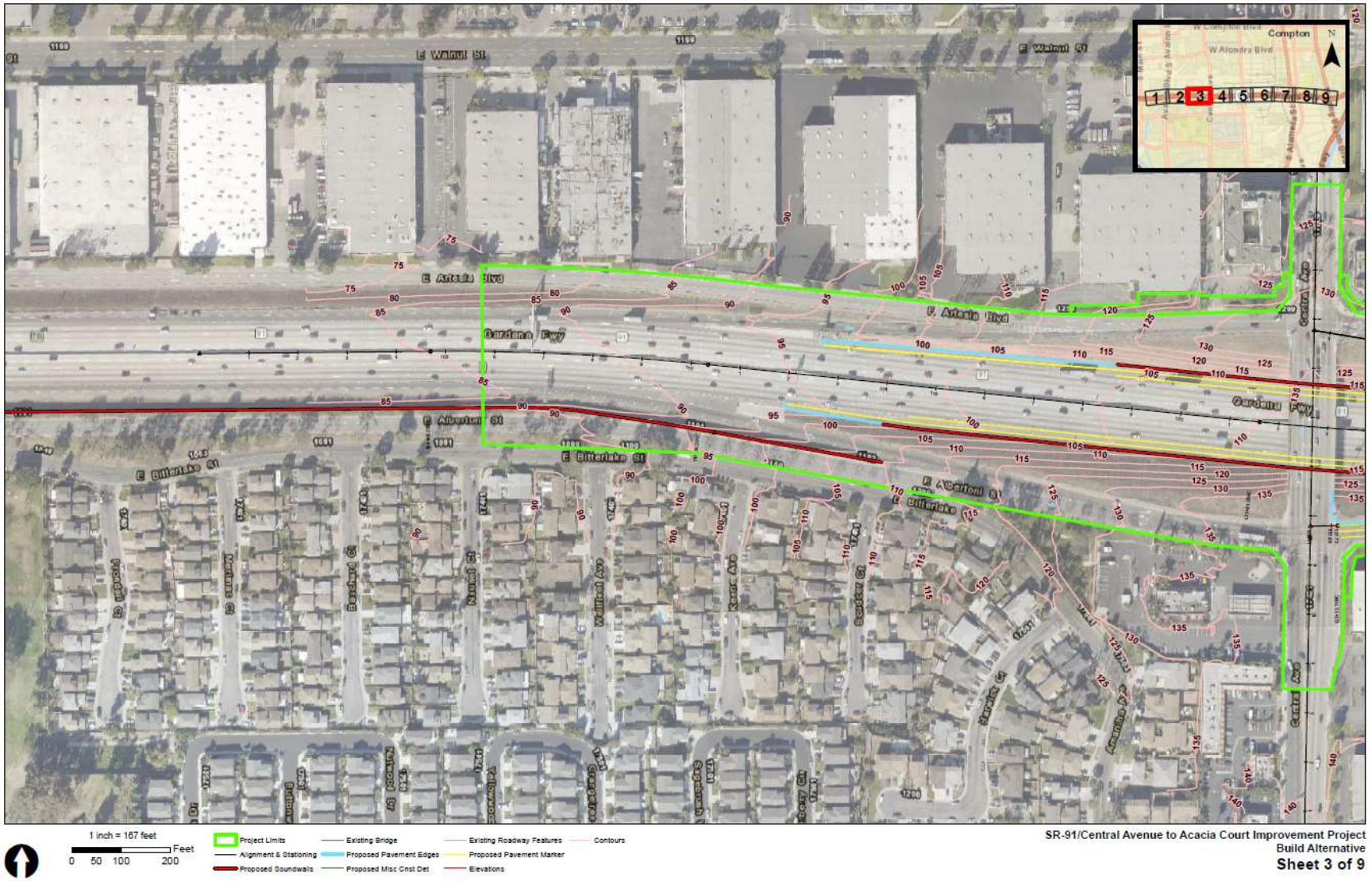


Figure 2-4. Proposed Project Limits & Improvements

Figure 2-5. Proposed Project Limits & Improvements

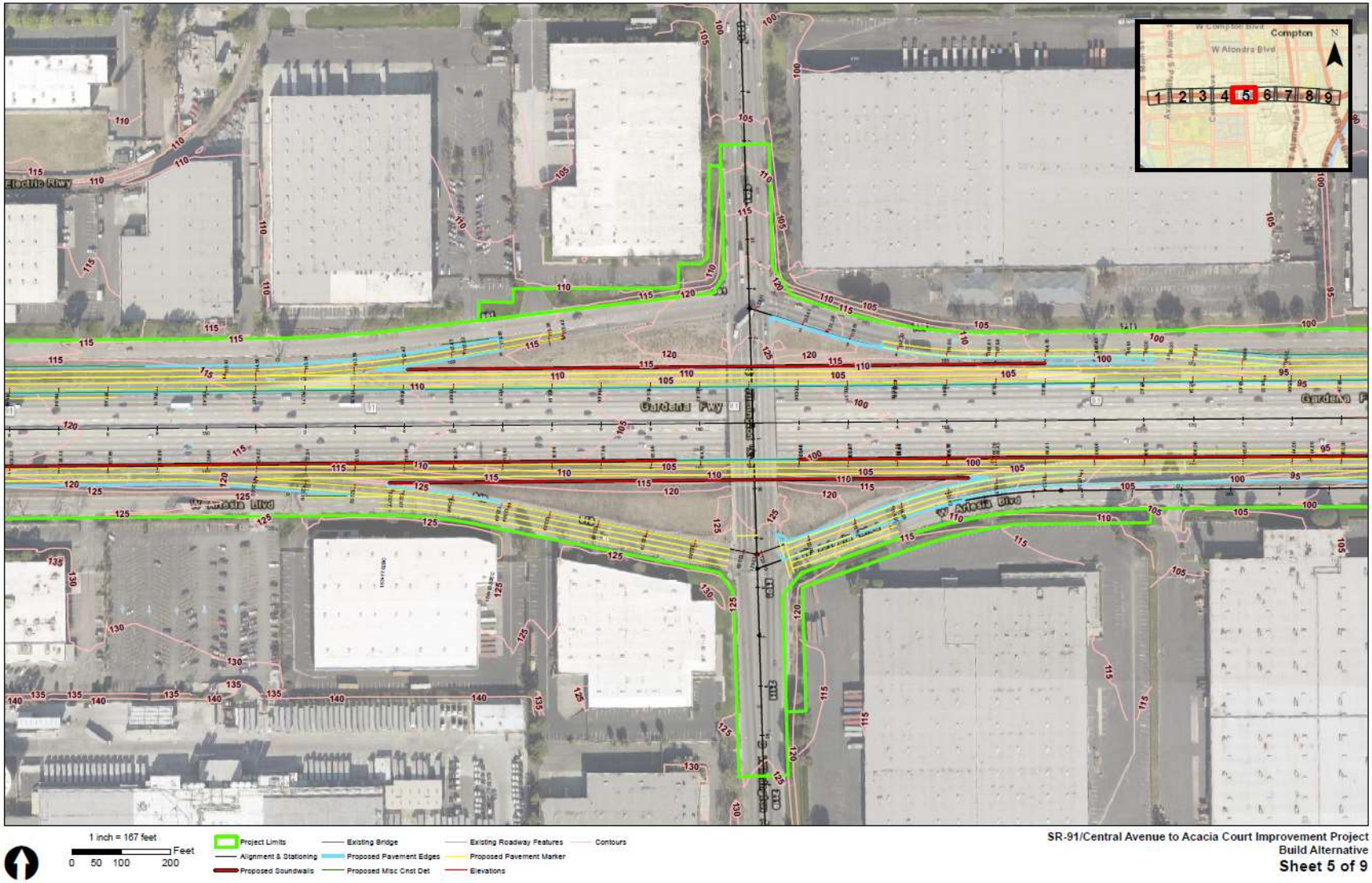


Figure 2-6. Proposed Project Limits & Improvements

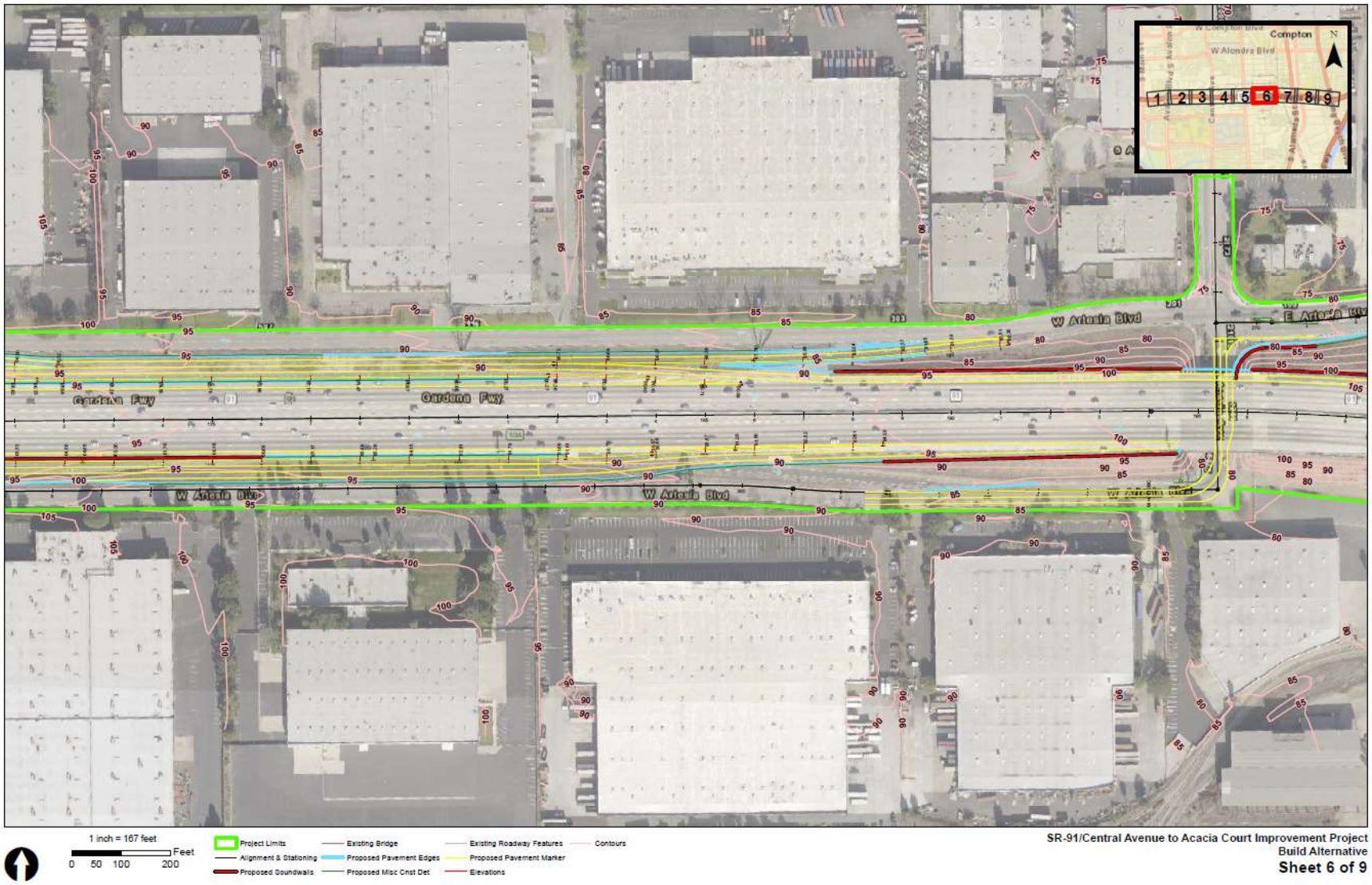


Figure 2-7. Proposed Project Limits & Improvements

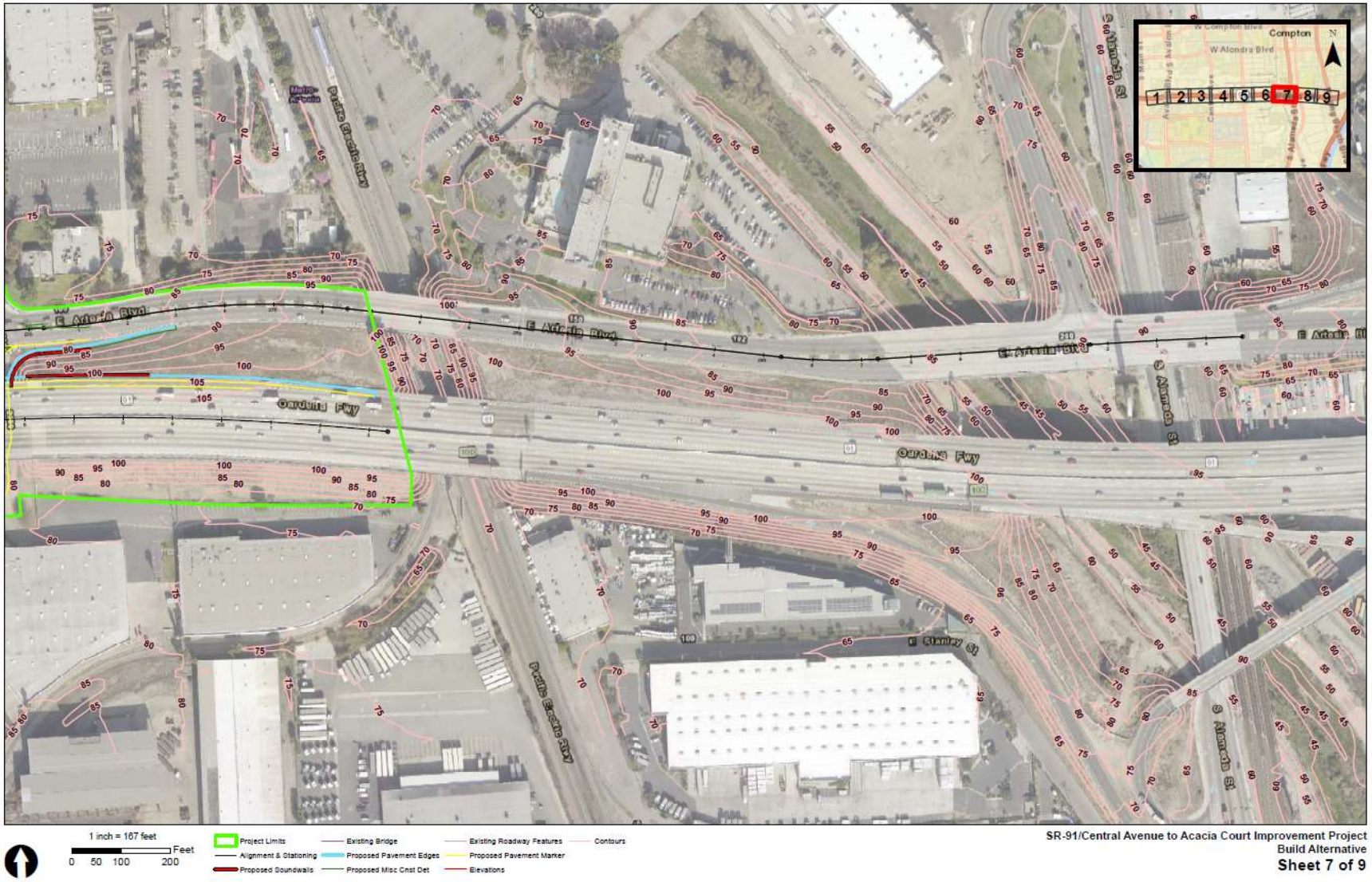


Figure 2-8. Proposed Project Limits & Improvements

Figure 2-9. Proposed Project Limits & Improvements

2019 Federal Transportation Improvement Program

Los Angeles County
State Highway
Including Amendments 1-11
(In $000's)

SB1TRADE CORRIDOR ENHANCEMENT	22,000			22,000		22,000							22,000
LA0G1541 Total	288,600			288,600	1,600	63,200	65,000		158,800				288,600

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	Signage Begin	Signage End	System	Conformity Category	Amendment
LA0G1456	Los Angeles	SCAB		1AL04	NCRH3	60	22.73	23.37			S	EXEMPT - 93.126	0
Description:							PTC	23,075			Agency	LOS ANGELES COUNTY MTA	
SR-60/7th Avenue Interchange Improvement Project													

Fund	ENG	R/W	CON	Total	Prior	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024	Total
MEASURE R 20H - HIGHWAY CAPITAL	3,000	75	20,000	23,075		1,500	11,525	10,050				23,075
LA0G1456 Total	3,000	75	20,000	23,075		1,500	11,525	10,050				23,075

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	Signage Begin	Signage End	System	Conformity Category	Amendment
LA0D450	Los Angeles	SCAB		1M0104	CAX63	60	30.4	24.5			S	NON-EXEMPT	0
Description:							PTC	257,900			Agency	INDUSTRY	
RECONSTRUCT SR 60/GRAND AV INTERCHANGE - WIDEN GRAND AV: SB ADD 1THRU LN (2 EXSTNG); NB ADD 1 THRU LN (3 EXSTNG), REPLACE GRAND AV OC, ADD EB LOOP ON-RAMP, CONSTRUCT ADDITIONAL EB THRU LN FROM GRAND AVE TRAP LN TO SR57 ADD LN, ADD TWO BYPASS RAMP CONNECTORS, ADD AUX LNS EB AND WB FROM EAST TO WEST JUNCTION OF THE CONFLUENCE.												

Fund	ENG	R/W	CON	Total	Prior	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024	Total
AGENCY	8,500			8,500	8,500							8,500
CITY FUNDS	7,500	26,000	215,900	249,400	33,500				215,900			249,400
LA0D450 Total	16,000	26,000	215,900	257,900	42,000				215,900			257,900

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	Signage Begin	Signage End	System	Conformity Category	Amendment
LA0B951	Los Angeles	SCAB		LA0B951	CAX68	71	.5	4.8			S	TCM Committed	7
Description:							PTC	338,959			Agency	CALTRANS	
Route 71: ROUTE 10 TO 0.14 MILE SOUTH SAN BERNARDINO COUNTY LINE - EXPRESSWAY TO FREEWAY CONVERSION - ADD 1 HOV LANE AND 1 MIXED FLOW LANE . (2001 CFP 8349, TCRP #50) (EA# 210600, PPNO 2741=EA 21060, PPNO 2741 + EA 21061, PPNO 2741N, EA 21062, PPNO 1741S) (TCRP #50) (Use Toll Credits as Local Match)													

Fund	ENG	R/W	CON	Total	Prior	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024	Total
2016 EARMARK REPURPOSING	17,047	41,000		58,047	47,200	10,847						58,047
LOCAL TRANS FUNDS	873			873	873							873
MEASURE M 35% TRANS CON			200,847	200,847			91,847		109,000			200,847
NATIONAL HWY SYSTEM - RIP	1,592			1,592	1,592							1,592
SB1TRADE CORRIDOR ENHANCEMENT			44,000	44,000			44,000					44,000
STIP ADVANCE CON-RIP			20,000	20,000					20,000			20,000
TRAFFIC CONGESTION RELIEF	13,600			13,600	13,600							13,600
LA0B951 Total	33,112	41,000	264,847	338,959	63,265	10,847	135,847		129,000			338,959

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	Signage Begin	Signage End	System	Conformity Category	Amendment
LA0G1563	Los Angeles	SCAB		1163S013	NCRH3	91	8.4	9.83			S	NON-EXEMPT	1
Description:							PTC	180,000			Agency	LOS ANGELES COUNTY MTA	
Add auxiliary lane between gore points, westbound from Acacia Avenue to Central Avenue.													

Fund	ENG	R/W	CON	Total	Prior	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024	Total
CITY FUNDS		20,000	154,486	174,486			174,486					174,486

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Page: 5 of 15

Los Angeles Metropolitan Transportation Authority

2019 Federal Transportation Improvement Program ($000)

TIP ID **LA0G1563** Implementing Agency **Los Angeles County MTA**

Project Description: Improve the weaving conflict on SR-91 between Central Avenue to Acacia Court by adding a two lane C-D road in each direction. Project includes proposed improvements to the truck turning radii at SR-91 Wilmington Avenue and Central Avenue Interchanges.

SCAG RTP Project #: 1163S013
Study:YES Is Model: YES Model #:
PM: Carlos Montez - (213) 418-3241
Email: MontezC@metro.net
LS: N LS GROUP#:
Conformity Category: NON-EXEMPT

System :State Hwy | Route :91 | Postmile: 7 to 11.04 | Distance: 4.04 | Phase: Environmental Document/Pre-Design Phase (PAED) | Completion Date 12/31/2025

Lane # Extd: 8 | Lane # Prop: 8 Imprv Desc: C-D Road + Ramps + Advance Signage | Air Basin: SCAB | Envir Doc: ENV ASMNT/INIT STUDY - JOINT NEPA/CEQA - 12/31/2020

Toll Rate: 0.00 | Toll Colc Loc: | Toll Method: | Hov acs eg loc: | Uza: Los Angeles-Long Beach-Santa Ana | Sub-Area: | Sub-Region:

CTIPS ID: | EA #: 35920 | PPNO:

Program Code: CARH3 - INTERCHANGE-MOD/REP/REC-LN ADD'S Stop Loc:

	PHASE	PRIOR	18/19	19/20	20/21	21/22	22/23	23/24	BEYOND	PROG TOTAL
MR20H - Measure R 20% Highway	PE		$2,503	$2,504	$7,724	$7,724				$20,455
	RW		$0	$0	$0	$0				$0
	CON		$0	$0	$0	$0				$0
	SUBTOTAL		$2,503	$2,504	$7,724	$7,724				$20,455
	TOTAL		**$2,503**	**$2,504**	**$7,724**	**$7,724**				**$20,455**

TOTAL PE: $20,455 **TOTAL RW: $0** **TOTAL CON: $0** **TOTAL PROGRAMMED: $20,455**

- **General Comment:** Removed ROW & construction phase.
- **Modeling Comment:** Project feature changed from auxiliary lane to adding a two lane C-D road in each direction on SR-91 between Central Avenue to Acacia Court between PM 7.82 to PM 9.96. Project limits are from PM 7 to PM 11.04 due to advance signage requirements.
- **TCM Comment:** No significant change made.
- **Amendment Comment:**
- **CMP Comment:**
- **Narrative:**

Last Revised **Amendment 19-12 - APPROVED** **Change reason**:COST DECREASE **Total Project Cost** **$20,455**

Chapter 5 List of Preparers

This chapter lists the following State and Local Agency personnel and consultants primarily responsible for preparing this Draft IS/EA and supporting technical studies.

5.1 Lead Agency

5.1.1 California Department of Transportation, District 7

Ronald Kosinski, Deputy District Director of Environmental Planning
Dawn Kukla, Office Chief Environmental Planning
Thoa Le, Senior Environmental Planner
Vanessa Velasco, Associate Environmental Planner
Kelly Ewing-Toledo, Office Chief Environmental Planning
Claudia Harbert, Senior Environmental Planner and PQS for Architectural History
Dustin Kay, Associate Environmental Planner, Archaeology
Paul Caron, Senior District Biologist, Biology
Andrew Johnstone, Associate Environmental Planner, Biology
Jin S. Lee, Senior Transportation Engineer, Noise and Vibration
Roland Cerna, Transportation Engineer, Noise and Vibration
Steven Friet, Engineering Geologist, Hazardous Waste
Andrew Yoon, Senior Transportation Engineer, Air Quality & Hazardous Waste (Acting)
Liberty San-Agustin, Associate Transportation Planner, Air Quality
George Olguin, Senior Landscape Architect, Visual/Aesthetics
Sarah Horn, Senior Transportation Engineer, Traffic Corridor Management
Tam Nguyen, Transportation Engineer, Traffic Corridor Management
Chao Wei, Senior Transportation Engineer, Advanced Planning
Dawn Helou, Senior Transportation Engineer, HOV
Hassan Mohter, Transportation Engineer, HOV
Vincent Chen, Transportation Engineer, Hydraulics
Janice Lu, Project Manager
Allen Shim, Senior Transportation Engineer, Design Manager
Joseph Reynoza, Senior Transportation Engineer, Design
Mumbie Fredson-Cole, Senior Project Manager, Risk Management
Richard Hartzell, HQ Structural Engineer, Structures Design Review
Mario Gutierrez, Caltrans Oversight
Susan Chau, District Design Liaison, Design Review
Sona Juharyan, Environmental Engineer, Geotechnical Design Review
Chung Lee, Environmental Engineer, Geotechnical Design Review
Kelly Lin, Associate Right of Way Agent, Relocation Impacts
Kenneth Wong, Associate Right of Way Agent, Relocation Impacts
Sid Rana, Transportation Engineer, Hydraulics
Prakash Yadav, Senior Transportation Engineer
Ajaykumar Shah, Transportation Engineer, Ramp Metering
Charlie Truong, Transportation Engineer, Maintenance
Hong-Thuy Vu, Transportation Engineer, Traffic Management Plan
Steven Wang, Transportation Engineer, Utilities

5.2 Responsible Agency/Project Sponsor

5.2.1 Los Angeles County Metropolitan Transportation Authority

Abdollah Ansari, Senior Executive Officer, Highway Program
Carlos Montez, Project Manager
Julio Perucho, Deputy Project Manager
Lourdes Ortega, Environmental Lead

5.3 Project Consultants

5.3.1 HNTB

Yoga Chandran, Project Manager
Heather Anderson, Deputy Project Manager
Elisabeth Suh, Environmental Lead
Lilly Acuña, CIA, Environmental Document
Tami Podesta, CIA, Environmental Document, QC
Shahram Vahdat, Engineering Lead
Andie Tempelis, Geometrics
Yung-Nien Wang, Structures Lead
Navaz Behkarfar, Structures Advanced Planning Studies
Michael Van Duyn, Structures Advanced Planning Studies
Carlos Melgar, Hydraulics/Hydrology
Kevin Reitze, Drainage
Kourosh Sameni, Drainage
Sean Silos, Utilities

5.3.2 GPA Consulting

Laura Comstock, Technical Studies Manager and Environmental Document
Richard Galvin, Environmental Document, QC
Adelina Munoz, Senior Biologist
Laura O'Neill, Senior Architectural Historian
Elysha Paluszek, Associate Architectural Historian
Martin Rose, Senior GIS Analyst
Joseph Vu, Associate Biologist
Katherine Warner, Associate Biologist

5.3.3 Ambient Air Quality & Noise Consulting

Kurt Legleiter, Air Quality Analysis; Noise Study
Danny Luu, Air Quality and Noise Analyst
John Pambakian, Air Quality and Noise Analyst

5.3.4 Calvada Surveying, Inc.

Saul Melgarejo, Jr., Survey

5.3.5 Fehr & Peers

Sarah Brandenberg, Traffic Principal in Charge
Anna Luo, Traffic Manager, Traffic Forecasting and Operational Analysis/Report
Saima Musharrat, GIS

David Stanek, QAQC Manager
Ethan Sun, Traffic Forecasting
Seishi Yamagata, Traffic Operations Analysis
Diwu Zhou, Traffic Ops Analysis

5.3.6 FMF Pandion

John Bodenchak, Storm Water Data Report

5.3.7 FPL and Associates, Inc.

Alex Eapen, Traffic Management Plan Lead
Manny Lava, Traffic Handling Plan
Fong-Ping Lee, Project Oversight
Jerry Porter, HOV Ingress/Egress Evaluation
Jessica Zia, Staging Concept Plans

5.3.8 Geo-Advantec, Inc.

Shawn Ariannia, Principal Geotechnical Engineer
Ronald C. Hanson, Principal Engineering Geologist
Yasmin Proa, Project Engineer

5.3.9 Geocon

Adrian Escobar, Staff Geologist
Michael Conkle, Initial Site Assessment/Hazardous Waste/Materials

5.3.10 Paleo Solutions

Evelyn Chandler, HPSR/ASR, Prehistoric and Historical Archaeology
Liz Denniston, HPSR/ASR, Archaeology

5.3.11 Tatsumi and Partners, Inc.

Michael Aceves, Visual Resources Impact Memorandum
Wey Kang, Visual Resources Impact Memorandum
Alexa Miranda, Landscape Designer/Graphics
David Tatsumi, Visual Resources Impact Memorandum

5.3.12 Value Management Strategies

Eric Trimble, VA Study Team Leader

5.3.13 Wagner Engineering & Survey, Inc.

Nirma Mendoza, Survey
Stephanie Wagner, Survey

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Chapter 6 Distribution List

Federal Agencies

Agency	Contact/Address
Federal Highway Administration, Cal-South Office	Hector Santiago 888 S. Figueroa Street, Suite 440 Los Angeles, CA 90017
U.S. Environmental Protection Agency, Region IX	Federal Activities Office, CMD-2 75 Hawthorne Street San Francisco, CA 94105-3901
U.S. Fish and Wildlife Service	Karen A. Goebel Assistant Field Supervisor Carlsbad Fish and Wildlife Office 2177 Salk Avenue, Suite 250 Carlsbad, California 92008
United States Army Corps of Engineers	Los Angeles District Attention: CESPL-CO-R 915 Wilshire Boulevard Los Angeles, CA 90017

State Agencies

Agency	Contact/Address
California Department of Fish and Wildlife	Ed Pert, Regional Manager 3883 Ruffin Road San Diego, CA 92123
State Water Resources Control Board	E. Joaquin Esquivel, Board Chair 1001 I Street Sacramento, CA 95814
California Transportation Commission	Fran Inman, Chair 1120 N Street, Room 2221 (MS-52) Sacramento, CA 95814
State Clearinghouse	Kate Gordon, Director 1400 Tenth Street Sacramento, CA 95814
Native American Heritage Commission	Christina Snider, Executive Secretary 1550 Harbor Boulevard, Suite 100 West Sacramento, CA 95691
California Natural Resources Agency	Wade Crowfoot California Secretary for Natural Resources 1416 Ninth Street, Suite 1311 Sacramento, CA 95814
California Highway Patrol	411 North Central Avenue Glendale, CA 91203
California Department of Toxic Substances Control	Barbara Lee, Director 1001 I Street Sacramento, CA 95814-2828

California Air Resources Board	Mary D. Nichols, Chair 1001 I Street Sacramento, CA 95814
Governor's Office of Emergency Services	Mark Ghilarducci, Director 3650 Schriever Avenue Mather, CA 95655-4203
California Department of Conservation	David Bunn, Director 801 K Street, MS 24-01 Sacramento, CA 95814
California Public Utilities Commission	Michael Picker, President 505 Van Ness Avenue San Francisco, CA 94102
State Office of Historic Preservation	Julianne Polanco, Preservation Officer 1725 23rd Street, Suite 100 Sacramento, CA 95816
California Department of Water Resources	Karla Nemeth, Director 1416 9th Street, Room 1115-1 Sacramento, CA 95814

Regional/County Agencies

Agency	Contact/Address
Los Angeles County Clerk	2400 Imperial Highway Norwalk, CA 90650
Southern California Association of Governments Media & Public Affairs	Jeff Liu, Manager 900 Wilshire Boulevard, Suite 1700 Los Angeles, CA 90017
Los Angeles Regional Water Quality Control Board – Region 4	Irma Muñoz, Chair 320 West 4th Street, Suite 200 Los Angeles, CA 90013
Metropolitan Water District of Southern California	Gloria D. Gray, Chairwoman P.O. Box 54153 Los Angeles, CA 90054-0153
Los Angeles County Sheriff's Department	Sheriff Alex Villanueva 211 West Temple Street Los Angeles, CA 90012
South Coast Air Quality Management District	Dr. William A. Burke, Chairman 21865 Copley Drive Diamond Bar, CA 91765
Los Angeles County Department of Public Works	Mark Pestrella, Director 900 South Freemont Alhambra, CA 91803
Los Angeles Department of Water and Power	David H. Wright, General Manager 111 North Hope Street, #1221 Los Angeles, CA 90012

Los Angeles County Fire Department	Environmental Review Unit 12605 Osborne Street Pacoima, CA 91331-2129
County of Los Angeles Department of Parks and Recreation	John Wicker, Director West, 1000 S. Fremont Avenue Alhambra, CA 91803
Gateway Cities Council of Governments	Diane DuBois, President 16401 Paramount Boulevard Paramount, CA 90723
Los Angeles County Department of Regional Planning	Amy J. Bodek, Director of Planning 320 West Temple Street, 13th Floor Los Angeles, CA 90012
Union Pacific Railroad	Lupe Valdez Sr. Director, Public Affairs 13181 Crossroads Parkway North, Industry, CA 91746

Local Agencies

Agency	Contact/Address
City of Compton	Wendell Johnson, Director of Public Works 205 S. Willowbrook Avenue Compton, CA 90220
City of Carson	Maria Slaughter, Public Works Director 701 E. Carson Street Carson, CA 90745
City of Compton	Craig J. Cornwell, City Manager 205 S. Willowbrook Avenue Compton, CA 90220
City of Carson	Sharon Landers, City Manager 701 E. Carson Street Carson, CA 90745
Compton Fire Department Station 1	201 S. Acacia Avenue Compton, CA 90220
City of Gardena	1700 West 162nd Street Gardena, CA 90247
Carson Sheriff Station	21356 S. Avalon Boulevard Carson, CA 90745
Compton Sheriff Station	301 S. Willowbrook Avenue Compton, CA 90220
Los Angeles County Fire Department, Station 116	755 E Victoria Street Carson, CA 90746
City of Long Beach	Eric Lopez, Director of Public Works 411 W. Ocean Boulevard Long Beach, CA 90802

Federal Elected Officials

Official	Address
The Honorable Dianne Feinstein United States Senator	11111 Santa Monica Boulevard, Suite 915 Los Angeles, CA 90025
The Honorable Alex Padilla United States Senator	B03 Russell Senate Office Building Washington, DC 20510
The Honorable Nanette Barragán United States Congress 44th District	701 E. Carson Street Carson, CA 90745

State Elected Officials

Official	Address
The Honorable Lena A. Gonzalez State Senate 33rd District	3939 Atlantic Avenue, Suite 107 Long Beach, CA 90807
The Honorable Steven Bradford State Senate 35th District	1 Manchester Boulevard, Suite 600 Inglewood, CA 90301
The Honorable Mike A. Gipson State Assembly 64th District	879 W. 190th Street, Suite 920 Gardena, CA 90248
The Honorable Anthony Rendon State Assembly 63rd District	4909 Lakewood Boulevard, Suite 400 Lakewood, CA 90712

County Elected Officials

Official	Address
The Honorable Holly Mitchell Los Angeles County Supervisor, 2nd District	866 Kenneth Hahn Hall of Administration 500 W. Temple Street Los Angeles, CA 90012
The Honorable Janice Hahn Los Angeles County Supervisor, 4th District	Norwalk Field Office 12720 Norwalk Boulevard, Room 704 Norwalk, CA 90650

Elected Officials/City of Carson

Official	Address
The Honorable Lula Davis-Holmes, Mayor	701 E Carson Street Carson, CA 90745
The Honorable Jim Dear, Mayor Pro Tem	701 E Carson Street Carson, CA 90745
Jawane Hilton, Councilmember	701 E Carson Street Carson, CA 90745
Cedric Hicks, Councilmember	701 E Carson Street Carson, CA 90745
Monica Cooper, City Treasurer	701 E Carson Street Carson, CA 90745
Donesia L. Gause Aldana, City Clerk	701 E Carson Street Carson, CA 90745

Elected Officials/City of Compton

Official	Address
The Honorable Aja Brown, Mayor	205 S. Willowbrook Avenue Compton, CA 90220
Michelle Chambers, Councilmember District 1	205 S. Willowbrook Avenue Compton, CA 90220
Isaac Galvan, Councilmember District 2	205 S. Willowbrook Avenue Compton, CA 90220
Tana L. McCoy, Councilmember District 3	205 S. Willowbrook Avenue Compton, CA 90220
Emma Sharif, Councilmember District 4	205 S. Willowbrook Avenue Compton, CA 90220
Alita Godwin, City Clerk	205 S. Willowbrook Avenue Compton, CA 90220
Damon Brown, City Attorney	205 S. Willowbrook Avenue Compton, CA 90220
Douglas Sanders, City Treasurer	205 S. Willowbrook Avenue Compton, CA 90220

Elected Officials/City of Gardena

Official	Address
The Honorable Tasha Cerda, Mayor	1700 West 162nd Street Gardena, CA 90247
The Honorable Mark E. Henderson, Ed. D, Mayor Pro Tem	1700 West 162nd Street Gardena, CA 90247
Paulette C. Francis, Councilmember	1700 West 162nd Street Gardena, CA 90247
Art Kaskanian, Councilmember	1700 West 162nd Street Gardena, CA 90247
Rodney G. Tanaka, Councilmember	1700 West 162nd Street Gardena, CA 90247
J. Ingrid Tsukiyama, Treasurer	1700 West 162nd Street Gardena, CA 90247
Mina Semenza, City Clerk	1700 West 162nd Street Gardena, CA 90247

Elected Officials/City of Long Beach

Official	Address
The Honorable Robert Garcia, Mayor	411 West Ocean Boulevard Long Beach, CA 90802
Rex Richardson, Councilmember, District 9	411 West Ocean Boulevard Long Beach, CA 90802

Native American Tribal Representatives

Representatives	Address
Gabrieleño Band of Mission Indians– Kizh Nation Andrew Salas, Chairperson	P.O. Box 393 Covina, CA 91723
Gabrieleno/Tongva San Gabriel Band of Mission Indians Anthony Morales, Chairperson	P.O. Box 693 San Gabriel, CA 91778
Gabrielino/Tongva Nation Sandonne Goad, Chairperson	106 1/2 Judge John Aiso Street, 231 Los Angeles, CA 90012
Gabrielino Tongva Indians of California Tribal Council Robert Dorame, Chairperson	P.O. Box 490 Bellflower, CA 90707
Gabrielino-Tongva Tribe Charles Alvarez	23454 Vanowen Street West Hills, CA 91307

Non-Profit Organizations

Organization	Address
California Native Plant Society	2707 K Street, Suite 1 Sacramento, CA 95816-5113
California Wildlife Federation	1012 J Street Sacramento, CA 95814
The Compton Initiative	8303 Alondra Boulevard Paramount, CA 90723
Compton Chamber of Commerce	700 N Bullis Road, Suite 10A Compton, CA 90221
Latino Chamber of Commerce	331 E Compton Boulevard Compton, CA 90221
Carson Chamber of Commerce	530 E Del Amo Boulevard Carson, CA 90746
Elite Culture & Education Foundation	123 E Artesia Boulevard Compton, CA 90220
The Salvation Army Compton Corps Community Center	736 E Compton Boulevard Compton, CA 90221
Boys and Girls Club of Carson	21502 Main St Carson, CA 90745
Rotary Club Carson/Gardena/Dominguez	P.O. Box 4661 Carson, CA 90749
The Kiwanis Club of Carson	P.O. Box 5005 Carson, CA 90749
Concerned Citizens of Compton	PO Box 5474 Compton, CA 90224

Libraries

Name/Location	Address
Carson Library	151 East Carson Street Carson, CA 90745
Compton Library	240 W. Compton Boulevard Compton, CA 90220
Dr. Martin Luther King, Jr. Library	17906 South Avalon Boulevard Carson, CA 90746
Compton College Library	111 E. Artesia Boulevard Compton, CA 90221
East Rancho Dominguez Library	4420 E. Rose Street East Compton, CA 90221

Educational Institutions

Institution	Address
California State University Dominguez Hills	Johnathan Scheffler, Director, Facilities Services 1000 E. Victoria Street Carson, CA 90747
Compton College	1111 E Artesia Boulevard Compton, CA 90221
Jordan Plus High School	171 W Bort Street Long Beach, CA 90805

Utility Providers

Provider	Address
Bulletin Displays LLC	3127 East South Street, Suite B Long Beach, CA 90805
Clear Channel Outdoor	19320 Harborgate Way Torrance, CA 90501
Outfront Media LLC	1731 Workman Street Los Angeles, CA 90031
Central Basin Municipal Water District	6252 Telegraph Road Commerce, CA 90040
Chevron Pipe Line Company DOT Specialist	1400 Smith Street Houston, TX 77002
Crown Castle Corporate	1220 Augusta Drive, Suite 600 Houston, TX 77057
Frontier Communications	Office of the President P.O. Box 5156 Tampa, FL 33675

Shell Pipeline	Shell Oil Company Headquarters 910 Louisiana Street Houston, TX 77002
Kinder Morgan – Carson Terminal	2000 East Sepulveda Carson, CA 90810
Southern California Gas Company	Centralized Correspondence PO Box 1626 Monterey Park, CA 91754
Los Angeles County Department of Public Works Headquarters	900 S. Fremont Avenue Alhambra, CA 91803
Charter Communications/Spectrum	400 Atlantic Street Stamford, CT 06901
Crimson Pipeline LP	3760 Kilroy Airport Way #300 Long Beach, CA 90806
Defense Fuel Support Point	3191 N Gaffey Street San Pedro, CA 90731
Golden State Water Corporate Office	630 E. Foothill Boulevard San Dimas, CA 91773
Liberty Utilities Downey Office	9750 Washburn Road Downey, CA 90241
Los Angeles County Sanitation Districts	Joint Administration Office 1955 Workman Mill Road Whittier, CA 90601
Time Warner Cable	One Time Warner Center, North Tower New York, New York 10019
XO Communications Headquarters	13865 Sunrise Valley Drive Herndon, VA 20171
Southern California Edison	1325 S Grand Avenue Santa Ana, CA 92705

Appendix A. Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

November 2019

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures "*No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.*"

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/business-and-economic-opportunity/title-vi.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

Toks Omishakin
Director

Appendix B. Environmental Commitments Record

Environmental Commitments Record (ECR)

DIST-CO-RTE: 07-LA-91 **PM/PM:** R7.00/R11.04 **EA/Project ID.:** 07-35920/0719000201
Project Description: The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the California Department of Transportation (Caltrans) and Gateway Cities Council of Governments (GCCOG), proposes to improve a portion of the State Route 91 (SR-91) corridor between Central Avenue and Acacia Court located in the City of Compton and the City of Carson and one overhead sign located near Long Beach Boulevard within the City of Long Beach in Los Angeles County, California. The proposed alternatives include the No-Build Alternative and the Collector-Distributor (C-D) Road Alternative. The proposed work includes mainline and ramp improvements from Central Avenue to Acacia Court and signage upgrades throughout the project limits. The proposed project would improve congestion between Central Avenue and Acacia Court and at the local interchanges of Central Avenue and Wilmington Avenue. The project aims to improve mobility and safety of the SR-91 freeway (both mainline and ramps) and local roadway operations.
Date (Last modification): February 2021

PERMITS

Permit	Agency	Application Submitted
Notices for National Pollutant Discharge Elimination System Construction General Permit	Los Angeles Regional Water Quality Control Board	Prior to Construction
Notices for Los Angeles County Municipal Separate Storm Sewer System Permit, Order No. R4-2012-0175-A01	Los Angeles Regional Water Quality Control Board	Prior to Construction
Construction Encroachment Permit	City of Compton	During Final Design Phase
Construction Encroachment Permit	City of Carson	During Final Design Phase
Flood Control Permit and Construction Permit	Los Angeles County Department of Public Works	During Final Design Phase

ENVIRONMENTAL COMMITMENTS

PA&ED

No environmental commitments for the PA&ED phase have been identified at this time.

PS&E/BEFORE RTL

Category	Task and Brief Description	Source	Responsible Branch/Staff	Action to Comply	Mitigation for Significant Impacts Under CEQA?
Community Impact Assessment	CIA-1: If the C-D Road Alternative with Truck Turning Radii Option 2 is selected, coordination with the City of Compton will occur to determine if a land use zoning amendment is required.	IS/EA Page 2.1-12	Project Sponsor	Request land use zoning amendment from the City of Compton for parcel acquisitions, if required.	No
Geology/Soils/Seismic/ Topography	PF-GEO-1: A site-specific investigation and subsurface data liquefaction screening and analysis will be performed to evaluate the potential stability and settlement characteristics for the proposed retaining walls supported on the embankment compacted fill during the final design phase of the project. Structures will be designed to withstand a defined level of ground acceleration and fault offset, where applicable.	IS/EA Page 2.9-6	Project Engineer	Perform site-specific investigation for retaining walls.	No

Category	Task and Brief Description	Source	Responsible Branch/Staff	Action to Comply	Mitigation for Significant Impacts Under CEQA?
Hazardous Waste	PF-HW-1: During the Final Design phase, an ADL survey will be completed to evaluate the potential presence of ADL in surface soils within Caltrans ROW or City ROW that will be disturbed during construction, including any of the nine potential acquisition areas. Based on the results of the ADL survey, management and disposal options will be developed for soil containing potentially hazardous concentrations of lead. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed in accordance with Caltrans Standard Specifications, Section 14-11.08 Material Containing Hazardous Waste Concentrations of Aerially Deposited Lead (2015) and under the July 1, 2016, ADL Agreement between Caltrans and the Department of Toxic Substances Control (DTSC). This ADL Agreement allows such soils to be safely reused within the project limits, as long as all requirements of the ADL Agreement are met.	IS/EA Page 2.11-12	Project Engineer	Conduct ADL survey and determine disposal options for soils with ADL. Caltrans Standard Specifications 14-11.	No
Paleontology	PAL-1: A Qualified Paleontologist shall prepare a Paleontological Mitigation Plan (PMP) following the guidelines in the Caltrans Standard Environmental Reference (SER), Environmental Handbook, Volume 1, Chapter 8 – Paleontology. The PMP shall be prepared concurrently with final design plans during the PS&E phase.	IS/EA Page 2.10-3	Project Sponsor	Prepare PMP	Yes
Stormwater	PF-WQ-2: A SWPPP will be prepared for the project and will address all construction-related activities, equipment, and materials that have the potential to affect water quality.	IS/EA Page 2.8-7	Project Engineer	Prepare a SWPPP. Caltrans Standard Specifications 13-3.	No
Traffic and Transportation/Pedestrian and Bicycle Facilities	PF-TR-1: A TMP will be prepared for the project during final design phase to address potential impacts on utilities and emergency services during construction of the project. Section 2.5.3.1 provides additional details pertaining to the TMP.	IS/EA Page 2.4-2	Traffic Operations, TMP Manager	Prepare a TMP.	No
Traffic and Transportation/Pedestrian and Bicycle Facilities	PF-TR-2: Early coordination with affected transit providers and implementation of a traffic management plan to maintain traffic safety will occur prior to construction to minimize potential disruptions to transit service or relocation of existing bus stop.	IS/EA Page 2.5-26	Project Sponsor	Coordinate with transit providers and implement a TMP.	No
Traffic and Transportation/Pedestrian and Bicycle Facilities	PF-TR-3: Early coordination with local agencies will occur to replace the exclusive pedestrian phase for the crosswalk on the east leg of the intersection of Wilmington Avenue/SR-91 westbound ramps with a leading pedestrian interval and to optimize traffic signal timings at the Wilmington Avenue/Westbound SR-91 ramps.	IS/EA Page 2.5-26	Traffic Operations	Coordinate with Traffic Operations.	No
Utilities/Emergency Services	PF-UES-1: If protection or relocation of utilities is required, early coordination and communication with the utility service provider will occur so there will be no disruption of services.	IS/EA Page 2.4-2	Project Engineer,	Early coordination during PS&E with utility service providers.	No
Visual Resources	PF-V-1: Landscape design will be consistent with applicable aesthetic corridor plans (i.e. Final Draft SR-91 Corridor Aesthetic Master Plan) and consider context sensitive solutions and project needs, as feasible, and will adhere to Caltrans planting guidelines and any current restrictions or regulations.	IS/EA Page 2.6-7	Project Engineer, Landscape Architect	Prepare landscape design consistent with aesthetic corridor plans and Caltrans planting guidelines.	No
Visual Resources	V-1: The aesthetic design of the structural elements will be consistent with applicable aesthetic corridor plans (i.e. Final Draft SR-91 Corridor Aesthetic Master Plan) and consider context sensitive solutions and project needs, as feasible. For example, retaining walls, and other structural aesthetics will receive a minimum aesthetic treatment such as fractured fin texture.	IS/EA Page 2.6-8	Project Engineer, Landscape Architect	Prepare landscape design consistent with aesthetic corridor plans.	No

ROW/PURCHASING

Category	Task and Brief Description	Source	Responsible Branch/Staff	Action to Comply	Mitigation for significant impacts under CEQA?
Community Impact Assessment	PF-RW-2: Should parcel takes be required, Metro will perform any needed ROW acquisitions during final design. If ROW acquisition is unavoidable, coordination with property owners and acquisition will occur in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 as amended for the Truck Turning Radii Option 2.	IS/EA Page 2.2-3	Project Sponsor	Coordinate with property owners where ROW acquisition is required and comply with Uniform Act.	No

PRE-CONSTRUCTION

Category	Task and Brief Description	Source	Responsible Branch/Staff	Action to Comply	Mitigation for significant impacts under CEQA?
Biology	PF-BIO-2: Trimming and removal of vegetation will be minimized and performed outside of the nesting season (typically February 1 to September 1) to the extent feasible. If construction is scheduled to begin during the bird nesting season, nesting bird surveys will be completed by a qualified biologist no more than 72 hours prior to construction, or as determined by the qualified biologist, to determine if nesting birds or active nests are present within the construction area. Surveys will be conducted within 150 feet for songbirds, 300 feet for shorebirds, and 500 feet for raptors, or as otherwise determined by the biologist. Surveys will be repeated if construction activities are suspended for 3 days or more.	IS/EA Page 2.14-7	Resident Engineer	Minimize and perform vegetation trimming and removal outside the bird nesting season. Complete nesting bird surveys prior to construction activities that occur during the bird nesting season. Caltrans Standard Specifications 14-6.03B.	No
Biology	PF-BIO-3: If nesting birds are found within 500 feet of the construction area, orange flagging/fencing or similar (typically 150 feet for songbirds, and 500 feet for raptors, or as directed by a qualified biologist) will be installed and maintained until nesting activity has ended, as determined in coordination with the project biologist and regulatory agencies, as appropriate.	IS/EA Page 2.14-7	Biologist, Resident Engineer	Install protective areas around nesting special-status birds. Caltrans Standard Specifications 14-1.01, 14-6.03B and 14-6.03A.	No
Biology	PF-BIO-5: If the project is constructed during the maternal season for bats (typically late March through mid-September), a thorough bat roosting habitat assessment will be conducted for all potential roosting habitat within 100 feet of construction activities. The survey will include a visual inspection to identify signs of roosting and if needed, emergence surveys will be conducted, to confirm presence or absence of bats.	IS/EA Page 2.14-8	Biologist, Resident Engineer	Conduct a bat roosting habitat assessment. Caltrans Standard Specifications 14-6.03A.	No
Biology	PF-BIO-6: If a maternal colony of bats is found, no work will be conducted within 100 feet of the maternal roosting site until the maternal season is finished or the bats have left the site, or as otherwise directed by a qualified biologist. The site will be designated as a sensitive area and protected as such until the bats have left the site. No activities will be authorized adjacent to the roosting site. Combustion equipment, such as generators, pumps, and vehicles, will not be parked or operated under or adjacent to the roosting site. Construction personnel will not be authorized to enter areas beneath the colony, especially during the evening exodus (typically, approximately 15 minutes prior to sunset and 1 hour following sunset).	IS/EA Page 2.14-8	Biologist, Resident Engineer	If bats are present, Designate sensitive areas around bat roosting sites. Caltrans Standard Specifications 14-6.03A.	No
Cultural Resources	CUL-1: Metro will implement a limited archaeological and Native American monitoring program with interested Tribes as appropriate prior to and during project construction.	IS/EA Page 2.7-6	Project Sponsor	Implement an archaeological and Native American monitoring program.	No

Category	Task and Brief Description	Source	Responsible Branch/Staff	Action to Comply	Mitigation for significant impacts under CEQA?
Hazardous Waste	PF-HW-3: An ACM and LBP survey of the Acacia Court bridge (Bridge No. 53.2371) will be required in order to obtain permits from the South Coast Air Quality Management District (SCAQMD). If present, removal and disposal of ACM and LBP will be performed prior to the start of demolition and renovation.	IS/EA Page 2.11-12	Project Engineer	Conduct ACM and LBP surveys. Remove and dispose ACM and LBP prior to construction.	No
Hazardous Waste	PF-HW-6: Preliminary site investigations (PSIs) will be completed in the vicinity of proposed areas where deep excavations will occur and/or where excess soil requiring export is generated including in areas of existing city and Caltrans ROW and acquisition areas where surficial grading will occur. PSIs will be completed to evaluate the potential presence of petroleum constituents resulting from the historic oil field operations and incidental leaks from known subsurface petroleum pipelines. PSIs will also be completed along the alignment of proposed retaining walls and sound walls where excess soil will be generated. Additionally, if drilled piles are chosen during the final design phase, PSIs will be completed at the proposed pile locations for the Acacia Court bridge improvements and at new overhead sign and billboard locations. The PSIs will include collection and analysis of samples to the total proposed depths of the excavations.	IS/EA Page 2.11-12	Project Engineer	Complete PSIs for petroleum constituents where deep excavations would occur or excess soil export would be generated.	No
Hazardous Waste	PF-HW-7: If groundwater is encountered during soil sampling, groundwater samples will be collected and analyzed.	IS/EA Page 2.11-13	Project Engineer	If encountered, collect and analyze groundwater samples.	No

CONSTRUCTION

Category	Task and Brief Description	Source	Responsible Branch/Staff	Action to Comply	Mitigation for significant impacts under CEQA?
Air Quality	PF-AQ-1: Section 14-9-02 of Caltrans' Standard Specifications specifically requires that the contractor comply with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. • Water or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions. • Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas. • Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by CCR Title 17, Section 93114. • A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely re-vegetation of disturbed slopes as needed to minimize construction impacts to existing communities. • Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.	IS/EA Page 2.12-14	Resident Engineer	Comply with applicable air quality laws and regulations, and Caltrans Standard Specifications 14-9.02.	No

Category	Task and Brief Description	Source	Responsible Branch/Staff	Action to Comply	Mitigation for significant impacts under CEQA?
Air Quality	• Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used. • All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize the emission of dust during transportation. • Dust and mud deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions. • To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times. • Mulch will be installed, or vegetation planted as soon as practicable after grading to reduce windblown PM in the area.	IS/EA Page 2.12-14	Resident Engineer	Comply with applicable air quality laws and regulations, and Caltrans Standard Specifications 14-9.02.	No
Air Quality	PF-AQ-2: SCAQMD Rule 403 – Fugitive Dust Construction activity sources are required to implement best available control measures for the control of fugitive dust.	IS/EA Page 2.12-15	Resident Engineer	Comply with SCAQMD Rule 403 to control fugitive dust.	No
Biology	PF-BIO-1: Construction in areas with trees or vegetation that may provide nesting habitat for special-status avian species will be reduced to the maximum extent feasible.	IS/EA Page 2.14-7	Resident Engineer	Reduce construction areas near nesting habitat for special-status avian species.	No
Biology	PF-BIO-2: Trimming and removal of vegetation will be minimized and performed outside of the nesting season (typically February 1 to September 1) to the extent feasible. If construction is scheduled to begin during the bird nesting season, nesting bird surveys will be completed by a qualified biologist no more than 72 hours prior to construction, or as determined by the qualified biologist, to determine if nesting birds or active nests are present within the construction area. Surveys will be conducted within 150 feet for songbirds, 300 feet for shorebirds, and 500 feet for raptors, or as otherwise determined by the biologist. Surveys will be repeated if construction activities are suspended for 3 days or more.	IS/EA Page 2.14-7	Resident Engineer	Minimize and perform vegetation trimming and removal outside the bird nesting season. Complete nesting bird surveys prior to construction activities that occur during the bird nesting season. Caltrans Standard Specifications 14-6.03A and 14-6.03B.	No
Biology	PF-BIO-4: Following project construction, disturbed areas will be re-vegetated according to the conceptual landscape plan and in accordance with Caltrans' planting guidelines. The conceptual landscape plan includes planting new trees, shrubs, and groundcover.	IS/EA Page 2.14-7	Resident Engineer	Re-vegetate disturbed areas following project construction.	No
Biology	PF- BIO-7: Invasive vegetation removed from the BSA will be treated and disposed of in a manner that will prevent the spread of invasive species on-site or off-site.	IS/EA Page 2.15-2	Resident Engineer	Treat and properly dispose invasive vegetation. Caltrans Standard Specifications 20-1.03C and 14-6.05.	No
Biology	PF- BIO-8: New landscaping materials, including erosion control seed mixes and other plantings, will be composed of non-invasive plant species and will be clear of weed seeds, and all erosion control and landscape planting will be conducted in a manner that will not result in the spread of invasive plant species.	IS/EA Page 2.15-2	Resident Engineer	Use non-invasive plant species in landscaping.	No
Biology	PF-BIO-9: Plants listed in the Pest Ratings of Noxious Weed Species and Noxious Weed Seed (United States Department of Agriculture, 2003) will not be used as part of the project.	IS/EA Page 2.15-2	Resident Engineer	Do not use plant species listed in the Pest Rating of Noxious Weed Species and Noxious Weed Seed list. Caltrans Standard Specifications 21-2.02H and 21-2.02P.	No
Community Impact Assessment	PF-RW-1: New billboards will be installed prior to the removal of existing billboards (both located in City ROW) with no loss of revenue.	IS/EA Page 2.2-3	Resident Engineer	Replace billboards before removal of existing billboards.	No

Category	Task and Brief Description	Source	Responsible Branch/Staff	Action to Comply	Mitigation for significant impacts under CEQA?
Cultural Resources	CUL-1: Metro will implement a limited archaeological and Native American monitoring program with interested Tribes as appropriate prior to and during project construction.	IS/EA Page 2.7-6	Project Sponsor	Implement a limited archaeological and Native American Monitoring program with interested Tribes.	No
Cultural Resources	PF-CUL-1: If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.	IS/EA Page 2.7-6	Archaeologist, Resident Engineer	Stop activities where cultural materials are discovered. Caltrans Standard Specifications 14-2.03.	No
Cultural Resources	PF-CUL-2: If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the NAHC, who, pursuant to PRC Section 5097.98, will then notify the MLD. At this time, the person who discovered the remains will contact Claudia Harbert, Caltrans District 7 Cultural Resources Environmental Branch Chief, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.	IS/EA Page 2.7-6	Archaeologist, Resident Engineer	Stop activities if human remains are discovered and contact County Coroner. Caltrans Standard Specifications 14-2.03.	No
Greenhouse Gas	PF-AQ-1: Contractor to comply with Caltrans standard Specification 14-9 which requires contractor to comply with all laws applicable to the project and to certify they are aware of and will comply with ARB emission reduction regulations for generators and on-road equipment including emissions and performance requirements and idling. Certain regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions including but not limited to: Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by the CA Code of Regulations Title 17, Section 93114.	IS/EA Page 3-39	Resident Engineer	Comply with Caltrans standard Specifications 14-9 and Caltrans standard Specification 14-9.02.	No
Greenhouse Gas	PF-TR-1: To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.	IS/EA Page 3-39	Resident Engineer	Construction traffic will be scheduled and routed to reduce congestion.	No
Hazardous Waste	PF-HW-2: During construction, sampling, analysis, removal, and disposal of any traffic striping and pavement materials will be completed in accordance with the *Construction Program Procedure Bulletin 99-2* Caltrans Standard Specifications, Section 14-11.12; *Removal of Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue;* and Section 36-4 *Residue Containing Lead from Paint and Thermoplastic* (2015). Project construction must be consistent with the requirements within Caltrans Construction Manual, Chapter 7 107E Removing Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue (2017). Before disposal, the contractor is required to sample the removed material for proper waste classification. Yellow traffic stripe and pavement marking that is characterized as hazardous waste requires disposal to a DTSC permitted Class I disposal facility.	IS/EA Page 2.11-12	Resident Engineer	Remove traffic striping in accordance with Caltrans requirements. Characterize hazardous waste and dispose at a permitted facility. Caltrans Standard Specifications 14-11.12.	No
Hazardous Waste	PF-HW-4: Treated wood waste will be managed in accordance with Chapter 34, Title 22 California CFR Sections 67386.1 through 67386.12, “Alternative Management Standards for Treated Wood Waste.” All treated wood waste will be properly disposed of at a landfill permitted to accept treated wood waste.	IS/EA Page 2.11-12	Resident Engineer	Dispose treated wood waste at a permitted facility.	No
Hazardous Waste	PF-HW-5: CalGEM will be contacted if a plugged oil well is uncovered during future site grading for evaluation. Depending on their evaluation, CalGEM may require that the well be abandoned in accordance with current requirements.	IS/EA Page 2.11-12	Resident Engineer	Contact CalGEM if plugged oil well is uncovered.	No

Noise	PF-NOI-1: Compliance with Caltrans Standard Specifications Section 14-8.02 will minimize construction noise impacts adjacent to the proposed project. In addition, construction would be limited between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday (except during national holidays), and 8:00 a.m. and 5:00 p.m. on Saturdays adjacent to residential areas.	IS/EA Page 2.13-15	Resident Engineer	Comply with Caltrans Standard Specifications Section 14-8.02.	No
Paleontology	PF-PAL-1: If unanticipated paleontological resources are discovered at the job site, do not disturb the resources and immediately: 1. Stop all work within a 60-foot radius of the discovery 2. Secure the area 3. Notify the Resident Engineer Caltrans investigates the discovery and modifies the dimensions of the secured area if needed. Do not move paleontological resources or take them from the job site. Do not resume work within the radius of discovery until authorized.	IS/EA Page 2.10-3	Resident Engineer	Caltrans Standard Specification 14-7.01 to 14.7-03	No
Water Quality	PF-WQ-1: During construction, Caltrans' Resident Engineer or designated contractor will ensure that all applicable construction site BMPs follow the latest edition of the Caltrans Construction Site BMP Manual to address temporary impacts associated with project construction (California Department of Transportation, 2017), including those associated with waste management, non-stormwater management, tracking controls, and other BMPs as applicable. In addition to applicable BMPs in the Caltrans Construction Site BMP Manual, the following measures will also be implemented: • Erosion control • Sediment control	IS/EA Page 2.8-7	Resident Engineer	Implement construction site BMPs for water quality. Caltrans Standard Specifications 13-1.01.	No
Water Quality	PF-WQ-3: Permanent design pollution prevention and treatment BMPs will be implemented to minimize downstream effects, stabilize slopes, control runoff, and treat water quality volume generated from new impervious surface area. During final design, the project will consider the construction and integration of biofiltration swales or other potential treatment options, where feasible, into aesthetics, landscape, and revegetation plans within the project area as feasible.	IS/EA Page 2.8-8	Resident Engineer	Implement permanent design pollution prevention and treatment BMPs as feasible.	No

ACM = asbestos containing materials
ADL = aerially-deposited lead
AQ = air quality
ARB = air resources board
BIO = biology
BMP = best management practice
BSA = Biological Study Area
CalGEM = California Geologic Energy Management Division
CCR = California Code of Regulations
C-D = Collector-Distributor
CEQA = California Environmental Quality Act
CFR = *Code of Federal Regulations*
CIA = Community Impact Assessment
ECR = Environmental Commitment Record
CUL = cultural
DIST-CO-RTE = district county route
GEO = geology
GHG = greenhouse gas
HW = hazardous waste
ID = identification
IS/EA = Initial Study/Environmental Assessment
LBP = lead based paint
MLD = Most Likely Descendent
NAHC = Native American Heritage Commission
NEPA = National Environmental Policy Act
NOI = noise
PA&ED = Project Approval/Environmental Document
PF = Project Features
PM = postmile
PRC = Public Resources Code
PS&E = plans, specs, & estimate
PSI = preliminary site investigations
QA/QC = quality assurance/quality control
ROW = right of way
RTL = ready to list
RW = right of way
SCAQMD = South Coast Air Quality Management District
SR-91 = State Route 91
SWPPP = Stormwater Project Protection Plan
TMP = Transportation Management Plan
UES = utilities/emergency services
WQ = water quality

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Appendix C. List of Acronyms

Acronym	Description
$	U.S. dollar
%	percent
µg/m	micrograms per cubic meter
°F	Degrees Fahrenheit
a/mvm	accidents per million vehicle miles
AB	aggregate base
AB	Assembly Bill
AC	Asphalt Concrete
ACHP	Advisory Council on Historic Preservation
ACM	asbestos containing materials
ADA	Americans with Disabilities Act of 1990
ADL	aerially-deposited lead
ADT	average daily traffic
AM	ante meridiem/before midday (6:00 to 9:00)
AP	Alquist-Priolo Earthquake Fault Zones
APE	area of potential effects
APN	Assessor's Parcel Number
APS	Accessible Pedestrian Signals
AQ	air quality
ARB	Air Resources Board
ASR	Archaeological Survey Report
ASTM	ASTM International (formally known as American Society for Testing and Materials)

Acronym	Description
bgs	below ground surface
Bio	biological
BMP	best management practice
BSA	Biological Study Area
CA	California
CAFE	Corporate Average Fuel Economy
Cal OSHA	California Occupational Safety and Health Administration
CalGEM	California Geologic Energy Management Division
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CCR	California Code of Regulations
C-D	Collector-Distributor
CDFW	California Department of Fish and Wildlife
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERFA	Community Environmental Response Facilitation Act of 1992

Acronym	Description
CFR	*Code of Federal Regulations*
CGP	Construction General Permit
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CIA	Community Impact Assessment
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CPG	Construction General Permit
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
dBA-Leq(h)	equivalent sound level over 1 hour
DDI	Diverging diamond interchange
DIST-CO-RTE	district county route
DOT	Department of Transportation
DPGR	District Preliminary Geotechnical Report
DPR	Draft Project Report
DPW	Department of Public Works
DSA	disturbed soil area

Acronym	Description
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EB	eastbound
EBR	eastbound ramp
EDR	Environmental Data Resources
EFH	Essential Fish Habitat
EO	Executive Order
EPA	U.S. Environmental Protection Agency
F	Fatality collisions
F+I	Fatality and Injury Collisions
FC	Federal Candidate Species
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FHSZ	Fire Department Fire Hazard Severity Zones
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FONSI	Finding of No Significant Impact
FR	Federal Register
ft	foot/feet
FTIP	Federal Transportation Improvement Program
GCCOG	Gateway Cities Council of Governments
GDP	gross domestic product
GHG	greenhouse gas

Acronym	Description
GIS	geographic information systems
GWP	global warming potential
H_2S	hydrogen sulfide
HCM	Highway Capacity Manual
HDM	Highway Design Manual
HFC	hydrofluorocarbon
H&SC	Health and Safety Code
HOT	high occupancy toll
HOV	high-occupancy vehicle
HPSR	Historic Property Survey Report
hr	hour
HW	hazardous waste
I-	Interstate
I.L.	Insertion Loss
ID	identification
in/hr	inch per hour
In/sec	Inch per second
IPCC	Intergovernmental Panel on Climate Change
IS/EA	Initial Study/Environmental Assessment
ISA	Initial Site Assessment
ITS	Intelligent Transportation Systems
LADOT	Los Angeles Department of Transportation
LBP	lead-based paint
lbs/day	pounds per day
LCFS	low carbon fuel standard
LED	Light emitting diode
LEDPA	least environmentally damaging practicable alternative
Leq(h)	equivalent sound level over 1 hour
LOS	level of service
LT	long-term
LUST	Leaking Underground Storage Tank
Metro	Los Angeles County Metropolitan Transportation Authority
MF	mixed flow lane
MLD	Most Likely Descendent
MND	mitigated negative declaration
MOU	Memorandum of Understanding
mph	mile per hour
MPO	Metropolitan Planning Organization
MSAT	mobile source air toxics
$MTCO_2e$/year	million metric tons of carbon dioxide equivalent
MWD	Metropolitan Water District
N_2O	nitrous oxide
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
NADR	Noise Abatement Decision Report
NAHC	Native American Heritage Commission
NATA	National Air Toxics Assessment

Acronym	Description
NAVD88	North American Vertical Datum of 1988
NB	northbound
NBR	Number of Benefited Receptors
NE	northeast
NEMA	National Electrical Manufacturers Association
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NESHAP	National Emission Standard for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
No.	number
NOAA Fisheries	National Oceanic and Atmospheric Administration's National Marine Fisheries Service
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSR	Noise Study Report
NW	northwest
O_3	ozone
OPR	Office of Planning and Research

Acronym	Description
OSHA	Occupational Safety and Health Act
PA	Programmatic Agreement
PA/ED	Project Approval/Environmental Document
Pb	lead
PCB	Polychlorinated biphenyls
PDR	Preliminary Drainage Report
PDT	project development team
PeMS	Performance Measurement System
PF	Project Feature
PF-AQ	Project Feature – Air Quality
PF-CUL	Project Feature - Cultural
PF-GEO	Project Feature - Geology
PF-HW	Project Feature - Hazardous Waste
PF-NOI	Project Feature - Noise
PF-PAL	Project Feature - Paleontology
PF-RW	Project Feature – Right of Way
PF-TR	Project Feature – Traffic and Transportation
PF-UES	Project Feature - Utilities/Emergency Services
PF-V	Project Feature – Visual Resources
PF-WQ	Project Feature – Water Quality

Acronym	Description
PID	Project Initiation Document
PM	postmile
PM	post meridiem/after midday (4:00 to 7:00)
PM	particulate matter
PM_{10}	particles of 10 micrometers or smaller
$PM_{2.5}$	particles of 2.5 micrometers or smaller
PMP	Paleontological Monitoring Plan
POAQC	project of air quality concern
ppb	parts per billion
ppm	parts per million
ppv	peak particle velocity
PRC	Public Resources Code
Project	SR-91/Central Avenue to Acacia Court Improvement Project
PS&E	plans, specs, & estimate
PSI	preliminary site investigations
PSR-PDS	Project Study Report-Project Development Support
QA/QC	quality assurance/quality control
RAP	Caltrans' Relocation Assistance Program
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
ROG	reactive organic gases
ROW	right of way

Acronym	Description
RSA	resource study area
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCBs	Regional Water Quality Control Board
SB	southbound
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	State Candidate Endangered
SCT	State Candidate Threatened
SDC	Seismic Design Criteria
SDI	Split Diamond Interchange
SE	southeast
SE	State Endangered
SER	Standard Environmental Reference
SF_6	sulfur hexafluoride
SHGA	Sub-Horizontal Ground Anchor
SHPO	State Historic Preservation Officer
SHS	State Highway System
SIP	State Implementation Plan

Acronym	Description
SLF	Sacred Lands File
SLR	Sea-Level Rise
SO_2	sulfur dioxide
SOV	single-occupant vehicle
SPUI	Single Point Urban Interchange
sq.ft.	square foot/feet
SR-91	State Route 91
SWDR	Stormwater Data Report
SWMP	Stormwater Waste Management Plan
SWPPP	Stormwater Project Protection Plan
SWRCB	State Water Resources Control Board
TASAS	Traffic Accident Surveillance and Analysis System
TCE	temporary construction easement
TCR	Transportation Concept Report
TCWG	Transportation Conformity Working Group
TDM	Transportation Demand Management
TI	Transportation and Infrastructure
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TMP	Transportation Management Plan
TMT	traffic management teams
TOAR	Traffic Operations Analysis Report
TSCA	Toxic Substances Control Act
TSM	Transportation System Management
U.S.	United States
U.S. EPA	U.S. Environmental Protection Agency
U.S.C./USC	United States Code
USA	United States of America
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOT/U.S. DOT/DOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGCRP	U.S. Global Change Research Program
USGS	U S Government Geological Survey
UST	underground storage tank
VA	value analysis
VdB	velocity decibels
VOC	volatile organic compound
VRP	visibility reducing particles
WB	westbound
WBR	westbound ramp
WDR	Waste Discharge Requirements
WL	watch list
WPCP	Water Pollution Control Program
WQ	water quality

Appendix D List of Technical Studies

The technical studies listed below were used in the preparation of this Initial Study/Environmental Assessment.

Air Quality Report (January 2021); Ambient Air Quality & Noise Consulting

Archaeological Survey Report (August 2020); Paleo Solutions

Community Impact Assessment (June 2020); HNTB

Historic Property Survey Report (August 2020); Paleo Solutions

Paleontological Identification and Evaluation Report (July 2020); Duke CRM

Preliminary Materials Information Report (August 2020); Geo-Advantec, Inc.

Preliminary Geotechnical Report (June 2020); Geo-Advantec, Inc.

Preliminary Drainage Report (August 2020); HNTB

Natural Environmental Study (Minimal Impacts) (February 2020); GPA Consulting

Noise Study Report (October 2020); Ambient Air Quality and Noise Consulting

Phase I Initial Site Assessment (August 2020); Geocon

*Relocation Impact Memorandum (*June 2020); HNTB

*Storm Water Data Report (*February 2021*);* FMF Pandion

Traffic Operations Analysis Report (November 2020); Fehr & Peers

Utility Impact Memo (June 2020); HNTB

Visual Impact Memorandum (June 2020); Tatsumi & Partners, Inc.

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Appendix E. FEMA Flood Insurance Rate Maps

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole–foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC–3, #9202
1315 East–West Highway
Silver Spring, MD 20910–3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713–3242,** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1994 or later and from National Geospatial Intelligence Agency imagery produced at a scale of 1:4,000 from photography dated 2003 or later.

This map reflects more detailed and up–to–date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables *in the Flood Insurance Study report (which contains authoritative hydraulic data)* may reflect stream channel distances that differ from what is shown on this map.

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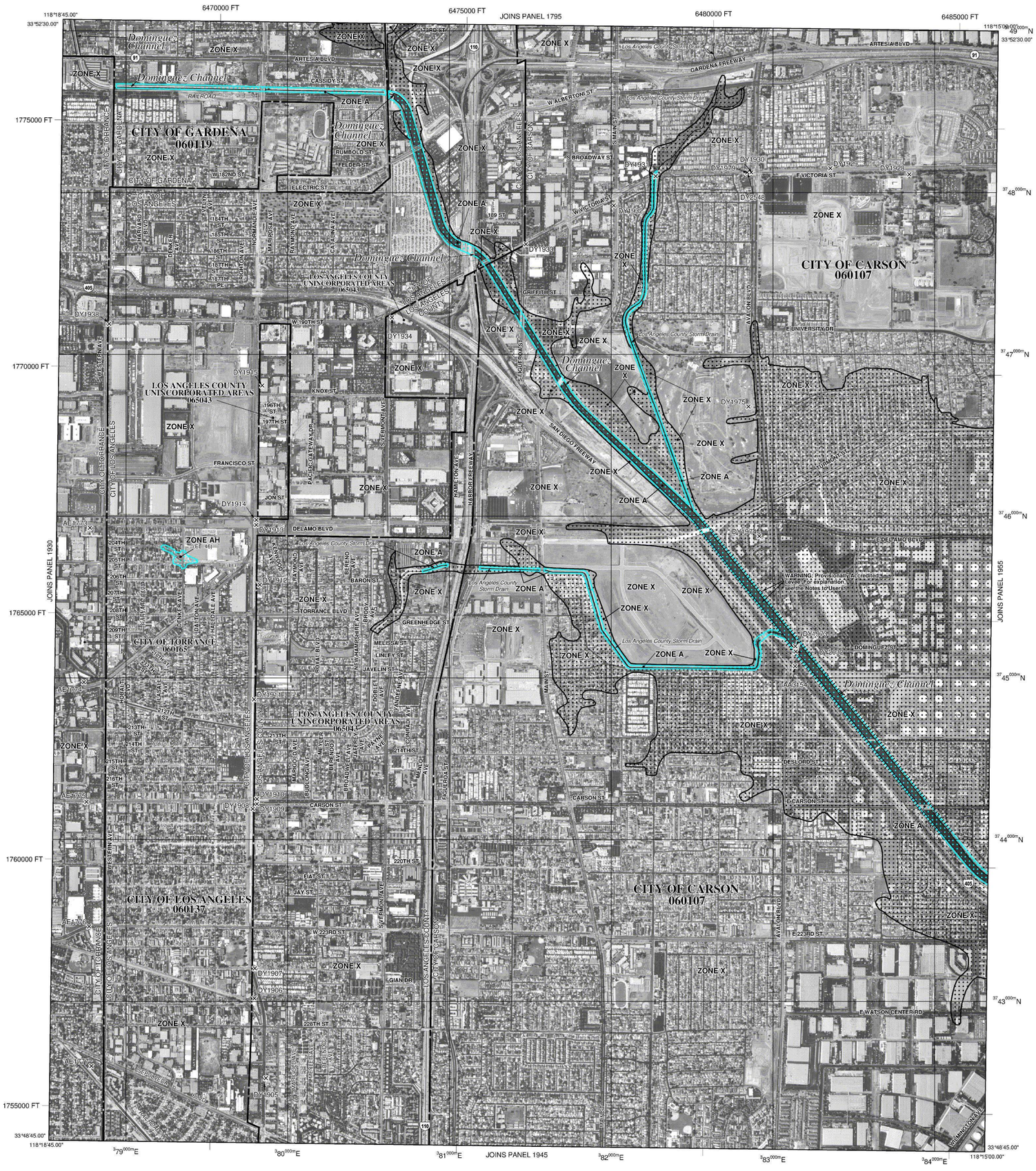
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1–800–358–9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, *a Flood Insurance Study report,* and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1–800–358–9620 and its website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1–877–FEMA MAP** (1–877–336–2627) or visit the FEMA website at http://www.fema.gov/.

WARNING: This levee, dike, or other structure has been provisionally accredited and mapped as providing protection from the 1-percent-annual-chance flood. To maintain accreditation, the levee owner or community is required to submit documentation necessary to comply with 44 CFR Section 65.10 by October 16, 2009. Because of the risk of overtopping or failure of the structure, communities should take proper precautions to protect lives and minimize damages in these areas, such as issuing an evacuation plan and encouraging property owners to purchase flood insurance.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referred to the North American Vertical Datum of 1988 (NAVD 88)

- A — A — Cross section line
- 23 — 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4275000m N — 1000-meter Universal Transverse Mercator grid values, zone 11
- 6000000 FT — 5000-foot grid ticks: California State Plane coordinate system, V zone (FIPSZONE 0405), Lambert Conformal Conic
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
September 26, 2008
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1–800–638–6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1935F

FIRM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1935 OF 2350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LOS ANGELES COUNTY	065043	1935	F
CARSON, CITY OF	060107	1935	F
GARDENA, CITY OF	060119	1935	F
LOS ANGELES, CITY OF	060137	1935	F
TORRANCE, CITY OF	060165	1935	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06037C1935F

EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

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ZONE AE	Base Flood Elevations determined.
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ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

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OTHER FLOOD AREAS

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OTHER AREAS

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1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

~~ 513 ~~~~	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

(A)———(A)	Cross section line
(23)- - - - - -(23)	Transect line
97°07'30", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
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6000000 FT	5000-foot grid ticks: California State Plane coordinate system, V zone (FIPSZONE 0405), Lambert Conformal Conic
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

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September 26, 2008
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N

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1955F

FIRM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1955 OF 2350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LOS ANGELES COUNTY	065043	1955	F
CARSON, CITY OF	060107	1955	F
COMPTON, CITY OF	060111	1955	F
LONG BEACH, CITY OF	060136	1955	F
LOS ANGELES, CITY OF	060137	1955	F

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MAP NUMBER
06037C1955F

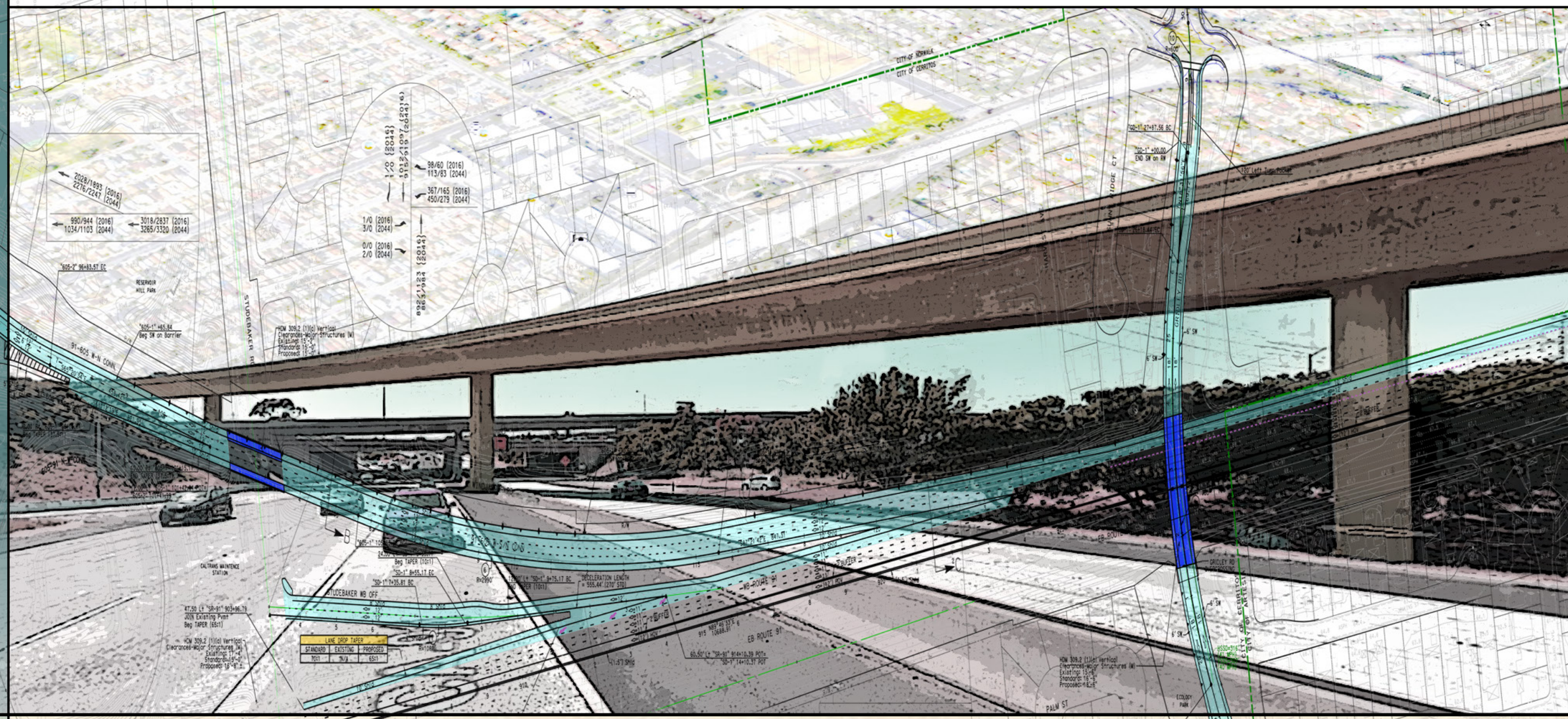
EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

Appendix F. Conceptual Aesthetic Treatments

State Route - 91 Corridor Aesthetic Master Plan

Caltrans · Metro · Gateway Cities Council of Governments



ARTESIA FREEWAY

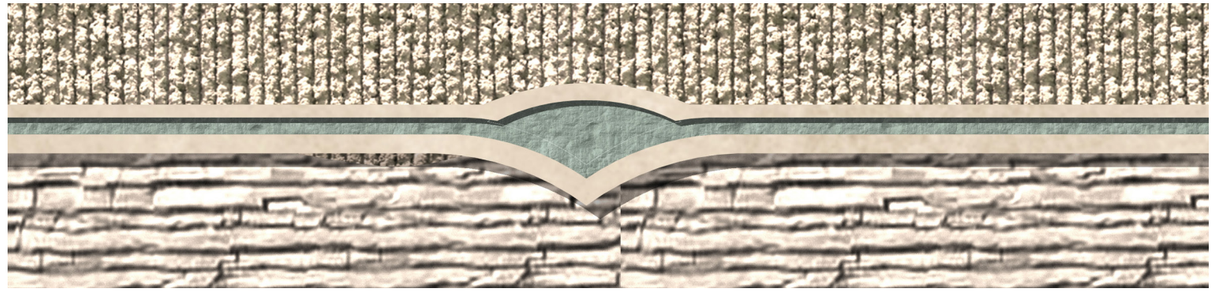
Rev 2 - Nov 23, 2020

FINAL DRAFT

PREPARED BY: CALTRANS, DIVISION OF ENGINEERING SERVICES
TRANSPORTATION ARCHITECTURE
BRIDGE ARCHITECTURE & AESTHETICS

4.11 RETAINING WALLS

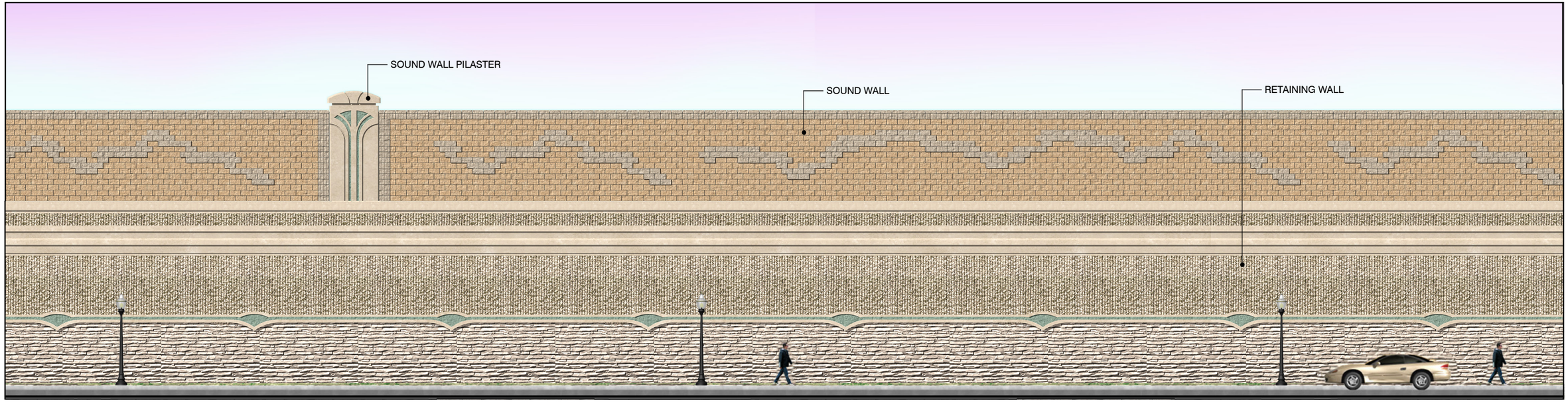
All new retaining walls throughout the SR-91 Corridor will have consistent aesthetic treatment. The textures and patterns will be consistently used on all wall types, whether they are MSE, cast in place, or other wall types. The "Artesian Theme" will be applied to all retaining walls and will be a combination of: integrally colored concrete, fractured fin texture, basalt texture, and a featured horizontal band with heavy sandblast texture.



BASALT TEXTURE

HEAVY SANDBLAST TEXTURE

FRACTURED FIN TEXTURE



PARTIAL ELEVATION VIEW

Appendix G. Species List

Special-Status Plant Species with Potential to be in the BSA

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Aphanisma blitoides Aphanisma	--	S2	1B.2	The aphanisma is an annual herb found in coastal dunes, coastal, and coastal bluff scrub on sandy or gravelly soils. Typical blooming period: February to June Typical elevation range: three to 1,000 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Astragalus tener var. *titi* Coastal dunes milk-vetch	FE	SE	1B.1	The coastal dunes milk-vetch is a small annual herb found in alkali playa, valley and foothill grassland, and vernal pools in one highly fragmented population located on a coastal terrace grassland along 17-Mile Drive in Pebble Beach on the Monterey Peninsula. Historically, this species was found in San Diego, Los Angeles, and Monterey counties. Typical blooming period: March to May Typical elevation range: three to 147 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Atriplex coulteri Coulter's saltbush	--	S1S2	1B.2	The Coulter's saltbush is a perennial herb found in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland in open sites with low lying clay or alkaline soils. Typical blooming period: March to October Typical elevation range: 82 to 1,443 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Atriplex pacifica South coast saltscale	--	S2	1B.2	The south coast saltscale is an annual herb found on alkali playa, coastal dunes, coastal and coastal bluff scrub on alkali soils. Typical blooming period: March to October Typical elevation range: zero to 459 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.
Atriplex parishii Parish's brittlescale	--	S1	1B.1	The Parish's brittlescale is an annual herb found in vernal pools, chenopod scrub, and playas. This species is usually found on drying alkali flats with fine soils. Typical blooming period: June to October Typical elevation range: 82 to 6,234 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.
Atriplex serenana var. *davidsonii* Davidson's saltscale	--	S1	1B.2	The Davidson's saltscale is an annual herb found in coastal bluff scrub and coastal scrub in alkaline soils. Typical blooming period: April to October Typical elevation range: 32 to 656 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Calochortus catalinae Catalina mariposa-lily*	--	S3S4	4.2	The Catalina mariposa lily is a perennial bulbiferous herb found in open slopes or openings in brush on heavy soils of valley and foothill grassland, chaparral, coastal scrub, and cismontane woodland habitats. This species is primarily associated with coastal sage scrub communities. Typical blooming period: February to June Typical elevation range: 49 to 2,296 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Calystegia peirsonii Peirson's morning-glory*	--	S4	4.2	The Peirson's morning glory is a perennial rhizomatous herb found in chaparral, coastal scrub, chenopod scrub, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland. This species is found in disturbed areas or along roadsides or in grassy, open areas. Typical blooming period: April to June Typical elevation range: nine to 457 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Camissoniopsis lewisii Lewis' evening-primrose*	--	S4	3	The Lewis' evening-primrose is an annual herb found in coastal strand, foothill woodland, coastal sage scrub, and valley grassland communities in coastal dunes and coastal scrub habitat. This species is found in sandy or clay soils. Typical blooming period: March to June Typical elevation range: zero to 984 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Centromadia parryi ssp. *australis* Southern tarplant	--	S2	1B.1	The southern tarplant is an annual herb found in vernally wet areas such as along the edges of marshes and vernal pools, often in association with valley and foothill grasslands where competition from other plants is limited by alkalinity, seasonal soil saturation, or the effects of human disturbance. Typical blooming period: May to November Typical elevation range: Zero to 1,378 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.
Centromadia pungens ssp. *laevis* Smooth tarplant	--	S2	1B.1	The smooth tarplant is an annual herb found in alkali scrub, alkali playas, and grasslands with alkaline affinities. This species is found in poorly drained flats, depressions, waterway banks and beds, grasslands, and disturbed sites. This species is restricted to clay and alkaline, silty-clay soils. This species is found in San Bernardino, Riverside, and San Diego Counties. Typical blooming period: April to September Typical elevation range: zero to 2,099 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Chloropyron maritimum ssp. *maritimum* Salt marsh bird's-beak	FE	SE	1B.2	The salt marsh bird's-beak is an annual herb generally found in coastal dunes and marshes and swamps (coastal salt). This species parasitizes many wetland plant species. Typical blooming period: May to October Typical elevation range: Zero to 98 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.
Convolvulus simulans Small-flowered morning-glory*	--	S4	4.2	The small-flowered morning-glory is an annual herb found in chaparral openings, coastal scrub, serpentine seeps, and valley and foothill grassland. This species grows on wet clay or occasionally on serpentine soils. The species may be found on serpentine ridges. Typical blooming period: March to July Typical elevation range: 98 to 2,427 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Eryngium aristulatum var. *parishii* San Diego button-celery	FE	SE	1B.1	The San Diego button-celery is an annual/perennial herb that is found in mesic soils in coastal scrub, valley and foothill grassland, and vernal pools. Typical blooming period: April to June Typical elevation range: 65 to 2,035 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Erysimum suffrutescens Suffrutescent wallflower*	--	S3	4.2	The suffrutescent wallflower is a perennial herb found along coastal bluff scrub, maritime chaparral, coastal dunes, and coastal scrub. Typical blooming period: January to July Typical elevation range: zero to 490 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Hordeum intercedens Vernal barley*	--	S3S4	3.2	The vernal barley is an annual herb found on seasonal and alkaline soils near seasonal flows and vernal pool habitats. This species is found in coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), saline riverbeds, and vernal pools. Typical blooming period: March to June Typical elevation range: Zero to 3,281 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Isocoma menziesii var. *decumbens* Decumbent goldenbush	--	S2	1B.2	The decumbent goldenbush is a perennial shrub found in the South Coast, Southern Channel Islands, and Peninsular Ranges in disturbed chaparral and coastal scrub habitats. Typical blooming period: April to November Typical elevation range: 33 to 443 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Juglans californica Southern California black walnut*	--	S4	4.2	The southern California black walnut is a perennial deciduous tree that is found in chaparral, cismontane woodland, coastal scrub, and riparian woodland on slopes, and in canyons and alluvial habitats. Typical blooming period: March to August Typical elevation range: 164 to 2,953 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.
Juncus acutus ssp. *leopoldii* Southwestern spiny rush*	--	S4	4.2	The southwestern spiny rush is a perennial rhizomatous herb found in coastal dunes (mesic), meadows and seeps (alkaline), and marshes and swamps (coastal salt). Typical blooming period: March to June Typical elevation range: Nine to 2,952 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	--	S2	1B.1	The Coulter's goldfield is an annual herb found in coastal salt marshes and swamps, playas, and vernal pools. Typical blooming period: February to June Typical elevation range: Three to 4,003 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Nama stenocarpa Mud nama	--	S1S2	2B.2	The mud nama is an annual/perennial herb that is found in marshes and swamps. Typical blooming period: January to July Typical elevation range: 16 to 1,640 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Navarretia fossalis Spreading navarretia	FT	S2	1B.1	Spreading navarretia is an annual herb found in vernal pools, chenopod scrub, marshes, and swamps (freshwater), and playas. This species is found on San Diego hardpan and San Diego claypan vernal pools; in swales and vernal pools, surrounded by other habitat types. Typical blooming period: April to June Typical elevation range: 98 to 4,265 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Navarretia prostrata Prostrate vernal pool navarretia	--	S2	1B.1	The prostrate vernal pool navarretia is an annual herb found in moist to wet places including, coastal scrub, meadows and seeps, valley and foothill grassland (alkaline washes), and vernal pools. Prostrate navarretia is known from Los Angeles, Merced, Monterey, Orange, Riverside, and San Diego counties and is thought to be extirpated from Alameda and San Bernardino counties. Typical blooming period: April to July Typical elevation range: nine to 3,970 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Nemacaulis denudata var. *denudata* Coast woolly-heads	--	S2	1B.2	The coast woolly heads is an annual herb found in coastal dunes. Typical blooming period: April to September Typical elevation range: Zero to 328 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Orcuttia californica California Orcutt grass	FE	SE	1B.1	The California Orcutt grass is an annual herb found in vernal pools. Typical blooming period: April to August Typical elevation range: 49 to 2,165 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.
Pentachaeta lyonii Lyon's pentachaeta	FE	SE	1B.1	The Lyon's pentachaeta is an annual herb found only in the Santa Monica Mountains in eastern Ventura and western Los Angeles Counties and in the western Simi Hills in Ventura County. This species is found on exposed, compact, clay soils of volcanic origin that exhibit a microbiotic crust. Typical blooming period: February to August Typical elevation range: 98 to 2,263 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.
Phacelia stellaris Brand's star phacelia	--	S1	1B.1	The Brand's star phacelia is an annual herb that is found in sandy open places, dunes, sandy benches, river floodplains, and silty plains near the coast. In California, this species is known only from Los Angeles (believed extirpated), Riverside, and San Diego Counties. Typical blooming period: March to June Typical elevation range: three to 1,312 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Sidalcea neomexicana Salt spring checkerbloom	--	S2	2B.2	The salt spring checkerbloom is a perennial herb found in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas on alkaline, mesic soils. Typical blooming period: March to June Typical elevation range: 49 to 5,019 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Suaeda esteroa Estuary seablite	--	S2	1B.2	The estuary seablite is a perennial herb found in coastal salt marshes and swamps. Typical blooming period: May to January Typical elevation range: Zero to 16 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Symphyotrichum defoliatum San Bernardino aster	--	S2	1B.2	The San Bernardino aster is a perennial rhizomatous herb known only from the San Bernardino and San Gabriel Mountains, and part of the Peninsular ranges to the south. This species may be found in vernally mesic grassland or near ditches, streams, and springs, and disturbed areas. Typical blooming period: July to November Typical elevation range: Six to 6,692 feet	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological survey, which was conducted during the typical blooming period for this species.

*Table Key: Absent [A] –vegetation community or habitat requirements were not observed in the BSA during the biological survey. Habitat Present [HP] – There is habitat present within the BSA. Federal Endangered (FE); Federal Threatened (FT); State Endangered (SE); State Threatened (ST); Federal Candidate Species (FC); State Candidate Endangered (SCE), State Candidate Threatened (SCT), Fully Protected (FP); Federally Delisted (FD); State Delisted (SD) Watch List (WL); State Species of Special Concern (SSC); State Rare (SR); S1 = Critically Imperiled - extreme rarity (often 5 or fewer observations) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from California; S2 = Imperiled- rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or California; S3 = Vulnerable- restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation; S4 = Apparently Secure - uncommon but not rare; some cause for long-term concern due to declines or other factors; * = Unprocessed Data - Unprocessed CNDDB data is data that has been submitted to*

CNDDB. The record of this data has been created but a thorough review by a CNDDB biologist has yet to be conducted. This data will be reviewed and incorporated into CNDDB, if appropriate. Unprocessed CNDDB data should be used with caution as the data has not been quality controlled.

California Native Plant Society (CNPS), etc. 1A = Plants presumed extirpated in California and either rare, or extinct elsewhere;1B= Plant species that are rare, threatened, or endangered in California and elsewhere; 2B= Plant species that are rare, threatened, or endangered in California, but are more common elsewhere; 3= Plants about which we need more information; 4 = Plants of limited distribution; 0.1=seriously threatened in California; 0.2 = moderately threatened in California; and 0.3 = Not very threatened in California.

Information for the habitat requirements and species range was obtained from the following sources: (CNPS, 2019a), (CDFW, 2019a), (Jepson eFlora Project, 2019), and (Sawyer, Keeler-Wolf, & Evans, 2012).

Special-Status Wildlife Species with Potential to be in the BSA

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Invertebrates					
Bombus crotchii Crotch bumble bee	--	S1S2	The Crotch bumble bee is found in open grassland and scrub habitats in coastal California east to the Sierra-Cascade crest and south into Mexico. This species nests underground in abandoned rodent burrows or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees. Food plant genera include snapdragons (*Antirrhinum* sp.), phacelia (*Phacelia sp.)*, clarkia (*Clarkia* sp.), dendromecon (*Dendromecon* sp.), poppy (*Eschscholzia* sp.), and buckwheat (*Eriogonum* sp.).	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Cicindela gabbii Western tidal-flat tiger beetle	--	S1	The western tidal-flat tiger beetle is found in salty coastal habitats including salt marshes, tidal flats, and beaches.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Cicindela hirticollis gravida Sandy beach tiger beetle	--	S2	The sandy beach tiger beetle is found in areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico in coastal dunes habitat. This species prefers clean, dry, light-colored sand in the upper zone and subterranean larvae prefer moist sand not affected by wave action.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Cicindela latesignata latesignata Western beach tiger beetle	--	S1	The western beach tiger beetle is found in coastal habitats, including salt flats around estuaries, and is not found inland.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Danaus plexippus pop. 1 Monarch – California overwintering population	--	S2S3	The monarch butterfly requires closed-cone coniferous forests and milkweed (*Asclepias* sp.) for breeding and as a food source for larvae. This species roosts in eucalyptus, Monterey pines, and Monterey cypresses groves in California. Nectar and nearby water sources are required.	A	The monarch butterfly was not observed during the biological surveys. Although there are single eucalyptus trees separated by other tree species within the BSA, they do not provide suitable overwintering habitat. In addition, there are no suitable adjacent food sources in the BSA. Therefore, this species is not expected to be in the BSA.
Glaucopsyche lygdamus palosverdesensis Palos Verdes blue butterfly	FE	S1	The Palos Verdes blue butterfly is restricted to the cool, fog-shrouded, seaward side of Palos Verdes Hills in Los Angeles County. This species requires *Astragalus trichopodus* var. *lonchus* as a host plant.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Rhaphiomidas terminatus terminatus El Segundo flower-loving fly*	--	S1	The El Segundo flower-loving fly is found in dune habitats in Los Angeles County. This species was presumed extinct, but was recently discovered on Malaga Dunes in Los Angeles County.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Crustaceans					

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Streptocephalus woottoni Riverside fairy shrimp	FE	S1S2	The riverside fairy shrimp is found in coastal scrub, vernal pools, wetlands, valley and foothill grasslands. They are endemic to Western Riverside, Orange, and San Diego counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. They inhabit seasonally astatic pools filled by winter/spring rains.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Fish					
Acipenser medirostris Green sturgeon	FT	S1S2	The green sturgeon utilizes both freshwater and saltwater habitats. This species' preferred spawning habitat is large cobble substrates, but range from clean sand to bedrock substrates. It is likely that cold, clean water is important for proper embryonic development. Spawns in the Sacramento, Klamath, and Trinity Rivers. Adults live in oceanic waters, bays, and estuaries when not spawning; known to forage in estuaries and bays.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Eucyclogobius newberryi Tidewater goby*	FE	SSC	The tidewater goby is found in shallow lagoons and lower stream reaches and requires fairly still but not stagnant water and high oxygen levels. This species prefers brackish, slow-moving water with emergent vegetation.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Oncorhynchus mykiss irideus pop. 10 Steelhead – southern California DPS*	FE	--	The steelhead – southern California DPS is found between the Santa Maria River and the Tijuana River at the United States and Mexican Border in seasonally accessible coastal rivers and streams. This species requires cool, clean water with natural cover such as submerged and overhanging large wood, and rocks and boulders.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Siphateles bicolor mohavensis Mohave tui chub	FE	SE	The Mohave tui chub is endemic to the Mohave River basin and has adapted to alkaline and mineralized waters. This species needs deep pools, ponds, or slough-like areas. Vegetation is needed for spawning.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Amphibians					
Spea hammondii Western spadefoot	--	SSC	The western spadefoot is found mainly in lowlands areas, with sandy or gravelly soils in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, foothills, and sometimes in mountains. Grasslands with shallow temporary pools are optimal habitats for this species. This species requires vernal pools which are essential for breeding and egg-laying and breeds in pools that do not contain bullfrogs, fish, or crayfish. Adults remain in underground burrows for most of the year and will initiate surface movement after the first rains of the year. This species is endemic to California and is found in the Coast Ranges from Point Conception, Santa Barbara County south to the Mexican border, and throughout the Central Valley and adjacent foothills. Adults eat insects, worms, ants, termites, beetles, and butterfly and moth larvae. Tadpoles eat algae and dead aquatic larvae of amphibians,	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			including their own species.		
Reptiles					
Anniella stebbinsi Southern California legless lizard	--	SSC	The southern California legless lizard is generally found south of the Transverse Range, extending to northwestern Baja California. This species is found in a variety of habitats in sandy or loose, loamy soils with high moisture content under sparse vegetation. This species is often locally abundant with specimens found in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. This species is often found in leaf litter under trees and shrubs in sunny areas and dunes stabilized with bush lupine and mock heather.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Caretta caretta North Pacific Loggerhead sea turtle	FE	--	The loggerhead sea turtle nest on ocean beaches, generally preferring high energy, relatively narrow, steeply sloped, coarse-grained beaches. Immediately after hatchlings emerge from the nest they move to the surf and are swept through the surf zone, continuing to swim away from land for several days. During this period, they are float-and-wait foragers that feed on a wide variety of floating items. This species will spend its juvenile years in the neritic zone of the ocean and continue to mature to adulthood, when they will move to open ocean and migration patterns.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Chelonia mydas East Pacific green sea turtle	FT	S1	The East Pacific green sea turtle is found in fairly shallow waters inside reefs, bays, and inlets. This species is attracted to lagoons and shoals where there is an adequate supply of seagrasses and algae. This species nests on open beaches with a sloping platform and minimal disturbance. The turtles have a strong nesting site fidelity and often make long distance migrations between their feeding grounds and nesting sites.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Dermochelys coriacea Leatherback sea turtle	FE	--	The leatherback turtle is the largest turtle in the world. Leatherback sea turtles are known as pelagic (open ocean) animals, but they will forage in coastal waters. Leatherbacks mate in waters adjacent to nesting beaches and along migratory corridors. After nesting, female leatherbacks migrate from tropical waters to more temperate latitudes, which support high densities of jellyfish prey in the summer.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Diadophis punctatus modestus San Bernardino ringneck snake*	--	S2?	The San Bernardino ringneck snake is most commonly found in moist habitats, including wet meadows, rocky hillsides, gardens, farmland, grassland, chaparral, mixed coniferous forests, and woodlands. This species is found under surface objects along drainage courses, in mesic chaparral, and oak and walnut woodland communities. This species avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous vegetation. The San Bernardino ringneck snake feeds on small salamanders, tadpoles, small frogs, small snakes, lizards, worms, and insects.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Emys marmorata Western pond turtle*	--	SSC	The western pond turtle is found in slow moving rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters. This species prefers areas that provide logs, algae, or vegetation for cover, and boulders, partially submerged logs, vegetation mats, or open mud banks for basking, and is found below 6,000 feet elevation.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Lepidochelys olivacea Olive ridley sea turtle	FT	SE	The olive ridley sea turtle is primarily a pelagic sea turtle, but has been known to inhabit coastal areas, including bays and estuaries. This species mainly breeds annually and have an annual migration from pelagic foraging to coastal breeding and nesting grounds, back to pelagic foraging.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Phrynosoma blainvillii Coast horned lizard	--	SSC	The coast horned lizard is found in open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. This species is also found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Preferred plant species are either chaparral or a chaparral/coastal sage scrub mix with bare ground coverage averaging 20 to 40 percent. California buckwheat (*Eriogonum fasiculatum*) is considered to be a primary indicator species for favorable soil and climatic conditions. Key habitat elements for this species are the presence of loose, fine soils, with a high sand content; an abundance of native ants; open areas for basking; and areas with low dense shrubs for refuge.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Thamnophis hammondii Two-striped gartersnake*	--	SSC	The two-striped garter snake is found in coastal California from the vicinity of Salinas to northwest Baja California. This species is highly aquatic, found in or near permanent fresh water. The two-striped garter snake is often found along streams with rocky beds and riparian growth, and has an elevational range from sea level to about 7,000 feet.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Thamnophis sirtalis pop. 1 South coast gartersnake*	--	SSC	The south coast garter snake is found in scattered locations along the southern California coastal plain, south to the vicinity of San Pasqual. This species is found in or near permanent fresh water in marshes or upland habitat. The south coast gartersnake is common in suburban and urban areas with plenty of cover (debris, rocks, vegetation, and logs). The south coast garter snake has an elevational range from sea level to about 2,730 feet.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Mollusks					
Gonidea angulata Western ridged mussel*	--	S1S2	The western ridged mussel is a sedentary, long-lived mollusk found primarily in creeks and rivers. This species is found on the bottom of streams, rivers, and lakes with substrates that vary from gravel to firm mud, and include at least some sand, silt or clay. Low shear stress (stress caused by fast flowing water over substrate), substrate stability, and flow refuges are important determinants of freshwater mussel survival. This species was originally found within most of the state, but is likely now extirpated from Central and southern California. This species requires a host fish to complete reproduction and dispersal.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Haliotis cracherodii Black abalone	FE	S1S2	The black abalone is a large marine gastropod found in rocky intertidal and subtidal habitats. This species is generally found wedged between rocks, they will use their foot to move freely over rock, primarily when immersed in water or at night. Black abalone are herbivores and primarily eat giant kelp and feather boa kelp in southern California habitats. This species can withstand extreme variation in temperature, salinity, moisture, and wave action.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Haliotis sorenseni White abalone	FE	S1	The white abalone is a marine gastropod found in open low and high relief rock or boulder habitat that is interspersed with sand channels. Sand channels are important for the movement and concentration of drift microalgae and red algae, which white abalone is known to feed on. White abalone are usually found at depths of 80 to 100 feet, making them the deepest occurring abalone species in California.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Tryonia imitator mimic tryonia (=California brackishwater snail)	--	S2	The mimic tryonia is found in coastal lagoons, estuaries, and salt marshes, from Sonoma County south to San Diego County. This species is found only in permanently submerged areas in a variety of sediment types and is able to tolerate a wide range of salinities.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Birds					
Accipiter cooperi Cooper's hawk*	--	S4, WL	The Cooper's hawk is found in cismontane woodland, riparian forest, riparian woodland, and upper montane coniferous forest, in wooded habitats from deep forests to leafy subdivisions and backyards. This species has more recently been found in suburbs and cities where there are tall trees for nesting. This species nests mainly in riparian growths of deciduous trees, often in canyon bottoms on river floodplains, and will also nest in live oaks.	HP (Nesting) HP (Foraging)	There are large trees adjacent to EB and WB SR-91 that could provide suitable nesting and foraging habitat in the BSA. Therefore, there is potential for this species to forage and nest in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Agelaius tricolor Tricolored blackbird	--	ST	The tricolored blackbird is a highly colonial species that is found in freshwater marshes dominated by cattails and bulrushes. This species is most numerous in the Central Valley, where this species forages in fields and farms. The tricolored blackbird breeds in large freshwater marshes, in dense strands of cattails or bulrushes. Mostly endemic to California, the tricolored blackbird requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Aimophila ruficeps canescens Southern California rufous-crowned sparrow*	--	S3, WL	The southern California rufous-crowned sparrow is a resident in southern California. This species prefers coastal sage scrub dominated by California sagebrush (*Artemisia californica*), but they can also be found breeding in coastal bluff scrub, low growing serpentine chaparral, and along edges of tall chaparral habitats in relatively steep, often rocky, xeric hillsides. They are ground nesters and will infrequently be situated in low bushes. In California, nests can be found under California sagebrush, deer weed (*Acmispon glaber*), giant wild rye (*Elymus condensatus*), white sage *(Salvia apiana*), manzanita (*Arctostaphylos* spp.), poison oak (*Toxicodendron diversiloba*), coastal goldenbush (I*socoma menziesii* var *vernonioides*), morning glory (*Calystegia macrostegia*), and various bunchgrasses. The Southern California rufous-crowned sparrow also thrives in recent burn areas where the habitat is open and disturbed.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Ammodramus savannarum Grasshopper sparrow*	--	SSC	The grasshopper sparrow is found in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Loosely colonial when nesting, this species favors native grasslands with a mix of grasses, forbs, and scattered shrubs.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Antigone canadensis canadensis Lesser sandhill crane*	--	SSC	The lesser sandhill crane is found in open wetlands, prairies, aspen stands, and other and other moist habitats, preferring those with standing water. This species normally nests in small, isolated wetlands such as marshes, bogs, and swales.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Aquila chrysaetos Golden eagle*	--	S3, FP, WL	The golden eagle is found in broadleaved upland forests, cismontane woodlands, coastal prairies, Great Basin grasslands, Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodlands, upper montane coniferous forests, and valley and foothill grasslands. Cliff-walled canyons provide nesting habitat in most of the range. Large trees provide nesting habitat in open areas. The golden eagle often forages over grasslands, marshes, and along rivers.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Ardea herodias Great blue heron*	--	S4	The great blue heron nests colonially in tall trees, cliff sides, and sequestered spots on marshes. This species forages in marshes, lake margins, tidal flats, rivers, streams, and wet meadows. Rookery sites are in close proximity to foraging areas.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Athene cunicularia Burrowing owl	--	SSC	The burrowing owl is found in open, dry, annual, or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. This species is a subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. The burrowing owl is also common in disturbed areas, including roadsides, and may develop burrows in debris piles. Burrowing owls are opportunistic feeders and prey upon insects, scorpions, small mammals, birds, amphibians, and small reptiles.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Aythya americana Redhead*	--	SSC	The redhead is found in seasonal ponds and other wetlands where emergent plants provide food and cover. This species also nests on reservoirs, sewage ponds, streams, and large marshes.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Calypte costae Costa's hummingbird*	--	S4	The Costa's hummingbird is found in desert washes, and sage scrub habitat, mostly in dry and open areas such as washes and streamsides in the Sonoran Desert and lower parts of dry canyons. In California, this species may also use various chaparral and riparian areas. This species nests in sparsely leaved shrubs or small trees, and sometimes in yucca or cactus.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Campylorhynchus brunneicapillus sandiegensis Coastal cactus wren*	--	SSC	The coastal cactus wren is a San Diego subspecies that is an obligate inhabitant of coastal sage scrub. These areas have a plant species diversity that is relatively high, and includes dominant components such as buckwheat (*Eriogonum fasiculatum*), California sagebrush, white sage, and black sage (*Salvia mellifera*), and prickly pear and cholla cacti (*Opuntia* spp.). Characteristic trees and tree-like shrubs in their preferred habitat can include California black walnut, elderberry *(Sambucus Mexicana*), laurel sumac (*Malosma laurina*), and lemonade berry (*Rhus integrifolia*).	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Charadrius montanus Mountain plover*	--	SSC	The mountain plover breeds in the high plains east of the Rocky Mountains from Montana to New Mexico and in western Texas and western Oklahoma south to central Mexico. In California, the primary wintering areas are the Central and Imperial Valleys. This species is strongly associated with short-grass prairie habitats, or their equivalents, that are flat and nearly devoid of vegetation. The mountain plover prefers grazed areas as well as areas with burrowing rodents.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Chlidonias niger Black tern*	--	SSC	The black tern is found near freshwater lakes, ponds, marshes, and agricultural fields. During migration, this species is found in coastal lagoons and estuaries. This species breeds primarily in the Modoc Plateau region, with some breeding taking place in the Sacramento and San Joaquin Valleys.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Cistothorus palustris clarkae Clark's marsh wren*	--	SSC	The Clark's marsh wren is restricted in freshwater and brackish marshes dominated by bulrushes or cattails and nests in narrow strips of marsh along lakeshores. This species is mostly confined to the coastal slope of southern California. Because of agricultural and urban development only six nesting sites are currently known in Los Angeles County. This species feeds on insects.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT	SE	The western yellow-billed cuckoo breeds in large blocks, or contiguous areas of riparian habitat, primarily cottonwood-willow riparian woodlands. Within California, the species breeds along the Colorado River, in Sacramento and Owens valleys, along the South Fork of the Kern River in Kern County, along the Santa Ana River in Riverside County, along the Amargosa River in Inyo and San Bernardino Counties and potentially along the San Luis Rey River in San Diego County. Western yellow-billed cuckoo is found in dense riparian habitat of willow, often mixed with cottonwoods, with understory of blackberry, nettles, or wild grape.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Dendrocygna bicolor Fulvous whistling-duck*	--	SSC	The fulvous whistling duck is found in freshwater and coastal marshes. In the United States this species is found in rice fields and tall-grass areas flooded to a depth of approximately 1.5 feet. This species nests over water within emergent swamps and on dry hummocks between ponds. This species feeds nocturnally and are almost totally granivorous as adults.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Egretta thula Snowy egret*	--	S4	The snowy egret is found in marshes and swamps, meadows and seeps, riparian forest, riparian woodland, and wetlands. This species is a colonial nester with nest sites situated in protected beds of dense tules or within trees or shrubs five to 10 feet up from the ground. Rookery sites are situated close to foraging areas. This species typically forages in shallow water, but may also forage in open fields.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Empidonax traillii extimus Southwestern willow flycatcher	FE	SE	Within California, the southwestern willow flycatcher's known breeding locations are restricted primarily to Sierra Nevada/Cascade region south to northern Kern County, including Alpine, Inyo, and Mono Counties, in Southern California near Buellton in Santa Barbara County, at the Prado Basin riparian forest in Riverside County, and several locations in San Diego County. This species breeds in extensive riparian thickets near surface water or saturated soil. However, suitable vegetation is not uniformly dense and typically includes interspersed patches of open habitat. The southwestern willow flycatcher can occupy riparian habitats composed of native broadleaf species, a mix of native and exotic species, or monotypic stands of exotics.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Falco peregrinus anatum American peregrine falcon*	Delisted	Delisted, FP	The American peregrine falcon can be found near wetlands, lakes, rivers, or other water, on cliffs, banks, dunes, mounds, and human-made structures. Their nests consist of a scrape or a depression or ledge in an open site.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

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	Federal USFWS	State CDFW			
Hydroprogne caspia Caspian tern*	--	S4	In western North America, the Caspian tern's breeding distribution has changed substantially from mostly inland wetlands to coastal environments. This species now breeds along the Pacific coast from Alaska to central Baja California, Mexico. For nesting, this species requires relatively barren, undisturbed islands, levees, or shores, and nearby foraging areas in lakes, estuaries, salt ponds, or emergent wetlands.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Icteria virens Yellow-breasted chat*	--	SSC	The yellow-breasted chat is found in riparian forests, riparian scrub, and riparian woodlands. The yellow-breasted chat nests in low, dense riparian thickets near water courses, consisting of willow, blackberry, and wild grape. This species forages and nests within 10-feet of the ground.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Larus californicus California gull*	--	S4, WL	The California gull is a fairly common nester at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades. This species is an abundant visitor to coastal and interior lowlands in nonbreeding season. Inland, this species frequents lacustrine, riverine, and cropland habitats, landfill dumps, and open lawns in cities. The California gull requires undisturbed, isolated islands for nesting.	A (Nesting) HP (Foraging)	There are open areas which could provide suitable foraging habitat in the BSA, but there is no suitable nesting habitat; therefore, there is potential for this species to forage in the BSA, but it is not expected to nest in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Nycticorax nycticorax Black-crowned night heron*	--	S4	The black-crowned night heron is a primarily nocturnal or crepuscular species found in marshes, swamps, riparian forests, riparian woodlands, and wetlands. The rookery sites are usually located near aquatic or emergent foraging sites within dense-foliaged trees, dense emergent wetlands, dense shrubbery, or vine tangles. Non-breeding roosts may be farther away from nesting sites. This species is a colonial nester, usually in trees, and occasionally in tule patches.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Passerculus sandwichensis beldingi Belding's savannah sparrow*	--	SE	The Belding's savannah sparrow is endemic to the upper littoral region of salt marshes and is associated with dense pickleweed, particularly *Salicornia virginica*, where most nests are found.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Passerculus sandwichensis rostratus Large-billed savannah sparrow*	--	SSC	The large-billed savannah sparrow is found in saline emergent wetlands at the Salton Sea and southern coast. This species breeds along the Colorado River delta in Mexico, and winters at the Salton Sea. Breeding habitat for this species is limited to open, low salt marsh vegetation, including grasses (*Spartina* spp., *Distichlis* spp.), pickleweed, and iodine bush (*Allenrolfea* spp.).	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Pelecanus occidentalis californicus California brown pelican	Delisted	Delisted, S3	The California brown pelican is found in marine areas near piers and jetties with offshore rocks and islands important for nesting. This species forages in estuarine and inshore waters.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

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	Federal USFWS	State CDFW			
Phalacrocorax auritus Double-crested cormorant*	--	S4	The double-crested cormorant is a colonial nester on coastal cliffs, offshore islands, riparian forest, and scrub or woodland habitat near lake margins. This species requires undisturbed nest-sites beside water, on islands or the mainland. The double-crested cormorant uses wide rock ledges on cliffs; rugged slopes; and live or dead trees, especially tall ones, for nesting. In addition, the double-crested cormorant roosts overnight beside water on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, jetties, or even transmission lines. Perching sites must be barren of vegetation.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Phoebastria albatrus Short-tailed albatross*	FE	SSC	The short-tailed albatross requires remote islands for breeding and nest in open, treeless areas with low to no vegetation. This species spends much of its time feeding in continental shelf-break areas in Alaskan, Japanese, and Russian waters.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Polioptila californica californica Coastal California gnatcatcher	FT	SSC	The coastal California gnatcatcher is found in chaparral, grassland, and riparian areas near sage scrub. An obligate, permanent resident of coastal sage scrub below 2,500 feet in Southern California, this species requires variable amounts of semi-open sage scrub dominated by California sagebrush (*Artemisia californica*) on shallow slope gradients.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

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	Federal USFWS	State CDFW			
Progne subis Purple martin*	--	SSC	The purple martin is a summer migrant found in valley foothill and montane hardwood/hardwood-conifer, coniferous habitats, and riparian habitats. This species nests in tall, old, isolated trees or snags in open forest or woodlands and in close proximity to a body of water. The purple martin frequently nests in old woodpecker cavities, but has also been found nesting in human-made structures such as bridges and culverts. Foraging habitats must provide large amounts of aerial insects.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Pyrocephalus rubinus Vermilion flycatcher*	--	SSC	The vermilion flycatcher is found in marshes, swamps, riparian forest, riparian scrub, riparian woodland, and wetland habitats. This species nests in cottonwoods (*Populus* sp.), willows (*Salix* sp.), mesquite (*Prosopis* sp.), and other large desert riparian trees near mesic areas.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Rallus obsoletus levipes Light-footed Ridgway's rail*	FE	SE	The light-footed Ridgway's rail is found exclusively in salt marshes between Santa Barbara, California and San Quintin Bay, Baja California, Mexico. This species nests primarily in dense cordgrass, plant material deposited at the high-water mark of tidally influenced waves deposits, and in hummocks of high marsh within the low marsh zone.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

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	Federal USFWS	State CDFW			
Riparia riparia Bank swallow	--	ST	The bank swallow is a migratory, dense colonial nester that is found in lowland and riparian habitats west of the deserts. The majority of the extant breeding populations are found within the Sacramento and Feather River corridors in the north Central Valley. Other colonies persist along the central coast from Monterey to San Mateo Counties, and northeastern California in Shasta, Siskiyou, Lassen, Plumas, and Modoc Counties. This species requires near vertical banks or cliffs with fine-textured or sandy soils near streams, rivers, lakes, or the ocean to dig nesting holes. The bank swallow forages in locations with high insect biomass, typically in close proximity to water, riparian scrub, riparian woodland, and grasslands.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Selasphorus rufus Rufous hummingbird*	--	S1S2	The rufous hummingbird is a common migrant and uncommon summer resident in California. In California, this species is known to breed in the Trinity Mountains of Trinity and Humboldt Counties. However, breeding range in the state may extend from the Transition life zone (6,000-9,000 feet) of the northwest coastal area at the Oregon border to southern Sonoma County. This species nests in old growth and north coast coniferous forest habitats in berry tangles, shrubs, and conifers. The rufous hummingbird prefers to forage in locations with a high density of nectar producing flowers.	A (Nesting) HP (Foraging)	There are ornamental trees and shrubs with nectar producing flowers in the BSA along EB and WB SR-91 which could be used as foraging habitat, but there is no suitable nesting habitat. Therefore, there is potential for this species to forage in the BSA, but it is not expected to nest in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Setophaga petechia Yellow warbler*	--	SSC	The yellow warbler is found in riparian plant associations in close proximity to water. This species also nests in montane shrubbery in open coniferous forests in the Cascades and Sierra Nevada. This species is frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods (*Populus* sp.), sycamores (*Plantanus* sp.), ash (*Fraxinus* sp.), and alders (*Alnus* sp.).	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Sphyrapicus ruber Red-breasted sapsucker*	--	S4	The red-breasted sapsucker is found in mixed coniferous and mixed deciduous-coniferous forests and woodlands. This species requires snags or hollow tree cavities for nesting. The red-berated sapsucker can also be found in riparian habitats with large cottonwoods.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Spizella breweri Brewer's sparrow*	--	S4	The Brewer's sparrow is found east of the Cascade-Sierra Nevada crest, mountains and high valleys of the Mojave Desert, and mountains at the south end of the San Joaquin Valley. This species breeds in treeless shrub habitats with moderate canopy, especially in sagebrush. Now mostly absent from former breeding grounds in southwestern California, this species depends almost exclusively on the sagebrush ecosystem, dominated by big sagebrush (*Artemisia tridentata*) and similar species that grow to approximately five feet tall for breeding. Some Brewer's sparrows use large clearings in pinyon-juniper woodlands.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

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	Federal USFWS	State CDFW			
Sternula antillarum browni California least tern	FE	SE	The California least tern nests in sparsely vegetated sandy or gravelly ground (typically tidal flats and beaches) near lagoons, estuaries, or bays.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Thalasseus elegans Elegant tern*	--	S2, WL	The elegant tern is found near coastal waters along the Pacific Coast. This species nests on the ground on undisturbed island beaches.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Vireo bellii pusillus least Bell's vireo	FE	SE	The least Bell's vireo is found in dense, willow dominated riparian habitat with lush understory vegetation. This species is a summer resident of Southern California in low riparian areas in the vicinity of water or in dry river bottoms below 2,000 feet. Least Bell's vireo nests are placed along margins of shrubs or on twigs projecting into pathways. This species primarily occupies riparian habitats that typically feature dense cover within three to seven feet of the ground and a dense, stratified canopy. It inhabits edge riparian growth along water or along dry parts of intermittent streams. In general, this species nests in vegetation typically dominated by willows (*Salix* sp.) and mule fat (*Baccharis salicifolia*), but habitats may also be populated by a variety of shrubs, trees, and vines. Least Bell's vireo forage in riparian habitat and at times are known to forage in mustard and coastal sage habitat patches in close proximity to their nests.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

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	Federal USFWS	State CDFW			
Xanthocephalus xanthocephalus Yellow-headed blackbird*	--	SSC	The yellow-headed blackbird nests in freshwater emergent wetlands often along borders of lakes or ponds with dense vegetation and deep water. This species only nests where large insects such as dragonflies and damselflies are abundant and is timed with maximum emergence of aquatic insects. Nests are lashed to standing vegetation growing in water, usually no more than three feet above the water's surface. This species forages on the ground in open fields, near the edge of water, and in low marsh vegetation. The species was not recorded on the coastal slope of Los Angeles County during 1995 to 2000 atlas surveys.	A (Nesting) A (Foraging)	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Mammals					
Arctocephalus townsendi Guadalupe fur seal	FT	ST	Guadalupe fur seals reside in the tropical waters of the southern California/Mexico region. During breeding season, they are found in coastal rocky habitats and caves. Little is known about their whereabouts during the non-breeding season.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Balaenoptera borealis Sei whale	FE	--	Sei whales prefer subtropical to subpolar waters on the continental shelf edge and slope worldwide. They are usually observed in deeper waters of oceanic areas far from the coastline.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Balaenoptera musculus Blue whale	FE	--	Blue whales are found worldwide, from sub-polar to sub-tropical latitudes. Poleward movements in spring allow the whales to take advantage of high zooplankton production in the summer. Although blue whales are found in coastal waters, they are thought to occur generally more offshore than other whales.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

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Balaenoptera physalus Fin whale	FE	--	Fin whales are found in deep, offshore waters of all major oceans, primarily in temperate to polar latitudes, and less commonly in the tropics. They occur year-round in a wide range of latitudes and longitudes, but the density of individuals in any one area changes seasonally.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Eubalaena japonica North Pacific right whale	FE	--	The North Pacific right whale primarily found in coastal or shelf waters, although movements over deep waters are known. Through much of the year, their distribution is strongly correlated to their prey. During winter, right whales occur in lower latitudes and coastal waters where calving takes place. This species migrates to higher latitudes in spring and summer.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Eumops perotis californicus Western mastiff bat	--	SSC	The western mastiff bat is found in many open, semi-arid and arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. This species has been recorded throughout central and southern California, with a concentration in southern California. This species roosts in crevices on high vertical cliffs or surfaces (including buildings), trees, or tunnels. Because of their large size, they typically require a larger drop distance from roosting sites.	HP	Bridge expansion joints, crevices, and weep holes, buildings, trees, and billboards in the BSA could provide suitable roosting habitat for this species. Therefore, there is potential for this species to be in the BSA.

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	Federal USFWS	State CDFW			
Lasionycteris noctivagans Silver-haired bat	--	S3S4	The silver-haired bat is found in summer in coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valleys. This species has been recorded throughout California, with a concentration in northern California. This species roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. Females may form nursery colonies or may be a solitary individual in dense foliage or hollow trees. This species is thought to need roosting sites in close proximity to water.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Megaptera novaeangliae Humpback whale	FE	--	Humpback whales will stay near the surface of the ocean during migration. This species prefers shallow waters for feeding and calving; calving grounds are commonly near offshore reef systems, islands, or continental shores. Humpback whale feeding grounds are in cold, productive coastal waters.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Microtus californicus stephensi South coast marsh vole	--	SSC	The south coast marsh vole is found in a narrow band of wetland communities and associated grasslands in the immediate coastal zone from southern Ventura County to northern Orange County.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Myotis velifer Cave myotis*	--	SSC	The cave myotis is known only in southern California, and is found in desert scrub, desert succulent shrub, desert wash, and desert riparian habitats in San Bernardino County, Riverside County, and Imperial County. This species primarily roosts in crevices in caves, but also uses mines, and occasionally buildings and bridges.	A	The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.

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	Federal USFWS	State CDFW			
Neotoma lepida intermedia San Diego desert woodrat*	--	SSC	The San Diego desert woodrat is found in Joshua tree woodlands, pinyon-juniper woodlands, mixed chaparral, sagebrush, and desert habitats in Southern California from San Diego County to San Luis Obispo County. This species prefers moderate to dense canopies and is particularly abundant in rock outcrops, rocky cliffs, and slopes. The San Diego desert woodrat builds dens using sticks, leaves, and other assorted materials.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Nyctinomops femorosaccus Pocketed free-tailed bat	--	SSC	The pocketed free-tailed bat is found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis habitats. This species typically roosts in cavities of cliffs, high rocky outcrops, and slopes, but there is potential for this species to roost in other crevices in structures, including bridges. This species is found in Riverside, San Diego, and Imperial counties.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Nyctinomops macrotis Big free-tailed bat	--	SSC	The big-free tailed bat is believed to prefer rugged, rocky canyons, and typically roosts in high cliffs or rock outcrops, buildings, caves, and occasionally in holes in trees. This species has also been documented roosting in bridges. This species is found in San Diego County and Alameda County within California, and is also found in New Mexico, southern Arizona, and Texas.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA

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	Federal USFWS	State CDFW			
Orcinus orca Southern resident killer whale	FE	--	Southern resident killer whales are the only known resident population in the United States. Their range during spring, summer, and fall includes the inland waterways of Washington state and the transboundary waters between the U.S. and Canada. Relatively little is known about their winter movements and range. However, in recent years they have been spotted as far south as central California and as far north as southeast Alaska.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Perognathus longimembris pacificus Pacific pocket mouse	FE	SSC	The Pacific pocket mouse is found in fine, sandy soils within approximately two to four miles from the Pacific coast of southern California. Historically, this species was found from the Mexican border to El Segundo in Los Angeles County. Currently, the only known populations are in Dana Point, San Mateo, and on the Camp Pendleton Marine Base.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Physeter macrocephalus Sperm whale	FE	--	Sperm whales tend to inhabit areas with a water depth of 1,968 feet or more and are uncommon in waters less than 984 feet deep. Female sperm whales are generally found in deep waters (3,280 feet) of low latitudes. These conditions generally correspond to sea surface temperatures greater than 59°F, and while they are sometimes spotted near oceanic islands they are typically far from land. Older, larger males are generally found near the edge of pack ice in both hemispheres. On occasion, these males will return to warm water breeding areas.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Taxidea taxus American badger	--	SSC	The American badger is most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. This species needs sufficient food, friable soils, and open and uncultivated ground. Ground squirrels are a major prey item, but the American badger will also feed on other burrowing rodents, reptiles, and insects.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

*Table Key: Absent [A] – The plant species/vegetation community or habitat requirements were not observed in the BSA during the biological survey. Habitat Present [HP] – There is habitat present within the BSA. Federal Endangered (FE); Federal Threatened (FT); State Endangered (SE); State Threatened (ST); Federal Candidate Species (FC); State Candidate Endangered (SCE), State Candidate Threatened (SCT), Fully Protected (FP); Federally Delisted (FD); State Delisted (SD) Watch List (WL); State Species of Special Concern (SSC); State Rare (SR); S1 = Critically Imperiled - extreme rarity (often five or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from California; S2 = Imperiled- rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or California; S3 = Vulnerable- restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation; S4 = Apparently Secure - uncommon but not rare; some cause for long-term concern due to declines or other factors; ? = inexact or uncertain – represents a rank qualifier, denoting an inexact or uncertain numeric rank; * = Unprocessed Data - Unprocessed CNDDB data is data that has been submitted to CNDDB. The record of this data has been created but a thorough review by a CNDDB biologist has yet to be conducted. This data will be reviewed and incorporated into CNDDB, if appropriate. Unprocessed CNDDB data should be used with caution as the data has not been quality controlled.*

Information for the habitat requirements was obtained from the following sources: (CDFW, 2019b), (California Herps, 2019), (Cornell Lab of Ornithology, 2019), (iNaturalist, 2019), (National Audubon Society, 2019), and (USFWS, 2019b).

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Inglewood (3311883) OR South Gate (3311882) OR Long Beach (3311872) OR Torrance (3311873))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Aphanisma blitoides aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
Astragalus hornii var. hornii Horn's milk-vetch	PDFAB0F421	None	None	GUT1	S1	1B.1
Astragalus tener var. titi coastal dunes milk-vetch	PDFAB0F8R2	Endangered	Endangered	G2T1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Chloropyron maritimum ssp. maritimum salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
Cicindela latesignata latesignata western beach tiger beetle	IICOL02113	None	None	G2G4T1T2	S1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Eryngium aristulatum var. parishii San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Glaucopsyche lygdamus palosverdesensis Palos Verdes blue butterfly	IILEPG402A	Endangered	None	G5T1	S1	
Glyptostoma gabrielense San Gabriel chestnut	IMGASB1010	None	None	G2	S2	
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S1S2	
Habroscelimorpha gabbii western tidal-flat tiger beetle	IICOL02080	None	None	G2G4	S1	
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Microtus californicus stephensi south coast marsh vole	AMAFF11035	None	None	G5T1T2	S1S2	SSC
Nama stenocarpa mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
Navarretia fossalis spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
Nemacaulis denudata var. denudata coast woolly-heads	PDPGN0G011	None	None	G3G4T2	S2	1B.2
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Orcuttia californica California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
Pelecanus occidentalis californicus California brown pelican	ABNFC01021	Delisted	Delisted	G4T3T4	S3	FP
Pentachaeta lyonii Lyon's pentachaeta	PDAST6X060	Endangered	Endangered	G1	S1	1B.1
Perognathus longimembris pacificus Pacific pocket mouse	AMAFD01042	Endangered	None	G5T1	S1	SSC
Phacelia stellaris Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sidalcea neomexicana salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Siphateles bicolor mohavensis Mohave tui chub	AFCJB1303H	Endangered	Endangered	G4T1	S1	FP
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Streptocephalus woottoni Riverside fairy shrimp	ICBRA07010	Endangered	None	G1G2	S1S2	
Suaeda esteroa estuary seablite	PDCHE0P0D0	None	None	G3	S2	1B.2
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 53

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

21 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3311872, 3311873 3311883 and 3311882;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. titi	coastal dunes milk-vetch	Fabaceae	annual herb	Mar-May	1B.1	S1	G2T1
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	1B.2	S1S2	G3
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	1B.1	S1	G1G2
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
Calystegia peirsonii	Peirson's morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	4.2	S4	G4
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May(Jun)	3	S4	G4
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct(Nov)	1B.2	S1	G4?T1
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Isocoma menziesii var. decumbens	decumbent goldenbush	Asteraceae	perennial shrub	Apr-Nov	1B.2	S2	G3G5T2T3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Nama stenocarpa	mud nama	Namaceae	annual / perennial herb	Jan-Jul	2B.2	S1S2	G4G5
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	Apr-Jun	1B.1	S2	G2
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
Nemacaulis denudata var. denudata	coast woolly-heads	Polygonaceae	annual herb	Apr-Sep	1B.2	S2	G3G4T2
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1
Pentachaeta lyonii	Lyon's pentachaeta	Asteraceae	annual herb	(Feb)Mar-Aug	1B.1	S1	G1
Phacelia hubbyi	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	4.2	S4	G4
Phacelia stellaris	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	1B.1	S1	G1
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	(May)Jul-Oct(Jan)	1B.2	S2	G3

Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov(Dec)	1B.2	S2	G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 19 January 2021].

From: Joseph Vu
To: NMFSWCRCA Specieslist - NOAA Service Account
Subject: SR-91 Acacia Court to Central Ave
Date: Tuesday, January 19, 2021 12:33:00 PM
Attachments: image001.png
image003.png
image004.png
image005.png
image006.png
image007.png

Federal Agency Name and Address:
California Department of Transportation

Non-federal Agency Name and Address
California Department of Transportation

Point-of-contact Name and Contact Information
GPA Consulting
Attn: Joseph Vu
2642 Michelle Drive, Suite 110
Tustin, CA 92780 (310) 792-2690

Quad Name **Long Beach (digital)**

Quad Number **33118-G2**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) - **X**
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -

SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) - X
Range White Abalone (E) - X

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) - X
Olive Ridley Sea Turtle (T/E) - X
Leatherback Sea Turtle (E) - X
North Pacific Loggerhead Sea Turtle (E) - X

ESA Whales

Blue Whale (E) - X
Fin Whale (E) - X
Humpback Whale (E) - X
Southern Resident Killer Whale (E) - X
North Pacific Right Whale (E) - X
Sei Whale (E) - X
Sperm Whale (E) - X

ESA Pinnipeds

Guadalupe Fur Seal (T) - X
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH - X
Coastal Pelagics EFH - X
Highly Migratory Species EFH - X

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans - X

MMPA Pinnipeds - X

CONSULTING GPA

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
http://www.fws.gov/carlsbad/

In Reply Refer To: January 19, 2021
Consultation Code: 08ECAR00-2020-SLI-1534
Event Code: 08ECAR00-2021-E-01109
Project Name: SR91 Central

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

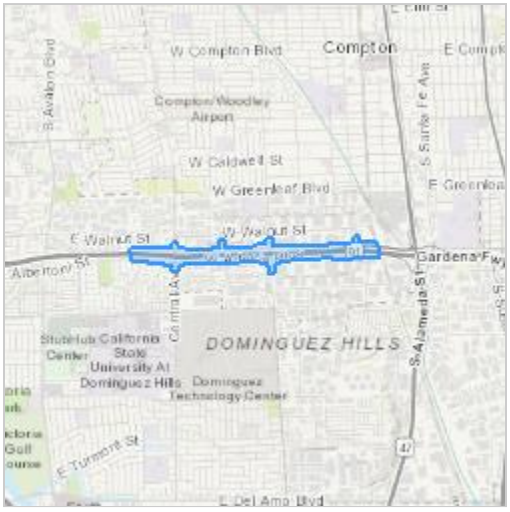
This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Project Summary

Consultation Code: 08ECAR00-2020-SLI-1534
Event Code: 08ECAR00-2021-E-01109
Project Name: SR91 Central
Project Type: TRANSPORTATION
Project Description: SR91 Central
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.87353333047861,-118.23812296581279,14z



Counties: Los Angeles County, California

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Pacific Pocket Mouse *Perognathus longimembris pacificus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8080	Endangered

Birds

NAME	STATUS
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Coastal California Gnatcatcher *Polioptila californica californica* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

Insects

NAME	STATUS
Palos Verdes Blue Butterfly *Glaucopsyche lygdamus palosverdesensis*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/8535

Crustaceans

NAME	STATUS
Riverside Fairy Shrimp *Streptocephalus woottoni*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/8148

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.