Eastbound State Route 91 / Atlantic Avenue to Cherry Avenue Auxiliary Lane Improvements Project

LOS ANGELES COUNTY, CALIFORNIA
DISTRICT 7 - LA - 91 (PM R11.8/R13.2)
07-354600/0718000343

Caltrans Metro

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

DECEMBER 2020

Initial Study with Proposed Mitigated Negative Declaration / Environmental Assessment

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.

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07-LA-91-PM R11.8/R13.2
07-354600
0718000343

Develop and implement an auxiliary lane to enhance safety conditions, reduce congestion, and improve freeway operations on eastbound State Route 91, from Atlantic Avenue to Cherry Avenue (Postmile R11.8 to Postmile R13.2)

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:
California Transportation Commission
Los Angeles County Metropolitan Transportation Authority
Gateway Cities Council of Governments

Dec 11, 2020
Date

RONALD KOSINSKI
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SCH:

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the Gateway Cities Council of Governments and the California Department of Transportation (Caltrans) District 7, proposes to develop and implement an auxiliary lane on Eastbound State Route 91 within a 1.4-mile segment from the southbound Interstate 710 (I-710) interchange connector to eastbound State Route 91, to Cherry Avenue. The Study Area includes Eastbound State Route 91 (Post Miles [PM] R11.8/R13.2) and is located in the City of Long Beach and adjacent to the City of Paramount, California.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision regarding the Project is final. This Mitigated Negative Declaration is subject to change based on comments received by interested agencies and the public. All Project features (including standard practices and specifications) are considered in significance determinations.

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 Project would have no effect on aesthetics, agriculture and forest resources, cultural resources, energy, land use and planning, mineral resources, population and housing, recreation, tribal cultural resources, and wildfire.

In addition, the proposed Project would have less than significant effects to air quality, biological resources, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, public services, transportation, and utilities and service systems.

With incorporation of the mitigation measures identified in Appendix A, the proposed Project would have less than significant effects to noise, and geology and soils.

_____ _____

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

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Chapter 1 – Proposed Project

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 the Federal Highway Administration. 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 Federal Highway Administration 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, the Federal Highway Administration assigned and 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 the Federal Highway Administration assigned to Caltrans under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

On July 16th, 2020, the Council on Environmental Quality (CEQ) published in the Federal Register the Final Rule to update its regulations for the implementation of NEPA. The updates are effective for all NEPA reviews that begin after September 14, 2020. For reviews that began prior to September 14, 2020, agencies may decide to apply the revised regulations or proceed under the 1978 regulations. Because NEPA reviews for this project were in process before the Final Rule's effective date, the Department is applying the 1978 NEPA procedures to this proposed action.

1.2 Introduction

The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the Gateway Cities Council of Governments and the California Department of Transportation (Caltrans) District 7, proposes to develop and implement an auxiliary lane on Eastbound State Route 91 within a 1.4-mile segment from the southbound Interstate 710 (I-710) to eastbound State Route 91, to Cherry Avenue. The Study Area includes Eastbound State Route 91 (Post Miles [PM] R11.8/R13.2) and is located in the City of Long Beach and adjacent to the City of Paramount, California. **Figure 1** below provides an illustration of the regional location, and **Figure 2** below provides an illustration of the Project location.

Funding is currently being provided through local Measure R funds with the potential of additional future federal and state funding sources. Caltrans is the lead agency ensuring compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) as assigned by the Federal Highway Administration.

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Figure 1: Regional Location Map

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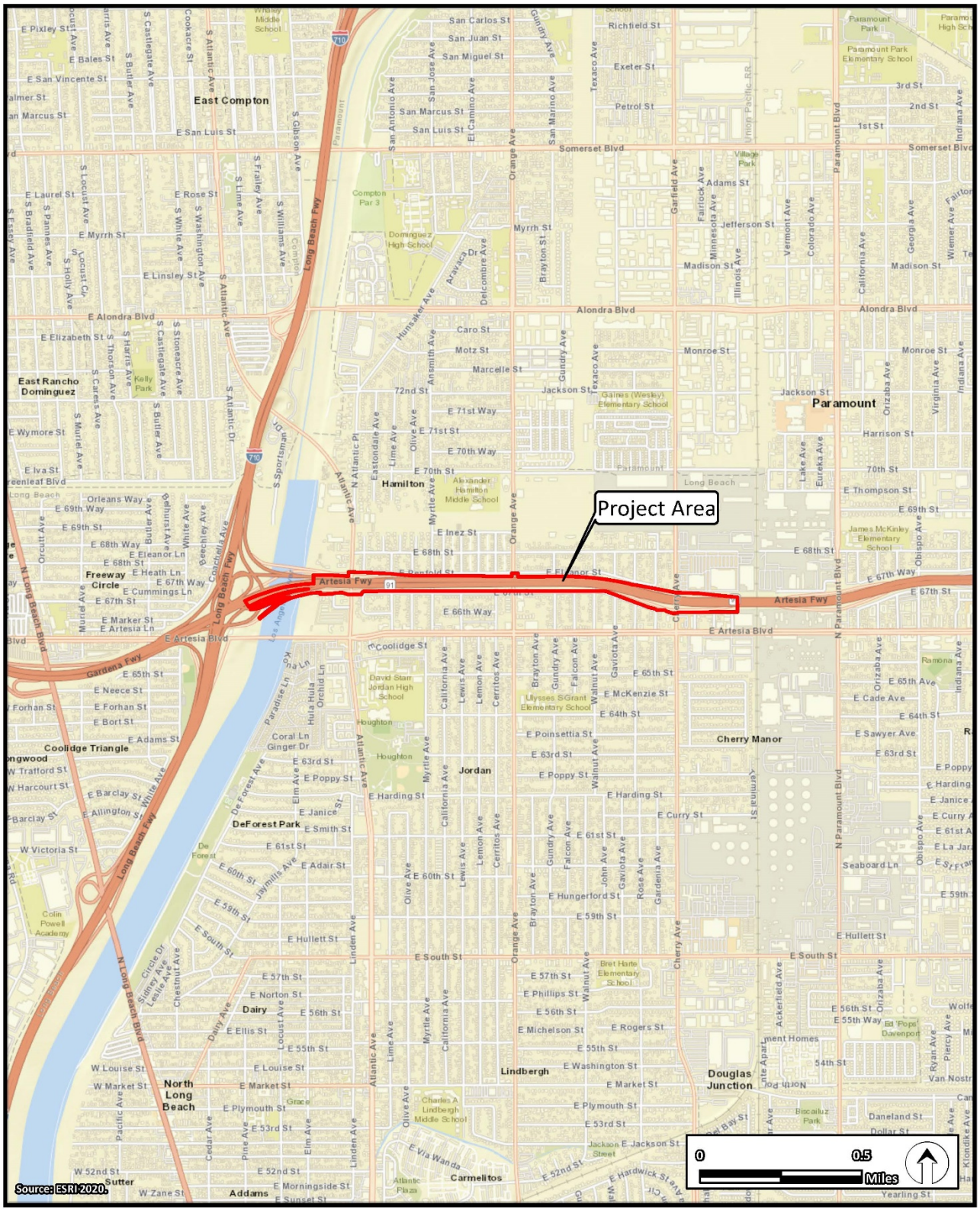
Figure 2: Project Location Map



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The Project is included in the Southern California Association of Governments (SCAG) 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy as Project No. 1163S005, and the 2019 Federal Transportation Improvement Program as Federal Transportation Improvement Program ID LA0G1453.

In 2012, Metro and the Gateway Cities Council of Governments initiated the State Route 91/I-605/I-405 "Congestion Hot Spots Feasibility Study" to identify freeway and arterial "Hot Spots" throughout the corridor. Building off those findings, Metro and Caltrans initiated a Project Study Report-Project Development Support for the State Route 91 corridor between Central Avenue (PM 8.2) and Paramount Boulevard (PM 13.8) in 2015.

The Project Study Report-Project Development Support served as the Project Initiation Document (PID), identified alternatives and design options that would improve mobility within the Study Area, and estimated the capital outlay support cost necessary to complete the technical studies and analyses for the Project Approval/Environmental Document phase (PA/ED or the "environmental phase"). As discussed in the Project Study Report-Project Development Support, State Route 91 experiences substantial congestion, which is forecast to increase in the absence of physical and operational improvements. The existing (and forecasted) traffic volumes along the Eastbound State Route 91 mainline with the short weaving distances between the closely spaced interchanges of the I-710 on-ramps, Atlantic Avenue, and Cherry Avenue result in congested operations at the confluence area between the I-710 to Eastbound State Route 91 connectors and the Cherry Avenue off-ramp. Operational improvements through the implementation of an eastbound auxiliary lane between the southbound I-710 connector on-ramp and the Cherry Avenue off-ramp can enhance safety conditions, reduce congestion, improve freeway operations on both the Eastbound State Route 91 mainline and ramps, and better accommodate projected regional growth.

1.3 Purpose and Need

1.3.1 PURPOSE

The purpose of the Eastbound State Route 91 Atlantic Avenue to Cherry Avenue Auxiliary Lane Improvements Project (Project) is to enhance safety conditions, reduce congestion, and improve freeway operations on both the Eastbound State Route 91 mainline and ramps.

1.3.2 NEED

Roadway Deficiencies

Eastbound State Route 91 experiences substantial congestion due to operational deficiencies within the Project Area, which is forecast to increase if no physical and operational improvements are made to the facility. The Project is needed to address operational safety due to the short weaving distance along Eastbound State Route 91 between the closely spaced interchanges of the I-710 to Eastbound State Route 91 connectors, Atlantic Avenue, and Cherry Avenue which impacts mainline congestion.

Capacity, Transportation Demand, and Safety

As discussed in the Project Study Report-Project Development Support, State Route 91 experiences substantial congestion, which is forecast to increase in the absence of physical and operational improvements. According to SCAG regional growth forecasts, population, households, and employment growth is expected to continue increasing, as shown in **Table 1**. The existing and forecasted traffic volumes along the Eastbound State Route 91 mainline, as shown in **Table 2**, with the short weaving distances between the closely spaced interchanges of the I-710 to Eastbound State Route 91 connectors, Atlantic Avenue, and Cherry Avenue result in congested operations at the confluence area between the I-710 to Eastbound State Route 91 connectors and the Cherry Avenue off-ramp.

Level of service provides a qualitative measure of capacity based on density of passenger cars per mile per lane (Level of service decreases as density increases) for freeway on- and off-ramps and delay of approaching vehicles for intersections. Level of service is expressed as a letter ranging from A (free flow traffic with low volume and high speeds) to F (breakdown in traffic flow, queues forming behind breakdown points). The freeway level of service is based on vehicle density, measured in passenger cars per mile per lane (pc/mi/ln), within the segment being analyzed. The criteria for each level of service designation is presented in **Table 3**.

Existing conditions for the freeway mainline, ramps, and weaving segments evaluated within the Project Area show several segments currently operate at level of service D or lower during one or both peak hour periods, as shown in **Table 4**.

Level of service would continue to deteriorate under the No Build Alternative and all segments are projected to operate at a level of service D or lower by opening year (2024) and horizon year (2045) during the P.M. peak hour.

An analysis of mainline and ramp collision history was performed using the Caltrans Traffic Accident Surveillance and Analysis System (TASAS) database. As shown in **Table 5**, the total accident rates (which include fatal, injury, and property damage only (PDO) accidents) range from 0.47 to 1.76 accidents per million vehicle miles on the mainline; and from 0 to 3.01 on the ramps. In addition, total accident rates range from about 30 percent to about 73 percent higher than the total statewide average accident rate, except for the segment between the Long Beach Boulevard interchange and the I-710 interchange, where the actual total accident rate is about 107 percent higher than the total statewide average accident rate.

Five of the ten ramp segments analyzed within the Study Area, show that both the Fatal plus Injury and the Total Actual Accident Rates are greater than the statewide average accident rates. In addition, two of the ten ramp segments show Total Actual Accident Rates greater than the statewide average total accident rates. Most of the accident types are rear ends and sideswipes with the reported primary collision factor being unsafe speed. Most of the accidents reported on the ramp segments occurred on the body of the ramp and at the ramp terminus intersection location. The predominant location, type, and primary collision factors of the reported accidents are considered congestion related and are mainly due to the formation of vehicular queues. In general, this data shows that the accidents on the ramps were indicative of collisions related to congestion and/or existing ramp and intersection geometry.

Table 1: Growth Forecast in the County and SCAG Region

Geographic Area	Population (2016)	Population (2045)	Population (Annual Growth Rate)	Households (2016)	Households (2045)	Households (Annual Growth Rate)	Employment (2016)	Employment (2045)	Employment (Annual Growth Rate)
Los Angeles County	10,111,000	11,677,000	0.50%	3,319,000	4,125,000	0.70%	4,743,000	5,383,000	0.40%
SCAG Region	18,832,418	22,507,188	0.61%	6,011,672	7,638,633	0.92%	8,389,000	10,050,000	0.62%

Source: Southern California Association of Governments, 2020
Notes: % = Percent; SCAG = Southern California Association of Governments

Table 2: Traffic Volumes for Existing and Forecast Conditions (No Build Alternative)

Segment Location	Existing Conditions (2019) A.M. Peak Hour (Mixed-Flow)	Existing Conditions (2019) A.M. Peak Hour (HOV)	Existing Conditions (2019) P.M. Peak Hour (Mixed-Flow)	Existing Conditions (2019) P.M. Peak Hour (HOV)	Opening Year (2024) A.M. Peak Hour (Mixed-Flow)	Opening Year (2024) A.M. Peak Hour (HOV)	Opening Year (2024) P.M. Peak Hour (Mixed Flow)	Opening Year (2024) P.M. Peak Hour (HOV)	Horizon Year (2045) A.M. Peak Hour (Mixed-Flow)	Horizon Year (2045) A.M. Peak Hour (HOV)	Horizon Year (2045) P.M. Peak Hour (Mixed-Flow)	Horizon Year (2045) P.M. Peak Hour (HOV)
West of Northbound I-710 Connector	2164	632	3173	1413	2190	634	3178	1417	2294	642	3198	1431
Northbound I-710 Connector	2149	-	1791	-	2155	-	1809	-	2182	-	1871	-
Northbound I-710 Connector to Southbound I-710 Connector	4313	632	4964	1413	4345	634	4987	1417	4476	642	5069	1431
Southbound I-710 Connector	1607	-	1952	-	1609	-	1954	-	1615	-	1961	-
Southbound I-710 Connector to Atlantic Avenue On-Ramp	5920	632	6916	1413	5954	634	6941	1417	6091	642	7030	1431
Atlantic Avenue On-Ramp	592	-	714	-	598	-	719	-	626	-	744	-
HOV Lane Egress	-	158	-	129	-	162	-	134	-	179	-	152

Segment Location	Existing Conditions (2019) A.M. Peak Hour (Mixed-Flow)	Existing Conditions (2019) A.M. Peak Hour (HOV)	Existing Conditions (2019) P.M. Peak Hour (Mixed-Flow)	Existing Conditions (2019) P.M. Peak Hour (HOV)	Opening Year (2024) A.M. Peak Hour (Mixed-Flow)	Opening Year (2024) A.M. Peak Hour (HOV)	Opening Year (2024) P.M. Peak Hour (Mixed Flow)	Opening Year (2024) P.M. Peak Hour (HOV)	Horizon Year (2045) A.M. Peak Hour (Mixed-Flow)	Horizon Year (2045) A.M. Peak Hour (HOV)	Horizon Year (2045) P.M. Peak Hour (Mixed-Flow)	Horizon Year (2045) P.M. Peak Hour (HOV)
HOV Lane Ingress	-	515	-	191	-	520	-	196	-	541	-	215
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	6512	989	7630	1475	6552	992	7660	1479	6717	1004	7774	1494
Cherry Avenue Off-Ramp	535	-	347	-	557	-	356	-	648	-	395	-
Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	5620	989	7221	1475	5637	992	7242	1479	5707	1004	7316	1494
Cherry Avenue On-Ramp	824	-	774	-	837	-	791	-	893	-	859	-
Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	6444	989	7995	1475	6474	992	8033	1479	6600	1004	8175	1494
Paramount Boulevard Off-Ramp	665	-	452	-	677	-	470	-	728	-	547	-
Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	5779	989	7543	1475	5797	992	7563	1479	5872	1004	7628	1494
Paramount Boulevard On-Ramp	380	-	499	-	381	-	512	-	389	-	566	-
East of Paramount Boulevard On-Ramp	6159	989	8042	1475	6178	992	8075	1479	6261	1004	8194	1494

Source: Iteris, 2020
Notes: HOV = High-Occupancy Vehicle; I-710 = Interstate 710

Table 3: Level of Service Criteria – Freeway and Ramp Segments

Level of Service	Basic Freeway and HOV Segments Density (pc/mi/ln)	Merge and Diverge Areas Density (pc/mi/ln)	Freeway Weaving Segments Density (pc/mi/ln)
A	0 - 11	0 - 10	0 - 10
B	> 11 - 18	> 10 - 20	> 10 - 20
C	> 18 - 26	> 20 - 28	> 20 - 28
D	> 26 - 35	> 28 - 35	> 28 - 35
E	> 35 - 45	> 35	> 35 – 43
F	Demand Exceeds Capacity or density > 45	Demand Exceeds Capacity	Demand Exceeds Capacity or density > 43

Source: Highway Capacity Manual 6th Edition
Notes: HOV = High-Occupancy Vehicle; pc/mi/ln = passenger cars per mile per lane

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Table 4: Level of Service for Existing and Forecast Conditions (No Build Alternative)

Location	Segment Type	Existing Conditions (2019) A.M. Peak Hour Density	Existing Conditions (2019) A.M. Peak Hour Level of Service	Existing Conditions (2019) P.M. Peak Hour Density	Existing Conditions (2019) P.M. Peak Hour Level of Service	Opening Year (2024) A.M. Peak Hour Density	Opening Year (2024) A.M. Peak Hour Level of Service	Opening Year (2024) P.M. Peak Hour Density	Opening Year (2024) P.M. Peak Hour Level of service	Horizon Year (2045) A.M. Peak Hour Density	Horizon Year (2045) A.M. Peak Hour Level of Service	Horizon Year (2045) P.M. Peak Hour Density	Horizon Year (2045) P.M. Peak Hour Level of service
West of I-710 Northbound Connector	Basic Freeway Segment	11.9	B	30.4	D	12.2	B	30.4	D	13.0	B	30.6	D
I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	19.4	C	44.8	E	19.7	C	45.1	F	20.7	C	46.2	F
I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	24.3	C	67.1	F	24.6	C	67.4	F	26.3	D	70.2	F
Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	30.4	D	59.3	F	30.8	D	59.4	F	32.5	D	61.8	F
Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	30.1	D	46.8	F	30.5	D	46.9	F	32.3	D	48.6	F
East of Paramount Boulevard On-Ramp	Basic Freeway Segment	26.6	D	44.9	E	27.0	D	45.1	F	28.6	D	47.0	F
West of I-710 Northbound Connector	HOV Lane Segment	10.7	A	75.1	F	10.7	A	75.4	F	10.8	A	76.1	F
I-710 Northbound Connector to I-710 Southbound Connector	HOV Lane Segment	10.7	A	75.1	F	10.7	A	75.4	F	10.8	A	76.1	F
I-710 Southbound Connector to Atlantic Avenue On-Ramp	HOV Lane Segment	10.7	A	75.1	F	10.7	A	75.4	F	10.8	A	76.1	F
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	HOV Lane Segment	22.0	C	56.7	F	22.1	C	56.9	F	22.7	C	57.7	F
Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	HOV Lane Segment	18.5	C	56.0	F	18.5	C	56.2	F	18.7	C	56.8	F
Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	HOV Lane Segment	18.5	C	56.0	F	18.5	C	56.2	F	18.7	C	56.8	F
Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	HOV Lane Segment	18.5	C	56.0	F	18.5	C	56.2	F	18.7	C	56.8	F
East of Paramount Boulevard On-Ramp	HOV Lane Segment	18.5	C	56.0	F	18.5	C	56.2	F	18.7	C	56.8	F
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp Conventional weave between auxiliary lane and the freeway mainline	Weaving Segment	27.9	C	50.1	F	28.3	C	50.3	F	30.0	D	52.3	F
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp Managed lane access segment with cross-weaving	Weaving Segment	22.0	C	56.7	F	22.1	C	56.9	F	22.7	C	57.7	F
Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp Conventional weave between auxiliary lane and the freeway mainline	Weaving Segment	27.7	D	52.6	F	28.0	D	52.8	F	29.5	D	55.0	F

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: HOV = High=Occupancy Vehicle; I-710 = Interstate 710
Density is equal to passenger cars per mile per lane.

Table 5: Summary of Accident Rates in Project Area (2016-2018)

Location Description	From Post Mile	To Post Mile	Direction	Total Accidents	Actual Accident Rates (Fatal)	Actual Accident Rates (Fatal plus Injury)	Actual Accident Rates (Total)	Statewide Average Accident Rates (Fatal)	Statewide Average Accident Rates (Fatal plus Injury)	Statewide Average Accident Rates (Total)
Long Beach Boulevard to I-710 Interchange (Mainline)	11.096	11.681	Eastbound	125	0	0.48	1.76	0.003	0.26	0.85
I-710 Interchange to Atlantic Avenue (Mainline)	11.681	12.039	Eastbound	25	0	0.06	0.47	0.003	0.34	1.09
Atlantic Avenue to Cherry Avenue (Mainline)	12.039	13.094	Eastbound	251	0	0.44	1.59	0.003	0.28	0.92
Cherry Avenue Paramount Boulevard (Mainline)	13.094	13.594	Eastbound	92	0	0.30	1.21	0.003	0.28	0.93
Eastbound State Route 91 On-Ramp from Long Beach Boulevard	11.043	11.043	Eastbound	10	0	0.35	1.73	0.001	0.23	0.67
Eastbound State Route 91 Off-Ramp to Southbound I-710 Freeway	11.421	11.421	Eastbound	7	0	0.41	0.72	0.003	0.12	0.37
Eastbound State Route 91 Off-Ramp to Northbound I-710 Freeway/Atlantic Avenue	11.588	11.588	Eastbound	4	0	0.00	0.13	0.002	0.08	0.25
Eastbound State Route 91 Off-Ramp Segment to Atlantic Avenue	11.748	11.748	Eastbound	14	0	0.86	3.01	0.004	0.32	0.92
Eastbound State Route 91 On-Ramp from Northbound I-710 Freeway	11.794	11.794	Eastbound	17	0	0.07	0.63	0.002	0.11	0.32
Eastbound State Route 91 On-Ramp from Southbound I-710 Freeway	11.994	11.994	Eastbound	0	0	0.00	0.00	0.002	0.11	0.32
Eastbound State Route 91 On-Ramp from Atlantic Avenue	12.240	12.240	Eastbound	9	0	0.23	1.03	0.002	0.21	0.60
Eastbound State Route 91 Off-Ramp to Cherry Avenue	12.968	12.968	Eastbound	8	0	0.10	0.79	0.004	0.32	0.92
Eastbound State Route 91 On-Ramp from Cherry Avenue	13.263	13.263	Eastbound	9	0	0.00	0.74	0.002	0.21	0.60
Eastbound State Route 91 Off-Ramp to Paramount Boulevard	13.452	13.452	Eastbound	16	0	0.84	1.92	0.004	0.32	0.92

Source: Caltrans Traffic Accident Surveillance and Analysis System (TASAS) Database; Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: I-710 = Interstate 710
Accident rates are expressed as the number of accidents per million vehicle miles. Average accident rates are for similar facilities throughout the state of California.

It is anticipated that the proposed Project improvement will improve overall interchange operations between the I-710 and Atlantic Avenue on-ramps and the Cherry Avenue off-ramp, help relieve congestion and, therefore, help reduce congestion related accident rates.

1.4 Independent Utility and Logical Termini

Federal regulations (23 Code of Federal Regulations [CFR] 771.111(f)) require that "independent utility" and "logical termini" be established for a transportation improvement project evaluated under NEPA. The Project limits were defined based on providing an independent and logical set of improvements. 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 are defined as rational end points for transportation improvement and analysis of the potential environmental impacts of a proposed project.

1.4.1 INDEPENDENT UTILITY

The auxiliary lane on Eastbound State Route 91 and the interchange modifications included in the Project would provide benefits to the traveling public without requiring or being dependent on the provision of other improvements on State Route 91 or other freeways or arterials. These improvements would benefit travelers as they enter/exit the freeway or travel in the general-purpose and high-occupancy vehicle (HOV) lanes. The Project represents a reasonable expenditure even if no additional transportation improvements are made in the corridor, it 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 State Route 91 corridor and areas adjacent to the Project limits. The Project would have independent utility because it meets the Project purpose in the absence of other improvements in the State Route 91 corridor.

1.4.2 LOGICAL TERMINI

The focus of the Project is to enhance safety conditions, reduce congestion, and improve freeway operations on Eastbound State Route 91. The environmental study limits extend from the southbound I-710 interchange connector to eastbound State Route 91 to Cherry Avenue (PM R11.8/R13.2). The proposed Project provides logical termini because the postmiles serve as rational endpoints between points of major traffic generation (i.e., westerly SB I-710/Eastbound State Route 91 on-ramp connectors and easterly Eastbound State Route 91/Cherry Avenue Interchange. The western and eastern termini assure a sufficient length of alignment (approximately 1.4 miles) to integrate the proposed Eastbound State Route 91 auxiliary lane and bridge improvements with existing facilities and avoid any abrupt transitions.

1.5 Project Description

This section describes the proposed action and the Project alternatives developed to meet the purpose and need of the Project, while avoiding or minimizing environmental impacts. Two alternatives are being considered for evaluation as part of this proposed Project. The proposed alternatives include a No Build Alternative (Alternative 1) and one Build Alternative (Alternative 2).

The Project is located in Los Angeles County on Eastbound State Route 91 within a 1.4-mile segment from the southbound I-710 interchange connector to eastbound State Route 91, to Cherry Avenue. **Figure 3** below provides an illustration of the Project Area, and demonstrates where the Project limits are, and where the Project features would be. The length of the proposed auxiliary lane is 0.86 mile. The Study Area includes Eastbound State Route 91 (Post Miles [PM] R11.8/R13.2) and is located in the City of Long Beach and adjacent to the City of Paramount, California.

State Route 91 is a major east-west transportation route that is used primarily for international, interstate, interregional, and intraregional travel of people and carrying of goods throughout Los Angeles, Orange, Riverside, and San Bernardino counties. State Route 91 is an important highway for goods movement in California, providing access to the Ports of Los Angeles and Long Beach; and serving the largest center for warehousing and transloading in the Los Angeles basin, at the southwest quadrant of State Route 91 and I-710 interchange, in the cities of Carson and Compton. State Route 91 also serves as a key commute route for southern Los Angeles County, Orange County, and Riverside County.

State Route 91 is part of the National Highway System (NHS) and the Freeway and Expressway (F&E) System, is a Terminal Access (TA) route, and has a functional classification of "other Freeway or Expressway." The segment of State Route 91 to the west of I-710 generally has four mixed flow lanes in each direction. The segment to the east of I-710 has five mixed flow lanes Eastbound, four mixed flow lanes westbound, and one high-occupancy vehicle (HOV) lane in each direction. The I-710/State Route 91 interchange area has four mixed flow lanes westbound and three mixed flow lanes eastbound.

The purpose of the Project is to enhance safety conditions, reduce congestion, and improve freeway operations on both the Eastbound State Route 91 mainline and ramps.

1.5.1 PROJECT ALTERNATIVES

Alternative 1 (No Build Alternative)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Study Area limits. This alternative would maintain the current configuration of the existing freeway, ramps, and local intersections within the Project limits. The Eastbound State Route 91 facility would continue to have five mixed flow lanes and one HOV lane. 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 under NEPA. Under CEQA, existing conditions at the beginning of environmental studies serve as the baseline to compare with the Build Alternative.

Alternative 2 (Build Alternative)

The Build Alternative would include the addition of a 0.86-mile auxiliary lane on Eastbound State Route 91 from the Atlantic Avenue on-ramp to the Cherry Avenue off-ramp. **Figure 4** and **Figure 5** below illustrate the Project components.

Figure 3: Project Area Map

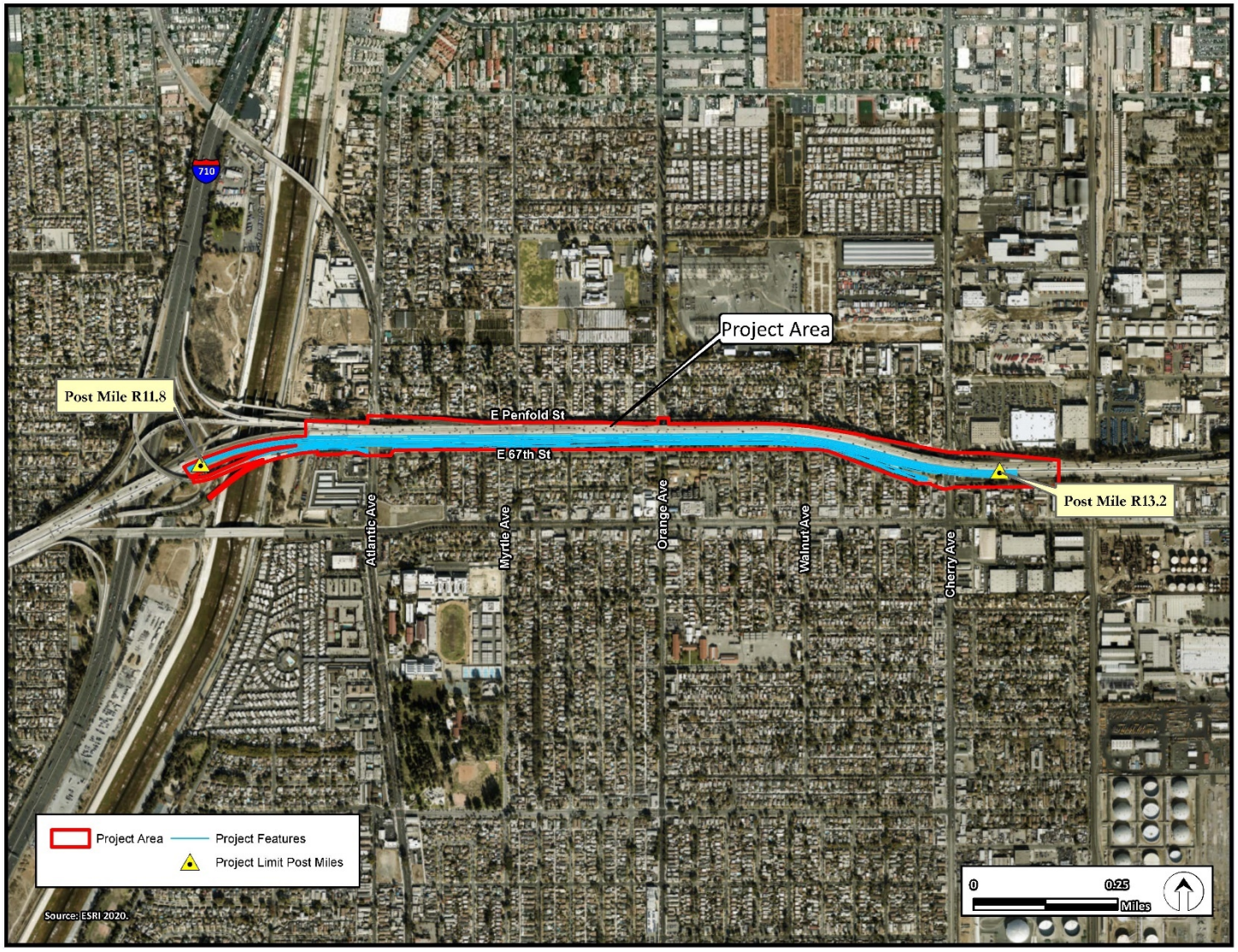

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Figure 4: Project Components (Sheet 1 of 2)

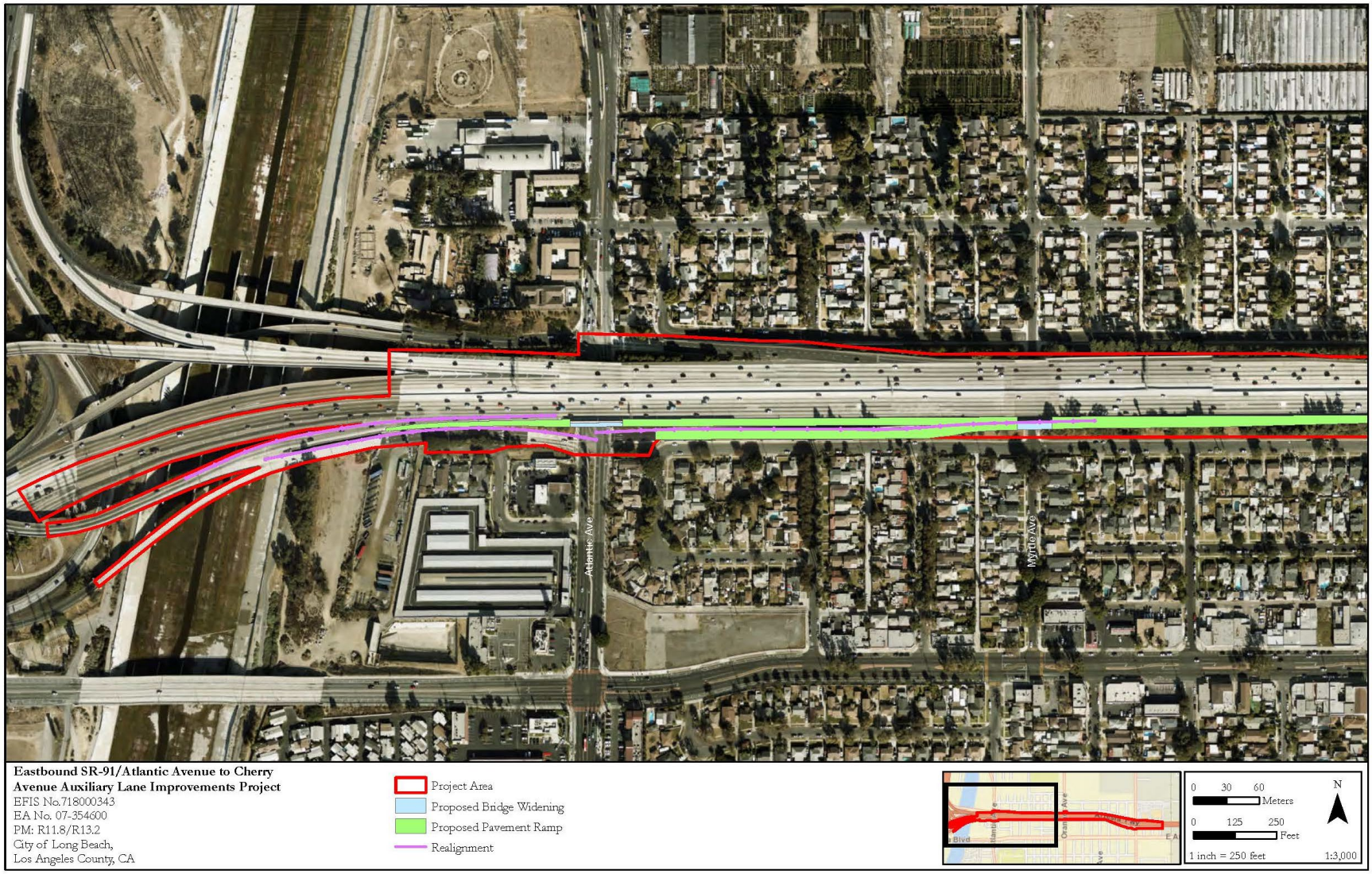

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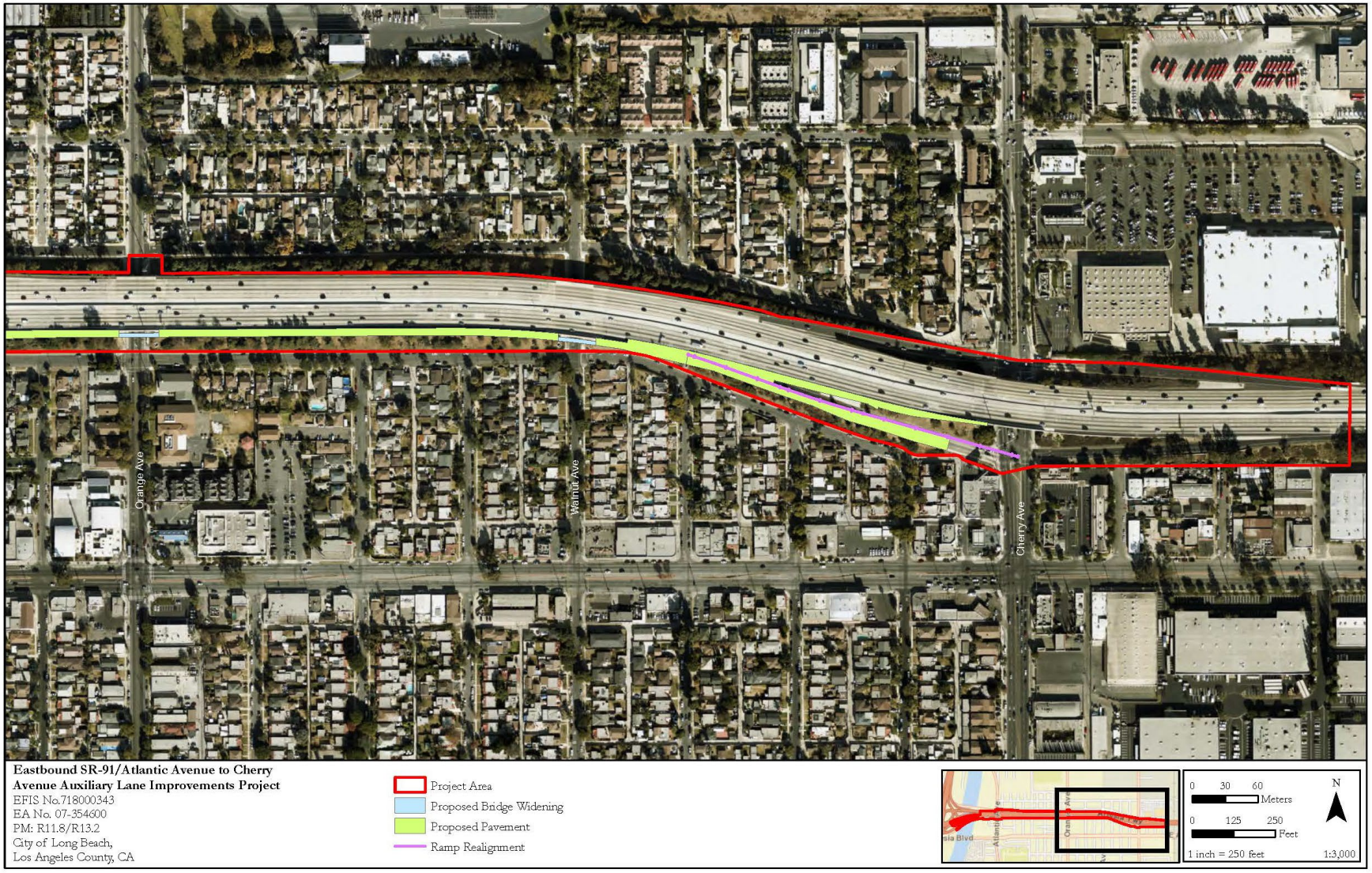
Figure 5: Project Components (Sheet 2 of 2)



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The proposed alternative would require modifications to the following bridges, which would be widened on the south side to accommodate the proposed auxiliary lane:

- Myrtle Avenue Undercrossing (Bridge No. 53-2121) 1-span widening
- Orange Avenue Undercrossing (Bridge No. 53-2122) 1-span widening
- Walnut Avenue Undercrossing (Bridge No. 53-2127) 1-span widening

To accommodate the proposed auxiliary lane on Eastbound State Route 91 and to abate noise impacts, the Build Alternative would also require reconstruction of the following walls and modification of the following ramps:

- RW No. 642, soundwall on retaining wall along Eastbound Atlantic Avenue on-ramp to Myrtle Avenue Undercrossing Bridge
- RW No. 654, soundwall on retaining wall along Eastbound State Route 91 mainline from Myrtle Avenue Undercrossing Bridge to Orange Avenue Undercrossing Bridge
- RW No. 668, soundwall on retaining wall along Eastbound State Route 91 mainline from Orange Avenue Undercrossing Bridge to Walnut Avenue Undercrossing Bridge
- RW No. 680, soundwall on retaining wall along Eastbound State Route 91 mainline from Walnut Avenue Undercrossing Bridge to Eastbound Cherry Avenue off-ramp
- Eastbound Atlantic Avenue on-ramp
- Eastbound Cherry Avenue off-ramp

The Build Alternative would include extending the auxiliary lane approximately 0.31 mile westerly to the Southbound I-710/Eastbound State Route 91 Connector (westerly extension), and would taper off easterly to the Cherry Avenue Undercrossing (easterly extension). The westerly extension would require:

- Widening on the south side of the Atlantic Avenue Undercrossing (Bridge No. 53-2124), 2-span widening
- Restriping and widening of the Southbound I-710/Eastbound State Route 91 Connector from one lane to two lanes east of bridge crossing over the Los Angeles River
- Restriping of the Atlantic Avenue off-ramp to accommodate the widening of the Southbound I-710/Eastbound State Route 91 Connector
- Reconstruction of the RW No. 634, retaining wall along Eastbound State Route 91 from the Los Angeles River to Atlantic Avenue Undercrossing Bridge
- Reconstruction of the RW No. 640, soundwall on retaining wall along Eastbound State Route 91 from Atlantic Avenue to Eastbound Atlantic Avenue on-ramp gore area

The easterly extension includes gradually tapering off the auxiliary lane to end at the Cherry Avenue Undercrossing.

The Build Alternative would enhance safety conditions, reduce congestion, and improve freeway operations on both the Eastbound State Route 91 mainline and ramps. Mitigation for noise impacts include implementation of soundwalls, which have been incorporated as Project features. Existing soundwalls would be removed and reconstructed within Caltrans right of way, approximately 10 to 15 feet to the south of, and parallel to, the existing soundwalls.

The Build Alternative would include new powered overhead signs and replacement roadway lighting. In addition, the Build Alternative will include Transportation System Management measures to improve operations, such as improved ramp metering, coordinated traffic signals, and intelligent transportation system elements, among others.

This Project contains a number of standardized project design elements which 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 addressed in more detail in the Environmental Consequences sections found in Chapter 2.

1.5.2 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION

Rejected Design Options

There were various design options that were evaluated and rejected. These included:

- Adding an additional lane starting at the easterly end of the Northbound I-710 to Eastbound State Route 91 Connector. This design option was rejected due to the inadequate available space on the existing bridge crossing the Los Angeles River.
- Extending the proposed auxiliary lane on Eastbound State Route 91 from Atlantic Avenue to Cherry Avenue and to the existing Cherry Avenue to Paramount Boulevard Auxiliary Lane. This design option was rejected due to railroad and right of way impacts.

Transportation System Management and Transportation Demand Management Alternatives

Transportation Systems Management 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 provides cost-effective improvements that reduce system demand by eliminating trips or shifting trips out of the peak periods to other, less-congested time periods during the day, thus increasing transportation system performance without implementing travel restrictions. Transportation Demand Management programs include rideshare programs, employer flex-time, parking pricing, and intermodal improvements that support Transportation Demand Management programs and transfers between modes at key locations. Transportation Demand Management programs are devised to change the behavior of travelers. Some Transportation Demand Management approaches are voluntary, and they motivate participants with incentives. Other Transportation Demand Management approaches apply disincentives to drive single-occupancy vehicles, such as fees and constraints.

A Transportation Systems Management/Transportation Demand Management alternative is not considered a viable stand-alone option because it does not fulfill the Project's purpose and need. A Transportation Systems Management/Transportation Demand Management alternative on its own would:

- Provide minimal congestion reduction,

- Provide minimal enhancement of operations and improvement in trip reliability, and
- Not increase mobility significantly because it would have a limited effect on congestion.

Transportation Systems Management and Transportation Demand Management 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 alternatives.

Although Transportation Systems Management and Transportation Demand Management measures alone do not satisfy the purpose and need of the Project, the following Transportation Systems Management and Transportation Demand Management measures are beneficial and may be incorporated into the Build Alternative for the Project:

- Improved ramp-metering hardware and software and closed-circuit television systems for viewing ramps and nearby arterials
- Upgraded traffic signals that are interconnected and coordinated with adjacent signals and ramp meters at locations of interchange improvements
- Additional way-finding signs on freeways and arterials
- On- and off-ramps designed to limit impacts to non-motorized travel and preserve access to bike lanes and trails
- Intelligent Transportation Systems elements, including fiber-optic and other communication systems for improved connectivity and remote management; changeable message signs; closed-circuit television coverage of the entire freeway mainline, ramps, and adjacent arterials; video detection systems; and vehicle detection systems for volume, speed, and vehicle classification
- Advanced traffic management system improvements to the hardware and software systems at the Caltrans District 7 Traffic Management Center
- Traveler information management system improvements to enhance dissemination of real-time information on roadway conditions

Reversible Lanes

To meet the requirements of Assembly Bill (AB) 2542, 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. Reversible lanes are not a viable alternative for the Project because both directions of State Route 91 have high traffic volumes in both the A.M. and P.M. peak periods and will also not be able to meet the required minimum length of 2 miles of reversible lanes.

1.6 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications (PLACs) are required for Project construction:

Agency	PLAC	Status
Federal Highway Administration	Air Quality Conformity Approval Letter	The Air Quality Conformity report will be submitted to the Federal Highway Administration after receipt of public comments on the Initial Study/Environmental Assessment (IS/EA). The Federal Highway Administration will make a conformity determination prior to final approval of the IS/EA.
State Water Resources Control Board	National Pollutant Discharge Elimination System Construction General Permit Order No. 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012- 0006-DWQ)	The permits, including the Notice of Intent (NOI), will be submitted to the State Water Resources Control Board prior to any Project construction.
State Water Resources Control Board	Caltrans National Pollutant Discharge Elimination System Permit Order No. 2012-0011-DWQ, (as amended by Order WQ 2014- 0006-EXEC, Order WQ 2014- 0077-DWQ, and Order WQ 2015- 0036-EXEC, National Pollutant Discharge Elimination System No. CAS000003)	The Permit Registration Documents, including the NOI, will be submitted to the State Water Resources Control Board prior to any Project construction.
City of Long Beach	Access Agreement	The access agreement will be completed after approval of environmental document.

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

TOPICS CONSIDERED BUT DETERMINED NOT TO BE RELEVANT

As part of the 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.

Land Use

The Build Alternative is not expected to result in changes to land uses in the Project Study Area, which includes a half-mile buffer around the Project Area. The Build Alternative was evaluated for consistency with transportation plans and programs (e.g., Southern California Association of Governments' 2020 Regional Transportation Plan and 2019 Federal Transportation Improvement Program, regional growth plans, habitat conservation plans or similar regional conservation plans, and general and community plans for Los Angeles County and the City of Long Beach). The Build Alternative would be consistent with the applicable federal, state, regional, and local plans and programs adopted for the area, including goals and polices for improving traffic and circulation. For more information regarding land use analysis, please refer to the Community Impact Assessment (August 2020) prepared for the Project.

Coastal Zone

The Project Area is over seven miles north of the Pacific coast, and not within the coastal zone.

Wild and Scenic Rivers

No Wild and Scenic Rivers are in proximity to the Project Area.

Parks and Recreational Facilities

The Build Alternative would not affect parks or recreational facilities. A proposed greenbelt, the Hamilton Loop (also known as the State Route 91 Embankment Greenbelt), is planned in Caltrans right of way within the Project Area. Coordination is being conducted with the City of Long Beach so that the Project will not preclude the proposed greenbelt. For more information regarding land use analysis, please refer to the Community Impact Assessment (August 2020) prepared for the Project

Farmlands and Timberlands

The Project is in a heavily developed urban area surrounded by industrial and commercial properties, and does not include agricultural land, forest land, or timberland.

Growth

No new streets, highways, ramps, etc. will be constructed as part of the Project. The Project does not create new or alternate routes to/on the freeway or to surrounding businesses, and accessibility to surrounding residences and business would remain the same. Traffic would only be affected on the mainline for existing operational deficiencies, and the Project does not create new or alternate routes for commuters, or direct new traffic to local streets or freeways. There

would be no addition of utility lines or other utilities, so the Project does not allow for new development; the Project would not alter existing land use or allow for new land uses by its construction; and community facilities would not be affected, so it would not attract new users to frequent or live in the area. Therefore, no new elements would be introduced to the environment that would facilitate growth. Lastly, because there is little developable land, the growth pressure is low. For more information regarding land use analysis, please refer to the Community Impact Assessment (August 2020) prepared for the Project

Community Character and Cohesion

No residences, businesses, community facilities, or services would be displaced, and the population characteristics and distribution within the Project Study Area would not change as a result of the Build Alternative. For more information regarding land use analysis, please refer to the Community Impact Assessment (August 2020) prepared for the Project

Relocations and Real Property Acquisitions

The Build Alternative would not require any right of way acquisitions, temporary construction easements, or permanent easements.

Floodplains

There will be no effects to the 100-year floodplain because the Project is not located within a 100-year base floodplain.

Threatened and Endangered Species

According to the Natural Environment Study (Minimal Impacts) prepared for the Project, the Biological Study Area 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 21, 2019, and updated on October 10, 2019, February 24, 2020, and December 3, 2020, indicated that several federally and/or state-listed species have the potential to be in the Biological Study Area. However, none of the species were observed during field surveys and there is no suitable habitat for these species in the Biological Study Area. Therefore, the Project would have no impact 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. The official species list obtained from NOAA Fisheries on January 1, 2019, and updated on December 3, 2020, indicated that one federally and/or state-listed species has the potential to be in the Biological Study Area. However, this species was not observed during field surveys and there is no suitable habitat for this species in the Biological Study Area, including Essential Fish Habitat (EFH). Therefore, consultation with the National Marine Fisheries Service (NMFS) is not required.

Wetlands and Other Waters

The Los Angeles River is the only waterway within the Biological Study Area. It flows north to south under the eastern most portion of the Project Area. The Los Angeles River is a Traditional

Navigable Water that is tributary to the Pacific Ocean. All construction activities for the Project would be outside of the Los Angeles River and restricted to the deck of the freeway. There is potential for construction debris and materials to fall into the Los Angeles River, resulting in water quality impacts. However, the potential for impacts would be low because the type of work completed near the Los Angeles River would be limited to restriping and potentially installing roadway signage (no overhead signs would be implemented in this area). In addition, the Project would follow Caltrans Standard Specifications for Water Pollution Control and the National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009-DWQ, NPDES No. CAS000002 as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ) to reduce the potential for chemical spills or contaminant releases into the Los Angeles River, including any non-stormwater discharge (see Section 2.2.1 for more information regarding water quality). Therefore, the Project would have no direct or indirect impacts on potential jurisdictional features, and coordination with the United States Army Corps of Engineers, Regional Water Quality Control Board, or California Department of Fish and Wildlife is not required. Therefore, the Project would not result in impacts on wetlands and other waters and no further analysis is required.

Natural Communities

Based on California Natural Diversity Database (CNDDB) database research, four special-status natural communities have the potential to be in the Biological Study Area, including California Walnut Woodland, Southern Coastal Salt Marsh, Southern Sycamore Alder Riparian Woodland, and Walnut Forest communities. However, no special-status natural communities were identified during the biological survey, and no special-status communities are expected to be in the Biological Study Area. Therefore, the Project would not result in impacts on natural communities and no further analysis is required.

Section 4(f)

There are no historic sites, parks and recreational resources, or 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 1966.

CUMULATIVE IMPACTS

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.

As discussed in individual sections below, the Project Area is located within Caltrans or City right of way in an area that is either occupied by, or directly adjacent to, existing transportation facilities. The Project Study Area, which includes a half-mile buffer around the Project Area, is primarily in the City of Long Beach, but also includes the southern portion of the City of Paramount and the eastern portion of the City of Compton. The Project Study Area is located in a highly developed urban area with few developable vacant lands. Within the Project Study Area, one proposed commercial development project is under construction; one proposed greenbelt project is under preliminary design; and one transportation project is in the Project Approval and Environmental Document phase, as listed in **Table 6**, and shown in **Figure 6**. In addition, there is one transportation improvement project that is outside of the Project Study Area, but was included in this cumulative impacts analysis as a related project (see **Table 6** and **Figure 6**). Cumulative impacts are discussed in the “Environmental Consequences” section for each resource.

Table 6: Current and Future Projects

Project Name	Address	Use	Status
Uptown Commons	6600-6630 Atlantic Avenue and 609-695 Artesia Boulevard	Three buildings that would make room for five restaurants and one drive-thru	Under construction
Hamilton Loop (also known as the State Route 91 Embankment Greenbelt)	Caltrans Right of Way Along Portions of the North and South and Embankments of State Route 91 Adjacent to 67th Street, Penfold Street, and Eleanor Street between Atlantic Avenue and Cherry Avenue	A 2-mile-long walking loop with seating areas and outdoor fitness equipment	Preliminary Design
Interstate 710 (I-710) Corridor Project	Along approximately 19 miles of I-710 from State Route 60 (SR-60) to Ocean Boulevard in the City of Long Beach	Part of the Early Action Program that would add general purpose lane capacity to I-710 as well as geometric design improvements	Project Approval and Environmental Document
State Route 91 (SR-91) Central Avenue to Acacia Court	Along SR-91 from Acacia Court to Central Avenue	Addition of collector-distributor road, mainline and ramp improvements, and signage upgrades	Project Approval and Environmental Document

Source: The Grunion, 2019; City of Long Beach, 2020

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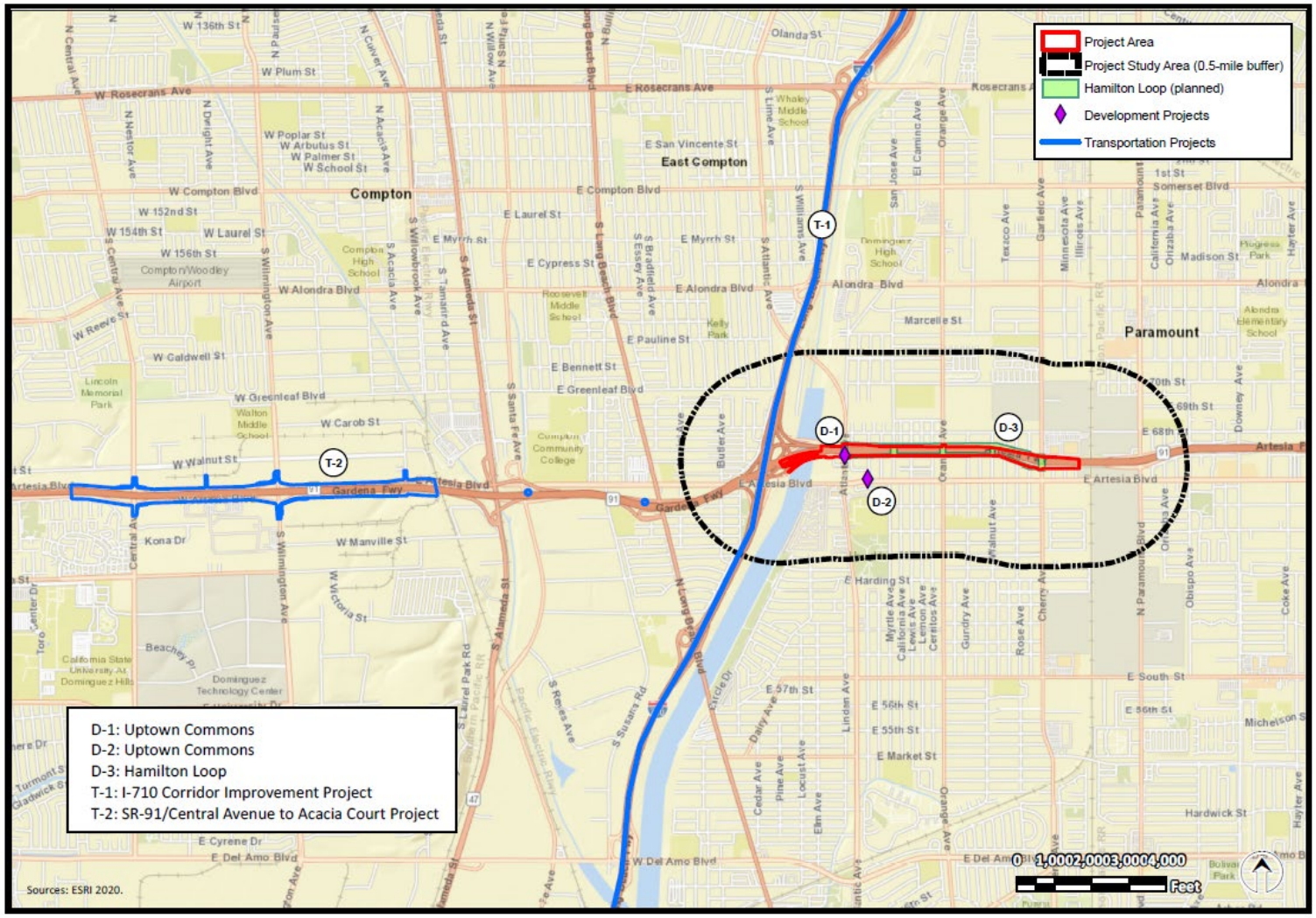
Figure 6: Current and Future Projects



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

2.1 Human Environment

2.1.1 ENVIRONMENTAL JUSTICE

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 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 Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2017, this was $24,600 for a family of four (U.S. Department of Health & Human Services, 2017).

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

Affected Environment

Environmental Justice populations are higher than average concentrations of traditionally under-served groups when compared to the area surrounding the Project Area or the city or county as a whole. As shown in **Table 7**, minority populations account for 71 percent of the population in Los Angeles County; and 69 percent in the City of Long Beach (U.S. Census Bureau, 2018). Minority populations in the Project Area range from 76 percent to 92 percent, which is higher than Los Angeles County and the City of Long Beach (U.S. Census Bureau, 2018). As shown in the table, all block groups in the Study Area have Environmental Justice populations because they have higher than average concentrations of minority populations when compared to Los Angeles County. The City of Long Beach census data from the U.S. Census Bureau is also provided, but was not used to determine Environmental Justice populations.

As shown in **Table 8**, the median household income in Los Angeles County is $61,015; and $58,314 in the City of Long Beach. In the Project Area, the median household income ranges from $24,891 to $68,105, which is higher than the U.S. Department of Health and Human Services 2017 Poverty Guidelines of $24,600. However, the median household income of $24,891 in Census Tract 5703.01, Block Group 2, is only slightly higher than the poverty guidelines. Because none of the block groups within the study area have a median household income below the Department of Health and Human Services 2017 Poverty Guidelines, there are no low-income populations in the Study Area for the purposes of this Environmental Justice analysis.

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Table 7: 2017 Minority Populations

Ethnicity and Race	Los Angeles County	City of Long Beach	Census Tract 5702.02, Block Group 1	Census Tract 5702.02, Block Group 2	Census Tract 5702.02, Block Group 3	Census Tract 5702.02, Block Group 4	Census Tract 5702.03, Block Group 2	Census Tract 5703.01, Block Group 2	Census Tract 5704.02, Block Group 1	Census Tract 5704.04, Block Group 1
Black or African American alone	799,579 (7.9%)	58,260 (12.4%)	163 (17.1%)	383 (30.5%)	226 (22.4%)	123 (16.0%)	545 (42.3%)	84 (8.0%)	481 (30.8%)	469 (31.0%)
American Indian and Alaska Native alone	19,915 (0.2%)	1,534 (0.3%)	10 (1.1%)	0 (0%)	0 (0%)	19 (2.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Asian alone	1,442,577 (14.3%)	61,269 (13.0%)	141 (14.8%)	111 (8.8%)	145 (14.4%)	130 (16.9%)	0 (0%)	13 (1.2%)	114 (7.3%)	141 (9.3%)
Native Hawaiian and Other Pacific Islander alone	24,950 (0.2%)	4,050 (0.9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	120 (7.7%)	129 (8.5%)
Hispanic or Latino	4,893,579 (48.4%)	201,523 (42.8%)	560 (58.8%)	714 (56.8%)	394 (39.1%)	437 (56.9%)	690 (53.5%)	868 (82.4%)	757 (48.5%)	730 (48.2%)
Total Minority Population	7,180,600 (71%)	326,636 (69%)	874 (92%)	1,208 (96%)	765 (76%)	709 (92%)	1,235 (96%)	965 (92%)	1,472 (94%)	1,469 (97%)

Source: U.S. Census Bureau, 2018
Notes: % = percent

Table 8: Median Household Income in the Past 12 Months (in 2017 inflation-adjusted dollars)

Study Area	Median Household Income
Los Angeles County	$61,015
City of Long Beach	$58,314
Census Tract 5702.2, Block Group 1	$46,369
Census Tract 5702.2, Block Group 2	$68,105
Census Tract 5702.2, Block Group 3	$46,607
Census Tract 5702.2, Block Group 4	$66,563
Census Tract 5702.03, Block Group 2	$41,063
Census Tract 5703.01, Block Group 2	$24,891
Census Tract 5704.02, Block Group 1	$48,713
Census Tract 5704.04, Block Group 1	$49,625

Source: U.S. Census Bureau, 2018

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on minority or low-income populations.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

The Project Area does not have a history of other projects or actions that may have had disproportionately high or adverse impacts on the local residents. The area is primarily occupied by residential neighborhoods. As discussed above, all block groups in the Study Area have minority populations that are considered Environmental Justice populations.

Environmental Justice populations in block groups adjacent to the Project Area would be directly affected by construction activities. These Environmental Justice populations would experience short-term impacts on access and circulation from freeway mainline and ramp closures, local street closures, and detours; aesthetics from construction staging and equipment; and short-term noise and air quality from excavation, grading, hauling, and other temporary construction activities. However, non-Environmental Justice populations in the Study Area would also experience the same short-term impacts during construction. Construction-related impacts would not be predominantly borne by Environmental Justice populations and would not be appreciably more severe or greater in magnitude on Environmental Justice populations when compared with non-Environmental Justice populations. Therefore, construction-related impacts on Environmental Justice populations would not be disproportionately high and adverse. Avoidance and minimization measures identified throughout this Initial Study/Environmental Assessment (IS/EA) would minimize these temporary impacts (see Sections 2.1.2, 2.1.3, 2.1.4, 2.2.5, and 2.2.6).

The Project would not increase traffic in low-income and minority neighborhoods, and minority owned businesses that serve a minority or low-income population would not be impacted by the Project. Access from minority or low-income neighborhoods to various services or cultural destinations (church, parks, community center) would also not be affected by the proposed Project. The Project would not affect access to transit services for minority or low-income households, and the benefits associated with the Project would be equitable for all segments of society.

In addition, Project improvements would be limited to Caltrans and City right of way and would not require incursion into surrounding neighborhoods, would not change existing community relationships, and would not require the displacement or relocation of any persons. The environmental document will be available for public review during a public comment period for at least 30 days; and public notices will be circulated to residents in proximity to the Project Area (owners or occupants of properties to the south of East 68th Street, to the north Artesia Boulevard, to the east of I-710, and to the west of the Union Pacific Railroad that runs between Cherry and Paramount Avenues), to ensure populations near the Project Area have been involved in the decision-making or project information process.

With implementation of avoidance, minimization, and/or mitigation measures identified throughout this IS/EA, the Project would not result in disproportionately high and adverse effects on any minority or low-income populations.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance, minimization, and/or mitigation measures identified throughout this IS/EA would minimize any temporary and permanent impacts on all affected populations, including low-income and minority populations (see Sections 2.1.2, 2.1.3, 2.1.4, 2.2.5, and 2.2.6).

Based on the above discussion 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 Executive Order 12898. No further Environmental Justice analysis is required.

Cumulative Impacts

As discussed above, the proposed Project would not cause disproportionately high and adverse effects on minority or low-income populations per Executive Order 12898. Other current and reasonably foreseeable actions (see **Table 6** above) would be required to comply with Executive Order 12898 and implement measures to reduce potential impacts on Environmental Justice populations. Therefore, the proposed Project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to Environmental Justice and mitigation would not be required.

2.1.2 UTILITIES/EMERGENCY SERVICES

Affected Environment

A Community Impact Assessment (CIA) was prepared for the Project in August 2020 to discuss potential impacts on community facilities, including utilities and emergency services. As discussed in the CIA, there are five utility lines in the Project Area, as summarized in **Table 9**.

Table 9: Affected Utilities

Utility Owner	Location	Utility Type	Size	Underground or Overhead	Utility Conflict Description
Long Beach Energy Resources	Myrtle Avenue	Gas	4-inch	Underground	Close to bridge widening
Long Beach Water Department	Myrtle Avenue	Sewer	8-inch	Underground	Close to bridge widening
Long Beach Water Department	Atlantic Avenue	Water	12-inch	Underground	Close to bridge widening
Crown Castle	Orange Avenue	Telecommunications	-	Underground	Close to bridge widening
Southern California Edison	Orange Avenue	Electric	-	Overhead	Potential impact to line

Source: TRC, 2020

In the City of Long Beach, the City's Police Department provides law enforcement services, and the Long Beach Fire Department provides fire and paramedic services, along with private and neighboring City law enforcement and first response agencies. The Los Angeles County Sheriff's Department and City of Paramount Sheriff's Department provide law enforcement services in proximity to the Project Area. In addition, the Los Angeles County Fire Department and City of Compton Fire Department provide fire and paramedic services in proximity to the Project Area. The closest fire and police stations to the Project Area are included in **Table 10**. No emergency service facilities are located in the Project Area.

Table 10: Emergency Service Facilities

Property Name	Address	Description
City of Compton Fire Department – Station 2	1320 East Palmer Street, Compton, CA 90221	Fire station approximately 1.8 miles northwest of Project Area
Los Angeles County Fire Department – Station 11	160 East Market Street, Long Beach, CA 90805	Fire station approximately 1.6 miles south Project Area
Long Beach Fire Department - Station 12	1199 East Artesia Boulevard, Long Beach, CA 90805	Fire station approximately 0.2 mile south of Project Area
Los Angeles County Fire Department – Station 31	7521 Somerset Boulevard, Paramount, CA 90723	Fire station approximately 1.4 miles north of Project Area
Los Angeles County Fire Department – Station 45	4020 Candlewood Street, Lakewood, CA 90712	Fire station approximately 2.0 miles southeast of Project Area

Property Name	Address	Description
Los Angeles County Sheriff – Compton Station	301 South Willowbrook Avenue, Compton, CA 90220	Police station approximately 2.3 miles northwest of Project Area
City of Long Beach Police – North Division	4891 Atlantic Avenue, Long Beach, CA 90807	Police station approximately 2.3 miles south of Project Area
City of Paramount Sheriff Station	15001 Paramount Boulevard # C, Paramount, CA 90723	Police station approximately 1.5 miles northeast of Project Area

Source: Google Earth, 2020

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on utilities or emergency services.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

There are five utility lines in the Project Area, as summarized above in **Table 9**. Existing utilities within proposed improvements would require to be protected in place. There are no anticipated relocation of utility lines proposed as part of the Project. Prior to construction, coordination would be conducted with utility owners/operators if any disruptions to utility service are anticipated to ensure that disruptions would not adversely affect customer service or utility operations (see **PF-COM-1** below). Prior to final design, coordination with affected utility owners will be conducted to ensure all utilities are accurately identified. Therefore, the Build Alternative would not result in adverse impacts on utilities.

As required by California state law, Underground Service Alert of Southern California (USA) would be contacted a minimum of two working days before initiating fieldwork. Prior to contacting USA, each boring location will be delineated with white spray paint thereby outlining the proposed limits of subsurface work. A ticket number would be obtained to request utility clearance by parties with underground utilities in the areas. Following notification, utility owners and/or representatives will mark the approximate location of each subsurface utility. Prior to conducting subsurface fieldwork, each location will be visually inspected to verify potential conflicts and avoid disruptions in service. Therefore, the Build Alternative would not result in adverse impacts on utilities.

The Project would not require the acquisition or displacement of emergency services. Emergency access may be temporarily affected by detours associated with temporary freeway mainline and ramp closures, and local street closures, which would require emergency service providers to use different routes. However, prior to construction, coordination would be conducted with local emergency service providers and the surrounding community to minimize service delays and disruptions during construction (see **PF-ES-1** below). Following construction, the Project would result in operational improvements on the freeway, which would benefit emergency service access.

The following Project features would be implemented to reduce impacts on emergency services:

PF-COM-1 Prior to construction, Metro will coordinate with and notify impacted community facilities owners (e.g., medical facilities, churches, and educational facilities and districts) to ensure access is maintained at all times during construction.

PF-ES-1 Prior to construction, Metro would coordinate with local emergency service providers and communicate with the surrounding community to minimize service delays and disruptions during construction.

With implementation of these Project features, the Build Alternative would not result in adverse impacts on utilities and emergency services.

Avoidance, Minimization, and/or Mitigation Measures

Impacts on utilities and emergency services would not be adverse; therefore, avoidance, minimization, and/or mitigation measures would not be required.

Cumulative Impacts

The Project Study Area is adequately served by existing utility and emergency service providers. The proposed Project's short-term effects on utilities and emergency services would be minor and long-term effects on emergency services would be beneficial through proposed improvements to traffic and transportation. Other current and reasonably foreseeable actions (see **Table 6** above) would include transportation improvements that would contribute to minor cumulative effects on utilities and beneficial cumulative effects on emergency services. Therefore, the proposed Project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to utilities and emergency services and mitigation would not be required.

2.1.3 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

Regulatory Setting

Caltrans, as assigned by the Federal Highway Administration, 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 Federal Highway Administration 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.

Affected Environment

A Traffic Volumes Report, Traffic Operations Analysis Report (TOAR), and Community Impact Assessment were prepared for the Project in July, September, and August 2020, respectively to discuss potential impacts on traffic, transportation, and pedestrian and bicycle facilities.

PRIMARY ROADWAYS

Figure 7 below illustrates existing and proposed transportation facilities in the Project Area. The Project Area includes a 1.4-mile segment from the southbound I-710 interchange connector to Eastbound State Route 91, to Cherry Avenue. Primary roadways within the Project Study Area are listed in **Table 11**.

Table 11: Primary Roadways

Roadway	Direction	Roadway Classification
Atlantic Avenue	North/South	Major Avenue
Paramount	North/South	Major Avenue
Myrtle Avenue	North/South	Local Road
Orange Avenue	North/South	Minor Avenue
Walnut Avenue	North/South	Local Road
Cherry Avenue	North/South	Major Avenue
Artesia Boulevard	East/West	Major Avenue
East Penfold Street/East Eleanor Street	East/West	Local Road
East 67th Street	East West	Local Road

Source: City of Long Beach, 2013

Existing and Forecast conditions (No Build Alternative) conditions for the freeway mainline, ramps, and weaving segments evaluated within the Project Area show several segments currently operate at level of service D or lower during one or both peak hour periods, as shown in **Table 12.**

Figure 7: Transportation Facilities

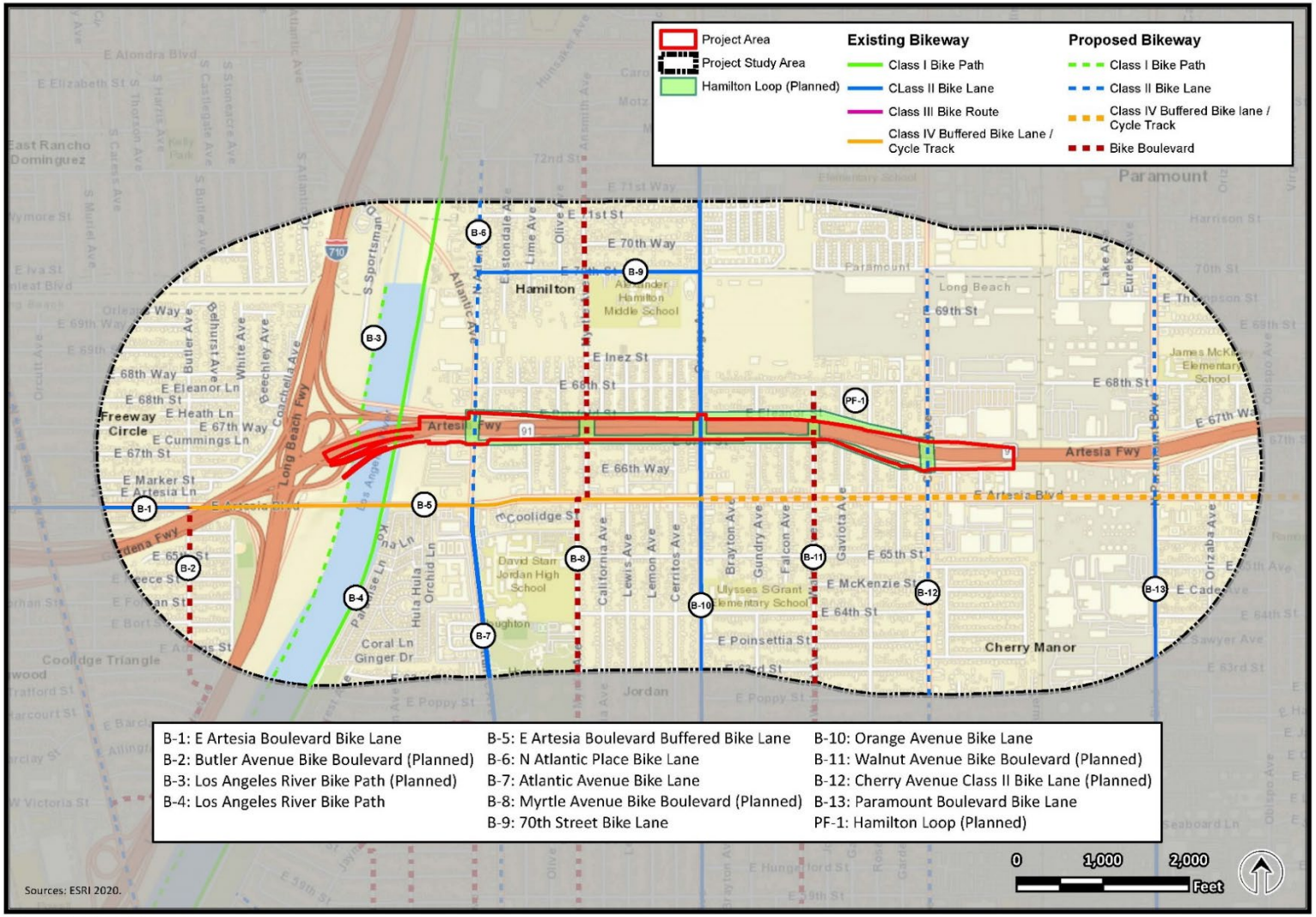

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Table 12: Level of Service for Existing and Forecast Conditions (No Build Alternative)

Location	Segment Type	Existing Conditions (2019) A.M. Peak Hour Density	Existing Conditions (2019) A.M. Peak Hour Level of Service	Existing Conditions (2019) P.M. Peak Hour Density	Existing Conditions (2019) P.M. Peak Hour Level of Service	Opening Year (2024) A.M. Peak Hour Density	Opening Year (2024) A.M. Peak Hour Level of Service	Opening Year (2024) P.M. Peak Hour Density	Opening Year (2024) P.M. Peak Hour Level of service	Horizon Year (2045) A.M. Peak Hour Density	Horizon Year (2045) A.M. Peak Hour Level of Service	Horizon Year (2045) P.M. Peak Hour Density	Horizon Year (2045) P.M. Peak Hour Level of service
West of I-710 Northbound Connector	Basic Freeway Segment	11.9	B	30.4	D	12.2	B	30.4	D	13.0	B	30.6	D
I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	19.4	C	44.8	E	19.7	C	45.1	F	20.7	C	46.2	F
I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	24.3	C	67.1	F	24.6	C	67.4	F	26.3	D	70.2	F
Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	30.4	D	59.3	F	30.8	D	59.4	F	32.5	D	61.8	F
Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	30.1	D	46.8	F	30.5	D	46.9	F	32.3	D	48.6	F
East of Paramount Boulevard On-Ramp	Basic Freeway Segment	26.6	D	44.9	E	27.0	D	45.1	F	28.6	D	47.0	F
West of I-710 Northbound Connector	HOV Lane Segment	10.7	A	75.1	F	10.7	A	75.4	F	10.8	A	76.1	F
I-710 Northbound Connector to I-710 Southbound Connector	HOV Lane Segment	10.7	A	75.1	F	10.7	A	75.4	F	10.8	A	76.1	F
I-710 Southbound Connector to Atlantic Avenue On-Ramp	HOV Lane Segment	10.7	A	75.1	F	10.7	A	75.4	F	10.8	A	76.1	F
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	HOV Lane Segment	22.0	C	56.7	F	22.1	C	56.9	F	22.7	C	57.7	F
Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	HOV Lane Segment	18.5	C	56.0	F	18.5	C	56.2	F	18.7	C	56.8	F
Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	HOV Lane Segment	18.5	C	56.0	F	18.5	C	56.2	F	18.7	C	56.8	F
Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	HOV Lane Segment	18.5	C	56.0	F	18.5	C	56.2	F	18.7	C	56.8	F
East of Paramount Boulevard On-Ramp	HOV Lane Segment	18.5	C	56.0	F	18.5	C	56.2	F	18.7	C	56.8	F
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp Conventional weave between auxiliary lane and the freeway mainline	Weaving Segment	27.9	C	50.1	F	28.3	C	50.3	F	30.0	D	52.3	F
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp Managed lane access segment with cross-weaving	Weaving Segment	22.0	C	56.7	F	22.1	C	56.9	F	22.7	C	57.7	F
Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp Conventional weave between auxiliary lane and the freeway mainline	Weaving Segment	27.7	D	52.6	F	28.0	D	52.8	F	29.5	D	55.0	F

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: HOV = High=Occupancy Vehicle; I-710 = Interstate 710
Density is equal to passenger cars per mile per lane.

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As shown in **Table 13**, the total accident rates (which include fatal, injury, and property damage only (PDO) accidents) range from 0.47 to 1.76 accidents per million vehicle miles on the mainline; and from 0 to 3.01 on the ramps. In addition, total accident rates range from about 30 percent to about 73 percent higher than the total statewide average accident rate, except for the segment between the Long Beach Boulevard interchange and the I-710 interchange, where the actual total accident rate is about 107 percent higher than the total statewide average accident rate.

The predominant types of accident collisions are presented in **Table 14** and the primary collision factor is summarized in **Table 15**. The data shows that about 50 percent of the freeway mainline collisions occurred in the interior lanes, 10 percent occurred in the HOV lane, and most of the remaining collisions took place in the right and left lanes. The predominant types of collisions were rear ends, accounting for about 65 percent of the total, followed by sideswipes which accounted for about 30 percent of the total accidents. The primary collision factor was speeding, which accounted for over 60 percent of the total accidents. The predominant location, type, and primary collision factors of the reported accidents are considered congestion related and are mainly due to stop-and-go traffic, the formation of vehicular queues, and the shifting between the various traffic lanes. Most of the accidents reported on the freeway ramp segments occurred on the body of the ramp and at the ramp terminus intersection location. Most of the accident types are rear ends and sideswipes with the reported primary collision factor being unsafe speed. The predominant location, type, and primary collision factors of the reported accidents are considered congestion related and are mainly due to the formation of vehicular queues.

As noted in **Table 16**, existing peak hour levels of service at area signalized intersections range from level of service A to level of service D. Peak hour level of service at 2-way-stop intersections are level of service D or level of service F. The freeway level of service is based on vehicle density within the segment being analyzed.

BICYCLE AND PEDESTRIAN FACILITIES

The City's Bicycle Master Plan identifies existing and planned bicycle and pedestrian facilities in the City (City of Long Beach, 2017). Existing and future bicycle facilities in the Project Study Area are shown in **Figure 7** above. Proposed portions of the Atlantic Avenue Bike Lane (B-7), Myrtle Avenue Bike Boulevard (B-8), and the Walnut Avenue Bike Boulevard (B-11) transect the Project Area; and an existing portion of the Orange Avenue Bike Lane (B-10) transects the Project Area.

One planned pedestrian facility, the Hamilton Loop (also known as the State Route 91 Embankment Greenbelt), is planned in Caltrans right of way along portions of the north and south embankments of State Route 91 within the Project Area (City of Long Beach, 2018). The greenbelt, which is currently in preliminary design, would include a 2-mile-long walking loop with seating areas and outdoor fitness equipment.

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Table 13: Summary of Accident Rates in Project Area (2016-2018)

Location Description	From Post Mile	To Post Mile	Direction	Total Accidents	Actual Accident Rates (Fatal)	Actual Accident Rates (Fatal plus Injury)	Actual Accident Rates (Total)	Statewide Average Accident Rates (Fatal)	Statewide Average Accident Rates (Fatal plus Injury)	Statewide Average Accident Rates (Total)
Long Beach Boulevard to I-710 Interchange (Mainline)	11.096	11.681	Eastbound	125	0	**0.48**	**1.76**	0.003	0.26	0.85
I-710 Interchange to Atlantic Avenue (Mainline)	11.681	12.039	Eastbound	25	0	0.06	0.47	0.003	0.34	1.09
Atlantic Avenue to Cherry Avenue (Mainline)	12.039	13.094	Eastbound	251	0	**0.44**	**1.59**	0.003	0.28	0.92
Cherry Avenue Paramount Boulevard (Mainline)	13.094	13.594	Eastbound	92	0	**0.30**	**1.21**	0.003	0.28	0.93
Eastbound State Route 91 On-Ramp from Long Beach Boulevard	11.043	11.043	Eastbound	10	0	**0.35**	**1.73**	0.001	0.23	0.67
Eastbound State Route 91 Off-Ramp to Southbound I-710 Freeway	11.421	11.421	Eastbound	7	0	**0.41**	**0.72**	0.003	0.12	0.37
Eastbound State Route 91 Off-Ramp to Northbound I-710 Freeway/Atlantic Avenue	11.588	11.588	Eastbound	4	0	0.00	0.13	0.002	0.08	0.25
Eastbound State Route 91 Off-Ramp Segment to Atlantic Avenue	11.748	11.748	Eastbound	14	0	**0.86**	**3.01**	0.004	0.32	0.92
Eastbound State Route 91 On-Ramp from Northbound I-710 Freeway	11.794	11.794	Eastbound	17	0	0.07	**0.63**	0.002	0.11	0.32
Eastbound State Route 91 On-Ramp from Southbound I-710 Freeway	11.994	11.994	Eastbound	0	0	0.00	0.00	0.002	0.11	0.32
Eastbound State Route 91 On-Ramp from Atlantic Avenue	12.240	12.240	Eastbound	9	0	**0.23**	**1.03**	0.002	0.21	0.60
Eastbound State Route 91 Off-Ramp to Cherry Avenue	12.968	12.968	Eastbound	8	0	0.10	0.79	0.004	0.32	0.92
Eastbound State Route 91 On-Ramp from Cherry Avenue	13.263	13.263	Eastbound	9	0	0.00	**0.74**	0.002	0.21	0.60
Eastbound State Route 91 Off-Ramp to Paramount Boulevard	13.452	13.452	Eastbound	16	0	**0.84**	**1.92**	0.004	0.32	0.92

Source: Caltrans Traffic Accident Surveillance and Analysis System (TASAS) Database; Intueor Consulting, 2020
Notes: Bold text indicates locations with accident rates higher than the statewide average.

Table 14: Predominant Type of Accident Collisions (2016-2018)

Location Description	From Post Mile	To Post Mile	Total Accidents	Head On	Side-swipe	Rear End	Broad-side	Hit Object	Over-turn	Auto-Peds	Other	Not Stated
Long Beach Boulevard to I-710 Interchange (Mainline)	11.096	11.681	125	0.0	26.4	65.6	0.8	5.6	0.8	0.0	0.8	0.0
I-710 Interchange to Atlantic Avenue (Mainline)	11.681	12.039	25	0.0	40.0	56.0	0.0	4.0	0.0	0.0	0.0	0.0
Atlantic Avenue to Cherry Avenue (Mainline)	12.039	13.094	251	0.0	29.1	66.1	1.6	2.4	0.8	0.0	0.0	0.0
Cherry Avenue Paramount Boulevard (Mainline)	13.094	13.594	92	2.2	25.0	65.2	1.1	6.5	0.0	0.0	0.0	0.0
Eastbound State Route 91 On-Ramp from Long Beach Boulevard	11.043	11.043	10	0.0	40.0	30.0	10.0	20.0	0.0	0.0	0.0	0.0
Eastbound State Route 91 Off-Ramp to Southbound I-710 Freeway	11.421	11.421	7	0.0	0.0	14.3	0.0	57.1	28.6	0.0	0.0	0.0
Eastbound State Route 91 Off-Ramp to Northbound I-710 Freeway/Atlantic Avenue	11.588	11.588	4	0.0	75.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0
Eastbound State Route 91 Off-Ramp Segment to Atlantic Avenue	11.748	11.748	14	7.1	14.3	35.7	21.4	7.1	0.0	0.0	0.0	14.3
Eastbound State Route 91 On-Ramp from Northbound I-710 Freeway	11.794	11.794	17	0.0	64.7	23.5	0.0	5.9	5.9	0.0	0.0	0.0
Eastbound State Route 91 On-Ramp from Southbound I-710 Freeway	11.994	11.994	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eastbound State Route 91 On-Ramp from Atlantic Avenue	12.240	12.240	9	11.1	22.2	66.7	0.0	0.0	0.0	0.0	0.0	0.0
Eastbound State Route 91 Off-Ramp to Cherry Avenue	12.968	12.968	8	12.5	37.5	25.0	25.0	0.0	0.0	0.0	0.0	0.0
Eastbound State Route 91 On-Ramp from Cherry Avenue	13.263	13.263	9	0.0	44.4	33.3	22.2	0.0	0.0	0.0	0.0	0.0
Long Beach Boulevard to I-710 Interchange (Mainline)	13.452	13.452	16	0.0	18.8	68.8	12.5	0.0	0.0	0.0	0.0	0.0

Source: Caltrans Traffic Accident Surveillance and Analysis System (TASAS) Database; Intueor Consulting, 2020

Table 15: Primary Collision Factor (2016-2018)

Location Description	From Post Mile	To Post Mile	Total Accidents	Influence of Alcohol	Follow too Close	Failure to Yield	Improper Turn	Speeding	Other Violations	Improper Driving	Other than Driver	Not Stated
Long Beach Boulevard to I-710 Interchange (Mainline)	11.096	11.681	125	5.6	0.0	0.0	4.8	60.8	28.0	0.0	0.8	0.0
I-710 Interchange to Atlantic Avenue (Mainline)	11.681	12.039	25	0.0	0.0	0.0	8.0	64.0	28.0	0.0	0.0	0.0
Atlantic Avenue to Cherry Avenue (Mainline)	12.039	13.094	251	2.8	0.4	0.0	8.4	59.8	27.9	0.4	0.0	0.4
Cherry Avenue Paramount Boulevard (Mainline)	13.094	13.594	92	4.3	0.0	0.0	9.8	66.3	16.3	0.0	1.1	2.2
Eastbound State Route 91 On-Ramp from Long Beach Boulevard	11.043	11.043	10	0.0	0.0	0.0	0.0	60.0	40.0	0.0	0.0	0.0
Eastbound State Route 91 Off-Ramp to Southbound I-710 Freeway	11.421	11.421	7	42.9	0.0	0.0	14.3	42.9	0.0	0.0	0.0	0.0
Eastbound State Route 91 Off-Ramp to Northbound I-710 Freeway/Atlantic Avenue	11.588	11.588	4	25.0	0.0	0.0	0.0	0.0	75.0	0.0	0.0	0.0
Eastbound State Route 91 Off-Ramp Segment to Atlantic Avenue	11.748	11.748	14	14.3	0.0	14.3	0.0	28.6	28.6	0.0	0.0	14.2
Eastbound State Route 91 On-Ramp from Northbound I-710 Freeway	11.794	11.794	17	0.0	0.0	0.0	0.0	76.5	23.5	0.0	0.0	0.0
Eastbound State Route 91 On-Ramp from Southbound I-710 Freeway	11.994	11.994	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eastbound State Route 91 On-Ramp from Atlantic Avenue	12.240	12.240	9	0.0	0.0	0.0	22.2	44.4	11.1	0.0	11.1	11.1
Eastbound State Route 91 Off-Ramp to Cherry Avenue	12.968	12.968	8	0.0	0.0	12.5	12.5	37.5	25.0	0.0	12.5	0.0
Eastbound State Route 91 On-Ramp from Cherry Avenue	13.263	13.263	9	0.0	0.0	0.0	22.2	22.2	33.3	0.0	0.0	22.2
Long Beach Boulevard to I-710 Interchange (Mainline)	13.452	13.452	16	6.3	6.3	6.3	0.0	37.5	37.5	0.0	6.2	0.0

Source: Caltrans Traffic Accident Surveillance and Analysis System (TASAS) Database; Intueor Consulting, 2020

Table 16: Intersection Level of Service Analysis – Existing Year 2019

ID	Intersection	Control Type	A.M. Peak Hour Delay	A.M. Peak Hour Level of Service	P.M. Peak Hour Delay	P.M. Peak Hour Level of Service
1	Long Beach Boulevard/State Route 91 Westbound Ramps	Signalized	100.5	F	42.8	D
2	Long Beach Boulevard/State Route 91 Eastbound Ramps	Signalized	33.6	C	36.4	D
3	Atlantic Avenue/68th Street	2-Way Stop	>300.0	F	221.3	F
4	Atlantic Avenue/State Route 91 Westbound Ramps	Signalized	18.7	B	27.9	C
5	Atlantic Avenue/State Route 91 Eastbound Ramps	Signalized	18.9	B	40.8	D
6	Atlantic Avenue/Artesia Boulevard	Signalized	48.2	D	52.0	D
7	Orange Avenue/68th Street	2-Way Stop	29.8	D	32.0	D
8	Orange Avenue/67th Street	Signalized	6.2	A	5.6	A
9	Orange Avenue/Artesia Boulevard	Signalized	43.0	D	36.3	D
10	Cherry Avenue/68th Street	Signalized	37.8	D	42.3	D
11	Cherry Avenue/State Route 91 Westbound Ramps	Signalized	34.1	C	40.6	D
12	Cherry Avenue/State Route 91 Eastbound Ramps	Signalized	24.3	C	19.3	B
13	Cherry Ave/Artesia Boulevard	Signalized	51.1	D	51.5	D
14	Paramount Boulevard/State Route 91 Westbound Ramps	Signalized	26.6	C	27.7	C
15	Paramount Boulevard State Route 91 Eastbound Ramps	Signalized	27.8	C	26.4	C

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: Control Delay (i.e., Peak Hour Delay) is in seconds per vehicle.

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PUBLIC TRANSIT

Existing bus routes in the Project Study Area are shown in **Figure 8**. The Project Study Area includes the following bus routes traveling east-west on Artesia Boulevard and north-south on Atlantic Avenue, Orange Avenue, Cherry Avenue, and Paramount Boulevard:

- Long Beach Transit – Routes 21, 61, 71
- Metro – Routes 130, 260, 265, 762

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. This alternative would maintain the current configuration of the existing freeway, ramps, and local intersections within the Project limits. The Eastbound State Route 91 facility would continue to have five mixed flow lanes and one HOV lane. 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 under NEPA.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

Project Construction

Construction of the Build Alternative could result in reduced access and increased congestion from temporary construction traffic and staging, freeway mainline and ramp closures on Eastbound State Route 91, and local street closures during short-term periods. Project construction would last approximately two years. Partial closures of ramps, where one lane would be closed at a time, would be required during Project construction; details of partial closures would be finalized during the Plans, Specifications, and Estimates Phase of the Project.

Full closures of the following ramps would occur for a time frame of approximately 55 hours to less than ten days: State Route 91/Atlantic Avenue Eastbound off-ramp, State Route 91/Atlantic Avenue Eastbound on-ramp, and State Route 91/Cherry Avenue Eastbound on-ramp. No consecutive ramps would be closed simultaneously. A full closure of the I-710/Atlantic Avenue Southbound off-ramp is anticipated to occur for approximately 6 months; however, adequate detours would be provided. A Traffic Management Plan would be implemented, which would identify alternate routes, detours, and access points for motorists (see **PF-COM-2** below under Avoidance, Minimization, and/or Mitigation Measures). A Traffic Management Plan is a standard design element for most Caltrans projects. Where feasible, new facilities would be constructed prior to freeway mainline or ramp closures to maintain existing traffic. A Construction Staging Plan would also be implemented to provide continuous, uninterrupted access to State Route 91 and the local interchanges for the duration of construction (see **PF-COM-3** below under Avoidance, Minimization, and/or Mitigation Measures).

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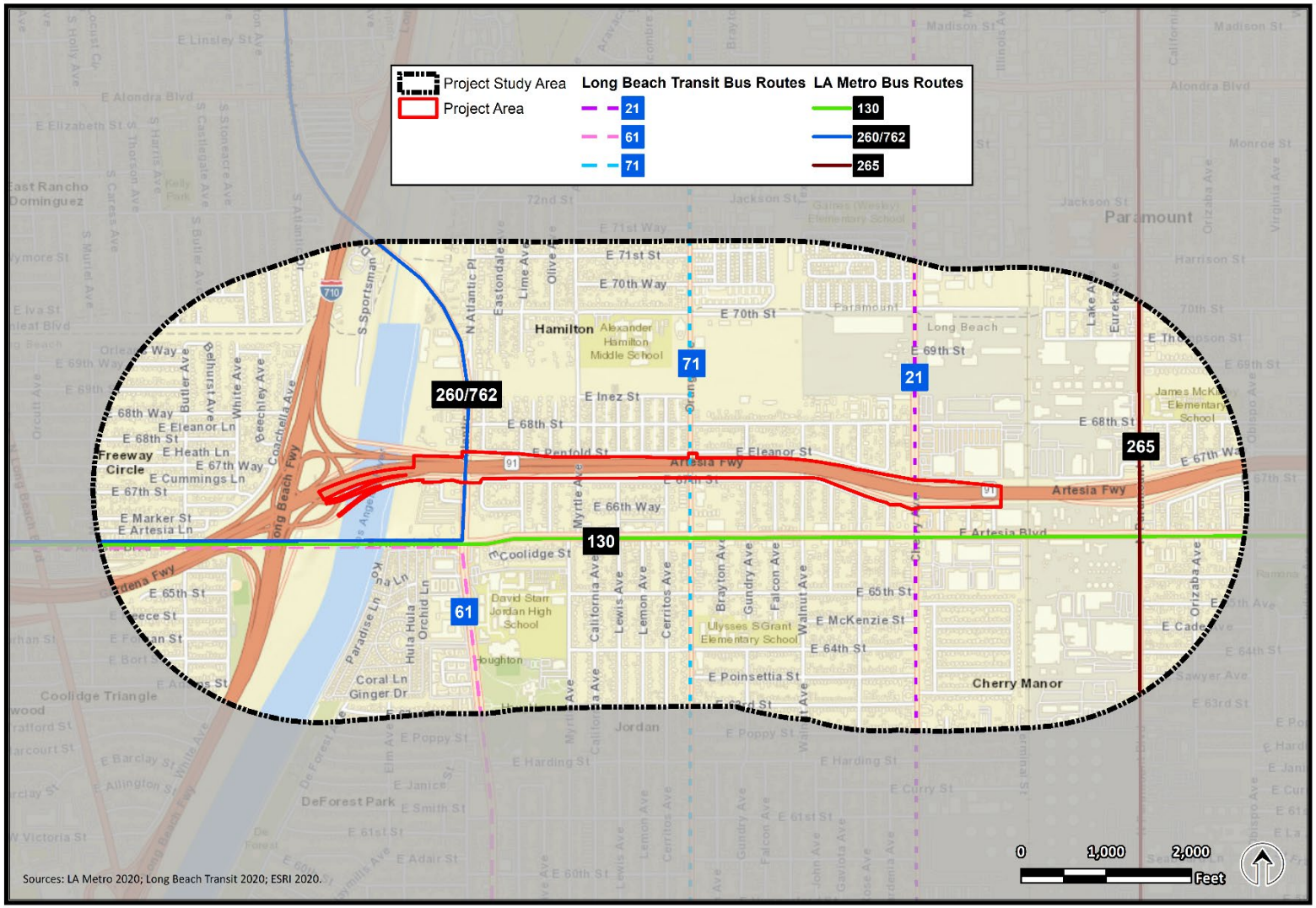
Figure 8: Bus Routes



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As detailed in the Traffic Management Plan (TRC, 2020), detour routes would be implemented during closures of the Southbound I-710 off-ramp to Atlantic Avenue, Eastbound State Route 91 on- and off-ramps to Atlantic Avenue, and Eastbound State Route 91 off-ramp to Cherry Avenue (please refer to Appendix E of the Traffic Management Plan for additional information). Consideration would be provided for local streets and access so that disruption to residences and businesses would be minimal. With implementation of the Construction Staging Plan and the detour routes identified in the Traffic Management Plan, access throughout the Project Area would be maintained for the duration of construction.

Traffic Operations

During operation, the Project would reduce congestion and improve freeway operations on Eastbound State Route 91 for both the mainline and ramps. **Table 17** through **Table 20** show a comparison of Alternative 1 (No Build Alternative) and Alternative 2 (Build Alternative) for the Opening Year (2024) and Horizon Year (2045). **Table 17** and **Table 19** show the following observations with regard to the Basic Freeway analysis:

- In the Build, compared to the No Build, operations as measured by level of service improved or stayed the same. In the segments where it stayed the same, the densities decreased within the Project limits and as expected, nominally increased as the proposed Project merges with the existing condition. However, these nominal increases in density do not translate to a change in forecasted speeds.
- In the Build, compared to the No Build, the forecasted densities are reduced within the basic freeway analysis segments within the Project limits. Similarly, in the Build, compared to the No Build, the forecasted speeds increased within the Basic Freeway Analysis segments within the Project limits. In the aggregate, the Basic Freeway Analysis demonstrates the Project benefits with regard to level of service and density, with speeds increasing by up to 16 percent in the P.M. peak hour within the Project limits.

Table 18 and **Table 20** show the following observations with regard to the HOV Lane Analysis:

- In the Build, compared to the No Build, the forecasted level of service stayed the same, but densities stayed the same or decreased and speeds stayed the same or increased in all segments analyzed.
- In the Build, compared to the No Build, the forecasted densities stayed the same or are reduced within the HOV lane segments within the Project limits and easterly within the Study Area.
- In the Build, compared to the No Build, the forecasted speeds stayed the same or increased within the HOV lane segments within the Project limits and easterly within the Study Area.
- Similar to the Basic Freeway Analysis, in the aggregate, the HOV Lane Analysis demonstrates the Project benefits with regard to level of service and density, with speeds increasing by up to 5 percent in the P.M. peak hour within the Project limits.

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Table 17: Comparison of Freeway Mainline and Weaving Analysis – Opening Year (2024)

ID	Segment	Segment Type	Peak Hour	No Build Speed (mile per hour)	No Build Density (pc/mi/ln)	No Build Level Of Service	Build Speed (mile per hour)	Build Density (pc/mi/ln)	Build Level of Service	With And Without Project Comparison Speed (mile per hour)	With And Without Project Comparison Density (pc/mi/ln)
1	West of I-710 Northbound Connector	Basic Freeway Segment	A.M.	67.0	12.2	B	**70.0**	**11.9**	B	3.0	-0.2
2	I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	A.M.	62.0	19.7	C	**65.0**	**19.3**	C	3.0	-0.4
3	I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	A.M.	57.0	24.6	C	**60.0**	**20.1**	C	3.0	-4.6
4	Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	Weaving Segment	A.M.	54.0	28.3	C	**59.0**	**22.2**	C	5.0	-6.1
5	Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	A.M.	54.0	30.8	D	54.0	31.7	D	0.0	0.9
6	Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	Weaving Segment	A.M.	54.0	28.0	D	54.0	28.8	D	0.0	0.7
7	Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	A.M.	56.0	30.5	D	56.0	31.4	D	0.0	0.9
8	East of Paramount Boulevard On-Ramp	Basic Freeway Segment	A.M.	54.0	27.0	D	54.0	27.7	D	0.0	0.8
1	West of I-710 Northbound Connector	Basic Freeway Segment	P.M.	37.0	30.4	D	**43.0**	**27.0**	D	6.0	-3.5
2	I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	P.M.	30.0	45.1	F	**34.0**	**40.9**	**E**	4.0	-4.1
3	I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	P.M.	23.0	67.4	F	**25.0**	**53.2**	F	2.0	-14.2
4	Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	Weaving Segment	P.M.	34.0	50.3	F	**39.0**	**37.7**	**E**	5.0	-12.7
5	Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	P.M.	34.0	59.4	F	34.0	61.2	F	0.0	1.8
6	Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	Weaving Segment	P.M.	34.0	52.8	F	34.0	54.2	F	0.0	1.4
7	Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	P.M.	45.0	46.9	F	45.0	48.3	F	0.0	1.4
8	East of Paramount Boulevard On-Ramp	Basic Freeway Segment	P.M.	40.0	45.1	F	40.0	46.3	F	0.0	1.2

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: I-710 = Interstate 710; pc/mi/ln = passenger cars per mile per lane
Bold text indicates improved speed, density, and level of service under the Build Alternative, when compared to the No Build Alternative.

Table 18: Comparison of HOV Lane Analysis – Opening Year (2024)

ID	Segment	Segment Type	Peak Hour	No Build Speed (mile per hour	No Build Density (pc/mi/ln)	No Build Level Of Service	Build Speed (mile per hour)	Build Density (pc/mi/ln)	Build Level of Service	With And Without Project Comparison Speed (mile per hour)	With And Without Project Comparison Density (pc/mi/ln)
1	West of I-710 Northbound Connector	Basic Freeway Segment	A.M.	63.0	10.7	A	63.0	10.7	A	0.0	0.0
2	I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	A.M.	63.0	10.7	A	63.0	10.7	A	0.0	0.0
3	I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	A.M.	63.0	10.7	A	63.0	10.7	A	0.0	0.0
4	Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	Weaving Segment	A.M.	57.0	22.1	C	57.0	**19.5**	C	0.0	-2.6
5	Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	A.M.	57.0	18.5	C	57.0	18.5	C	0.0	0.0
6	Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	Weaving Segment	A.M.	57.0	18.5	C	57.0	18.5	C	0.0	0.0
7	Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	A.M.	57.0	18.5	C	57.0	18.5	C	0.0	0.0
8	East of Paramount Boulevard On-Ramp	Basic Freeway Segment	A.M.	57.0	18.5	C	57.0	18.5	C	0.0	0.0
1	West of I-710 Northbound Connector	Basic Freeway Segment	P.M.	20.0	75.4	F	**21.0**	**71.8**	F	1.0	-3.6
2	I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	P.M.	20.0	75.4	F	**21.0**	**71.8**	F	1.0	-3.6
3	I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	P.M.	20.0	75.4	F	**21.0**	**71.8**	F	1.0	-3.6
4	Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	Weaving Segment	P.M.	28.0	56.9	F	**29.0**	**48.3**	F	1.0	-8.6
5	Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	P.M.	28.0	56.2	F	**29.0**	**54.2**	F	1.0	-2.0
6	Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	Weaving Segment	P.M.	28.0	56.2	F	**29.0**	**54.2**	F	1.0	-2.0
7	Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	P.M.	28.0	56.2	F	**29.0**	**54.2**	F	1.0	-2.0
8	East of Paramount Boulevard On-Ramp	Basic Freeway Segment	P.M.	28.0	56.2	F	**29.0**	**54.2**	F	1.0	-2.0

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: I-710 = Interstate 710; HOV = High-Occupancy Vehicle; pc/mi/ln = passenger cars per mile per lane
Bold text indicates improved speed, density, and level of service under the Build Alternative, when compared to the No Build Alternative.

Table 19: Comparison of Freeway Mainline and Weaving Analysis – Horizon Year (2045)

ID	Segment	Segment Type	Peak Hour	No Build Speed (mile per hour	No Build Density (pc/mi/ln)	No Build Level Of Service	Build Speed (mile per hour)	Build Density (pc/mi/ln)	Build Level of Service	With And Without Project Comparison Speed (mile per hour)	With And Without Project Comparison Density (pc/mi/ln)
1	West of I-710 Northbound Connector	Basic Freeway Segment	A.M.	67.0	13.0	B	**70.0**	**12.7**	B	3.0	-0.2
2	I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	A.M.	62.0	20.7	C	**65.0**	**20.3**	C	3.0	-0.4
3	I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	A.M.	57.0	26.3	D	**60.0**	**21.4**	**C**	3.0	-4.9
4	Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	Weaving Segment	A.M.	54.0	30.0	D	**59.0**	**23.6**	**C**	5.0	-6.5
5	Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	A.M.	54.0	32.5	D	54.0	33.5	D	0.0	1.0
6	Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	Weaving Segment	A.M.	54.0	29.5	D	54.0	30.3	D	0.0	0.8
7	Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	A.M.	56.0	32.3	D	56.0	33.2	D	0.0	0.9
8	East of Paramount Boulevard On-Ramp	Basic Freeway Segment	A.M.	54.0	28.6	D	54.0	29.3	D	0.0	0.8
1	West of I-710 Northbound Connector	Basic Freeway Segment	P.M.	37.0	30.6	D	**43.0**	**27.1**	D	6.0	-3.5
2	I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	P.M.	30.0	46.2	F	**34.0**	**42.0**	**E**	4.0	-4.2
3	I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	P.M.	23.0	70.2	F	**25.0**	**55.4**	F	2.0	-14.8
4	Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	Weaving Segment	P.M.	34.0	52.3	F	**39.0**	**39.2**	**E**	5.0	-13.2
5	Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	P.M.	34.0	61.8	F	34.0	63.6	F	0.0	1.9
6	Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	Weaving Segment	P.M.	34.0	55.0	F	34.0	56.5	F	0.0	1.5
7	Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	P.M.	45.0	48.6	F	45.0	50.1	F	0.0	1.4
8	East of Paramount Boulevard On-Ramp	Basic Freeway Segment	P.M.	40.0	47.0	F	40.0	48.3	F	0.0	1.3

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: I-710 = Interstate 710; pc/mi/ln = passenger cars per mile per lane
Bold text indicates improved speed, density, and level of service under the Build Alternative, when compared to the No Build Alternative.

Table 20: Comparison of HOV Lane Analysis – Horizon Year (2045)

ID	Segment	Segment Type	Peak Hour	No Build Speed (mile per hour	No Build Density (pc/mi/ln)	No Build Level Of Service	Build Speed (mile per hour)	Build Density (pc/mi/ln)	Build Level of Service	With And Without Project Comparison Speed (mile per hour)	With And Without Project Comparison Density (pc/mi/ln)
1	West of I-710 Northbound Connector	Basic Freeway Segment	A.M.	63.0	10.8	A	63.0	10.8	A	0.0	0.0
2	I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	A.M.	63.0	10.8	A	63.0	10.8	A	0.0	0.0
3	I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	A.M.	63.0	10.8	A	63.0	10.8	A	0.0	0.0
4	Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	Weaving Segment	A.M.	57.0	22.7	C	57.0	**19.9**	C	0.0	-2.8
5	Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	A.M.	57.0	18.7	C	57.0	18.7	C	0.0	0.0
6	Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	Weaving Segment	A.M.	57.0	18.7	C	57.0	18.7	C	0.0	0.0
7	Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	A.M.	57.0	18.7	C	57.0	18.7	C	0.0	0.0
8	East of Paramount Boulevard On-Ramp	Basic Freeway Segment	A.M.	57.0	18.7	C	57.0	18.7	C	0.0	0.0
1	West of I-710 Northbound Connector	Basic Freeway Segment	P.M.	20.0	76.1	F	**21.0**	**72.5**	F	1.0	-3.6
2	I-710 Northbound Connector to I-710 Southbound Connector	Basic Freeway Segment	P.M.	20.0	76.1	F	**21.0**	**72.5**	F	1.0	-3.6
3	I-710 Southbound Connector to Atlantic Avenue On-Ramp	Basic Freeway Segment	P.M.	20.0	76.1	F	**21.0**	**72.5**	F	1.0	-3.6
4	Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp	Weaving Segment	P.M.	28.0	57.7	F	**29.0**	**48.9**	F	1.0	-8.7
5	Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	Basic Freeway Segment	P.M.	28.0	56.8	F	**29.0**	**54.8**	F	1.0	-2.0
6	Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp	Weaving Segment	P.M.	28.0	56.8	F	**29.0**	**54.8**	F	1.0	-2.0
7	Paramount Boulevard Off-Ramp to Paramount Boulevard On-Ramp	Basic Freeway Segment	P.M.	28.0	56.8	F	**29.0**	**54.8**	F	1.0	-2.0
8	East of Paramount Boulevard On-Ramp	Basic Freeway Segment	P.M.	28.0	56.8	F	**29.0**	**54.8**	F	1.0	-2.0

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: I-710 = Interstate 710; HOV = High-Occupancy Vehicle; pc/mi/ln = passenger cars per mile per lane
Bold text indicates improved speed, density, and level of service under the Build Alternative, when compared to the No Build Alternative.

Table 17 and **Table 19** show the following observations with regard to the Weaving Segments Analysis:

- In the Build, compared to the No Build, 2 of the 3 segments analyzed show a reduction in density and an increase in forecasted speeds.
- There is a slight increase in density at the eastern terminus of the Project where it ties into the existing condition. However, these nominal increases in density do not translate to a change in forecasted speeds.
- Similar to the Basic Freeway and HOV Lane Analysis, in the aggregate, the Weaving Segments Analysis demonstrates the Project benefits with regard to LOS and density, with speeds increasing by up to 15 percent in the P.M. peak hour within the Project limits.

The comparison above shows that the Build Alternative traffic operations on Eastbound State Route 91 from the Northbound I-710 connector on-ramp to the Cherry Avenue off-ramp will improve from the No Build Alternative operating conditions as a result of the proposed auxiliary lane improvements. This is noted by the decrease in densities and increase in speeds in the Basic Freeway Analysis comparison above.

Additionally, the proposed Project improves P.M. peak hour HOV lane operations within the Study Area. The proposed extension of the HOV ingress/egress opening to the west and east of its current opening location will provide additional and earlier access to and from the HOV lane and an opportunity for HOV vehicles to more easily weave to and from the ramps over a longer distance. This is noted by the decrease in densities and increase in speeds in the HOV Lane Analysis comparison above.

These demonstrated improvements will help alleviate vehicular congestion, assist in potentially reducing congestion related accidents, and enhance mobility on the Eastbound State Route 91 freeway segment from the Northbound I-710 connector on-ramp to the Cherry Avenue off-ramp. Furthermore, the addition of the auxiliary lane in this area is anticipated to increase weaving length, reduce overall vehicular queues, and improve operational safety. This is noted by the decrease in densities and increase in speeds in the Weaving Segment Analysis comparison above.

In addition, the Build Alternative addresses the Atlantic Avenue on-ramp vehicle storage length issue by both lengthening and extending the ramp meter limit line 500 feet to the east of its current location. Consequently, the available vehicular storage length increases to 780 feet per lane from its current length of 280 feet per lane. This proposed improvement provides adequate vehicular storage length to accommodate the forecasted P.M. peak hour on-ramp traffic volume in the horizon year (2045). Hence, current spillover of vehicular queues to the ramp terminus intersection and the adjacent local street, due to the lack of adequate on-ramp storage, will be minimized.

In comparison to existing year 2019/baseline conditions, Opening Year 2024 delay and level of service at intersections will not significantly change, as shown in **Table 21**. As demonstrated in **Table 22**, traffic volumes are not predicted to significantly change.

Table 21: Comparison of Intersection Levels of Service – Opening Year 2024

Intersection	Peak Hour	Existing Delay	Existing Level of Service	No Build Delay	No Build Level of Service	Build Delay	Build Level of Service
Long Beach Boulevard/State Route 91 Westbound Ramps	A.M.	100.5	F	101.2	F	101.2	F
Long Beach Boulevard/State Route 91 Westbound Ramps	P.M.	42.8	D	44.8	D	44.8	D
Long Beach Boulevard/State Route 91 Eastbound Ramps	A.M.	33.6	C	34.5	C	34.5	C
Long Beach Boulevard/State Route 91 Eastbound Ramps	P.M.	36.4	D	36.7	D	36.7	D
Atlantic Avenue/68th Street	A.M.	>300.0	F	>300.0	F	>300.0	F
Atlantic Avenue/68th Street	P.M.	221.3	F	266.8	F	266.8	F
Atlantic Avenue/State Route 91 Westbound Ramps	A.M.	18.7	B	19.1	B	19.1	B
Atlantic Avenue/State Route 91 Westbound Ramps	P.M.	27.9	C	29.3	C	29.3	C
Atlantic Avenue/State Route 91 Eastbound Ramps	A.M.	18.9	B	18.8	B	18.6	B
Atlantic Avenue/State Route 91 Eastbound Ramps	P.M.	40.8	D	40.5	D	42.3	D
Atlantic Avenue/Artesia Boulevard	A.M.	48.2	D	51	D	51	D
Atlantic Avenue/Artesia Boulevard	P.M.	52	D	53.6	D	53.6	D
Orange Avenue/68th Street	A.M.	29.8	D	32.0	D	32.0	D
Orange Avenue/68th Street	P.M.	32	D	33.7	D	33.7	D
Orange Avenue/67th Street	A.M.	6.2	A	6.2	A	6.2	A
Orange Avenue/67th Street	P.M.	5.6	A	5.6	A	5.6	A
Orange Avenue/Artesia Boulevard	A.M.	43	D	44.1	D	44.1	D
Orange Avenue/Artesia Boulevard	P.M.	36.3	D	36.9	D	36.9	D
Cherry Avenue/68th Street	A.M.	37.8	D	38.2	D	38.2	D
Cherry Avenue/68th Street	P.M.	42.3	D	42.6	D	42.6	D

Table 21: Comparison of Intersection Levels of Service – Opening Year 2024 (Continued)

Intersection	Peak Hour	Existing Delay	Existing Level of Service	No Build Delay	No Build Level of Service	Build Delay	Build Level of Service
Cherry Avenue/State Route 91 Westbound Ramps	A.M.	34.1	C	34.3	C	34.4	C
Cherry Avenue/State Route 91 Westbound Ramps	P.M.	40.6	D	40.8	D	40.9	D
Cherry Avenue/State Route 91 Eastbound Ramps	A.M.	24.3	C	24.5	C	24.7	C
Cherry Avenue/State Route 91 Eastbound Ramps	P.M.	19.3	B	19.4	B	19.6	B
Cherry Avenue/Artesia Boulevard	A.M.	51.1	D	53.6	D	53.6	D
Cherry Avenue/Artesia Boulevard	P.M.	51.5	D	52.9	D	52.9	D
Paramount Boulevard/State Route 91 Westbound Ramps	A.M.	26.6	C	26.9	C	26.9	C
Paramount Boulevard/State Route 91 Westbound Ramps	P.M.	27.7	C	27.6	C	27.6	C
Paramount Boulevard/State Route 91 Eastbound Ramps	A.M.	27.8	C	27.9	C	27.9	C
Paramount Boulevard/State Route 91 Eastbound Ramps	P.M.	26.4	C	26.7	C	26.7	C

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: Delay is expressed in seconds per vehicle.

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Table 22: Comparison of Eastbound Segment Traffic Average Daily Traffic Volumes – Opening Year 2024

Segment	No Build Average Daily Traffic Volumes (Total Vehicle)	No Build Average Daily Traffic Volumes (Truck)	No Build Average Daily Traffic Volumes (Truck %)	Build Average Daily Traffic Volumes (Total Vehicle)	Build Average Daily Traffic Volumes (Truck)	Build Average Daily Traffic Volumes (Truck %)	Build Change in Conditions Compared to Existing (Total Vehicle)	Build Change in Conditions Compared to Existing (Truck)	Build Change in Conditions Compared to Existing (Truck %)	Build Change in Conditions Compared to No Build (Total Vehicle)	Build Change in Conditions Compared to No Build (Truck)	Build Change in Conditions Compared to No Build (Truck %)
Eastbound State Route 91 HOV Lane at I-710	14,745	0	0%	14,745	0	0%	37	0	0%	0	0	0%
Eastbound State Route 91 at I-710	29,274	1,171	4%	30,082	1,203	4%	783	31	3%	808	32	3%
I-710 Northbound to State Route 91 Eastbound Ramp Direct Connector	39,115	2,738	7%	40,301	2,821	7%	1,553	109	4%	1,186	83	3%
Eastbound State Route 91 between I-710 Northbound Direct Connector and I-710 Southbound Direct Connector	68,389	3,419	5%	70,383	3,519	5%	2,336	117	3%	1,994	100	3%
I-710 Southbound to State Route 91 Eastbound Ramp Direct Connector	35,224	2,466	7%	36,292	2,540	7%	1,069	75	3%	1,068	75	3%
Eastbound State Route 91 between I-710 Southbound Direct Connector and Eastbound Atlantic Avenue On-ramp	103,613	12,434	12%	106,675	12,801	12%	3,405	1,441	13%	3,062	367	3%
Eastbound Atlantic Avenue On-ramp	11,716	351	3%	12,071	362	3%	437	13	4%	355	11	3%
Eastbound State Route 91 Atlantic Avenue to Cherry Avenue	115,329	13,839	12%	118,746	14,250	12%	3,842	1,610	13%	3,417	410	3%
Eastbound State Route 91 HOV Lane at Cherry Avenue	17,284	0	0%	17,284	0	0%	43	0	0%	0	0	0%
Eastbound Cherry Avenue Off-ramp	5,802	638	11%	5,977	657	11%	326	36	6%	175	19	3%
Eastbound State Route 91 Between Cherry Avenue Off-ramp and On-ramp	106,988	12,839	12%	110,230	13,228	12%	3,510	1,488	13%	3,242	389	3%
Eastbound Cherry Avenue On-ramp	12,885	773	6%	12,885	773	6%	266	16	2%	0	0	0%
Eastbound State Route 91 Cherry Avenue to Paramount Boulevard	119,873	14,385	12%	123,115	14,774	12%	3,776	1,647	13%	3,242	389	3%
Eastbound Paramount Boulevard Off-ramp	7,663	766	10%	7,663	766	10%	298	30	4%	0	0	0%
Eastbound State Route 91 Between Paramount Boulevard Off-ramp and On-ramp	112,210	13,465	12%	115,452	13,854	12%	3,478	1,537	12%	3,242	389	3%
Eastbound Paramount Boulevard On-ramp	8,341	918	11%	8,341	918	11%	208	23	3%	0	0	0%
Eastbound State Route 91 East of Paramount Boulevard	120,551	14,466	12%	123,793	14,855	12%	3,686	1,643	12%	3,242	389	3%

Source: Traffic Volumes Report (Iteris, July 2020); PM Conformity Hot Spot Analysis Project Summary Form for Interagency Consultation (AMBIENT Air Quality and Noise Consulting, September 2020)
Notes: I-710 = Interstate 710; HOV = High-Occupancy Vehicle; % = percent

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In comparison to existing conditions, Design Year 2045 delay and level of service at most intersections will not significantly change, as shown in **Table 23**. Atlantic Ave/State Route 91 Westbound Ramps would go from level of service B to level of service C during A.M. peak hour and level of service C to level of service D during P.M. peak hour for No Build and Build conditions. Atlantic Avenue/Artesia Avenue goes from level of service D to level of service E for both peak hours under No Build and Build conditions. Orange Avenue/68th Street goes from level of service D to level of service F for A.M. peak hour and level of service D to level of service E for P.M. peak hour under both No Build and Build conditions. Cherry Avenue/State Route 91 Westbound Ramps goes from level of service C to level of service D for A.M. peak hour under No Build and Build conditions. Cherry Avenue/State Route 91 Eastbound Ramps goes from level of service B to level of service C during P.M. peak hour under No Build and Build conditions. Cherry Avenue/Artesia Boulevard goes from level of service D to level of service E for both peak hours under No Build and Build conditions. As demonstrated in **Table 24**, traffic volumes are not predicted to significantly change.

Safety

From the three-year collision history summarized in **Table 13** above, collision rates at four out of the nine analyzed mainline segments and two out of the four analyzed ramps were higher than the statewide average for similar facilities. **Table 14** and **Table 15** above shows the following:

- Rear-end collisions were the most common type of collision – 65 percent of collisions on mainline segments and 42 percent of collisions on ramps.
- Sideswipe collisions were the second most common type of collision – 29 percent of collisions on mainline segments and 23 percent of collisions on ramps.
- Most collisions occurred during peak periods of high traffic volume and congestion.
- Speeding was the primary cause of most collisions – 62 percent of collisions on mainline segments and 39 percent of collisions on ramps.

As discussed above, when comparing the Build versus No Build, the improved traffic operations will result in a potential reduction in rear-end and sideswipe collisions. The Build enhancement features in this Project include:

- The addition of auxiliary lane between Southbound I-710 to Eastbound State Route 91 connector and Cherry Avenue off-ramp.
- Reconstruction of ramps to improve geometrics from the existing condition .
- Upgrades to pavement delineation, signage and lighting to meet the current Caltrans requirements.
- Increase in sight distance at Eastbound State Route 91 Cherry Avenue off-ramp
- Extension of the easterly and westerly limits of the existing HOV ingress/egress. Weaving to and from the ramps would have a longer distance.

Table 23: Comparison of Intersection Levels of Service - Design Year 2045

Intersection	Peak Hour	Existing Delay	Existing Level of Service	No Build Delay	No Build Level of Service	Build Delay	Build Level of Service
Long Beach Boulevard/State Route 91 Westbound Ramps	A.M.	100.5	F	105.7	F	105.7	F
Long Beach Boulevard/State Route 91 Westbound Ramps	P.M.	42.8	D	54.0	D	54.0	D
Long Beach Boulevard/State Route 91 Eastbound Ramps	A.M.	33.6	C	36.6	C	36.6	C
Long Beach Boulevard/State Route 91 Eastbound Ramps	P.M.	36.4	D	38.3	D	38.3	D
Atlantic Avenue/68th Street	A.M.	>300.0	F	>300.0	F	>300.0	F
Atlantic Avenue/68th Street	P.M.	221.3	F	>300.0	F	>300.0	F
Atlantic Avenue/State Route 91 Westbound Ramps	A.M.	18.7	B	21.2	C	21.2	C
Atlantic Avenue/State Route 91 WB Ramps	P.M.	27.9	C	37.6	D	37.5	D
Atlantic Avenue/State Route 91 Eastbound Ramps	A.M.	18.9	B	18.1	B	18.1	B
Atlantic Avenue/State Route 91 Eastbound Ramps	P.M.	40.8	D	40.9	D	42.7	D
Atlantic Avenue/Artesia Boulevard	A.M.	48.2	D	65.6	E	65.6	E
Atlantic Avenue/Artesia Boulevard	P.M.	52	D	61.2	E	61.2	E
Orange Avenue/68th Street	A.M.	29.8	D	51.7	F	51.7	F
Orange Avenue/68th Street	P.M.	32	D	42.7	E	42.7	E
Orange Avenue/67th Street	A.M.	6.2	A	6.3	A	6.3	A
Orange Avenue/67th Street	P.M.	5.6	A	5.6	A	5.6	A
Orange Avenue/Artesia Boulevard	A.M.	43	D	49.6	D	49.6	D
Orange Avenue/Artesia Boulevard	P.M.	36.3	D	39.3	D	39.3	D
Cherry Avenue/68th Street	A.M.	37.8	D	41.1	D	41.1	D
Cherry Avenue/68th Street	P.M.	42.3	D	44.6	D	44.6	D

Table 23: Comparison of Intersection Levels of Service - Design Year 2045 (Continued)

Intersection	Peak Hour	Existing Delay	Existing Level of Service	No Build Delay	No Build Level of Service	Build Delay	Build Level of Service
Cherry Avenue/State Route 91 Westbound Ramps	A.M.	34.1	C	35.5	D	35.6	D
Cherry Avenue/State Route 91 Westbound Ramps	P.M.	40.6	D	41.8	D	41.8	D
Cherry Avenue/State Route 91 Eastbound Ramps	A.M.	24.3	C	24.7	C	25.0	C
Cherry Avenue/State Route 91 Eastbound Ramps	P.M.	19.3	B	20.4	C	20.4	C
Cherry Avenue/Artesia Boulevard	A.M.	51.1	D	70.7	E	70.7	E
Cherry Avenue/Artesia Boulevard	P.M.	51.5	D	60.3	E	60.3	E
Paramount Boulevard/State Route 91 Westbound Ramps	A.M.	26.6	C	27.8	C	27.8	C
Paramount Boulevard/State Route 91 Westbound Ramps	P.M.	27.7	C	27.9	C	27.9	C
Paramount Boulevard/State Route 91 Eastbound Ramps	A.M.	27.8	C	28.4	C	28.4	C
Paramount Boulevard/State Route 91 Eastbound Ramps	P.M.	26.4	C	27.9	C	27.9	C

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: > = greater than
Delay is expressed in seconds per vehicle.
There is no significant difference in projected traffic volumes/data between year 2040 and year 2045. Therefore, 2045 traffic data is presented as the Horizon/Design Year (2040) for purposes of this table.

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Table 24: Comparison of Eastbound Segment Traffic Average Daily Traffic Volumes - Design Year 2045

Segment	No Build Average Daily Traffic Volumes (Total Vehicle)	No Build Average Daily Traffic Volumes (Truck)	No Build Average Daily Traffic Volumes (Truck %)	Build Average Daily Traffic Volumes (Total Vehicle)	Build Average Daily Traffic Volumes (Truck)	Build Average Daily Traffic Volumes (Truck %)	Build Change in Conditions Compared to Existing (Total Vehicle)	Build Change in Conditions Compared to Existing (Truck)	Build Change in Conditions Compared to Existing (Truck %)	Build Change in Conditions Compared to No Build (Total Vehicle)	Build Change in Conditions Compared to No Build (Truck)	Build Change in Conditions Compared to No Build (Truck %)
Eastbound State Route-91 HOV Lane at I-710	14,876	0	0%	14,876	0	0%	168	0	0%	0	0	0%
Eastbound State Route 91 at I-710	29,169	1,750	6%	29,949	1,797	6%	650	625	53%	780	47	3%
I-710 Northbound to SR-91 Eastbound Ramp Direct Connector	40,419	2,829	7%	41,643	2,915	7%	2,895	203	7%	1,224	86	3%
Eastbound State Route 91 between I-710 Northbound Direct Connector and I-710 Southbound Direct Connector	69,588	4,871	7%	71,592	5,011	7%	3,545	1,609	47%	2,004	140	3%
I-710 Southbound to SR-91 Eastbound Ramp Direct Connector	35,230	2,466	7%	36,297	2,541	7%	1,074	75	3%	1,067	75	3%
Eastbound SR-91 between I-710 Southbound Direct Connector and Eastbound Atlantic Avenue On-ramp	104,818	16,771	16%	107,889	17,262	16%	4,619	5,903	52%	3,071	491	3%
Eastbound Atlantic Avenue On-ramp	12,116	363	3%	12,498	375	3%	864	26	7%	382	11	3%
Eastbound SR-91 Atlantic Avenue to Cherry Avenue	116,934	18,709	16%	120,387	19,262	16%	5,483	6,622	52%	3,453	552	3%
Eastbound SR-91 HOV Lane at Cherry Avenue	17,438	0	0%	17,438	0	0%	197	0	0%	0	0	0%
Eastbound Cherry Avenue Off-ramp	6,434	708	11%	6,616	728	11%	965	106	17%	182	20	3%
Eastbound SR-91 Between Cherry Avenue Off-ramp and On-ramp	107,938	17,270	16%	111,209	17,793	16%	4,489	6,054	52%	3,271	523	3%
Eastbound Cherry Avenue On-ramp	14,004	840	6%	14,004	840	6%	1,385	83	11%	0	0	0%
Eastbound State Route 91 Cherry Avenue to Paramount Boulevard	121,942	19,511	16%	125,213	20,034	16%	5,874	6,907	53%	3,271	523	3%
Eastbound Paramount Boulevard Off-ramp	8,916	892	10%	8,916	892	10%	1,551	155	21%	0	0	0%
Eastbound State Route 91 Between Paramount Boulevard Off-ramp and On-ramp	113,026	18,084	16%	116,297	18,608	16%	4,323	6,290	51%	3,271	523	3%
Eastbound Paramount Boulevard On-ramp	9,218	1,014	11%	9,218	1,014	11%	1,085	119	13%	0	0	0%
Eastbound State Route 91 East of Paramount Boulevard	122,244	19,559	16%	125,515	20,082	16%	5,408	6,871	52%	3,271	523	3%

Source: Traffic Volumes Report (Iteris, July 2020); PM Conformity Hot Spot Analysis Project Summary Form for Interagency Consultation (AMBIENT Air Quality and Noise Consulting, September 2020)
Notes: HOV = High-Occupancy Vehicle; % = percent
There is no significant difference in projected traffic volumes/data between year 2040 and year 2045. Therefore, 2045 traffic data is presented as the Horizon/Design Year (2040) for purposes of this table.

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Pedestrian and Bicycle Facilities

As shown in **Figure 7** above, proposed portions of the Atlantic Avenue Bike Lane (B-7), Myrtle Avenue Bike Boulevard (B-8), and the Walnut Avenue Bike Boulevard (B-11) transect the Project Area; and an existing portion of the Orange Avenue Bike Lane (B-10) transects the Project Area. Construction of the Build Alternative could result in reduced bicycle and pedestrian access from temporary construction traffic and staging, and local street closures during short-term periods.

However, a Public Awareness Campaign would be implemented as part of the Transportation Management Plan to address access impacts for bicyclists and pedestrians (see **PF-COM-2** below). The Public Awareness Campaign would include procedures for notifying the public of road closures, noise, dust, and other construction-related activities and would include a telephone hotline for the public to report concerns. In addition, the Public Awareness Campaign would encourage motorists, pedestrians, and bicyclists to take alternate routes or travel outside road closure hours. A Construction Staging Plan would also be implemented to minimize hazards on the roadways for bicyclists and pedestrians, and may include temporary detour routes, wayfinding and warning signage, barriers, and protective fencing (see **PF-COM-3** below). Specific measures to ensure safety for bicyclists and pedestrians would be developed during the Plans, Specifications, and Estimates Phase. In addition, any public input regarding bicycle and pedestrian facilities will be gathered during circulation of the environmental document to ensure any temporary access impacts are minimized.

The Build Alternative would be constructed within Caltrans and City right of way, and would not permanently affect any existing pedestrian or bicycle facilities, or impede pedestrian or bicycle access to existing transit services once the Project has been constructed. A proposed greenbelt, the Hamilton Loop (also known as the State Route 91 Embankment Greenbelt), is planned in Caltrans right of way within the Project Area. Coordination is being conducted with the City of Long Beach so that the Project will not preclude the proposed greenbelt. Therefore, the Build Alternative would not result in adverse impacts on bicycle and pedestrian facilities.

Public Transit

As shown in **Figure 8** above, one bus stop along Long Beach Transit Bus Route 71, at Orange Avenue and 67th Street, has been identified in the Project Area that could be temporarily affected during Project construction as a result of local street closures. The bus stop may need to be temporarily relocated during the construction period. However, the bus route would continue to operate during construction.

Prior to Project construction, Metro would coordinate with affected public transportation agencies (Long Beach Transit and Metro bus service) to provide rerouting information to the public in advance of any service disruptions (see **PF-TR-1** below). During operation, the Build Alternative would not result in reduced access to, or the displacement or relocation of, transit stops in the Project Study Area.

Project Features

The following Project features will be implemented to reduce impacts on traffic and transportation:

PF-COM-2 Prepare a Traffic Management Plan and Traffic Handling Plan. The Traffic Management Plan would include a Public Awareness Campaign.

PF-COM-3 Prepare a Construction Staging Plan.

PF-TR-1 Prior to construction, Metro will coordinate with public transportation agencies (Long Beach Transit and Metro bus service) to provide rerouting information, including operating schedules, to the public at least one month in advance of any service disruptions.

With implementation of these Project features, the Build Alternative would not result in adverse impacts on traffic and transportation/pedestrian and bicycle facilities.

Avoidance, Minimization, and/or Mitigation Measures

Impacts on traffic and transportation/pedestrian and bicycle facilities would not be adverse; therefore, avoidance, minimization, and/or mitigation measures would not be required.

Cumulative Impacts

Overall, the circulation system in the Project Study Area 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 (see **Table 6 above**) would contribute to minor or beneficial cumulative effects on traffic and transportation and bicycle facilities from improvements to the circulation system. 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.

2.1.4 VISUAL/AESTHETICS

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, 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.

Affected Environment

A Minor Level Visual Impact Assessment (VIA) was prepared for the Project in March 2020 to discuss potential impacts related to visual/aesthetics.

State Route 91 is not a designated State Scenic Highway in this area, nor is it labeled as a corridor that offers scenic views. This portion of State Route 91 also does not have any landmark plantings, special rock formations, or any other scenic resources present.

The Project setting is characterized by manmade development with most structures consisting of buildings, roads, and utilities. The land use within the Project corridor is primarily urban that is developed with freeways (State Route 91 and I-710), residential, commercial, and a church. The existing view along Eastbound State Route 91 between Atlantic Avenue and Cherry Avenue consists of a wide, 6-lane freeway with existing soundwalls visible on both sides, no landscape, and protruding treetops, light poles, and utility poles along the outer limits and in the distance.

The visual character of these hardscape elements from the eastbound direction maintains the symmetry of the existing soundwalls and protruding treetops from both sides of the freeway. Strong linear lines are present with neutral colors, simple textures, and a prominent roadway. The visual quality of the Project Area is average, because although the elements are compositionally harmonious with each other and have few visual intrusions, there are no elements that create memorable or diverse views.

Figure 9 illustrates key view locations, and are described as follows:

- **Key View #1**: The existing street view along Eastbound State Route 91 between Atlantic Avenue and Cherry Avenue is along 67th Street, and approximately 25 feet below grade from the surrounding freeway. From this Key View location, there is a 10-foot-high retaining wall abutting the sidewalk, sloped and narrow landscape area with mature trees and brush, and the soundwall from the above grade freeway. There are no structural aesthetics on the retaining wall and no pattern to the existing trees. The visual character at Key View #1 has strong lines, forms, and dominance from the staggered walls, soundwall and retaining wall. The tree canopies are prominent too, but there is no pattern and very little consistency amongst them.

- **Key View #2**: The existing street view at this location on 67th Street shows a chain link fence at the perimeter of the sidewalk, sloped landscape buffer adjacent to the freeway, and the freeway underpass at Walnut Avenue and 67th Street The existing trees are sparse and the rest of the landscape dead. There are two-tiered landscape tie walls and a picnic table on the corner of the street, adjacent to the freeway and Caltrans right of way landscape.

Key viewers include the following:

- Neighbors (people with views to the road), located in residential neighborhoods from below grade adjacent to the existing freeway, have full views to the existing State Route 91 freeway if they look up. The existing freeway has a notable presence in the daily lives of residential neighbors, but the duration of exposure is relatively short.

- Highway users (people with views from the road) include motorists along State Route 91. Highway user views of the Project corridor mostly consist of the wide 12-lane freeway, existing soundwalls, utility poles and lines, and tree canopies protruding from behind the soundwalls in the distance and adjacent to the walls.

Figure 9: Key View Locations

Source: Tatsumi and Partners, Inc., November 2019

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Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on visual/aesthetics.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

The proposed Build Alternative would require construction activities, which would result in visual impacts. Construction would be temporary, and any visual impacts related to construction would end once the Build Alternative is in place. In addition, a Public Awareness Campaign would be implemented to minimize construction-related impacts on the public (see **PF-COM-2** above under Section 2.1.3, Traffic and Transportation/Pedestrian and Bicycle Facilities). The Public Awareness Campaign would include procedures for notifying the public of construction-related activities and would include a telephone hotline for the public to report concerns. Specific measures to minimize visual impacts during construction would be included in the Construction Staging Plan, which would be developed during the Plans, Specifications, and Estimates Phase.

The proposed eastbound widening would push the soundwalls out 10 to 15 feet, parallel to the existing walls, thus maintaining similar forms, lines, colors, textures, and height within the area. The roadway would still be the most prominent visual element. The visual character of the Project would be fully compatible with the existing visual character of the corridor. The visual quality of the existing corridor would not be altered by the Project.

The changes to key views are described as follows, and are illustrated in **Figure 10** and **Figure 11** below showing pictures before Project implementation and simulations after Project implementation:

- **Key View #1**: Due to the Atlantic Avenue eastbound on-ramp widening at this location, the Project would remove most of the existing landscape area within this view and replace it with a new, aesthetically treated retaining wall with a new freeway soundwall on top. The widening would limit the right of way so that there would not be adequate space to accommodate plant material, even vines. The scale, form, colors, and texture from the proposed elements will emphasize the structural visual character of the Project. The visual quality at this location would be altered by the proposed Project. The Build Alternative at this location is shown to be very noticeable, but still compatible with the existing design elements. Visual quality would increase in vividness and unity, but lower in intactness because of an encroaching structural element replacing the vegetation within this view. Although the vegetation is removed within this Key View, it is important to note that within the rest of the Project Area, there would still be landscaped areas present.

- **Key View #2**: In this view, the proposed widening of Eastbound State Route 91 would cut into the existing landscape, but would still maintain enough space for new planting. The landscape tiered walls would be modified, but there would still be room for the picnic table.

The visual character for the proposed elements at this location is shown to be minor and subtle, with the new changes strongly resembling the existing elements. The soundwall, bridge undercrossing, top of slope, chain link fence, and bottom of slope, all create strong horizontal lines across the view. The visual quality at this location shows that the existing streetlight encroaches into and breaks up the strong horizontal lines, but it would remain the same after the proposed Project is constructed. The proposed elements are continuous of the existing infrastructure and do not encroach or obstruct any existing views or elements. The proposed Build Alternative for Key View #2 maintains a very similar composition to the existing infrastructure, thus having very little impact on vividness.

The visual character and visual quality for both Key Views would be harmonious, orderly, and uniform with the existing visual character and quality. Within the Project improvements, most of the existing elements would remain intact and unified with the proposed elements. The proposed Build Alternative would result in moderately-low changes to both visual character and visual quality, thus resulting in an overall moderately-low Resource Change.

Viewer response is described as follows:

- Highway viewers would hardly notice the changes from the Build Alternative because the widening would replace the existing soundwall in similar design, color, and height. The speeds at which the highway users are driving would be too fast for them to be distracted or take much notice of any minor changes. Highway users have low sensitivity to the existing Project corridor because it does not have any scenic highway qualities. The soundwalls help to keep the freeway corridor uniform and harmonious and would be replaced with a similar soundwall.

- Neighbors would notice that most of the changes are minor and very similar to shape and scale to the existing infrastructure, so the distance from the view and the duration would be low. Residential viewer sensitivity to the existing Project Area is moderately-low because it is directly across the street from their front yard, but there are no elements with any prior scenic qualities that would be impacted. It is anticipated that the average response of all viewer groups will be moderately-low.

Figure 10: Key View #1 – Visual Simulation (Before and After)

This view looks northeast down towards 67th St and the EB SR-91 freeway. The Atlantic Ave. EB SR-91 on-ramp is located to the left of this view behind the existing soundwall.

Visual simulation of the proposed roadway widening with example of structural aesthetics. In this view, the Atlantic Ave. EB SR-91 on-ramp is realigned with the addition of the auxiliary lane. The existing soundwall will remove the existing landscape and sit directly on top of the new retaining wall. Final aesthetic treatments will be determined during construction documentation phase.

Source: Tatsumi and Partners, Inc., November 2019

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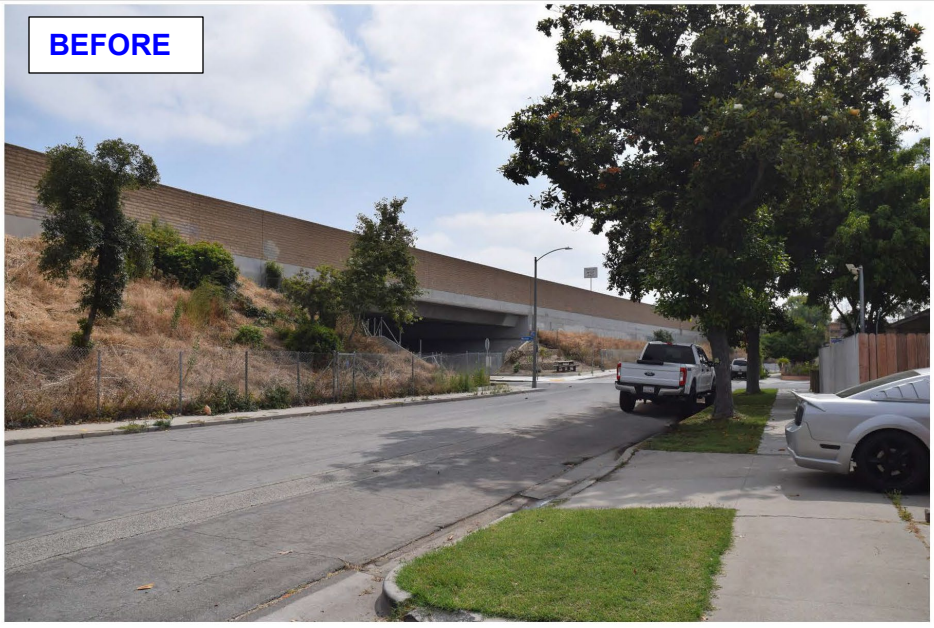
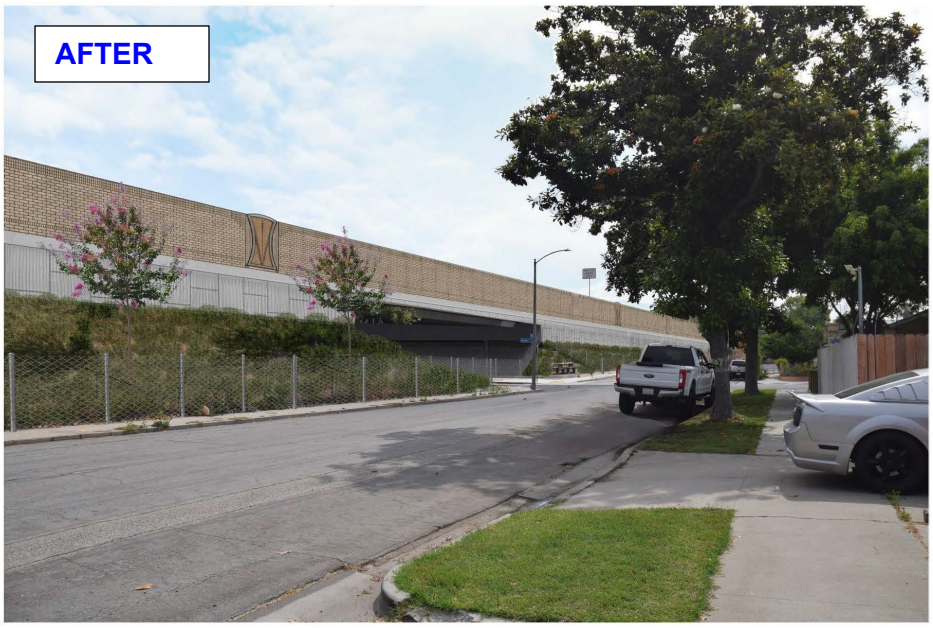
Figure 11: Key View #2 - Visual Simulation (Before and After)



This view looks northeast towards the EB SB-91 near Walnut Ave. and 67th St intersection.



Visual simulation of the proposed EB roadway widening with example of structural aesthetics. In this view, an auxiliary lane is added to SR-91 between Atlantic Ave. and Cherry Ave. which pushes the existing soundwall and undercrossing out 10-15 feet. Final aesthetic treatments will be determined during construction documentation phase.

Source: Tatsumi and Partners, Inc., November 2019

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The proposed Build Alternative would result in compatible visual characteristics to the existing Project corridor. The viewers affected by this Project are anticipated to have moderately-low viewer sensitivity to the changes in the visual character of visual resources. The overall degree of the impact to the visual quality is anticipated to be moderately-low. Construction of the Project would create temporary visual related impacts in the Project Area due to the use of construction vehicles and equipment. However, proposed Project features would be similar in character and quality to the existing features within the Project corridor. Therefore, visual impacts from Project construction would be moderately low.

The Project would include context sensitive solutions, including aesthetic treatments and landscaping, to ensure the Project is compatible with existing visual character and quality (see **AVM-VIS-1** and **AVM-VIS-2** below under Avoidance, Minimization, and/or Mitigation Measures). With the implementation of these avoidance and minimization measures, the Build Alternative would not result in adverse impacts related to visual/aesthetics.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce impacts on visual/aesthetics:

AVM-VIS-1 Soundwalls, retaining walls, and other structures may receive aesthetic treatments, which would be consistent with applicable aesthetic corridor plans. Pilasters may be added to soundwalls and places where deemed necessary by engineers. However, final aesthetics will adhere to guidelines to be determined by the State Route 91 Aesthetics Master Plan Committee with concurrence by Caltrans, Metro, the City of Long Beach, and local communities during the construction documentation phase.

AVM-VIS-2 Where feasible, drought tolerant trees, shrubs, and groundcover will be incorporated within the Project right of way to help improve the overall visual quality of this area. The plant palette will be developed in consultation with a Caltrans landscape architect.

With implementation of these avoidance and minimization measures, the Build Alternative would not result in adverse impacts on visual/aesthetics.

Cumulative Impacts

The Project Study Area is in an urbanized transportation corridor with low visual quality and no scenic resources. With implementation of avoidance and minimization measures, the proposed Project's effects on aesthetics would be relatively minor. Other current and reasonably foreseeable actions (see **Table 6** above) would be required to implement similar measures to reduce impacts related to aesthetics. Therefore, the proposed Project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to aesthetics and mitigation would not be required.

2.1.5 CULTURAL RESOURCES

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 Programmatic Agreement (PA) among the Federal Highway Administration, the ACHP, the California State Historic Preservation Officer (SHPO), and Caltrans regarding Compliance with Section 106 of the National Historic Preservation Act went into effect for Department projects, both state and local, with Federal Highway Administration involvement. The PA implements the ACHP’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration’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.

Affected Environment

An Historic Property Survey Report and Archaeological Survey Report were prepared for the Project in October 2020 to discuss the Project's impacts on cultural resources.

The Project's Area of Potential Effects was developed in consultation with the Project Development Team (PDT) and is composed of both vertical and horizontal dimensions. The Area of Potential Effects consists of the entirety of the Project footprint, including the areas where physical impacts will occur (direct effects). **Figure 12** illustrates the horizontal Area of Potential Effects, which spans 1.4 linear miles (from P.M. R11.8 to R13.2) and covers 46.83 acres. The majority of the Area of Potential Effects consists of lane and shoulder extensions along the Eastbound State Route 91, four bridges that would also require expansion (Myrtle Avenue Undercrossing, Orange Avenue Undercrossing, Walnut Avenue Undercrossing, and Atlantic Avenue Undercrossing), and one bridge that would not require expansion (Cherry Avenue Undercrossing). All construction areas would be within the Caltrans and/or the City of Long Beach right of way and do not require any acquisitions or easements. The vertical Area of Potential Effects is estimated to be a maximum depth of 100 feet for piles for the proposed bridge widenings, and potentially for wall footings or overhead sign footings.

A records search, literature research, Native American consultation, and a field survey were conducted. The records search did not identify any archaeological resources within one mile of the Project's Area of Potential Effects. The records search indicated that two cultural resources studies have previously been completed and have study areas that overlap with portions of the Area of Potential Effects. No built environment resources are located within the Area of Potential Effects, though there are 19 built environment resources within one mile of the Area of Potential Effects. No archaeological resources were identified during the field survey. The surface of the Area of Potential Effects was covered by pavement, vegetation, and modern construction.

The following groups were contacted with combined AB 52/Section 106 letters:

- Gabrieleño Band of Mission Indians-Kizh Nation – Andrew Salas
- Gabrieleno/Tongva San Gabriel Band of Mission Indians – Anthony Morales

The following groups were contacted with Section 106 letters:

- Gabrielino/Tongva Nation – Sandonne Goad
- Gabrielino Tongva Indians of California Tribal Council – Robert Dorame
- Gabrielino-Tongva Tribe – Charles Alvarez

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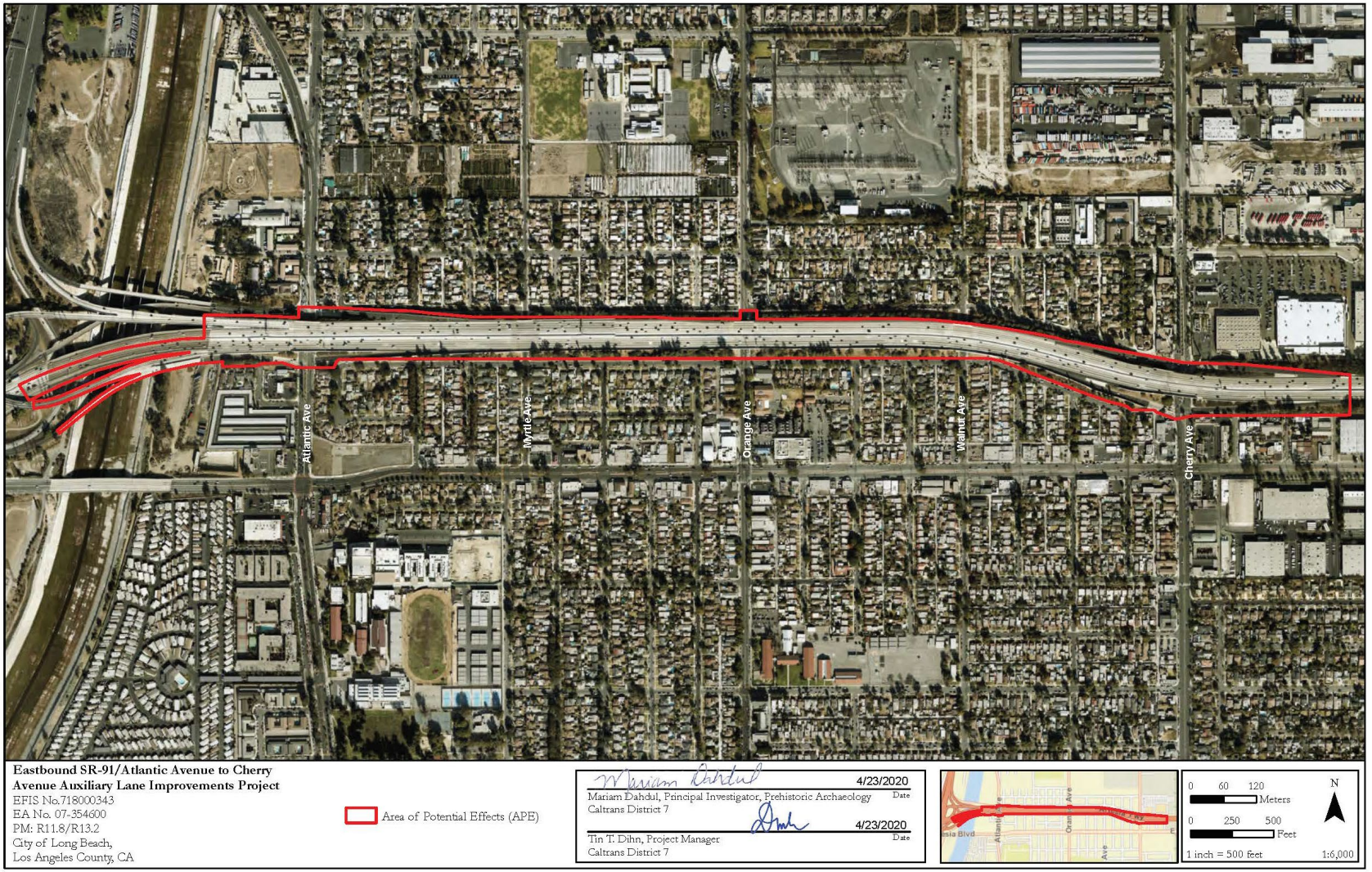
Figure 12: Area of Potential Effects



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As of June 23, 2020, responses have been received from Anthony Morales, Andrew Salas, and Robert Dorame regarding the AB 52 and Section 106 consultation. Their responses are below:

- On May 15, 2020, Mr. Morales expressed a concern for the Project's location near the Los Angeles River and the cultural significance the area holds for his people. He indicated that due to proximity to the Los Angeles River and Compton Creek the area is sensitive for Gabrielino sites. He also indicated that the discovery of human remains near the intersection of the SR-22 and the I-405 a few months ago seems like a similar situation with the elevated roadbed of the Project. He requested that Native American monitoring and archaeological monitoring be undertaken during excavation.

- Between May 2019 and May 2020, the Gabrieleño Band of Mission Indians-Kizh Nation consulted nine separate times with Caltrans and/or DUKE CRM (the preparer of the Archaeological Survey Report), on behalf of Caltrans, including meetings, phone calls, and emails. In summary, the Tribe has repeatedly maintained that the area is sensitive for cultural resources and recommended archaeological and Native American monitoring. The Tribe provided extensive information about the background of the Project Area, the history of the Los Cerritos land grant, various Native place-names, and the historic Gabrielino occupation and settlement of the area surrounding the Project.

- On May 15, 2020, Mr. Dorame requested and was emailed the consultation letter and maps. To follow up with Mr. Dorame, the consultation letter and map was emailed on June 17, 2020 and he was called later that day. Over the phone Mr. Dorame requested that in the event of the discovery of cultural material and burials from the Tongva people, that the Gabrielino Tongva Indians of California Tribal Council be notified, regardless of any finding about Most Likely Descendent decisions by the Native American Heritage Commission.

Further outreach to Mr. Morales was conducted on October 2, 2020 summarizing edits made to this document and stating that it is Caltrans' and Metro's intent to implement a limited monitoring program to be described in a Monitoring Plan. Mr. Morales has not responded.

Consultation with Gabrieleño Band of Mission Indians-Kizh Nation took place throughout the planning process. In a meeting held on July 9, 2019 with the Gabrieleño Band of Mission Indians-Kizh Nation, Chairperson Andrew Salas and Matthew Teutimez provided information about the prehistoric land use of the Project vicinity for consideration during this study. Mr. Salas and Mr. Teutimez shared that the Project location is between two known ethnohistoric villages: *Tibahangna* located about 2.5 miles to the south and *Abahangna* located about 7.2 miles to the north. They also stated a *Jabonera* (soap production facility) was situated within Rancho Los Cerritos, in the area of the Project, as well as another in the area of *Abahangna*. Mr. Teutimez explained that *Jaboneras* were historically established in areas containing resources available for soap production and, as would be expected, these resources were managed and used by local Native American communities prior to colonization. Such resources would have been part of a village's resource use area. For this reason, the locations of *Jaboneras* are good indicators of the locations of ancient village sites. Mr. Teutimez also stated that Artesia Boulevard to the south was an old trade route that ran in an east-west direction, and that the Los Angeles River was another north-south trending trade route. In addition to this information, Mr. Salas and Mr. Teutimez provided references to additional sources of

information, including historic maps, news accounts of archaeological finds, and ethnographic studies. These sources were examined for this study, and only those relevant to the Study Area and vicinity have been included in the Archaeological Survey Report.

In a follow-up meeting with the Tribe held on March 14, 2020, Mr. Teutimez pointed out that the Project was located along the meandering course of the Los Angeles River and that a Gabrieleno trade route traversed in a north-south direction along present-day Cherry Avenue. This route was the precursor to the Union Pacific Railroad that runs between Cherry and Paramount Avenues. The Tribe reiterated the fact that two ethnohistoric villages, *Tibahangna* and *Abahangna*, were located in the area of the Project.

In a final meeting on September 8, 2020, Caltrans staff reviewed all of the information provided by the Tribe and provided an overview of the results of the current archaeological investigation. Mr. Salas and Mr. Teutimez objected to the placement of village locations on the maps as these may give researchers the wrong impression that villages were contained within a small area. They also pointed out that boundaries of villages were fluid and encompassed resource procurement areas; so, a dot on a map does not capture the complexity and fluidity of Gabrieleno settlements. They requested that all maps showing village locations be removed from the report. Mr. Salas and Mr. Teutimez concluded the consultation by stating that the Project location is situated in the vicinity of three Gabrieleno travel routes that followed the present-day course of the Los Angeles River on the west, the San Gabriel River on the east, and Artesia Boulevard on the south. In addition, two ethnohistoric villages are known to have been located some distance to the north and south of the Project. This would place the Project's Area of Potential Effects at the center of a heavily trafficked area and, thus, it is an area of concern for the Tribe. For this reason, the Tribe requests archaeological and Native American monitoring to confirm that no cultural resources will be affected during Project construction.

Following this meeting, Caltrans staff confirmed with Mr. Salas and Mr. Teutimez via email (dated September 17, 2020) that a limited archaeological and Native American monitoring program will be prepared to outline the conditions and procedures for monitoring.

An archaeological sensitivity analysis was prepared as part of the Archaeological Survey Report to assess the potential for buried prehistoric or historic-era archaeological resources within the Area of Potential Effects and to make recommendations for additional steps to identify and treat buried archaeological resources, if necessary, to avoid inadvertent effects by project-related activities. The archaeological sensitivity analysis, coupled with the results of the field survey and background research, indicates that the Area of Potential Effects has low sensitivity for archaeological resources.

Environmental Consequences

Alternative 1 (No Build Alternative)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on cultural resources.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

Ground disturbance within the Project's Area of Potential Effects would be as deep as 100 feet in depth at the proposed bridge widenings (Myrtle Avenue Undercrossing, Orange Avenue Undercrossing, Walnut Avenue Undercrossing, and Atlantic Avenue Undercrossing), and potentially for wall footings or overhead sign footings; and up to 15 feet vertical and up to 30 feet horizontal to remove and reconstruct soundwalls and retaining walls, a portion of which likely is fill as observed during the reconnaissance survey. The origin of the fill is unknown; however, if the fill sediments came from nearby parcels, these are likely devoid of cultural materials as no known sites have been recorded within a one-mile radius of the Project Area of Potential Effects. The results of the archaeological sensitivity analysis indicate that the potential for encountering buried archaeological resources is low. According to the Historic Property Survey Report, the anticipated effects finding is No Historic Properties Affected.

As stated above, during the course of Native American consultation for the undertaking, the Gabrieleño Band of Mission Indians-Kizh Nation and the Gabrieleno/Tongva San Gabriel Band of Mission Indians identified the Project location as sensitive for buried cultural resources and, thus, both parties requested archaeological and Native American monitoring. The results of the background research, archaeological sensitivity analysis, and field survey indicate that the Project has a low potential to affect cultural resources. These findings have been shared with the concerned tribes, but they remain concerned about ground disturbance in the Project Area. For this reason, and to confirm the conclusions of this study, a limited archaeological and Native American monitoring program will be implemented during Project construction. An archaeological and Native American monitoring plan is under preparation and will outline conditions and procedures for monitoring that will ensure Native American concerns are satisfactorily resolved with regard to degree of disturbance to the Project location and potential to encounter buried archaeological deposits. The monitoring plan will be approved by the Native American tribes and implemented during Project construction.

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.

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 Native American Heritage Commission, who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent. 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 Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Section 4(f) of the Department of Transportation Act of 1966 provides protection for historic properties. There are no historic properties present within the Area of Potential Effects; therefore, there are no Section 4(f) historic sites affected by the proposed Project.

The following Project features will be implemented during construction:

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 Native American Heritage Commission, who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent. 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 Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

PF-CUL-3 Metro will implement a limited archaeological and Native American monitoring program with interested Tribes as detailed in the Archaeological and Native American Monitoring Plan prior to and during Project construction.

Because no cultural resources were identified in the APE, the Build Alternative would not result in impacts on cultural resources.

Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in impacts on cultural resources; therefore, avoidance, minimization, and/or mitigation measures would not be required.

Cumulative Impacts

Because no cultural resources were identified in the Project Study Area, the Build Alternative would not result in impacts on cultural resources. Other current and reasonably foreseeable actions (see **Table 6** above) would be required to implement measures to reduce impacts on cultural resources, if they were to be encountered during Project activities. Therefore, the proposed Project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to cultural resources and mitigation would not be required.

2.2 Physical Environment

2.2.1 WATER QUALITY AND STORM WATER RUNOFF

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 unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System permit (A point source is any discrete conveyance such as a pipe or a man-made ditch.). This act and its amendments are known today as the Clean Water Act. 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 National Pollutant Discharge Elimination System permit scheme. The following are important Clean Water Act 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 National Pollutant Discharge Elimination System, 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 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.

- 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.

The goal of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

The U.S. Army Corps of Engineers 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 U.S. Army Corps of Engineers’ Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits,

the U.S. Army Corps of Engineers' 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 U.S. Army Corps of Engineers, 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 U.S. Army Corps of Engineers 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 standards (The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."), 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 U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

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 Clean Water Act 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 Clean Water Act 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 Clean Water Act.

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act 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 Regional Water Quality Control Board Basin Plan. In California, Regional Water Quality Control Boards 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 State Water Resources Control Board identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with Clean Water Act 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 (National Pollutant Discharge Elimination System permits or WDRs), the Clean Water Act 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 State Water Resources Control Board 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 National Pollutant Discharge Elimination System permits. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System Program Municipal Separate Storm Sewer Systems

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems. A municipal separate storm sewer system 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 State Water Resources Control Board has identified Caltrans as an owner/operator of a municipal separate storm sewer system under federal regulations. Caltrans' municipal separate storm sewer systems permit covers all Department rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollutant Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' municipal separate storm sewer systems 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) and Order No. 2015-0036-EXEC (conformed and effective April 7, 2015) has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);

2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices, to the maximum extent practicable, and other measures as the State Water Resources Control Board determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing storm water management procedures and

practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices. The Project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit, Order No. 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans; 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 Storm Water Pollution Prevention Plan. In accordance with Caltrans' SWMP and Standard Specifications, a Water Pollution Control Program (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act, 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 Clean Water Act Section 404 permits issued by the U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the Project location, and are required before the U.S. Army Corps of Engineers issues a 404 permit.

In some cases, the Regional Water Quality Control Board may have specific concerns with discharges associated with a project. As a result, the Regional Water Quality Control Board 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.

Affected Environment

The Los Angeles Region encompasses 10 Watershed Management Areas, which generally consists of a single large watershed with smaller subwatersheds that are tributaries to the main river. The Project Area is within the Los Angeles River watershed, and extends over the Los Angeles River; however, no Project activities will occur in the Los Angeles River itself.

The Los Angeles River Watershed is one of the largest in the region at 824 square miles; the river is 55 miles long. The watershed is also one of the most diverse in terms of land use patterns. Approximately 324 square miles of the watershed are covered by forest or open space land including the area near the headwaters, which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The rest of the watershed is highly developed (California Water Boards, 2018b).

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on water quality and storm water runoff.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

Construction activities have the potential to affect water quality through the transport of pollutants and soil disturbance. Pollutants of concern during construction are trash, petroleum products, concrete, and chemicals. Construction activities could include grading, roadway widening, freeway ramp modifications, and construction of new and modified drainage ditches, berms, and swales, which have the potential to disturb soil in the Project Area.

In accordance with the National Pollutant Discharge Elimination System Construction General Permit, a Storm Water Pollution Prevention Plan would be required. The Storm Water Pollution Prevention Plan would include the development of a Construction Site Monitoring Program, including procedures and methods related to visual monitoring, sampling and analysis plans for pollutants, sediment, turbidity, and pH. In addition, the Storm Water Pollution Prevention Plan would include temporary erosion and sediment control measures. Also, there are no surface waters in the Project Area; therefore, a Section 404 General Permit from the United States Army Corps of Engineers and a Section 401 Water Quality Certification from the Los Angeles Regional Water Quality Control Board are not anticipated.

During operation, oil, grease, and chemical pollutants (e.g., particulates from pavement wear, metals, diesel fuel, etc.) could be discharged into the storm drain system in the Project Area from incidental drippings from vehicles and accidental spills during maintenance activities.

Design Pollution Prevention Best Management Practices (e.g., drainage design follows existing drainage pattern, unlined channels would be kept, as much as possible, to promote infiltration), treatment Best Management Practices, and adherence to operation maintenance protocols would address these potential impacts.

The Project Area includes existing stormwater Best Management Practices adjacent to the roadway, which include gross solids removal devices with screens that prevent solids larger than the screen opening from passing through. The existing gross solids removal devices would be either maintained in place or replaced with Project implementation.

The Project would result in a net increase in impervious surface area as a result of the added auxiliary lane. The additional impervious surface area could increase the volume and velocity of storm water runoff, as well as the amount of pollutants traveling into the drainage system and into downstream receiving waters. However, treatment Best Management Practices would be maintained under the Build Alternative to address these pollutants.

The following Project features will be implemented to reduce impacts on water quality and storm water runoff:

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

- Good housekeeping
- Erosion control
- Sediment control

PF-WQ-2 During construction, Caltrans' Resident Engineer or designated contractor will ensure compliance with the provision of the National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System No. CAS000002 as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ) and any subsequent amendment or renewal, as they relate to construction activities for the Project. This will include submission of the Permit Registration Documents, including a Notice of Intent, risk assessment, site map, Storm Water Pollution Prevention Plan, annual fee, and signed certification statement to the State Water Resources Control Board via the Stormwater Multi-Application and Report Tracking

System at least seven days prior to the start of construction. Construction activities will not commence until a Waste Discharger Identification number is received from the Stormwater Multi-Application and Report Tracking System. The Storm Water Pollution Prevention Plan will be prepared by a qualified Storm Water Pollution Prevention Plan developer and will meet the requirements of the Construction General Permit:

- Identifying potential pollutant sources associated with construction activities;
- Identifying non-storm water discharges;
- Developing a water quality monitoring and sampling plan;
- Implementing and maintaining Best Management Practices to reduce or eliminate pollutants associated with construction sites.

PF-WQ-3 Existing permanent Design Pollution Prevention and treatment Best Management Practices will be protected in place or replaced in-kind to minimize downstream effects, stabilize slopes, control runoff, and treat water quality volume generated from new impervious surface area.

PF-WQ-4 Procedures in the Caltrans Stormwater Quality Handbooks, Project Planning and Design Guide will be followed for maintaining existing treatment Best Management Practices (gross solids removal devices) to the Maximum Extent Practicable. Additionally, all treatment Best Management Practices will be consistent with the requirements of applicable permits, including the Caltrans municipal separate storm sewer systems permit, and will be inspected/monitored to ensure effectiveness.

With implementation of these Project features, the Build Alternative would not result in adverse impacts on water quality and storm water runoff.

Avoidance, Minimization, and/or Mitigation Measures

Impacts on water quality and storm water runoff would not be adverse; therefore, avoidance, minimization, and/or mitigation measures would not be required.

Cumulative Impacts

Past urbanization has contributed to degradation of water quality within the Project Study Area. The proposed Project's effects on water quality and storm water runoff would be minor through compliance with all applicable permit requirements and implementation of Best Management Practices. Other current and reasonably foreseeable actions (see **Table 6** above) would be required to implement similar measures, such that impacts on water quality and storm water runoff 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 water quality and storm water runoff and mitigation would not be required.

2.2.2 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

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 Caltrans' 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 Caltrans' Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

The Los Angeles County General Plan, Safety Element contains the following goal and policies that are applicable to the Project:

- **Goal S1**: An effective regulatory system that prevents or minimizes personal injury, loss of life and property damage due to seismic and geotechnical hazards.

- **Policy S1.1**: Discourage developing in Seismic Hazard and Alquist-Priolo Earthquake Fault Zones.

Affected Environment

A District Preliminary Geotechnical Report was prepared for the Project in November 2019 to discuss impacts related to geology/soils/seismic/topography.

The Project Area 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.

State Route 91 in this area runs east to west, with elevations ranging between 63 feet and 84 feet Above Mean Sea Level (AMSL). The terrain is relatively flat, with embankments along the freeway to accommodate the overcrossings and undercrossings.

Geologic maps obtained from the United States Geological Survey Map View Website show the Project Area to consist of younger alluvium. The soils present along State Route 91 consists primarily of alternate layers of relatively fine sands, silty sands, sandy silts, and silts. The consistency of fine-grained soils is reported to be predominantly stiff to very stiff, while the shallower layers of sandy soils are loose to medium dense in place, and grade to denser condition with increasing depth.

This Project is located within a seismically active region as a result of being 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.

The Project Area is not located within the Alquist-Priolo Earthquake Fault Zone. The nearest Alquist-Priolo Earthquake Fault Zone is the Newport-Inglewood Fault Zone located approximately 3.24 miles (5.21 km) southwest of the Project Area. The information from the Caltrans Fault Database shows that a Magnitude 7.2 earthquake may occur on the Newport-Inglewood Fault. The Caltrans Fault Database shows the nearest faults being the Newport-Inglewood Fault located approximately 3.24 miles (5.21 km) southwest of the Project Area and the Puente Hills (Santa Fe Spring) Fault located approximately 3.29 miles (5.30 km) east of the Project Area.

The Project Area is not within Landslide Seismic Hazard Zone. The topography is relatively flat, and landslides are not considered to be a potential hazard to the Project Area. However, the Project Area is located within a Liquefaction Potential Seismic Hazard Zone. In addition, the Project Area includes historical high-water levels. The historic high depth to groundwater in the Project Area, provided by the California Geological Survey, is approximately 10 to 15 feet below the ground surface (bgs).

Based on review of the available subsurface data, shallow soils underlying the Project Area predominantly consist of relatively loose to medium dense silty sandy earth material, which becomes denser with increasing depth. Due to the soils' classification, the in-situ state of the soils, and the likelihood of earthquake occurrences with relatively high magnitudes, liquefaction/seismic induced settlement is expected to occur in the Project Area.

Oil and gas well locations were obtained from the California Division of Oil, Gas, and Geothermal Resources (DOGGR). There were no wells within 500 feet of the Project Area.

Environmental Consequences

Alternative 1 (No Build Alternative)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts related to geology/soils/seismic/topography.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

The Project includes roadway improvements that could be susceptible to the effects of seismic shaking due to the nearby faults, liquefaction, seismic embankment stability, and settlement. The Build Alternative would be designed and constructed to meet current highway design standards, including Caltrans Seismic Design Criteria. Therefore, potential impacts would be minimized. Specific recommendations for earthwork, foundation design, pavement design, and hazard mitigation will be provided in the design phase of the Project.

The Project lies within a liquefaction hazard zone, as delineated by the California Geological Survey. Based on the soil type (i.e., loose to medium dense granular soils) and existence of groundwater under the Project site, the District Preliminary Geotechnical Report determined that liquefaction is likely at the site. However, the Project would include replacing existing infrastructure and would not change land use within the Project Area. In addition, the Project would be constructed to current seismic standards. Therefore, potential impacts related to liquefaction would be minimized. Furthermore, a site-specific investigation would be completed during the design phase to evaluate liquefaction potential at specific structure locations and within the Project Area (see **AVM-HW-1** in Section 2.2.4).

The Project Area begins at about 500 feet east of the Los Angeles River, and the center of the Project is about 3,000 feet east of the Los Angeles River. Because of the Project Area's location and the likelihood of liquefaction in the Project Area, lateral spreading will be evaluated during the design phase. As stated above, the Project would be constructed to current seismic standards. Therefore, potential impacts related to lateral spreading would be minimized.

The proposed retaining walls will be seated on the side slope of the existing freeway embankment and will allow widening of the Eastbound State Route 91 along the Project. During the design phase and upon availability of final profile and cross sections of the walls overall, the seismic slope stability of the walls and embankment will be evaluated using Caltrans Guidelines. As stated above, the Project would be constructed to current seismic standards. Therefore, potential impacts related to slope stability would be minimized.

In general, the erosion potential of soils is expected to be minor to moderate considering the provisions for site drainage, slope planting, and other measures required by Caltrans. **PF-GEO-1**, which requires that all finished slopes be planted with non-water succulent plants as soon as practical after grading, would be implemented to minimize potential erosion. Therefore, potential permanent impacts related to erosion would be minimized.

Construction of the various elements of the Project will likely result in alterations of the landform due to grading. Landform alterations may create erosional impacts to the existing terrain. The more extensive alterations will be from construction of the cuts for retaining walls and fill slopes associated with the ramp and roadway widening. Applying standard engineering techniques during design and construction to prevent erosion can reduce these impacts. Typical erosion control measures include improving drainage control and implementing landscaping after construction. Therefore, potential temporary impacts related to erosion would be minimized.

Corrosion test results are not available for the Project Area; therefore, corrosion potential of on-site soils is not known. A site-specific corrosion study should be performed later during the

design phase, and necessary measures will be recommended if the site soils are found to be corrosive to concrete or steel. On-site soils are generally expected to have an expansivity varying from non-expansive to low-expansive potential. Based on the scope of the future work, during the design phase, samples of subgrade soils shall be collected and tested for the expansivity. As stated above, the Project would be constructed to current seismic standards. Therefore, potential impacts related to corrosion and expansivity would be minimized.

As discussed above, the historic groundwater elevation in the Project Area is approximately 10 to 15 feet below the ground surface (bgs). As stated above, a site-specific investigation would be conducted during the design phase to determine groundwater conditions and evaluate liquefaction potential at specific structure locations and within the Project Area (see **AVM-HW-1** in Section 2.2.4, Hazardous Waste/Materials). If groundwater is encountered and dewatering is required during construction activities, groundwater controls would be implemented in accordance with the Caltrans *Field Guide to Construction Site Dewatering* (California Department of Transportation, 2014). Therefore, potential impacts related to liquefaction would be minimized.

With the implementation of **PF-WQ-1** (see Section 2.2.1, Water Quality and Storm Water Runoff), a Storm Water Pollution Prevention Plan would be developed and would include erosion and sediment control measures. In addition, the following Project features will be implemented to reduce impacts related to geology/soils/seismic/topography:

PF-GEO-1 All finished slopes will be planted with non-water succulent plants as soon as practical after grading.

PF-GEO-2 During construction, the Resident Engineer will ensure that safe work practices in accordance with Caltrans and Cal/OSHA are implemented to mitigate the risk to workers. This includes sloping and/or shoring of excavations to prevent collapse of unstable soils. Sloping and/or shoring of excavations would be constructed in accordance with Caltrans Shoring Manual, Cal/OSHA, and any local standards.

PF-GEO-3 During final design, the geotechnical engineer and/or engineering geologist will prepare a quality assurance/quality control plan that will be implemented during construction. The quality assurance/quality control plan is a document that would include requirements for observation, monitoring, and testing by a geotechnical engineer and/or engineering geologist during construction to confirm that geotechnical/geologic recommendations are followed, or if different site conditions are encountered, ensure appropriate changes are made to accommodate such issues. The geotechnical engineer will prepare field observation reports while grading and construction activities are underway.

With implementation of these Project features, the Build Alternative would not result in adverse impacts related to geology/soils/seismic/topography.

Avoidance, Minimization, and/or Mitigation Measures

Impacts on geology/soils/seismic/topography would not be adverse; therefore, avoidance, minimization, and/or mitigation measures would not be required.

Cumulative Impacts

The Project Study Area is in a seismically active region. The proposed Project's effects related to geology, soils, seismicity, and topography would be minor. Other current and reasonably foreseeable actions (see **Table 6 above**) would be required to comply with all applicable design standards, building codes, and permits, such that impacts related to geology, soils, seismicity, and topography 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 geology, soils, seismicity, and topography and mitigation would not be required.

2.2.3 PALEONTOLOGY

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.

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

Affected Environment

A combined Paleontological Identification and Evaluation Report was prepared for the Project in July 2020 to discuss impacts on paleontological resources.

Geology maps of the Project Area indicate that the Project is located on young alluvial fan and valley deposits. Locally, these deposits are composed of poorly consolidated and poorly sorted sand and silt, with lesser amounts of clay, gravel, and cobbles deposited during the late Pleistocene Epoch (approximately 2.5 million to 11,700 years ago) and the Holocene Epoch (approximately 11,700 years ago to today).

According to paleontological record searches performed through the Natural History Museum of Los Angeles County, the University of San Diego 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, including remains of mammoth (*Mammuthus*) to the west in Compton at a depth of 5 feet below the ground surface (bgs); and 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. In addition, the nearby meandering Los Angeles River would have produced deposits that were highly conducive to the preservation and fossilization of Pleistocene fauna, which combined with the documented fossil localities nearby in similar deposits, would result in a high paleontological sensitivity for Pleistocene sediments in the Project Area.

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on paleontological resources.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

Portions of the Project improvements are located in areas identified as having high paleontological sensitivity at greater than 5 feet below the original ground surface. Project components that would extend to these depths include excavation of piles to 100 feet bgs for the proposed bridge widenings, and potentially for wall footings or overhead sign footings. Two fossil localities are documented nearby in sediments similar to those underlying the Project.

Based on the positive results (previously documented nearby fossil localities and high paleontological sensitivity of underlying sediments at depth), a Paleontological Mitigation Plan will be prepared during the design phase of the Project to mitigate potential impacts on paleontological resources (see **MM-PALEO-1** through **MM-PALEO-7** below under Avoidance, Minimization, and/or Mitigation Measures). With implementation of these mitigation measures, the Build Alternative would not result in adverse impacts on paleontological resources.

Avoidance, Minimization, and/or Mitigation Measures

The following mitigation measures will be implemented to mitigate potential impacts on paleontological resources:

MM-PALEO-1 A Paleontological Mitigation Plan, following the Caltrans SER, Chapter 8, will be prepared by a Principal Paleontologist.

MM-PALEO-2 The Principal Paleontologist will attend the pre grade meeting. At this meeting, the Paleontologist will explain the likelihood for encountering paleontological resources, what resources may be discovered, and the methods of recovery that will be employed.

MM-PALEO-3 During construction excavation, a qualified Paleontological Monitor shall be present on a full-time basis initially whenever excavation will occur within the sediments that have a high paleontological sensitivity (greater than 5 feet below the original ground surface) and on a spot-check basis for excavation in sediments that have low sensitivity (non-fill sediment above 5 feet bgs). Monitoring may be reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating (monitoring reductions, when they occur, will be determined by the qualified Principal Paleontologist).

MM-PALEO-4 The Monitor shall inspect fresh cuts and/or spoils piles to recover paleontological resources. The monitor shall be empowered to temporarily divert construction equipment away from the immediate area of the discovery. The monitor shall be equipped to rapidly stabilize and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, Caltrans will consider using heavy equipment on site to assist in the removal and collection of large materials. Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, it is recommended that these sediments occasionally be spot-screened on site through 1/8 - to 1/20-inch mesh screens to determine whether microfossils are present. If microfossils are encountered, sediment samples (up to 6,000 pounds) shall be collected and processed through 1/20-inch mesh screens to recover additional fossils.

MM-PALEO-5 Recovered specimens shall be prepared to the point of identification and permanent preservation. This includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume of storage for the repository and storage cost, and the addition of approved chemical hardeners/stabilizers to fragile specimens.

MM-PALEO-6 Specimens shall be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institutions usually charge a one-time fee based on volume, so removing surplus sediment is important. The repository institution may be a local museum or university with a curator who can retrieve the specimens on request. Caltrans requires that a draft curation agreement be in place with

an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities.

MM-PALEO-7 A Paleontological Mitigation Report documenting completion of the Paleontological Mitigation Plan for the Lead Agency (Caltrans) will be prepared and submitted.

With implementation of these mitigation measures, the Build Alternative would not result in adverse impacts on paleontological resources.

Cumulative Impacts

The Project Study Area has high 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 6** 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 mitigation measures **MM-PALEO-1** through **MM-PALEO-7** above.

2.2.4 HAZARDOUS WASTE/MATERIALS

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 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

In addition to the acts listed above, Executive Order 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.

Affected Environment

An Initial Site Assessment (ISA) was prepared for the Project in June 2020 to discuss potential impacts related to hazardous waste/materials. This ISA was prepared in accordance with the ASTM Standard E1527-13, including additional elements as required by Caltrans District 7 Environmental Protocol Procedure and Deliverable Requirements (rev. 2, 11/22/2019) for ISA Reports.

Based on a review of the database report(s) provided by Environmental Data Resources, no known hazardous material sources or releases were identified within the Project Study Area.

There are no acquisitions required for the Project. However, an interview was conducted with a Caltrans employee who is most knowledgeable about the property. Antonio Garcia, the Maintenance Superintendent for the Project Area, was contacted on Wednesday, March 25, 2020 to ask applicable questions given by the ASTM E1527-13 standard. The interview did not reveal any issues of concern or that required follow-up.

The ISA identified other potential issues in the Project Area, which are summarized in the sections below. Further site investigations would be completed during the design phase to determine the concentrations of these contaminants and the level and extent of contamination in relationship to the Project.

AERIALLY DEPOSITED LEAD

Elevated lead concentrations exist in soils along older roadways as a result of aerially-deposited lead (ADL) from the historic use of leaded gasoline.

ORGANOCHLORIDE PESTICIDES

The Project Area was historically used for ranch-style housing and agriculture. It is possible that organochloride pesticides are contained with the soil from the previous land use.

ASBESTOS-CONTAINING MATERIAL

Bridge components and bridge concrete, including retaining walls and soundwalls that are connected to retaining walls or other structures, may contain asbestos-containing material (ACM).

LEAD BASED PAINT

The removal of existing yellow thermoplastic traffic striping and pavement marking has potential to produce hazardous waste residue and contain lead-based paint (LBP).

TREATED WOOD WASTE

Wood posts removed from existing guardrails and roadside signs have potential to be considered treated wood waste.

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts related to hazardous waste/materials.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

To remove and reconstruct existing soundwalls and retaining walls, it is estimated that soil impacts are up to 15 feet vertical, and up to 30 feet horizontal, based on the average wall height in Caltrans standard plan requirements. Excavation of piles to 100 feet below the ground surface (bgs) may be required for the proposed bridge widenings, and potentially for wall footings or overhead sign footings.

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 Build Alternative. 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 hazardous materials/waste issues have also been identified in the Project Area:

- Bridge components and bridge concrete, including retaining walls and soundwalls that are connected to retaining walls or other structures, may contain ACM. The following bridges between Atlantic and Cherry Avenues have potential to contain ACM and LBP:
  - Atlantic Avenue Undercrossing (Bridge # 53-2124)
  - Myrtle Avenue Undercrossing (Bridge #53-2121)
  - Orange Avenue Undercrossing (Bridge #53-2122)
  - Walnut Avenue Undercrossing (Bridge #53-2127)
- The Project Area includes historical high-water levels (10 to 15 feet bgs); therefore, there is potential for groundwater to be encountered during construction, which may be contaminated. If groundwater is encountered during soil sampling, the groundwater should be sampled and analyzed for at least total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and metals; this is to ensure worker safety and for waste profiling purposes.
- The Project Area was historically used for ranch-style housing and agriculture. It is possible that organochloride pesticides are contained with the soil from the land use at this time.
- The Project also assumes all wood posts removed from existing guardrails and roadside signs are treated wood waste.

With the implementation of avoidance and minimization measures (see **AVM-HW-1** through **AVM-HW-4** below under Avoidance, Minimization, and/or Mitigation Measures), the Build Alternative would not result in adverse impacts related to hazardous waste/materials.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce impacts related to hazardous waste/materials:

AVM-HW-1 A subsurface investigation would be required during the design phase to confirm the depth to groundwater is between 10 to 15 feet, as well to determine actual groundwater flow direction, if needed. If groundwater is encountered at this time, additional sampling and analysis of the groundwater would be warranted to ensure worker safety and for waste profiling purposes.

AVM-HW-2 A soil site investigation (SI) for aerial deposits of lead (ADL) and organochlorine pesticides would be conducted to the maximum lateral and vertical extent of proposed soil excavation for all unpaved areas, including roadway improvements, retaining walls and soundwalls, overhead signs and traffic signs. This shall be done during the design phase.

AVM-HW-3 Asbestos-Containing Material (ACM) and Lead Based Paint (LBP) surveys should be conducted for the 4 bridges within the Project Area during the design phase. ACM and LBP surveys would also be conducted for retaining

walls and soundwalls connected to retaining walls or other structures. Freestanding soundwalls do not require ACM or LBP studies.

AVM-HW-4 It is assumed that the removal of pavement markings and treated wood will produce hazardous waste. Removal plans for both lead based paint (such as in yellow thermoplastic striping) and treated wood waste will be determined during the design phase.

With implementation of these avoidance and minimization measures, the Build Alternative would not result in adverse impacts related to hazardous waste/materials.

Cumulative Impacts

Historic land uses within the Project Study Area have contributed to an accumulation of potentially hazardous wastes and materials in man-made structures, soils, and groundwater. The proposed Project's effects related to hazardous waste would be minor in the short-term and potentially beneficial in the long-term with implementation of avoidance and minimization measures and the removal of hazardous materials from the Project Study Area. Other current and reasonably foreseeable actions (see **Table 6** above) would be required to implement similar measures and comply with all regulations pertaining to the handling and disposal of hazardous wastes, such that impacts related to hazardous waste 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 hazardous waste and mitigation would not be required.

2.2.5 AIR QUALITY

Regulatory Setting

The Federal Clean Air Act, 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 United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board, set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards. National Ambient Air Quality Standards 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 National Ambient Air Quality Standards 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 Federal Clean Air Act also applies.

Conformity

The conformity requirement is based on Federal Clean Air Act 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 for attaining the National Ambient Air Quality Standards. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the Project level. The Project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the National Ambient Air Quality Standards, and only for the specific National Ambient Air Quality Standards 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 National Ambient Air Quality Standards 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 National Ambient Air Quality Standards 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 nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans and Federal Transportation Improvement Programs that include all transportation projects planned for a region over a period of at least 20 years (for the Regional Transportation Plan) and 4 years (for the Federal Transportation Improvement Program). Regional Transportation Plan and Federal Transportation Improvement Program 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 Federal Clean Air Act and the State Implementation Plan are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration, and Federal Transit Administration (FTA) make the determinations that the Regional Transportation Plan and Federal Transportation Improvement Program are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the Projects in the Regional Transportation Plan and/or Federal Transportation Improvement Program must be modified until conformity is attained. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the Regional Transportation Plan and Federal Transportation Improvement Program, then the proposed Project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the Project comes from a conforming Regional Transportation Plan and Transportation Improvement Program; the Project has a design concept and scope that has not changed significantly from those in the Regional

Transportation Plan and Transportation Improvement Program ("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.); project analyses have used the latest planning assumptions and U.S. EPA-approved emissions models; and in PM areas, the Project complies with any control measures in the State Implementation Plan. 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.

Affected Environment

An Air Quality Report was prepared for the Project in November 2020 to discuss potential impacts on air quality.

The Project Area is located in Los Angeles County, which is within the South Coast Air Basin. The South Coast Air Basin consists of an approximately 6,600-square mile area bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The South Coast Air Basin 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 South Coast Air Basin'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 South Coast Air Basin include topography and meteorology, which can affect pollutant transport and dispersion from sources located within and outside of the South Coast Air Basin.

The annual average temperature varies little throughout the South Coast Air Basin averaging approximately 62 degrees Fahrenheit (°F). Based on historical data collected from the Los Beach Airport (Daugherty Field), average temperatures range from a January low of approximately 45.6 °F to an August high of approximately 83.9 °F.

Average wind speeds in the South Coast Air Basin are light and primarily from the west. Mild sea breezes slowly carry pollutants inland. In the general vicinity of the Project Area, historical wind flow is predominantly from the northwest with an average annual wind speed of approximately six miles per hour (mph).

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 South Coast Air Basin, 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 South Coast Air Basin 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 (SCAQMD 1980, 2002).

The South Coast Air Basin is surrounded by mountains on three sides and the Pacific Ocean on the remaining side. The mountains serve as a barrier, preventing ready dispersion of pollutant concentrations. Prevailing wind patterns off the ocean carry pollutants eastward across the South Coast Air Basin, enabling continual photochemical reactions to occur as new emissions are added to existing pollutant concentrations. Intense sunlight, present at the latitude of the South Coast Air Basin, provides the ultraviolet light necessary to fuel the photochemical reactions that produce O_3.

The Clean Air Act requires the U.S. EPA to set National Ambient Air Quality Standards for six criteria air contaminants: ozone, particulate matter, carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. It also permits states to adopt additional or more protective air quality standards if needed. California has set standards for certain pollutants. **Table 25** documents the current air quality standards, while **Table 26** summarizes the sources and health effects of the six criteria pollutants and pollutants regulated in the state of California.

The state and national attainment status designations pertaining to the South Coast Air Basin are summarized in **Table 27**. The South Coast Air Basin 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 South Coast Air Basin is designated attainment for the lead standards. Federal standards designate PM_{10}, CO, and NO_2 as attainment/maintenance. The South Coast Air Basin is designated attainment or unclassified for the remaining State and Federal standards.

Table 25: State and Federal Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990 California Air Resources Board (5/4/16)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, 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.

2. National standards (other than ozone, particulate matter, 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 three years, is equal to or less than the standard. For PM10, 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 one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 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 PM10 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.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. 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 one 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.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. 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.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (5/4/16)**

Table 26: 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 & 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.
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.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
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

Table 27: 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

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on air quality.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

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 computer program based on traffic information provided by the Project engineer. Estimated changes in operational emissions are summarized in **Table 28**. Operational emissions were quantified for existing year 2019 (baseline) conditions, No Build Alternative and the Build Alternative conditions for Opening Year 2024 and Design Year 2045 conditions. In comparison to No Build Alternative year 2024 conditions, the proposed Build Alternative is predicted to increase emissions by approximately three percent for $PM_{2.5}$, PM_{10}, NO_x and ROG with a two percent increase for CO. In comparison to No Build Alternative year 2045 conditions, the proposed Build Alternative is predicted to

increase emissions approximately three percent for $PM_{2.5}$, PM_{10} and NO_X with two percent for CO and ROG.

Table 28: Summary of Comparative Operational Emissions Analysis

Scenario/Analysis Year	$PM_{2.5}$ Emissions (Tons per Year)	PM_{10} Emissions (Tons per Year)	NO_X Emissions (Tons per Year)	CO Emissions (Tons per Year)	ROG Emissions (Tons per Year)
Existing - Year 2019	2.52	8.52	23.99	68.67	4.56
No Build Alternative – Opening Year 2024	2.30	8.43	11.56	43.35	2.95
No Build Alt. 2024 Compared to Existing:	-0.23	-0.09	-12.43	-25.32	-1.61
Percent Change:	-9%	-1%	-52%	-37%	-35%
Build Alternative – Opening Year 2024	2.36	8.66	11.90	44.43	3.03
Build Alt. 2024 Compared to Existing:	-0.17	0.14	-12.10	-24.24	-1.53
Percent Change:	-7%	2%	-50%	-35%	-34%
Build Alt. 2024 Compared to No Build Alt. 2024:	0.06	0.22	0.33	1.08	0.07
Percent Change:	3%	3%	3%	2%	3%
No Build Alternative – Design Year 2045	2.45	9.29	8.75	28.15	1.66
No Build Alt. 2045 Compared to Existing:	-0.07	0.77	-15.24	-40.52	-2.91
Percent Change:	-3%	9%	-64%	-59%	-64%
Build Alternative – Design Year 2045	2.52	9.53	9.00	28.84	1.70
Build Alt. 2045[3] Compared to Existing:	-0.01	1.01	-15.00	-39.83	-2.87
Percent Change:	0%	12%	-63%	-58%	-63%
Build 2045[3] Alt. Compared to No Build Alt. 2045:	0.06	0.24	0.25	0.68	0.04
Percent Change:	3%	3%	3%	2%	2%

Source: AMBIENT Air Quality and Noise Consulting, 2020
Notes: % = percent; $PM_{2.5}$ = fine particulate matter; PM_{10} = respirable particulate matter; NO_x = nitrogen oxide; CO = carbon monoxide; ROG = reactive organic gases
Emissions were calculated using the CT-EMFAC2017 version 1.0.2 computer program based, in part, of traffic data provided for this project in the Final Traffic Operations Analysis Report (Intueor Consulting, September 2020).
The analysis includes exhaust emissions, brake, road, and tire dust.
NOx is surrogate for NO_2.
There is no significant difference in projected traffic volumes/data between year 2040 and year 2045. Therefore, 2045 traffic data is presented as the Horizon/Design Year (2040) for purposes of this table.

Regional Conformity

The Project is included in the regional emissions analysis conducted by the Southern California Association of Governments (SCAG) for the conforming 2020 Regional Transportation Plan/Sustainable Communities Strategy and the 2019 Federal Transportation Improvement Program. The Project is identified in the 2020 Regional Transportation Plan/Sustainable

Communities Strategy as Project No. 1163S005, and the 2019 Federal Transportation Improvement Program as Project No. LA0G1453, and described as “Add one eastbound auxiliary lane from I-710 ramps at Atlantic Avenue to past Cherry Avenue Undercrossing”. In addition, the Project is included in Amendment #19-27 to revise the Project description and postmiles (PM 11.8 to PM 13.2).

The Project’s design, concept, and scope have not changed significantly from what was analyzed in the regional emission analysis prepared for the federally approved 2020 Regional Transportation Plan/Sustainable Communities Strategy and the 2019 Federal Transportation Improvement Program. The air quality conformity analysis prepared for these plans found that the plans, which take into account regionally significant projects and financial constraints, would conform to the state implementation plan(s) for attaining and maintaining the National Ambient Air Quality Standards as provided in Section 176(c) of the Federal Clean Air Act. The Federal Highway Administration determined that the 2020 Regional Transportation Plan/Sustainable Communities Strategy and the 2019 Federal Transportation Improvement Program conform to the State Implementation Plan on June 5, 2020. It is important to note that the Project was evaluated based on design 2045 traffic conditions. There is no significant difference in projected traffic volumes/data between future design years 2040 and 2045.

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 **Table 27** above). As a result, a project-level hot-spot analysis for PM_{10}, $PM_{2.5,}$ and CO is required under 40 CFR 93.109. As discussed below, 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 National Ambient Air Quality Standards or any required interim emission reductions or other milestones during the timeframe of the transportation plan (or regional emissions analysis).

In 1997, the U.S. EPA approved the CO Protocol (*Transportation Project-Level Carbon Monoxide Protocol*, *UCD-ITS-97-21*, University of California, Davis, December 1997) for use as an alternative hot-spot analysis method in California. Statewide and regional interagency consultation groups also reviewed the 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. Based on the screening criteria, the Project Area intersection would not be suspected of resulting in higher CO concentrations than those existing within the region at the time of attainment demonstration. No further analysis is necessary.

In November 2015, the 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 National Ambient Air Quality Standards (75 FR 79370). The Guidance requires a hot-spot analysis to be completed for a project of air quality concern (POAQC).

The Project is not considered a POAQC for PM_{10} and/or $PM_{2.5}$ because it does not meet the definition of a POAQC as defined in U.S. EPA's Transportation Conformity Guidance. The Project is not a new or expanded highway that would result in a significant increase in diesel vehicles. As noted in Section 2.1.3, Traffic and Transportation/Pedestrian and Bicycle Facilities, the 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 has undergone review by SCAG's Transportation Conformity Working Group (TCWG) for POAQC determination. On September 22, 2020, TCWG participants concurred that the Project is not a POAQC.

Natural Occurring Asbestos (NOA) and Structural Asbestos

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 Project lies is not known to contain serpentine or ultramafic rock. Therefore, the impact of naturally occurring asbestos during Project construction would be minimal to none.

However, it is important to note that 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.

As discussed in Section 2.2.4, Hazardous Waste/Materials, avoidance and minimization measure **AVM-HW-3** would be implemented, and would include conducting ACM surveys for the 4 bridges in the Project Area during the design phase, as well as for retaining walls and soundwalls connected to other structures.

Lead (Pb)

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, California Code of Regulations, and require disposal in a Class I disposal site. In addition, the disturbance of lead paint must meet U.S. EPA and air district rules (Caltrans Standard Specifications 14-9.02 and Caltrans Standard Special Provision 14-11.07, 2018). Lead-based paint may be encountered with painted curbs and protective bollards. Furthermore, the Project is not located near an industrial lead emissions source. Therefore, exposure to lead in excess of applicable standards during construction would be unlikely.

Mobile Source Air Toxics (MSAT)

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. EPA regulate 188 air

toxics, also known as hazardous air pollutants. The U.S. EPA has assessed this expansive list in its rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are part of U.S. EPA's Integrated Risk Information System (IRIS) (https://www.epa.gov/iris). In addition, the 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) (https://www.epa.gov/national-air-toxics-assessment). These are *1,3-butadiene*, *acetaldehyde*, *acrolein*, *benzene*, *diesel particulate matter (diesel PM)*, *ethylbenzene*, *formaldehyde*, *naphthalene*, and *polycyclic organic matter*. While the Federal Highway Administration considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future U.S. EPA rules.

The auxiliary lane under 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 under 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, will over time cause substantial reductions that, in almost all cases, will 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 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.

Construction (Short-term) Impacts

Site preparation and roadway construction will 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, volatile organic compounds (VOCs), directly emitted PM_{10} and $PM_{2.5}$, and toxic air contaminants (TACs) such as diesel exhaust particulate matter. 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 activities will not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123(c)(5)). Construction of the Project would occur over an approximately 2-year period.

As depicted in **Table 29**, construction of the proposed Build Alternative would generate maximum daily emissions of approximately 5.14 pounds per day of reactive organic gases, 45.64 pounds per day of carbon monoxide, 53.91 pounds per day of oxides of nitrogen, 9.30 pounds per day of PM_{10}, and 3.52 pounds per day of $PM_{2.5}$. Total emissions generated during construction would be 0.93 tons of reactive organic gases, 8.74 tons of carbon monoxide, 9.41 tons of oxides of nitrogen, 1.98 tons of PM_{10}, and 0.70 tons of $PM_{2.5}$.

Table 29: Construction Emissions of Criteria Air Pollutants and Precursors

Construction Phase	Reactive Organic Gas Emissions (pounds per day)	Carbon Monoxide Emissions (pounds per day)	Oxides of Nitrogen Emissions (pounds per day)	PM_{10} Emissions (pounds per day)	$PM_{2.5}$ Emissions (pounds per day)
Land Clearing/Grubbing	1.12	10.57	11.03	7.48	1.88
Grading/Excavation	5.14	45.64	53.91	9.30	3.52
Drainage/Utilities/Sub-Grade	2.94	29.34	27.92	8.24	2.59
Paving	1.38	17.98	12.79	0.68	0.59
Maximum per Day:	*5.14*	*45.64*	*53.91*	*9.30*	*3.52*
Project Total (tons):	*0.93*	*8.74*	*9.41*	*1.98*	*0.70*

Source: AMBIENT Air Quality and Noise Consulting, 2020
Notes: PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Construction emissions were estimated using the Sacramento Metropolitan Air Quality Management District'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.

Most of the construction impacts to air quality are short-term in duration and, therefore, will not result in long-term adverse conditions. Implementation of the following standardized measures (**PF-AQ-1** through **PF-AQ-13**), some of which may also be required for other purposes such as storm water pollution control, will reduce any air quality impacts resulting from construction activities:

PF-AQ-1 The construction contractor must comply with the Caltrans' Standard Specifications in Section 14-9 (2018).

- Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

PF-AQ-2 Water or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions.

PF-AQ-3 Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.

PF-AQ-4 Trucks will be washed as they leave the right of way, as necessary, sufficient to prevent track-out of material onto paved surfaces for the purposes of controlling fugitive dust emissions. Other measures, such as the use of track-out devices or gavel pads, may also be used.

PF-AQ-5 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.

PF-AQ-6 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.

PF-AQ-7 Equipment and materials storage sites would be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.

PF-AQ-8 Construction activities involving the extended idling of diesel equipment or vehicles will be limited near air sensitive receptors to the extent feasible.

PF-AQ-9 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.

PF-AQ-10 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.

PF-AQ-11 Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions.

PF-AQ-12 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.

PF-AQ-13 Mulch will be installed, or vegetation planted as soon as practicable after grading to reduce windblown PM in the area.

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 would not be anticipated to result in the frequent exposure of receptors to objectionable odorous emissions.

Based on the analysis above, the Build Alternative would not result in adverse impacts on air quality.

Avoidance, Minimization, and/or Mitigation Measures

Impacts on air quality would not be adverse; therefore, avoidance, minimization, and/or mitigation measures would not be required.

Climate Change

Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. The Federal Highway Administration emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because there have been requirements set forth in California legislation and executive orders 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 National Environmental Policy Act (NEPA) determination for the Project.

Cumulative Impacts

As discussed above, the Project Study Area is in a nonattainment area for several criteria air pollutants. Although other current and reasonably foreseeable actions (see **Table 6** above) could contribute to cumulative effects on air quality within the Project Study Area, the proposed Project's effects on air quality would 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.

2.2.6 NOISE AND VIBRATION

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 the 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.

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.

NATIONAL ENVIRONMENTAL POLICY ACT AND 23 CFR 772

For highway transportation projects with Federal Highway Administration 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 A-weighted decibels [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 30: Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, Leq(h)	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	67 (Exterior)	Residential.
C	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings. Includes undeveloped lands permitted for this activity category.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	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, etc.), and warehousing.
G	No NAC— reporting only	Undeveloped lands that are not permitted.

Figure 13 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.

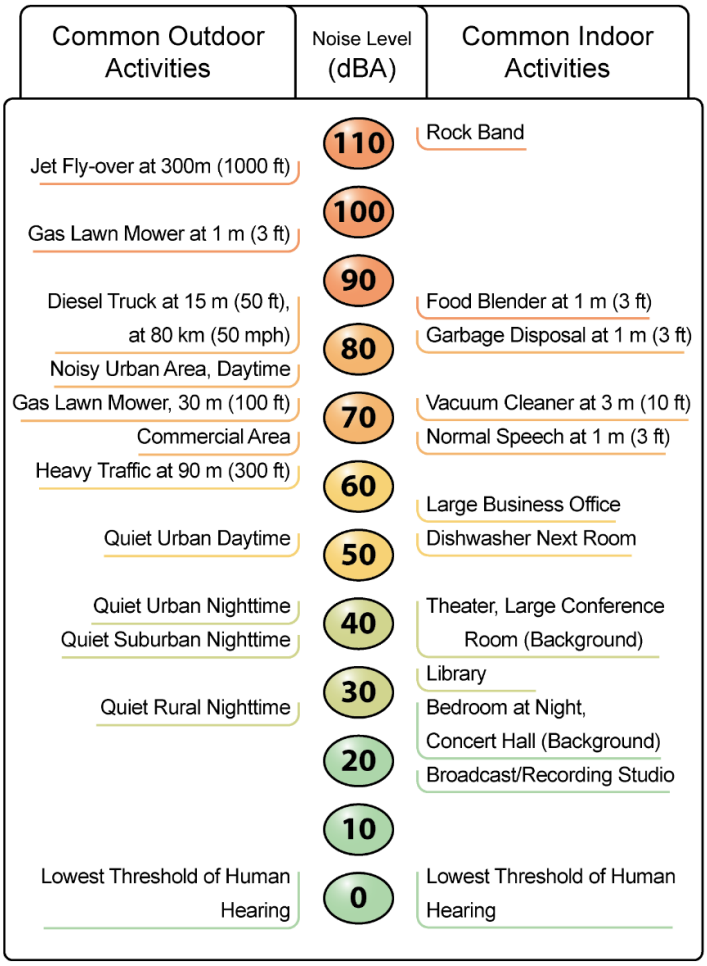

Figure 13: Noise Levels of Common Activities

According to Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 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 decibels (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).

Affected Environment

A Noise Study Report (NSR) was completed in September 2020 to discuss potential impacts related to noise. A Noise Abatement Decision Report (NADR) was also completed for the Project in October 2020.

The Project Area has been grouped into two analysis areas, Area A and Area B, which are shown in **Figure 14** through **Figure 18**. These figures also show the locations of receptors and proposed barrier locations along the Study Area.

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Figure 14: Analysis Areas, Noise-Monitoring Locations, Modeled Receptors, Evaluated Noise Barriers, and Nearby Land Uses (Sheet 1 of 5)

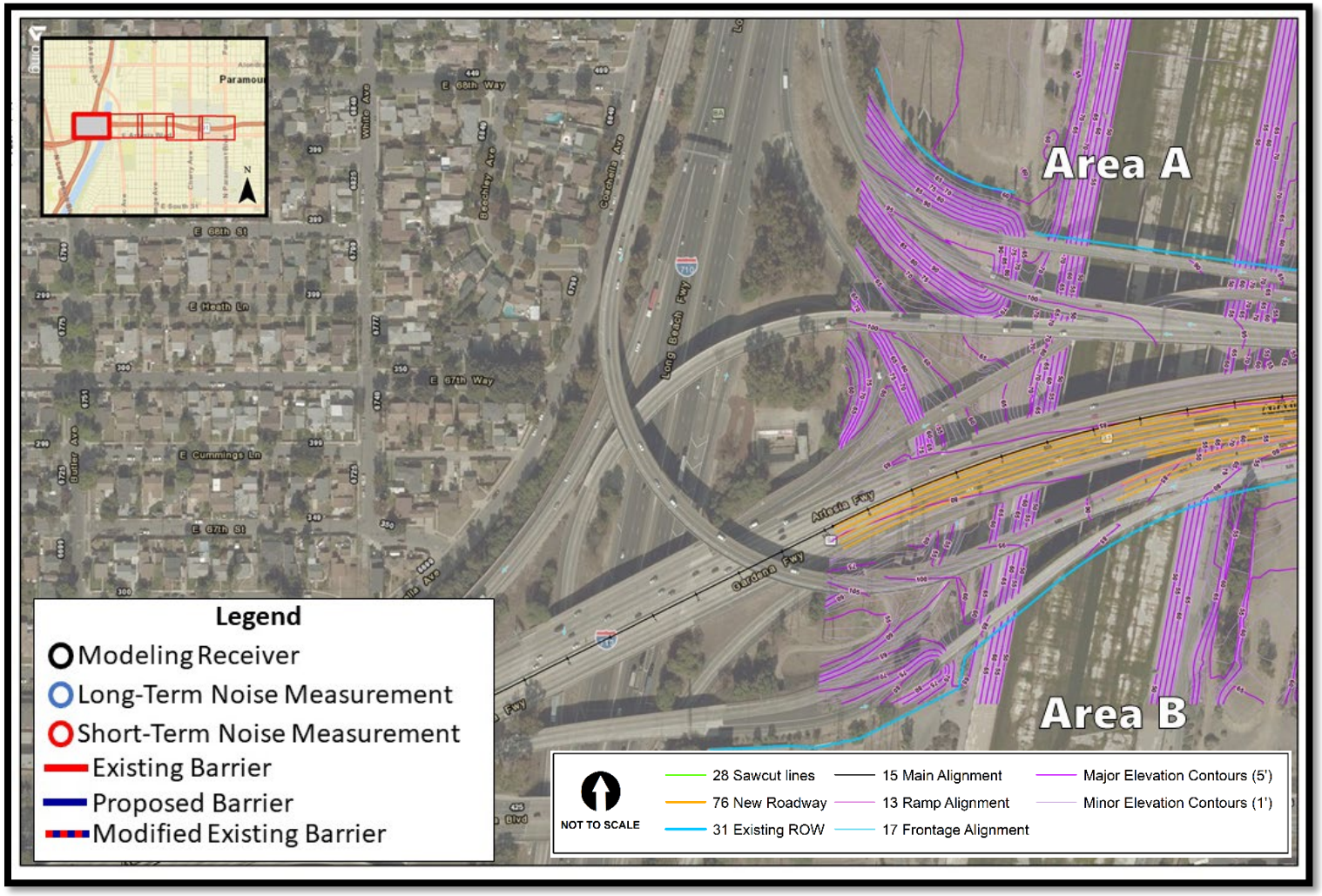

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Figure 15: Analysis Areas, Noise-Monitoring Locations, Modeled Receptors, Evaluated Noise Barriers, and Nearby Land Uses (Sheet 2 of 5)

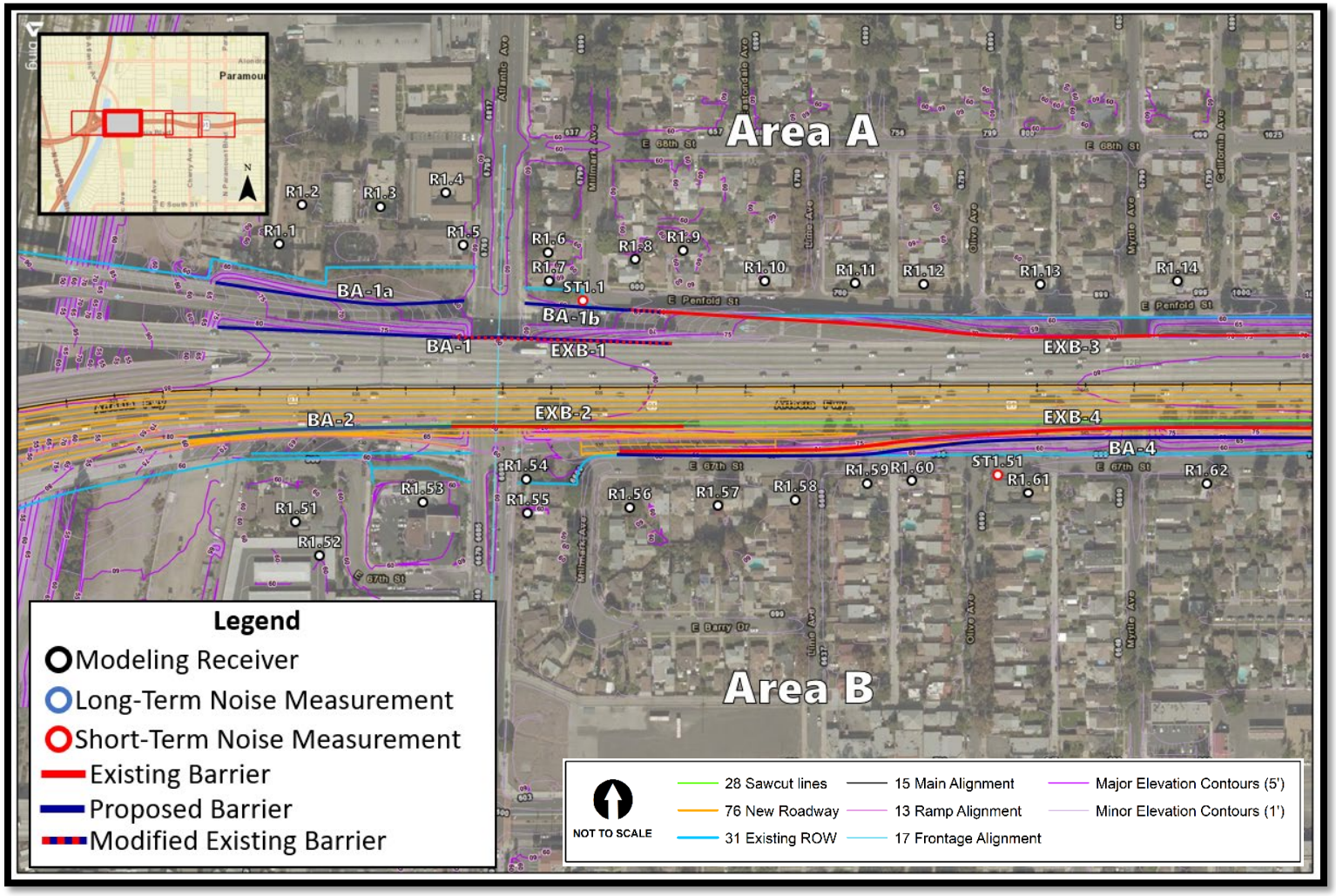

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Figure 16: Analysis Areas, Noise-Monitoring Locations, Modeled Receptors, Evaluated Noise Barriers, and Nearby Land Uses (Sheet 3 of 5)

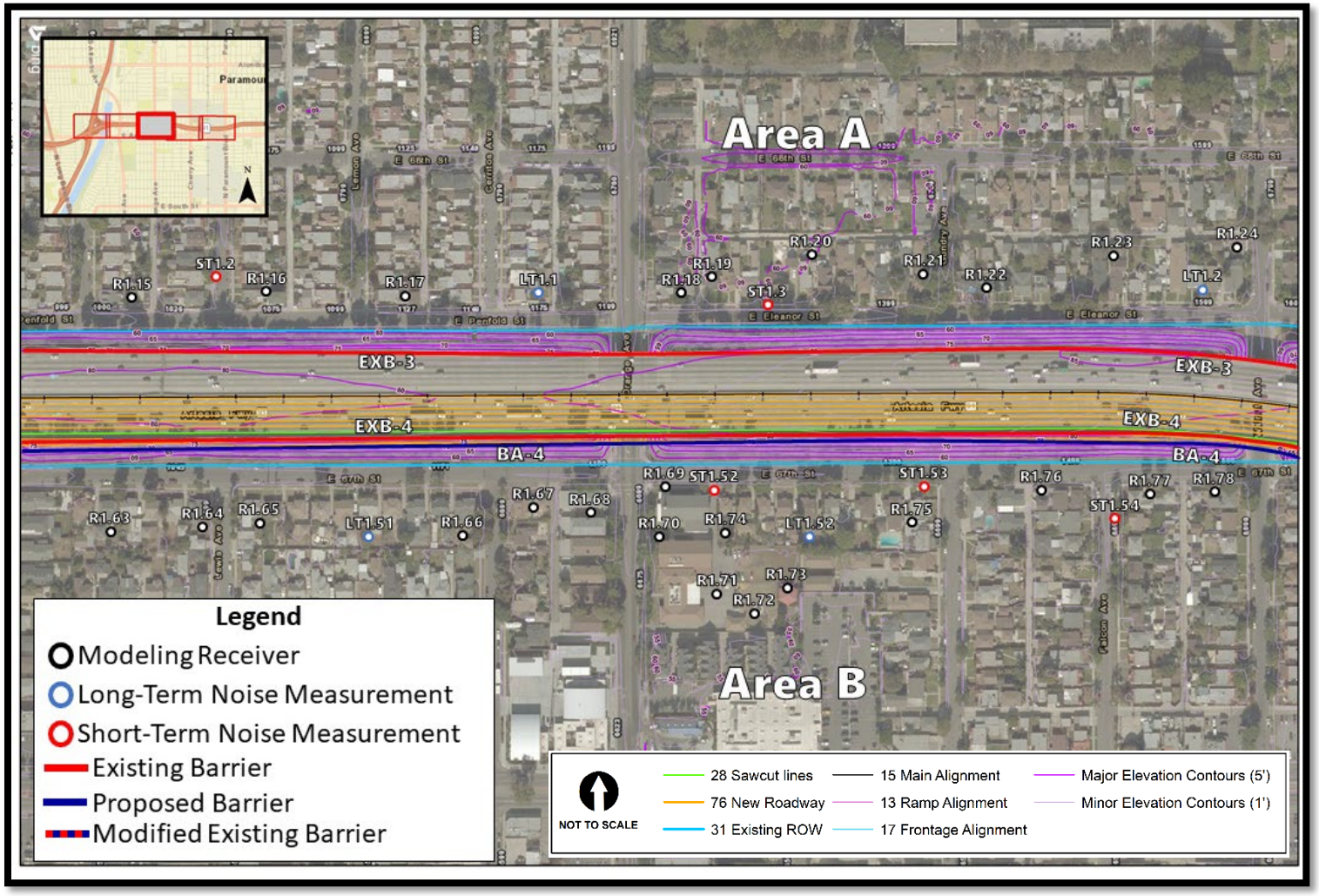

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Figure 17: Analysis Areas, Noise-Monitoring Locations, Modeled Receptors, Evaluated Noise Barriers, and Nearby Land Uses (Sheet 4 of 5)

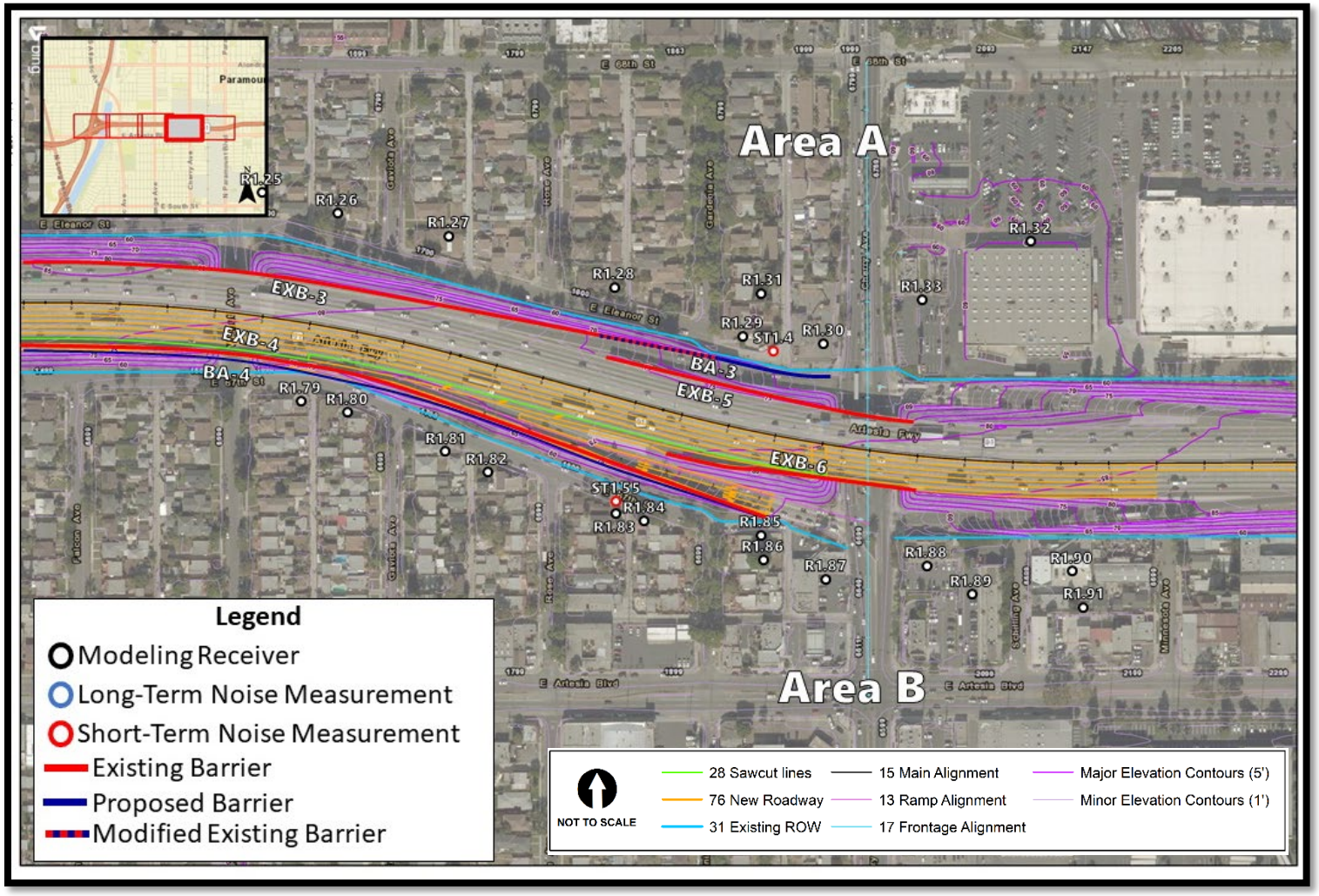

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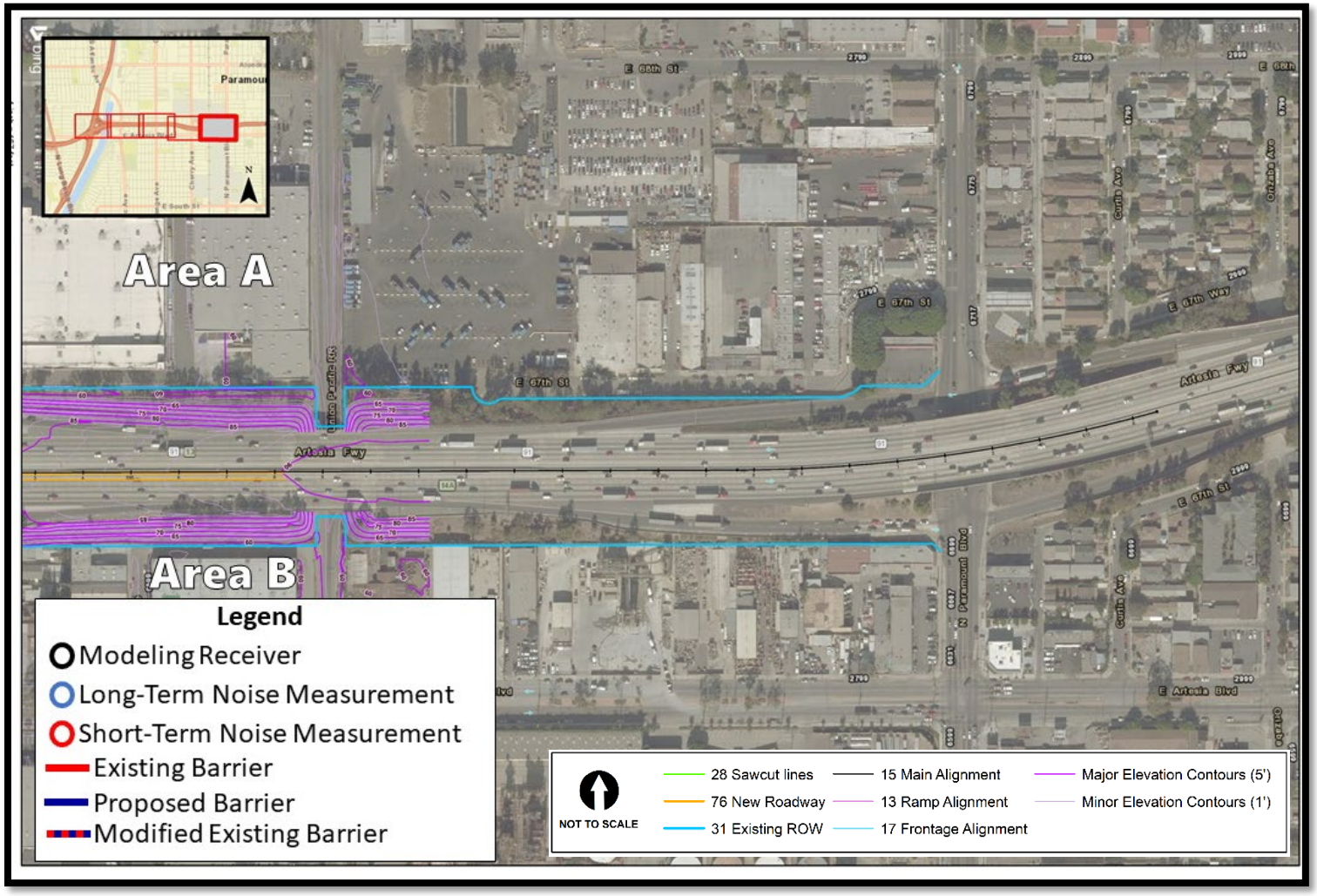
Figure 18: Analysis Areas, Noise-Monitoring Locations, Modeled Receptors, Evaluated Noise Barriers, and Nearby Land Uses (Sheet 5 of 5)



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Area A and Area B are described as follows:

- **Area A:** This area is located on the north side of State Route 91, between the westerly (I-710/State Route 91 Connector) and easterly (Cherry Interchange) end of the Project. Residential subdivisions (Activity Category B), a restaurant (Activity Category E), and agriculture/industrial/retail uses (Activity Category F) are located in this area. This area is generally flat and lower in elevation than the highway. Existing noise barriers with a nominal height of 8 feet to 14 feet are generally located between State Route 91 and the residential areas, as shown in **Figure 14** through **Figure 18**.

- **Area B:** This area is located on the south side of State Route 91, between the westerly (I-710/State Route 91 Connector) and easterly (Cherry Interchange) end of the Project. Residential subdivisions (Activity Category B), a school and a place of worship (exterior Activity Category C, interior Activity Category D), offices (Activity Category E), and industrial/retail uses (Activity Category F) are located in this area. The ground is generally flat and lower in elevation than the highway. Existing noise barriers with a nominal height of 8 feet to 14 feet are generally located between State Route 91 and the residential areas, as shown in **Figure 14** through **Figure 18**.

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts related to noise.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

The Federal Highway Administration 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 of the highway. This project is categorized as a Type I project.

Under 23 CFR 772.11, noise abatement must be considered for Type I projects if the Project is predicted to result in a traffic noise impact. In such cases, 23 CFR 772 requires that the Project sponsor “consider” noise abatement before adoption of the final NEPA document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the Project, and of noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR 772.5, occur when the predicted noise level in the design-year approaches or exceeds the NAC specified in 23 CFR 772, or a predicted noise level substantially exceeds the existing noise level (a "substantial" noise increase). **Table 31** summarizes existing and predicted design-year (2045) noise levels for each land use in the Project Area, without consideration of noise abatement. **Table 32** summarizes the existing and predicted design-year (2045) noise levels for all impacted receptors (i.e., receptors where future noise conditions approach or exceed the noise abatement criteria). Appendix B of the Noise Study Report includes the predicted future noise levels and noise barrier analysis for all modeled receptors.

Table 31: Summary of Noise Levels and Traffic Noise Impacts (Without Noise Abatement)

Land Use	Existing Noise Level Range, dBA	Predicted Design-Year Noise Level Range, dBA	Number of Traffic Noise Impacted Receptors
Agriculture	69	69	0
Industrial	59 to 69	59 to 69	0
Office	66 to 68	67 to 68	0
Place of Worship	63	70	1
Residential	59 to 72	60 to 72	28
Restaurant	68	68	0
Retail	64 to 69	65 to 69	0
School	61 to 62	68 to 69	4

Source: AMBIENT Air Quality and Noise Consulting, 2020

Table 32: Predicted Future Noise Levels for Impacted Receptors in Area B

Receptor ID	Barrier ID	Land Use	Number of Dwelling Units	Address	Existing Noise Level $L_{eq}(h)$, dBA	Design Year Noise Level without Project $L_{eq}(h)$, dBA	Design Year Noise Level with Project $L_{eq}(h)$, dBA	Design Year Noise Level without Project minus Existing Conditions $L_{eq}(h)$, dBA	Design Year Noise Level with Project Minus No Project Conditions $L_{eq}(h)$, dBA	Activity Category (Noise Abatement Criteria)	Design Year Noise Level with Project Minus Existing Conditions, $L_{eq}(h)$, dBA
R1.51	BA-2	Residential	4	540 East 67th Street	67	66	67	0	0	B (67)	0
LT1.51	BA-4	Residential	8	1100 East 67th Street	59	60	72	1	13	B (67)	13
LT1.52	BA-4	Residential	7	1306 East 67th Street	60	61	66	1	6	B (67)	6
R1.59	BA-4	Residential	1	6686 Lime Avenue	64	64	70	1	7	B (67)	6
R1.61	BA-4	Residential	2	6690 Olive Avenue	65	66	72	1	7	B (67)	7
R1.62	BA-4	Residential	1	6690 Myrtle Avenue	66	67	71	1	5	B (67)	5
R1.63	BA-4	Residential	6	1008 East 67th Street	62	63	66	1	4	B (67)	4
R1.64	BA-4	Residential	1	1040 East 67th Street	61	62	68	1	7	B (67)	7
R1.66	BA-4	Residential	1	1132 East 67th Street	60	61	67	1	7	B (67)	7
R1.67	BA-4	Residential	1	6680 Cerritos Avenue	60	61	67	1	6	B (67)	7
R1.68	BA-4	Residential	2	6695 Orange Avenue	61	61	67	1	6	B (67)	6
R1.69	BA-4	Church	N/A	6698 Orange Avenue	63	64	71	1	8	D (52)	8
R1.70	BA-4	School	N/A	6650 Orange Avenue	62	62	69	1	7	D (52)	7
R1.71	BA-4	School	N/A	6650 Orange Avenue	61	62	68	1	7	C (67)	7
R1.72	BA-4	School	N/A	6650 Orange Avenue	61	62	68	1	6	C (67)	7
R1.73	BA-4	School	N/A	6650 Orange Avenue	61	61	68	1	7	C (67)	7
R1.74	BA-4	Residential	1	1230 East 67th Street	62	63	69	1	7	B (67)	7
R1.75	BA-4	Residential	1	1346 East 67th Street	60	60	66	1	6	B (67)	6
R1.76	BA-4	Residential	2	6697 Falcon Avenue	64	64	71	1	7	B (67)	7
R1.77	BA-4	Residential	1	6698 Falcon Avenue	60	61	67	1	7	B (67)	7
R1.78	BA-4	Residential	1	6691 Walnut Avenue	63	63	71	1	8	B (67)	8
R1.79	BA-4	Residential	1	6684 Walnut Avenue	64	65	72	1	8	B (67)	8
R1.80	BA-4	Residential	1	6679 Gaviota Avenue	64	65	72	1	8	B (67)	8

Receptor ID	Barrier ID	Land Use	Number of Dwelling Units	Address	Existing Noise Level $L_{eq}(h)$, dBA	Design Year Noise Level without Project $L_{eq}(h)$, dBA	Design Year Noise Level with Project $L_{eq}(h)$, dBA	Design Year Noise Level without Project minus Existing Conditions $L_{eq}(h)$, dBA	Design Year Noise Level with Project Minus No Project Conditions $L_{eq}(h)$, dBA	Activity Category (Noise Abatement Criteria)	Design Year Noise Level with Project Minus Existing Conditions, $L_{eq}(h)$, dBA
R1.81	BA-4	Residential	1	6670 Gaviota Avenue	63	64	71	1	8	B (67)	8
R1.82	BA-4	Residential	2	6659 Rose Avenue	63	63	71	1	8	B (67)	8
R1.83	BA-4	Residential	1	6654 Rose Avenue	62	63	69	1	7	B (67)	7
R1.84	BA-4	Residential	1	6641 Gardenia Avenue	63	63	69	1	7	B (67)	6

Source: AMBIENT Air Quality and Noise Consulting, 2020
Notes: N/A = Not Applicable; $L_{eq}(h)$ = hourly equivalent sound level; dBA = A-weighted decibels

During Project construction, noise and vibration from construction activities may intermittently dominate the noise environment in the immediate area of construction. In addition, sensitive noise receptors, including nearby residences, may be exposed to increased traffic noise following demolition of the existing soundwall. The Project would not require any pile driving activities for bridge widening, as cast-in-drilled-hole piles would be used for bridge construction; however, pile driving may be required for shoring during construction. In addition, the Project would require the use of loaded trucks and bulldozers. Based on the Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual (2018), a loaded truck, a large bulldozer, and pile driving would generate a vibration level of 0.076 peak particle velocity (PPV) (inches per second [in/sec]) (86 vibration velocity decibels [VdB]), 0.089 PPV (in/sec) (87 VdB), and 0.644 PPV (in/sec) (104 VdB), respectively, when measured at 25 feet. Vibration associated with construction activities, specifically, pile driving, could cause annoyance impacts, depending on the distance from vibration sensitive receptors, and the impact would not be adverse.

The Build Alternative includes the following Project features:

PF-NOI-1 Sound control will conform to the provisions in Section 14-8.02, Noise Control, of the Caltrans Standard Specifications. According to requirements of these specifications, construction noise cannot exceed 86 dBA L_{max} at 50 feet from the job site activities from 9:00 p.m. to 6:00 a.m.

PF-NOI-2 All equipment will have sound-control devices no less effective than those provided on the original equipment. Each internal combustion engine used for any purpose on the job or related to the job will be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine will be operated on the job site without an appropriate muffler. Additionally, construction methods or equipment that will provide the lowest level of noise impact will be used and idling equipment will be turned off.

PF-NOI-3 Existing noise barrier, EXB-2, would be demolished due to roadway and bridge widening as part of the Project implementation. This existing noise barrier would be replaced in-kind (length and height), at minimum.

Avoidance and minimization measures (see **AVM-NOI-1**, **AVM-NOI-2**, and **AVM-NOI-3** under Avoidance, Minimization, and/or Abatement Measures) would also be implemented, such as using cast-in-drilled-hole piles or sonic or vibratory pile drivers, where feasible, to avoid the use of impact-type pile drivers near residences, conducting activities during weekday daytime hours when residents may be away from their homes when there is a possibility of human annoyance from pile driving, avoiding high vibration–generating activities during the same time in proximity to each other to the maximum extent practicable, and contacting residents prior to pile driving to notify them that this activity will be occurring.

Avoidance, Minimization, and/or Abatement Measures

Implementation of this project would widen some existing roadways/bridges requiring the demolition of existing barriers. Predicted noise levels for design-year conditions with the Project

alternative were modeled with the proposed widening conditions and no barrier. Noise abatement was considered at locations where the noise levels in the design-year are predicted to approach or exceed the noise abatement criterion at the specified land use as shown above in **Table 30**. The following is a discussion of noise abatement considered for each evaluation area where traffic noise impacts are predicted.

Area A

This area contains several land use categories represented by the following receptors. Receptors R1.3 to R1.29, R1.88, ST1.1 to ST1.4, LT1.1, and LT1.2 represent a total of 62 residences. Receptor R1.1 represents commercial retail. Receptor R1.2 represents agriculture land use. Receptor R1.30 represents industrial land use.

The traffic noise modeling results indicate that traffic noise levels at the land uses in Area A are predicted to be in the range of 60 to 72 dBA L_{eq}(h) in the design-year. The results also indicate a 2 dBA increase in noise between existing conditions and the design-year. Because the noise levels in the design-year are predicted to approach or exceed the noise abatement criterion (67 dBA L_{eq}[h]) at residences, noise abatement must be considered in Area A.

This area is comprised of existing barriers (EXB) EXB-1, EXB-3, and EXB-5 (**Figure 14** through **Figure 18** above). EXB-1 extends from PM LA R12.087 to LA R12.119 at an approximate height of 8 feet and continues from LA R12.119 to LA R12.175 at an approximate height of 12 feet. EXB-3 extends from PM LA R12.156 to LA R13.058 at a height ranging from approximately 10 to 14 feet. EXB-5 at a height of 12 feet extends from PM LA R13.007 to LA R13.129.

Detailed modeling analysis was conducted for four barriers located at the edge of the shoulder. The barriers evaluated are identified as proposed barriers BA-1, BA-1a, BA-1b, and BA-3 in **Figure 14** through **Figure 18** above. Barrier heights in the range of 8 to 16 feet were evaluated in 2-foot increments. Proposed Barrier BA-1 extends from PM LA R11.998 to LA R12.175. As an option, barriers BA-1a and BA-1b were evaluated in place of Barrier BA-1. Proposed Barrier BA-1a extends from PM LA R11.995 to LA R12.092. Proposed Barrier BA-1b extends from PM LA R12.115 to LA R12.166. Proposed Barrier BA-3 extends from PM LA R12.998 to LA R13.095.

Table 33 summarizes noise abatement, acoustical feasibility of noise abatement, and reasonable allowances for feasible abatement. While Project improvements would only be completed along Eastbound State Route 91, sensitive noise receptors are located to the north and south of the transportation facility. Therefore, noise abatement along WB State Route 91 was considered in this analysis.

The NADR modeled and evaluated noise barriers BA-1, BA-1a, BA-1b, BA-3 for reasonableness. These noise barriers were not found to be acoustically feasible for any of the evaluated heights ranging from 8 to 16 feet. None of these noise barriers would meet the acoustic feasibility criteria of providing noise reduction of at least 5 dBA at an impacted receptor for any of the evaluated wall heights ranging from 8 to 16 feet. Therefore, these noise barriers are not considered reasonable and not recommended for construction.

Table 33: Summary of Noise Abatement, Acoustic Feasibility, and Reasonable Allowances for Feasible Westbound State Route 91 Barriers

Design Year with Barrier BA-1	8-Foot Barrier	10-Foot Barrier	12-Foot Barrier	14-Foot Barrier	16-Foot Barrier
Barrier Noise Reduction (decibels)	0 to 2	0 to 2	1 to 2	1 to 3	1 to 3
Number of Benefited Receptors	0	0	0	0	0
Reasonable Allowance Per Benefited Receptor	$107,000	$107,000	$107,000	$107,000	$107,000
Total Reasonable Allowance	$0	$0	$0	$0	$0
Design Year with Barrier BA-1a (Option)	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**
Barrier Noise Reduction (decibels)	0 to 1	0 to 1	1 to 2	1 to 2	1 to 3
Number of Benefited Receptors	0	0	0	0	0
Reasonable Allowance Per Benefited Receptor	$107,000	$107,000	$107,000	$107,000	$107,000
Total Reasonable Allowance	$0	$0	$0	$0	$0
Design Year with Barrier BA-1b (Option)	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**
Barrier Noise Reduction (decibels)	0 to 2	0 to 2	0 to 2	0 to 3	1 to 3
Number of Benefited Receptors	0	0	0	0	0
Reasonable Allowance Per Benefited Receptor	$107,000	$107,000	$107,000	$107,000	$107,000
Total Reasonable Allowance	$0	$0	$0	$0	$0
Design Year with Barrier BA-3	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**
Barrier Noise Reduction (decibels)	-2 to 1	0 to 1	1 to 2	1 to 3	1 to 4
Number of Benefited Receptors	0	0	0	0	0
Reasonable Allowance Per Benefited Receptor	$107,000	$107,000	$107,000	$107,000	$107,000
Total Reasonable Allowance	$0	$0	$0	$0	$0

Source: AMBIENT Air Quality and Noise Consulting, 2020
Notes: For Barrier BA-1, a 12-foot barrier is the minimum height needed to break the line of sight between 11.5-foot truck stack and first row receptor. Break in line of sight is not achieved for the evaluated heights for Barrier BA-1a, BA-1b, and BA-3.

Area B

This area contains several land use categories represented by the following receptors. Receptors R1.51, R1.54 to R1.68, R1.91, R1.74 to R1.86, ST1.51, ST1.53 to ST1.55, LT1.51, and LT1.52 represent a total of 61 residences. Receptors ST1.52 and R1.69 represent a place of worship. Receptors R1.70 to R.73 represent a school. Receptors R1.53 and R1.87 represent commercial retail. Receptors R1.88 and R1.89 represent offices. Receptors R1.52 and R1.90 represent industrial areas.

The traffic noise modeling results indicate that traffic noise levels at the land uses in Area B are predicted to be in the range of 59 to 72 dBA L_{eq}(h) in the design-year. The results also indicate an up to 13 dBA increase in noise between existing conditions and the design-year. Because the predicted noise level in the design-year exceeds 67 dBA L_{eq} (h) at residences, traffic noise impacts are predicted, and noise abatement must be considered in Area B.

Because schools and places of worship have an interior noise abatement criterion in addition to the exterior criterion, interior noise must be considered at the school and place of worship as well. From Table 6 in the Federal Highway Administration Highway Traffic Noise Analysis and Abatement Guidance document, 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 49 dBA L_{eq}(h), and 51 dBA L_{eq}(h) at the place of worship. Because this predicted design year noise level does not approach or exceed the interior NAC of 52 dBA Leq(h), no interior traffic noise impacts are predicted at the school or place of worship.

This area is comprised of barriers EXB-2, EXB-4, and EXB-6 (refer to **Figure 14** through **Figure 18** above). EXB-2 is 12 feet high and extends from PM LA R12.086 to LA R12.184. EXB-4, ranging from approximately 10 to 14 feet high, would be demolished due to roadway and bridge widening. Barrier BA-4 was analyzed as a replacement for this barrier. EXB-6 has an approximate height of 10 feet and extends from PM LA R13.04 to LA R13.131.

Detailed modeling analysis was conducted for two barriers located at the edge of the shoulder. The barriers evaluated are identified as proposed barriers BA-2 and BA-4 in **Figure 14** through **Figure 18** above. Barrier heights in the range of 8 to 16 feet were evaluated in 2-foot increments. Proposed Barrier BA-2 extends from PM LA R11.992 to LA R12.184. Proposed Barrier BA-4 extends from PM LA R12.149 to LA R13.073.

The NADR modeled and evaluated Barrier BA-2 for reasonableness. **Table 34** summarizes noise abatement, acoustical feasibility of noise abatement, and reasonable allowances for feasible abatement. Barrier BA-2 would not achieve a minimum noise reduction of 5 dB at the critical receptors, and would therefore not be considered acoustically feasible; in addition, Barrier BA-2 would not meet the Caltrans design goal of 7 dB noise reduction at one or more benefited receivers for any of the evaluated wall heights. Therefore, BA-2 is not reasonable to construct at the evaluated length extending from the end of the southbound I-710/ eastbound State Route 91 connector bridge to the existing gore of the Atlantic Avenue eastbound on-ramp. However, there is an existing noise barrier, EXB-2, approximately 12 feet high extending from the beginning of the Atlantic Avenue Undercrossing to the existing gore of the Atlantic Avenue eastbound on-ramp, which would be demolished due to roadway and bridge widening as part of the Project implementation. This existing noise barrier would be replaced in-kind (length and height), at minimum.

As shown in **Table 34**, Barrier BA-4 would achieve the minimum noise reduction to be considered acoustically feasible and would replace existing noise barrier, EXB-4. This noise barrier would also meet the Caltrans design goal of 7 dB noise reduction at one or more benefited receivers for all evaluated wall heights, with a length of approximately 4,864 feet. Barrier BA-4 would be consistent with existing noise barrier EXB-4 that has a height of 14 feet. The estimated construction cost for barrier heights of 14 feet ($2,566,000) and 16 feet ($2,834,000) is less than the reasonable allowance of $4,815,000.

Table 34: Summary of Noise Abatement, Acoustic Feasibility, and Reasonable Allowances for Feasible Eastbound State Route 91 Barriers

Design Year with Barrier BA-2	8-Foot Barrier	10-Foot Barrier	12-Foot Barrier	14-Foot Barrier	16-Foot Barrier
Barrier Noise Reduction (decibels)	1 to 2	1 to 2	1 to 2	1 to 2	2
Number of Benefited Receptors	0	0	0	0	0
Reasonable Allowance Per Benefited Receptor	$107,000	$107,000	$107,000	$107,000	$107,000
Total Reasonable Allowance	$0	$0	$0	$0	$0
Design Year with Barrier BA-4	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**
Barrier Noise Reduction (decibels)	0 to 11	1 to 12	1 to 13	1 to 13	1 to 14
Number of Benefited Receptors	23	35	45	45	45
Reasonable Allowance Per Benefited Receptor	$107,000	$107,000	$107,000	$107,000	$107,000
Total Reasonable Allowance	$2,461,000	$3,745,000	$4,815,000	$4,815,000	$4,815,000

Source: AMBIENT Air Quality and Noise Consulting, 2020
Notes: For Barrier BA-2 and Barrier BA-4, a 10-foot barrier is the minimum height needed to break the line of sight between 11.5-foot truck stack and first row receptor. For Barrier BA-4, due to variations in terrain, the minimum height required to break line of sight between the first row of receptors and truck stack varies with barrier location. A 10-foot barrier for Barrier BA-4 is the minimum height needed to achieve 7-decibel noise reduction design goal.

The NSR evaluated all noise-sensitive land uses for traffic noise impacts and corresponding feasible noise abatement measures have been recommended. As a standard practice, construction of new soundwalls will be specified as the first order of work during final design.

Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of a barrier at: PM LA R12.149 to LA R13.073, with respective lengths and average heights of 4,864 feet and 14 to 16 feet. Calculations based on preliminary design data show that the barrier will reduce noise levels by 5 to 13 dBA for 45 residences at a cost of $57,022 per receptor for a 14-foot barrier; and by 5 to 14 dBA for 45 residences barrier at a cost of $62,978 per receptor for a 16-foot barrier. These measures may change based on input received from the public. If conditions have substantially changed during final design, noise abatement may not be constructed. The final decision on noise abatement will be made upon completion of the Project design. As discussed above, the other evaluated noise barriers (BA-1, BA-1a, BA-1b, BA-3) were not considered reasonable and, therefore, not recommended for construction.

The following avoidance and minimization measures will also be implemented to reduce impacts related to noise and vibration during construction:

AVM-NOI-1 Demolition of the existing noise barrier and construction of the proposed noise barrier on top of the retaining wall would be conducted in four segments along the Project Area to minimize traffic noise impacts on nearby residences. Construction within each segment would include demolishing the existing noise barrier, constructing the retaining wall, and then constructing the proposed noise barrier.

AVM-NOI-2 Though construction noise and vibration would be temporary and sporadic and would not present any long-term impacts, the following practices would reduce noise and vibration level increases produced by Project construction equipment at nearby noise-sensitive residential land uses:

- Construction activities shall comply with the Long Beach Municipal Code, which states that construction activities shall only occur on weekdays from 7:00 a.m. to 7:00 p.m. and Saturdays from 9:00 a.m. to 6:00 p.m.,
- Property owners and occupants located within 200 feet of the Project boundary shall be sent a notice, at least 15 days prior to commencement of construction of each phase, regarding the construction schedule of the proposed project. A sign, legible at 50 feet shall also be posted at the Project construction site. All notices and signs shall be reviewed and approved by Caltrans, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints.
- Construction noise reduction methods shall be implemented, such as:
    - Replacing worn, loose, or unbalanced machine parts that cause vibration,
    - Keeping machine parts well lubricated to reduce friction,
    - Erecting acoustical enclosures and barriers around generators,
    - Installing sound absorbing material and vibration isolation systems on hand tools,
    - Turning off equipment when not in use, and
    - Placing stationary construction equipment such that emitted noise is directed away from sensitive noise receivers.

AVM-NOI-3 The following procedures shall be implemented to minimize the potential for annoyance from construction vibration:

- Use cast-in-drilled-hole piles or sonic or vibratory pile drivers, where feasible, to avoid the use of impact-type pile drivers near residences.
- When there is a possibility of human annoyance from pile driving, conduct activities during weekday daytime hours when residents may be away from their homes.

- Avoid high vibration–generating activities during the same time in proximity to each other to the maximum extent practicable.

- Contact residents prior to pile driving to notify them that this activity will be occurring.

Cumulative Impacts

The Project Study Area is an urbanized transportation corridor with high existing background noise levels. The proposed Project's effects on noise would be relatively minor with implementation of avoidance, minimization, and abatement measures. Other current and reasonably foreseeable actions (see **Table 6** above) would be required to implement similar measures, such that effects on noise in the Project Study Area 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 noise with implementation of noise abatement measures discussed above.

2.2.7 ENERGY

Regulatory Setting

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

The California Environmental Quality Act (CEQA) Guidelines section 15126.2(b) and Appendix F, Energy Conservation, require an analysis of a project's energy use to determine if the Project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources.

Affected Environment

Existing daily roadway volumes for roadway segments in the Project Area are summarized in **Table 35**; existing freeway volumes are summarized in **Table 36**; and existing freeway HOV volumes are summarized in **Table 37**.

Table 35: Existing Daily Roadway Volumes

Segment	Average Daily Traffic
Artesia Boulevard west of Atlantic Avenue	27,058
Artesia Boulevard between Atlantic Avenue and Myrtle Avenue	24,106
Artesia Boulevard between Orange Avenue and Cherry Avenue	22,174
Artesia Boulevard between Cherry Avenue and Paramount Boulevard	21,581
Atlantic Avenue between State Route 91 and Artesia Boulevard	33,717
Orange Avenue between 67th Street and Artesia Boulevard	11,672
Cherry Avenue between State Route 91 and Artesia Boulevard	33,146
Paramount Boulevard between State Route 91 and Artesia Boulevard	31,664

Source: Iteris, 2019

Table 36: Existing Freeway Volumes

Segment or Ramp (West to East)	A.M. Peak Hour	P.M. Peak Hour	Daily
Eastbound State Route 91 HOV Lane at I-710	632	1,413	14,708
Eastbound State Route 91 at 710	2,164	3,173	29,299
I-710 Northbound to State Route 91 Eastbound Ramp (Direct Connector)	2,149	1,791	38,748
Eastbound State Route 91 between I-710 Northbound and 710 Southbound (Direct Connector)	4,313	4,964	68,047
I-710 Southbound to State Route 91 Eastbound Ramp (Direct Connector)	1,607	1,952	35,223
Eastbound State Route 91 between I-710 Southbound Direct Connector and Eastbound Atlantic Avenue On-ramp	5,920	6,916	103,270
Eastbound Atlantic Avenue On-ramp	592	714	11,634
Eastbound State Route 91 Atlantic Avenue to Cherry Avenue	6,512	7,630	114,904
Cross-weave Net Difference	357	62	2,533
Eastbound State Route 91 HOV Lane at Cherry Avenue	989	1,475	17,241
Eastbound Cherry Avenue Off-ramp	535	347	5,651
Eastbound State Route 91 Between Cherry Avenue Off-ramp & On-ramp (using Downey Avenue data)	5,620	7,221	106,720
Eastbound Cherry Avenue On-ramp	824	774	12,619
Eastbound State Route 91 Cherry Avenue to Paramount Boulevard	6,444	7,995	119,339
Eastbound Paramount Boulevard On-ramp	665	452	7,365
Eastbound State Route 91 Between Paramount Boulevard Off-ramp and On-ramp	5,779	7,543	111,974
Eastbound Paramount Boulevard On-ramp	380	499	8,133
Eastbound State Route 91 East of Paramount Boulevard	6,159	8,042	120,107

Source: Final Traffic Operations Analysis Report (Intueor Consulting, September 2020)
Notes: HOV = High-Occupancy Vehicle; I-710 = Interstate 710

Table 37: Existing Freeway HOV Volumes

Segment (West to East)	A.M. Peak Hour	P.M. Peak Hour	Daily
Eastbound State Route 91 HOV Lane near Butler Avenue	632	1,413	14,708
Eastbound State Route 91 HOV Lane at Downey Avenue	989	1,475	17,241
Change in Eastbound HOV Volumes	357	62	2,533

Source: Iteris, 2019
Notes: HOV = High-Occupancy Vehicle
Freeway HOV volumes are based on March, April, May 2019 averages.

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on energy.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

The Build Alternative would include the addition of a 0.86-mile-long auxiliary lane on Eastbound State Route 91. Therefore, a qualitative analysis for energy impacts is included below, as the Project improvements include an auxiliary lane of less than one mile in length.

Transportation energy is generally described in terms of direct and indirect energy, defined as follows:

- **Direct Energy:** In the context of transportation**,** direct energy involves all energy consumed by vehicle propulsion (e.g., automobiles, trains, airplanes). This energy consumption is a function of traffic characteristics such as vehicle miles traveled (VMT) (volume X distance traveled), speed, vehicle mix, and thermal value of the fuel being used. Some projects may also include features such as new or replacement roadway lighting or other features requiring electricity which is an ongoing and permanent source of direct energy consumption. The one-time energy expenditure involved in constructing a project is also considered direct energy.

- **Indirect Energy** includes maintenance activities which would result in long-term indirect energy consumption by equipment required to operate and maintain the roadway.

As noted in Section 2.1.3, Traffic and Transportation/Pedestrian and Bicycle Facilities, the 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. In addition, because of the roadway improvements that would result under the Build Alternative, increased operational efficiencies and improved vehicle operations would be expected to reduce energy consumption. Furthermore, under the Build Alternative, maintenance activities are not anticipated to increase beyond existing conditions. The Build Alternative would include electrical work for new powered overhead signs and replacement roadway lighting;

however, the energy requirements would not differ substantially from existing conditions. Therefore, the Project would not result in an inefficient, wasteful, and unnecessary consumption of energy. Project construction would primarily consume diesel and gasoline through operation of heavy-duty construction equipment, material deliveries, and debris hauling. This represents a small demand on local and regional fuel supplies that would be easily accommodated, and this demand would cease once construction is complete.

Moreover, construction-related energy consumption would be temporary and not a permanent new source of energy demand, and demand for fuel would have no noticeable effect on peak or baseline demands for energy. While construction would result in a short-term increase in energy use, construction design features would help conserve energy. For example, recycled materials will be used where feasible (see **AVM-EN-1** through **AVM-EN-5** below under Avoidance, Minimization, and/or Mitigation Measures). Recycled products typically have lower manufacturing and transport energy costs since they do not utilize raw materials, which must be mined and transported to a processing facility. These energy conservation features are consistent with State and local policies to reduce energy. Therefore, the Project would not result in an inefficient, wasteful, and unnecessary consumption of energy.

As discussed above, the Build Alternative would not result in adverse impacts on energy.

Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in adverse effects related to energy consumption; therefore, no avoidance, minimization, or mitigation measures are required. However, the following avoidance and minimization measures are recommended to conserve energy during project construction:

AVM-EN-1 During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including the reuse of existing rail, steel, and lumber wherever possible, such as for falsework, shoring, and other applications during the construction process.

AVM-EN-2 During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including recycling asphalt taken up from roadways, if practicable and cost-effective.

AVM-EN-3 During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including using newer, more energy-efficient equipment where feasible, and maintaining older construction equipment to keep in good working order.

AVM-EN-4 During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including scheduling of construction operations to efficiently use construction equipment (e.g., only haul waste

when haul trucks are full and combine smaller dozer operations into a single comprehensive operation, where possible).

AVM-EN-5 During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including promoting construction employee carpooling.

Cumulative Impacts

Past development has contributed to increasing energy consumption in the Project Study Area. The proposed Project's effects on energy consumption would be relatively minor with implementation of avoidance and minimization measures. Other current and reasonably foreseeable actions (see **Table 6** above) would be required to implement similar measures, such that impacts on energy consumption 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 energy consumption and mitigation would not be required.

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2.3 Biological Environment

The Biological Environment section of the environmental document is divided into the following subsections:

- Plant Species
- Animal Species
- Invasive Species

2.3.1 PLANT SPECIES

Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and CDFW have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA).

This section of the document discusses all other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), found at California Public Resources Code, Sections 21000-21177.

Affected Environment

A Natural Environment Study (Minimal Impacts) (NES(MI)) was completed in December 2020 for the Project to discuss potential impacts on biological resources.

Vegetation communities within the Biological Study Area include ruderal and ornamental. Ruderal areas were observed along the perimeter of a vacant dirt lot in the southwest portion of the Biological Study Area, within a vacant lot at the southwest corner of the intersection of the Eastbound State Route 91 off-ramp at Atlantic Avenue, and at the Eastbound State Route 91 entry gore at Cherry Avenue. Ruderal species observed in the Biological Study Area include, but are not limited to, red stemmed filaree (*Erodium cicutarium*), cultivated radish (*Raphanus sativus*), and ripgut brome (*Bromus diandrus*).

Ornamental communities were observed adjacent to the Eastbound State Route 91 on-ramps and off-ramps, in the area between the Eastbound State Route 91 soundwall and 67th Street,

and adjacent to residential and commercial development. Ornamental species observed in the Biological Study Area include, but are not limited to, sea fig (*Carpobrotus edulis*), Brazilian pepper tree (*Schinus terebinthifolius),* oleander (*Nerium oleander*), and jacaranda (*Jacaranda mimosifolia*) (refer to Appendix D for a full list of the species observed during field surveys).

The Biological Study Area also consists of unvegetated areas, including a disturbed field adjacent to the south side of the State Route 91 undercrossing, and developed areas that include paved roads; sidewalks; industrial, residential, and commercial development; and transportation infrastructure.

According to records searches, 53 special-status plant species have the potential to be in the Biological Study Area based on recorded geographical distribution. However, the ruderal and ornamental vegetation communities in the Biological Study Area do not support 52 of these special-status plant species (refer to Appendix D for a full list of the special-status plant species and their habitat requirements). Based on habitat requirements and the results of the biological survey, there is potential for one special-status plant species to be in the Biological Study Area: the southern tarplant (*Centromadia parryi ssp. australis*). During the biological survey on January 22, 2019, the southern tarplant was not observed in the Biological Study Area.

The southern tarplant is an annual herb found primarily in vernally wet areas such as along the edges of marshes and vernal pools. This species is often found 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. The Biological Study Area does not include marshes and vernal pools; however, there are moist, disturbed areas at the western extent of the Biological Study Area under the State Route 91 overpass that could support the southern tarplant. Therefore, there is potential for this species to be in the Biological Study Area.

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on plant species.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

The Project would not result in the direct removal of the southern tarplant. However, construction activities would include pedestrian and vehicle movement, staging, grading, paving, and removal and trimming of ornamental vegetation within the Biological Study Area, which could result in indirect impacts on plant species including the southern tarplant if these activities were to be conducted while individuals are present within or adjacent to the affected areas. This species could be indirectly impacted from dust and/or herbicide use. However, with the implementation of avoidance and minimization measures (see **AVM-BIO-1** through **AVM-BIO-3** below under Avoidance, Minimization, and/or Mitigation Measures), the Build Alternative would not result in adverse impacts on the southern tarplant.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce impacts on plant species:

AVM-BIO-1 Prior to construction, a qualified biologist would conduct rare plant surveys within the construction area. Surveys would be conducted during the appropriate blooming period for species with potential to be in the construction area, to the extent feasible.

AVM-BIO-2 If a special-status plant species is found during pre-construction surveys, high visibility Environmentally Sensitive Area (ESA) protective fencing would be installed around the special-status plants to prevent construction staff or equipment from entering this area. The ESA protective fencing buffer would be species specific, with a minimum buffer radius based on the guidance from a qualified biologist.

AVM-BIO-3 All excluded areas with ESA protective fencing would be monitored to determine whether exclusion measures were successful and to identify any outstanding concerns. Exclusionary measures would be monitored throughout construction to ensure they are functioning correctly and would be removed following construction

With implementation of these avoidance and minimization measures, the Build Alternative would not result in adverse impacts on plant species.

Cumulative Impacts

Past actions have contributed to the loss of suitable habitat for special-status plant species within the Project Study Area. The proposed Project would include avoidance and minimization measures to prevent adverse impacts on the southern tarplant. Other current and reasonably foreseeable future actions (see **Table 6** above) would be required to implement measures to reduce impacts on the southern tarplant, if the species was to be impacted by project activities. Therefore, the proposed Project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to the southern tarplant and mitigation would not be required.

2.3.2 ANIMAL SPECIES

Regulatory Setting

Many state and federal laws regulate impacts to 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. 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 – 1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

Affected Environment

A NES(MI) was completed in December 2020 for the Project to discuss potential impacts on biological resources.

Vegetation communities within the Biological Study Area include ruderal and ornamental. Habitat within the Biological Study Area is disturbed; however, the Biological Study Area contains ornamental trees, fallen branches, and leaf litter, which may provide habitat for wildlife. Vegetation and wildlife habitat within the Biological Study Area is predominately located along the Eastbound State Route 91 soundwall between State Route 91 and East 67th Street. Pictures of the Biological Study Area are shown in **Figure 19**.

According to records searches, 114 special-status wildlife species have the potential to be in the Biological Study Area based on recorded geographical distribution (refer to Appendix D for a full list of the special-status wildlife species). Based on the existing habitat in the Biological Study Area, 11 special-status birds have potential to be in the Biological Study Area, including the Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), great egret, great blue heron, Vaux's swift, snowy egret, white-tailed kite (*Elanus leucurus*), merlin (*Falco columbarius*), American peregrine falcon (*Falco peregrinus anatum*), California gull (*Larus californicus*), and rufous hummingbird (*Selasphorus rufus*). Suitable habitat in the Biological Study Area that could support these species includes areas containing trees and nectar producing shrubs and vines along the Eastbound State Route 91 soundwall.

Based on the existing habitat in the Biological Study Area, nine special-status bats have potential to be in the Biological Study Area, including the cave myotis (*Myotis velifer*), big free-tailed bat (*Nyctinomops macrotis*), hoary bat (Lasiurus cinereus), pallid bat (*Antrozous pallidus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), Yuma myotis (*Myotis yumanensis*), and western yellow bat (*Lasiurus xanthinus*). Suitable habitat in the Biological Study Area that could support these species includes bridges, buildings, and trees.

Figure 19: Pictures of Biological Study Area

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During the biological survey conducted on January 22, 2019, multiple bird species were observed foraging or flying over the Biological Study Area. These common species include the black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), American crow (*Corvus brachyrhynchos*), and yellow-rumped warbler (*Setophaga coronata*). In addition, cliff swallow nests were observed on a bridge column.

Environmental Consequences

ALTERNATIVE 1 (NO BUILD ALTERNATIVE)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts on animal species.

ALTERNATIVE 2 (BUILD ALTERNATIVE)

As stated above, the Biological Study Area contains ornamental trees, fallen branches, and leaf litter, which may provide habitat for wildlife. Vegetation and wildlife habitat within the Biological Study Area is predominately located along the Eastbound State Route 91 soundwall between State Route 91 and East 67th Street. This vegetation may provide roosting and foraging habitat for birds, insects, and wildlife. Migratory birds have potential to be nesting and foraging in the Biological Study Area and construction area during construction. In addition, special-status birds and bats have potential to be in the Biological Study Area.

Construction activities in the Biological Study Area would include approximately five acres of vegetation and tree removal and trimming, particularly within the vegetated area along the Eastbound State Route 91 soundwall. Tree trimming and removal could result in direct impacts on birds and bats if they were to be nesting or roosting in the construction area. In addition, vegetation and tree removal could reduce roosting and foraging habitat for birds, insects, and wildlife.

Other construction activities in the Biological Study Area would include breaking up of concrete to remove bridge rails, pedestrian and vehicle movement, staging, grading, and paving. These activities could result in impacts on special-status avian species if birds are nesting within or adjacent to the affected areas. In addition, construction activities could temporarily disrupt foraging in the Biological Study Area. These activities could also result in impacts on bats if they were to be in the construction area. In addition, noise and vibration could result in indirect impacts on special-status species.

The Project would include implementation of avoidance and minimization measures to reduce direct and indirect impacts on migratory birds and special-status birds and bats (see **AVM-BIO-4** through **AVM-BIO-16** below under Avoidance, Minimization, and/or Mitigation Measures). These measures include limiting construction activities to outside of nesting and roosting periods when feasible. If construction is necessary during these periods, other measures would be implemented and may include conducting bird and bat surveys, establishing buffer zones

around nests and roosting sites, allowing foraging birds to leave the construction area, and implementing exclusionary measures for bats.

In addition, the Landscape Concept Design for the Project would be prepared in consultation with the Caltrans Landscape Architect, which would include replanting ratios, vegetation types, and establishment criteria (see **AVM-BIO-17**). With the implementation of these avoidance and minimization measures, the Build Alternative would not result in adverse impacts on animal species, including migratory birds and special-status birds and bats.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce impacts on animal species:

AVM-BIO-4 Construction during bird nesting season (typically February 1 to September 1) would be avoided to the extent feasible.

AVM-BIO-5 If construction is required during the nesting season, vegetation removal would be conducted outside of the nesting season (typically February 1 to September 1), wherever feasible.

AVM-BIO-6 If construction is scheduled to begin during nesting bird season, nesting bird surveys would 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 would be conducted within 150 feet for songbirds and 500 feet for raptors, or as otherwise determined by the qualified biologist. Surveys would be repeated if construction activities are suspended for five days or more.

AVM-BIO-7 If nesting birds/raptors are found within 500 feet of the construction area, appropriate buffers consisting of orange flagging/fencing or similar (typically 150 feet for songbirds, and 500 feet for raptors, or as directed by a qualified biologist) would be installed and maintained until nesting activity has ended, as determined in coordination with the qualified biologist and regulatory agencies, as appropriate.

AVM-BIO-8 In the event that trimming, or removal of vegetation and trees must be conducted during bird nesting season, nesting bird surveys would be completed within 500 feet of the vegetation to be trimmed or removed by a qualified biologist no more than 72 hours prior to trimming or cleaning activities to determine if nesting birds are within the affected vegetation. Surveys would be conducted within 150 feet for songbirds and 500 feet for raptors, or as otherwise determined by the qualified biologist. Nesting bird

surveys would be repeated if trimming or removal activities are suspended for five days or more.

AVM-BIO-9 In the event that any bird species is observed foraging within the construction site, it would be allowed to move away from the site prior to initiating any construction activities that could result in direct injury of the individual.

AVM-BIO-10 Where feasible, tree removal would be conducted after October 31, which is outside of the maternal and non-active seasons for bats.

AVM-BIO-11 During the summer months (June to August) prior to construction, a thorough bat roosting habitat assessment would be conducted of all trees and structures within 100 feet of the construction area. Visual and acoustic surveys would be conducted for at least two nights during appropriate weather conditions to assess the presence of roosting bats. If presence is detected, a count and species analysis would be completed to help assess the type of colony and usage.

AVM-BIO-12 No fewer than 30 days prior to construction, and during the non-breeding and active season (typically October), bats would be safely evicted from any roosts to be impacted by the Project. The eviction plan would be developed by, and completed under the direction of, a qualified biologist. Once bats have been safely evicted, exclusionary devices would be installed to prevent bats from returning and roosting in these areas prior to removal. Roosts not impacted by the Project would be left undisturbed.

AVM-BIO-13 No fewer than two weeks prior to construction, all excluded areas would be surveyed to determine whether exclusion measures were successful and to identify any outstanding concerns. Exclusionary measures would be monitored throughout construction to ensure they are functioning correctly and would be removed following construction

AVM-BIO-14 If the presence or absence of bats cannot be confirmed in potential roosting habitat, a qualified biologist would be onsite during removal or disturbance of this area. If the biologist determines that bats are being disturbed during this work, work would be suspended until bats have left the vicinity on their own or can be safely excluded under direction of the biologist. Work would resume only once all bats have left the site and/or approval, is given by a qualified biologist.

AVM-BIO-15 In the event that a maternal colony of bats is found, no work would 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. No equipment, personnel, or construction activities would be allowed within the buffer unless authorized in advance by a qualified biologist.

AVM-BIO-16 Prior to construction, inactive cliff swallow nests and other nests would be removed under supervision of a qualified biologist during the non-breeding season for cliff swallows (typically September 16 to February 14). The inactive nests would also be checked for bats prior to removal. During the nesting season for cliff swallows (typically February 1 to September 15), the Project Area would be monitored as necessary to ensure that no new nests are built, and any partially-built nests would be removed from the bridge during construction to prevent swallows from nesting on the bridge structure. Monitoring and nesting deterrence would continue until birds no longer attempt to nest.

AVM-BIO-17 The Landscape Concept Design for the Project would be prepared in consultation with the Caltrans Landscape Architect, which would include replanting ratios, vegetation types, and establishment criteria.

With implementation of these avoidance and minimization measures, the Build Alternative would not result in adverse impacts on plant species.

Cumulative Impacts

Past actions have contributed to the loss of suitable habitat for special-status animal species within the Project Study Area. The proposed Project would include avoidance and minimization measures to prevent adverse impacts on the 11 special-status birds and 9 special-status bats that have potential to be in the Project Study Area. Other current and reasonably foreseeable future actions (see **Table 6** above) would be required to implement measures to reduce impacts on these species if they were to be impacted by project activities. Therefore, the proposed Project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to these animal species and mitigation would not be required.

2.3.3 INVASIVE SPECIES

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 (NEPA) analysis for a proposed Project.

Affected Environment

There are 14 invasive plant species growing in the Biological Study Area that are listed by the Invasive Species Council of California as invasive to California, including sea fig (*Carpobrotus edulis*), Brazilian peppertree (*Schinus terebinthifolius*), bristly ox-tongue (*Helminthotheca echioides*), cultivated radish (*Raphanus sativus*), Russian thistle (*Salsola tragus*), castor bean (*Ricinus* communis), blackwood acacia (*Acacia melanoxylon*), redstem filaree (*Erodium cicutarium*), tree of heaven (*Ailanthus altissima*), lantana (*Lantana camara*), Mexican fan palm (*Washingtonia robusta*), crimson fountaingrass (*Pennisetum* setaceum), ripgut brome (*Bromus diandrus*), and Bermuda grass (*Cynodon dactylon*).

Environmental Consequences

Alternative 1 (No Build Alternative)

Under this alternative, Project improvements would not be developed or constructed on Eastbound State Route 91 within the Project Area. The No Build Alternative would not result in any changes to existing conditions. Therefore, the No Build Alternative would not result in adverse impacts related to invasive species.

Alternative 2 (Build Alternative)

Invasive species are often found in disturbed areas, and project activities would have the potential to spread invasive species through further disturbance of the Biological Study Area. These species could also be spread through the improper disposal of the graded and excavated soils onsite or offsite, or through landscaping with invasive species.

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and guidance from the Federal Highway Administration, the landscaping and erosion control included in the Project will not use species listed as invasive. None of the species on the California list of invasive species is used by Caltrans for erosion control or landscaping in the Project Area. All equipment and materials will be inspected for the presence of invasive species and cleaned if necessary. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

In addition, with the implementation of avoidance and minimization measures (see **AVM-BIO-18** through **AVM-BIO-20** below under Avoidance, Minimization, and/or Mitigation Measures), the Build Alternative would not result in adverse impacts related to invasive species.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce impacts related to invasive species:

AVM-BIO-18 Invasive vegetation removed from the Biological Study Area would be treated and disposed of in a manner that would prevent the spread of invasive species onsite or offsite.

AVM-BIO-19 New landscaping materials, including erosion control seed mixes and other plantings, would be composed of non-invasive species and would be clear of weeds, and all erosion control and landscape planting would be conducted in a manner that would not result in the spread of invasive species.

AVM-BIO-20 Plants listed in the Pest Ratings of Noxious Weed Species and Noxious Weed Seed (United States Department of Agriculture, 2003) would not be used as part of the Project.

With implementation of these avoidance and minimization measures, the Build Alternative would not result in adverse impacts related to invasive species.

Cumulative Impacts

Past actions have contributed to the spread of invasive species within the Project Study Area. The proposed Project would be required to comply with Executive Order 13112, such that its effects related to the spread of invasive species would be relatively minor. Other current and reasonably foreseeable actions (see **Table 6** above) would also result in minor contributions to the spread to invasive species through compliance with Executive Order 13112. Therefore, the proposed Project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effect related to invasive species and mitigation would not be required.

Chapter 3 – California Environmental Quality Act (CEQA) Evaluation

3.1 Determining Significance under CEQA

The Project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The Federal Highway Administration's responsibility for 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 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016, and executed by the Federal Highway Administration and Caltrans. Caltrans is the lead agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or a lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the Project and ways to mitigate each significant effect. If the Project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 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, which can include both design elements of the Project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the Project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

AESTHETICS

Except as provided in Public Resources Code Section 21099, would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

CEQA Significance Determinations for Aesthetics

a) No Impact

The Project would not have a substantial adverse impact on a scenic vista because the Project Area does not include any scenic vistas.

b, c) No Impact

As discussed in the Visual/Aesthetics section in Chapter 2, the Project Area is not located within a state scenic highway. The Project would include pushing the soundwalls out 10 to 15 feet, parallel to the existing walls, but would maintain similar forms, lines, colors, textures, and height within the area. The roadway would still be the most prominent visual element. The visual character of the Project would be fully compatible with the existing visual character of the corridor. The visual quality of the existing corridor would not be altered by the Project. Viewer sensitivity in the area is considered moderately-low. The Project would not conflict with applicable zoning and other regulations governing scenic quality.

d) No Impact

The proposed Project would not include new lighting elements in an area in which there is currently no lighting.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

CEQA Significance Determinations for Agriculture and Forest Resources

a) No Impact

According to the California Department of Conservation's (CDOC) Farmland Mapping and Monitoring Program (FMMP), there are no lands near or within the Project Area that are designated as Prime Farmland, Unique Farmland, or Farmland or Statewide Importance.

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

There are no other changes anticipated to farmland or forest land.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non- attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

CEQA Significance Determinations for Air Quality

a, b, c, d) <u>Less Than Significant Impact</u>

The Project is located in the South Coast Air Basin and is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB). The SCAQMD is the primary agency responsible for writing the Air Quality Management Plan (AQMP) in cooperation with SCAG, local governments, and the private sector. The AQMP provides the blueprint for meeting state and federal ambient air quality standards. The Project would have no substantial impacts on traffic volumes and would generate a less than significant amount of pollutants during construction due to the very short duration of Project construction. The Project is included in SCAG's most recent Regional Transportation Plan and Federal Transportation Improvement Program both of which were found to be conforming (see Air Quality section of Chapter 2). Therefore, the proposed Project will not conflict with the AQMP, violate any air quality standard, result in a net increase of any criteria pollutant, or expose sensitive receptors to substantial pollutant concentrations. Impacts will be less than significant. No mitigation is required.

Temporary construction activities could generate fugitive dust from the operation of construction equipment. The Project will comply with construction standards adopted by the South Coast Air Quality Management District (SCAQMD) as well as Caltrans standardized procedures for minimizing air pollutants during construction.

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 would not be anticipated to result in the frequent exposure of receptors to objectionable odorous emissions. Impacts will be less than significant. No mitigation is required.

BIOLOGICAL RESOURCES

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

CEQA Significance Determinations for Biological Resources

a) Less Than Significant Impact

Based on habitat requirements and the results of the biological survey, there is potential for one special-status plant species to be in the Biological Study Area: the southern tarplant (*Centromadia parryi ssp. australis*).

Based on the existing habitat in the Biological Study Area, nine special-status bats have potential to be in the Biological Study Area, including the cave myotis (*Myotis velifer*), big free-tailed bat (*Nyctinomops macrotis*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), Yuma myotis (*Myotis yumanensis*), and western yellow bat (*Lasiurus xanthinus*). Suitable habitat in the Biological Study Area that could support these species includes bridges, buildings, and trees.

During the biological survey, multiple bird species were observed foraging or flying over the Biological Study Area, including the black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), American crow (*Corvus brachyrhynchos*), and yellow-rumped warbler (*Setophaga coronata*). In addition, cliff swallow nests were observed on a bridge column.

As discussed in the Plant Species and Animal Species sections in Chapter 2, avoidance and minimization measures will be implemented to minimize impacts on special-status plant and animal species. In addition, Project improvements would be completed on existing paved roadways, or on vegetated slopes adjacent to the freeway. Because of the developed nature of the Project Area, the Project would not have a substantial adverse effect, either directly or through habitat modifications, on any special-status species. Impacts will be less than significant. No mitigation is required.

b, c, d, e, f) No Impact

The Project will not affect any riparian habitat or other sensitive natural community, federally protected wetlands, migratory wildlife corridors, or the movement of any native resident or migratory fish or wildlife species. The Project will not impede the use of native wildlife nursery sites. The Project will not conflict with any local policies or ordinances protecting biological resources. The Project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

CULTURAL RESOURCES

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

CEQA Significance Determinations for Cultural Resources

a, b, c) <u>No Impact</u>

The Project would not cause a substantial adverse change in the significance in historical or archaeological resources, because these resources have not been identified in the Project Area. According to the Historic Property Survey Report, the anticipated effects finding is No Historic Properties Affected. The results of the archaeological sensitivity analysis indicate that the potential for encountering buried archaeological resources is low. Human remains have not been previously identified within the Project Area.

The Project would be completed within Caltrans or City right of way, and includes improvements to an existing transportation facility. No Project activities will occur in the Los Angeles River itself. Project improvements would be completed on existing paved roadways, or on vegetated slopes adjacent to the freeway, a portion of which likely is fill.

The following Native American Tribes were contacted between May 8, 2020 and October 2, 2020:

- Gabrieleño Band of Mission Indians-Kizh Nation- Andrew Salas
- 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- Charles Alvarez

During the course of Native American consultation for the undertaking, the Gabrieleño Band of Mission Indians-Kizh Nation and the Gabrieleno/Tongva San Gabriel Band of Mission Indians identified the Project location as sensitive for buried cultural resources and, thus, both parties requested archaeological and Native American monitoring. The results of the

background research, archaeological sensitivity analysis, and field survey indicate that the Project has a low potential to affect cultural resources. These findings have been shared with the concerned tribes, but they remain concerned about ground disturbance in the Project Area. For this reason, and to confirm the conclusions of this study, a limited archaeological and Native American monitoring program will be implemented during project construction. An archaeological and Native American monitoring plan is under preparation and will outline conditions and procedures for monitoring that will ensure Native American concerns are satisfactorily resolved with regard to degree of disturbance to the Project location and potential to encounter buried archaeological deposits. The monitoring plan will be approved by the Native American tribes and implemented during Project construction.

The following Project features would be incorporated into the Project: 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. 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 Native American Heritage Commission (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.

ENERGY

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

CEQA Significance Determinations for Energy

a, b) <u>No Impact</u>

The Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The Project would result in increased operational efficiencies and improved vehicle operations that would be expected to reduce energy consumption. In addition, maintenance activities associated with the Project are not anticipated to increase beyond existing conditions. Furthermore, Project construction would primarily consume diesel and gasoline through operation of heavy-duty construction equipment, material deliveries, and debris hauling. However, this represents a small demand on local and regional fuel supplies that would be easily accommodated, and this demand would cease once construction is complete. In addition, construction design features would help conserve energy, such as the use of recycled materials where feasible.

GEOLOGY AND SOILS

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

CEQA Significance Determinations for Geology and Soils

a-i) No Impact

The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving rupture of a known earthquake fault, because the Project is not located in an Alquist-Priolo Earthquake Fault Zone.

a-ii, a-iii) Less Than Significant Impact

This Project is located within a seismically active region as a result of being 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. The Project Area is also located within a Liquefaction Potential Seismic Hazard Zone. Based on review of the available subsurface data, shallow soils underlying the Project Area predominantly consist of relatively loose to medium dense silty sandy earth material, which becomes denser with increasing depth. Due to the soils' classification, the in-situ state of the soils, and the likelihood of earthquake occurrences with relatively high magnitudes, liquefaction/seismic induced settlement is expected to occur in the Project Area.

To avoid and minimize impacts, specific recommendations for earthwork, foundation design, pavement design, and hazard mitigation will be provided in the design phase of the Project. With incorporation of these design recommendations, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking and seismic-related ground failure, including liquefaction. Impacts will be less than significant. No mitigation is required.

a-iv) No Impact

The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving landslides, because the Project Area is not within Landslide Seismic Hazard Zone, and the topography is relatively flat.

b, c, d) Less Than Significant Impact

As discussed in the Geology/Soils/Seismic/Topography section of Chapter 2, in general, the erosion potential of soils in the Project Area is expected to be minor to moderate considering the provisions for site drainage, slope planting, and other measures required by Caltrans. In order to minimize potential erosion, all finished slopes should be planted with non-water succulent plants as soon as practical after grading.

Construction of the various elements of the Project will likely result in alterations of the landform due to grading. Landform alterations may create erosional impacts to the existing terrain. The more extensive alterations will be from construction of the cuts for retaining walls and fill slopes associated with the ramp and roadway widening. Applying standard engineering techniques during design and construction to prevent erosion can reduce these impacts. Typical erosion control measures include improving drainage control and

implementing landscaping after construction. Within implementation of these design features, the Project would not result in substantial soil erosion or the loss of topsoil.

The primary geotechnical and geologic hazards associated with the Project are anticipated to be liquefaction, seismic embankment stability, and settlement. In addition, on-site soils are generally expected to have an expansivity varying from non-expansive to low-expansive potential. Based on the scope of the future work, during the design phase, samples of subgrade soils shall be collected and tested for the expansivity. In addition, specific recommendations for earthwork, foundation design, pavement design, and hazard mitigation will be provided in the design phase of the Project. With incorporation of these design recommendations, the geologic unit or soils underlying the Project Area would not become unstable as a result of the Project, and would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. In addition, with implementation of design recommendations, the Project would not create substantial direct or indirect risks to life or property as a result of expansive soils. Impacts will be less than significant. No mitigation is required.

e) No Impact

The Project would not require the use of septic tanks or alternative waste water disposal systems because sewers are available for the disposal of waste water.

f) Less Than Significant with Mitigation Incorporated

The Project has the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. As discussed in the Paleontology section in Chapter 2, portions of the Project improvements are located in areas identified as having high paleontological sensitivity at greater than 5 feet below the original ground surface. Project components that would extend to these depths include excavation of piles to 100 feet bgs for the proposed bridge widenings, and potentially for wall footings or overhead sign footings. In addition, two fossil localities are documented nearby in sediments similar to those underlying the Project. This is a potentially significant impact due to the previously documented nearby fossil localities and high paleontological sensitivity of underlying sediments at depth. With implementation of the mitigation measures below, the impacts to paleontological resources would be less than significant.

MM-PALEO-1 A Paleontological Mitigation Plan, following the Caltrans SER, Chapter 8, will be prepared by a Principal Paleontologist.

MM-PALEO-2 The Principal Paleontologist will attend the pre grade conference. At this meeting, the Paleontologist will explain the likelihood for encountering paleontological resources, what resources may be discovered, and the methods of recovery that will be employed.

MM-PALEO-3 During construction excavation, a qualified Paleontological Monitor shall be present on a full-time basis initially whenever excavation will occur within the sediments that have a high paleontological

sensitivity (greater than 5 feet below the original ground surface) and on a spot-check basis for excavation in sediments that have low sensitivity (non-fill sediment above 5 feet bgs). Monitoring may be reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating (monitoring reductions, when they occur, will be determined by the qualified Principal Paleontologist).

MM-PALEO-4 The Monitor shall inspect fresh cuts and/or spoils piles to recover paleontological resources. The monitor shall be empowered to temporarily divert construction equipment away from the immediate area of the discovery. The monitor shall be equipped to rapidly stabilize and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, Caltrans will consider using heavy equipment on site to assist in the removal and collection of large materials. Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, it is recommended that these sediments occasionally be spot-screened on site through 1/8 - to 1/20-inch mesh screens to determine whether microfossils are present. If microfossils are encountered, sediment samples (up to 6,000 pounds) shall be collected and processed through 1/20-inch mesh screens to recover additional fossils.

MM-PALEO-5 Recovered specimens shall be prepared to the point of identification and permanent preservation. This includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume of storage for the repository and storage cost, and the addition of approved chemical hardeners/stabilizers to fragile specimens.

MM-PALEO-6 Specimens shall be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institutions usually charge a one-time fee based on volume, so removing surplus sediment is important. The repository institution may be a local museum or university with a curator who can retrieve the specimens on request. Caltrans requires that a draft curation agreement be in place with an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities.

MM-PALEO-7 A Paleontological Mitigation Report documenting completion of the Paleontological Mitigation Plan for the Lead Agency (Caltrans) will be prepared and submitted.

GREENHOUSE GAS EMISSIONS

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

CEQA Significance Determinations for Greenhouse Gas Emissions

a, b) <u>Less Than Significant Impact</u>

As discussed in the Climate Change section of this chapter, the Project would introduce operational improvements that would reduce vehicle delays. No increase in operational greenhouse gas (GHG) emissions is expected. Construction activities would require material processing, on-site construction equipment, and traffic delays that would generate approximately 1,647 metric tons of carbon dioxide equivalent (CO_2e) over the 24-month construction period (see Section 3.3 for additional information). Project construction would be required to comply with all standard air pollution control rules, regulations, ordinances, and statutes, including Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, and Section 14-9.02, Air Pollution Control during construction. In addition, other statewide efforts and project-level GHG reduction strategies would be implemented (see **PF-AQ-1**, **PF-AQ-5**, **PF-AQ-8**, and **PF-AQ-12** in Section 3.3.4). Therefore, the Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG. Impacts will be less than significant. No mitigation is required.

HAZARDS AND HAZARDOUS MATERIALS

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

CEQA Significance Determinations for Hazards and Hazardous Materials

a, b, c) <u>Less Than Significant Impact</u>

During Project construction, there is a potential to encounter hazardous materials in soils and existing roads and structures, such as aerially deposited lead (ADL), asbestos-containing materials (ACM), lead-based paint (LBP), and treated wood waste (TWW). In addition, hazardous materials (e.g. solvents, paints, fuels) are anticipated to be used during

construction. Schools within 0.25 mile of the Project Area include Grant Elementary, Saint John's School, Jordan High School, Hamilton Middle School, and McKinley Elementary.

Hazardous materials and waste would be handled in accordance with all applicable federal, state, and local regulations. Therefore, with compliance with standard regulations, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; 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; or emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Impacts will be less than significant. No mitigation is required.

d, e) No Impact

Project improvements would be completed within Caltrans and City right of way, and would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. In addition, the Project is not located within an airport land use plan area or within two miles of a public airport or public use airport.

f) Less Than Significant Impact

During construction, the Project could include short-term lane closures and modifications to existing facilities. The temporary closures and detours could have short-term impacts on emergency response and evacuation within the Project Area. However, emergency responders within the Project Area would be notified in advance about the detour routes and the planned closures. Therefore, the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts will be less than significant. No mitigation is required.

g) No Impact

Because of the developed nature of the Project Area, the Project Area is not susceptible to wildland fires, and would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

HYDROLOGY AND WATER QUALITY

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
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;	☐	☐	☒	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
(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	☐	☐	☒	☐
(iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

CEQA Significance Determinations for Hydrology and Water Quality

a) Less Than Significant Impact

Construction activities have the potential to affect water quality through the transport of pollutants and soil disturbance. Pollutants of concern during construction are trash, petroleum products, concrete, and chemicals. Construction activities could include grading, roadway widening, freeway ramp modifications, and construction of new and modified

drainage ditches, berms, and swales, which have the potential to disturb soil in the Project Area.

In accordance with the National Pollutant Discharge Elimination System Construction General Permit, a Storm Water Pollution Prevention Plan would be required. The Storm Water Pollution Prevention Plan would include the development of a Construction Site Monitoring Program, including procedures and methods related to visual monitoring, sampling and analysis plans for pollutants, sediment, turbidity, and pH. In addition, the Storm Water Pollution Prevention Plan would include temporary erosion and sediment control measures.

The Project Area includes existing stormwater Best Management Practices adjacent to the roadway, which include gross solids removal devices with screens that prevent solids larger than the screen opening from passing through. The existing gross solids removal devices would be either maintained in place or replaced with Project implementation.

The Project would result in a net increase in impervious surface area as a result of the added auxiliary lane. The additional impervious surface area could increase the volume and velocity of storm water runoff, as well as the amount of pollutants traveling into the drainage system and into downstream receiving waters. However, treatment Best Management Practices would be maintained under the Build Alternative to address these pollutants.

With implementation of standard measures included in the Storm Water Pollution Prevention Plan and treatment Best Management Practices, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Impacts will be less than significant. No mitigation is required.

b) No Impact

The Project does not require the use of groundwater, and would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.

c-i, c-ii, c-iii) Less Than Significant Impact

With implementation of standard measures included in the Storm Water Pollution Prevention Plan and treatment Best Management Practices (see Response a) above), the Project would not result in substantial erosion or siltation on- or off-site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; or 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. Impacts will be less than significant. No mitigation is required.

c-iv, d, e) No Impact

The Project would not alter the existing drainage facilities in the Project Area, and is not located in a flood hazard, tsunami, or seiche zone. Therefore, the Project would not impede or redirect flood flows, or risk release of pollutants due to Project inundation.

LAND USE AND PLANNING

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

CEQA Significance Determinations for Land Use and Planning

a, b) <u>No Impact</u>

The Project would not physically divide an established community, or conflict with any land use plans, policies, regulations, because it would be completed within Caltrans or City right of way within existing transportation facilities.

MINERAL RESOURCES

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

CEQA Significance Determinations for Mineral Resources

a, b) No Impact

The Project would not result in the loss of known mineral resources or a locally-important mineral resource recovery site because the Project Area does not include any mineral resources. Oil and gas well locations were obtained from the California Division of Oil, Gas, and Geothermal Resources (DOGGR). There were no wells within 500 feet of the Project Area.

NOISE

Would the Project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
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?	☐	☐	☐	☒

CEQA Significance Determinations for Noise

a) Less Than Significant with Mitigation Incorporated

Noise-sensitive receptors in the vicinity of the Project Area include residences. The existing noise level at residential receptors in the Project Area ranges from 56 to 72 a-weighted decibels (dBA) equivalent continuous sound level (L_{eq}). Existing ambient noise levels are largely influenced by vehicle traffic on State Route 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. Implementation of noise barriers will reduce noise levels by 13 dBA.

Based on the Noise Study Report, design-year future worst-hour noise levels would range from 60 to 72 dBA $L_{eq}(h)$ under the Build Alternative. The results also indicate an up to 13 dBA increase in noise between existing conditions and the design-year. However, with implementation of the mitigation measure **MM-NOI-1** below, impacts related to noise during Project operation would be less than significant:

MM-NOI-1 Based on the studies completed to date, the Project would incorporate Barrier BA-4 at PM LA R12.149 to LA R13.073, with a length of 4,864 feet and a height of 14 to 16 feet, consistent with existing noise barrier EXB-4 that has a height of 14 feet. These measures may change based on input received from the public. The final decision on noise abatement will be made upon completion of the Project design.

As discussed in Section 2.2.6, construction activities would generate short-term increases in noise and vibration levels. The impact would be less than significant. The following avoidance and minimization measures will also be implemented to reduce impacts related to noise during construction:

AVM-NOI-1 Demolition of the existing noise barrier and construction of the proposed noise barrier on top of the retaining wall would be conducted in four segments along the Project Area to minimize traffic noise impacts on nearby residences. Construction within each segment would include demolishing the existing noise barrier, constructing the retaining wall, and then constructing the proposed noise barrier.

AVM-NOI-2 Though construction noise and vibration would be temporary and sporadic and would not present any long-term impacts, the following practices would reduce noise and vibration level increases produced by Project construction equipment at nearby noise-sensitive residential land uses:

- Construction activities shall comply with the Long Beach Municipal Code, which states that construction activities shall only occur on weekdays from 7:00 a.am. to 7:00 p.m. and Saturdays from 9:00 a.m. to 6:00 p.m.,
- Property owners and occupants located within 200 feet of the Project boundary shall be sent a notice, at least 15 days prior to commencement of construction of each phase, regarding the construction schedule of the proposed project. A sign, legible at 50 feet shall also be posted at the Project construction site. All notices and signs shall be reviewed and approved by Caltrans, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints.
- Construction noise reduction methods shall be implemented, such as:
    - Replacing worn, loose, or unbalanced machine parts that cause vibration,
    - Keeping machine parts well lubricated to reduce friction,
    - Erecting acoustical enclosures and barriers around generators,

- Installing sound absorbing material and vibration isolation systems on hand tools,
- Turning off equipment when not in use, and
- Placing stationary construction equipment such that emitted noise is directed away from sensitive noise receivers.

AVM-NOI-3 The following procedures shall be implemented to minimize the potential for annoyance from construction vibration:

- Use cast-in-drilled-hole piles or sonic or vibratory pile drivers, where feasible, to avoid the use of impact-type pile drivers near residences.
- When there is a possibility of human annoyance from pile driving, conduct activities during weekday daytime hours when residents may be away from their homes.
- Avoid high vibration–generating activities during the same time in proximity to each other to the maximum extent practicable.
- Contact residents prior to pile driving to notify them that this activity will be occurring.

b) Less Than Significant Impact

During construction, the Project would not require any pile driving activities for bridge widening, as cast-in-drilled-hole piles would be used for bridge construction; however, pile driving may be required for shoring during construction. In addition, the Project would require the use of loaded trucks and bulldozers. As described in Section 2.2.6, Noise and Vibration, a loaded truck, a large bulldozer, and pile driving would generate a vibration level of 0.076 peak particle velocity (PPV) (inches per second [in/sec]) (86 vibration velocity decibels [VdB]), 0.089 PPV (in/sec) (87 VdB), and 0.644 PPV (in/sec) (104 VdB), respectively, when measured at 25 feet. Vibration associated with construction activities, specifically, pile driving, could cause annoyance impacts, depending on the distance from vibration sensitive receptors, and the impact would be less than significant. Avoidance and minimization measures would also be implemented, such as using cast-in-drilled-hole piles or sonic or vibratory pile drivers, where feasible, to avoid the use of impact-type pile drivers near residences, conducting activities during weekday daytime hours when residents may be away from their homes when there is a possibility of human annoyance from pile driving, avoiding high vibration–generating activities during the same time in proximity to each other to the maximum extent practicable, and contacting residents prior to pile driving to notify them that this activity will be occurring.

During Project operation, 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. Therefore, the Project would not generate excessive groundborne vibration or groundborne noise levels.

c) No Impact

The Project is not located within the vicinity of a private airstrip or an airport land use plan, or within two miles of a public airport or public use airport.

POPULATION AND HOUSING

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

CEQA Significance Determinations for Population and Housing

a, b) <u>No Impact</u>

The Project would not result in substantial unplanned population growth or, displace substantial numbers of existing people or housing, because the Project would be constructed within Caltrans and City right of way, and would include operational improvements to an existing transportation facility. The Project does not propose new homes or businesses, would not extend any roads or other infrastructure, and would not displace any people our housing.

PUBLIC SERVICES

a) 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 public services:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

CEQA Significance Determinations for Public Services

a) <u>No Impact</u>

The Project would not result in substantial adverse physical impacts associated with the provision of, or need for, new or physically altered governmental facilities, because the Project would not substantially affect acceptable service ratios, response times, or other performance objectives for these public services; and would therefore not require any construction of these facilities that could result in significant environmental impacts. The Project would be constructed within Caltrans and City right of way, and would include operational improvements to an existing transportation facility. No fire, police, school, park, or public facilities would be displaced by the Project, nor would the Project result in population growth that would affect service ratios, response times, or other performance objectives for these services. Emergency service providers may temporarily need to use alternate routes during Project construction; however, these impacts would cease following construction, and would not require the construction of new or physically altered governmental facilities that could result in significant environmental impacts.

RECREATION

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

CEQA Significance Determinations for Recreation

a, b) No Impact

The Project would not increase the use of, or include or require the construction or expansion of, parks or recreational facilities; and would therefore not result in the deterioration of these facilities, or have adverse physical effects on the environment associated with the construction of these facilities. The Project would be constructed within Caltrans and City right of way, and would include operational improvements to an existing transportation facility. A proposed greenbelt, the Hamilton Loop (also known as the State Route 91 Embankment Greenbelt), is planned in Caltrans right of way within the Project Area. Coordination is being conducted with the City of Long Beach so that the Project will not preclude the proposed greenbelt. However, the Project would not displace any parks or recreational facilities; nor would the Project result in population growth that would result in the increased use and deterioration of these facilities, or include or require the construction of these facilities that could have an adverse physical effect on the environment.

TRANSPORTATION

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐

CEQA Significance Determinations for Transportation

a) No Impact

The Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The Project includes transportation improvements that would enhance operational efficiencies along an existing transportation facility, consistent with regional and local transportation programs and plans. In addition, a proposed greenbelt, the Hamilton Loop (also known as the State Route 91 Embankment Greenbelt), is planned in Caltrans right of way within the Project Area. Coordination is being conducted with the City of Long Beach so that the Project will not preclude the proposed greenbelt.

b) No Impact

Senate Bill 743 effects major changes in California Environmental Quality Act (CEQA) analysis for capacity increasing projects on the State Highway System (SHS). CEQA 15064.3 is a new regulation for determining the significance of transportation impacts, replacing level of service with vehicle miles traveled (VMT), approved on December 28, 2018 as summarized below:

> *Vehicle miles traveled is generally the most appropriate measure for transportation impacts. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. Certain projects types, primarily those which are not capacity increasing, are presumed*

to result in a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. Beginning on July 1, 2020, the provisions of this section shall apply statewide.

Projects initiated on or after December 28, 2018 which have reached or will reach Caltrans' Milestone 020 ("Begin Environmental") before September 15, 2020, will be evaluated by Caltrans in consultation with project sponsors on a case-by-case basis to determine if the use of a VMT-based transportation impact significance determination in the draft environmental document is warranted.

The intent of Senate Bill 743 is to measure potential transportation impacts for roadway capacity projects utilizing VMT as a metric. Although the Caltrans' Milestone 020 of the Eastbound State Route 91/Atlantic Avenue to Cherry Avenue Auxiliary Lane Improvements Project was on April 2, 2019, a VMT-based transportation impact significance determination is not warranted because:

- The primary purpose of the addition of an auxiliary lane is to improve traffic operations and not to increase capacity. The addition of a 0.86-mile-long auxiliary lane is to enhance safety conditions on the Eastbound State Route 91 mainline, reduce congestion, and improve freeway operations (both mainline and ramps). Caltrans Final Implementation Timing Memo, Attachment A, explores the Project types not likely to lead to a substantial increase in vehicle travel. The Eastbound State Route 91/Atlantic Avenue to Cherry Avenue Auxiliary Lane Improvements Project is one of the Project types as described:

  Addition of an auxiliary lane of less than one mile in length designed to improve roadway safety.

- The Project is not increasing capacity.
- The Project is not anticipated to generate a high level of public or stakeholder interest.

c) No Impact

The Project would be designed, constructed, and operated consistent with Caltrans Highway Design Manual and other applicable federal, state, and local standards and specifications for roadways, retaining walls, and pedestrian access improvements. The Project does not include any additional access or roadway improvements that would substantially increase hazards due to geometric design features or incompatible uses.

d) Less Than Significant Impact

During Project construction, emergency access may be temporarily affected by detours associated with temporary freeway mainline and ramp closures, and local street closures, which would require emergency service providers to use different routes. However, emergency service providers within the Project Area would be notified in advance about the detour routes and the planned closures. Therefore, the Project would not result in inadequate emergency access. Impacts will be less than significant. No mitigation is required.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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	☐	☐	☐	☒
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.	☐	☐	☐	☒

CEQA Significance Determinations for Tribal Cultural Resources

a, b) <u>No Impact</u>

Native American consultation is described in Chapter 4 – Comments and Coordination, and is detailed in Appendix C of this document. No tribal cultural resources or human remains have been identified in the Project Area. No Project activities will occur in the Los Angeles River itself. The Project would be completed within Caltrans or City right of way, and includes improvements to an existing transportation facility. Project improvements would be completed on existing paved roadways, or on vegetated slopes adjacent to the freeway, a portion of which likely is fill.

During the course of Native American consultation for the undertaking, the Gabrieleño Band of Mission Indians-Kizh Nation and the Gabrieleno/Tongva San Gabriel Band of Mission Indians identified the Project location as sensitive for buried cultural resources and, thus, both parties requested archaeological and Native American monitoring. The results of the background research, archaeological sensitivity analysis, and field survey indicate that the Project has a low potential to affect cultural resources. These findings have been shared with the concerned tribes, but they remain concerned about ground disturbance in the Project Area. For this reason, and to confirm the conclusions of this study, Metro (in coordination with the Gateway Cities Council of Governments and Caltrans) will implement a limited archaeological and Native American monitoring program during project construction. An archaeological and Native American monitoring plan is under preparation and will outline

conditions and procedures for monitoring that will ensure Native American concerns are satisfactorily resolved with regard to degree of disturbance to the Project location and potential to encounter buried archaeological deposits.

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. If human remains are discovered, the Project would comply with California H&SC Section 7050.5 and PRC Section 5097.98.

UTILITIES AND SERVICE SYSTEMS

Would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

CEQA Significance Determinations for Utilities and Service Systems

a) <u>Less Than Significant Impact</u>

There are five utility lines in the Project Area, as summarized above in **Table 8**, in the Utilities/Emergency Services section of Chapter 2. Existing utilities within proposed improvements would require to be protected in place. There are no anticipated relocation of utility lines proposed as part of the Project. Because of the developed nature of the Project Area, and avoidance and minimization measures will be included in the Project, activities in proximity to utilities would not cause significant environmental effects. Impacts will be less than significant. No mitigation is required.

b, c, d, e) <u>No Impact</u>

The Project includes operational improvements to an existing transportation facility, and would not require additional water supplies, wastewater treatment services, or solid waste

services. The Project would create waste during construction activities. However, waste generated by the Project would not exceed state and local standards. In addition, the Project would comply with all federal, state, and local management and reduction statues and regulations related to solid waste.

WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

CEQA Significance Determinations for Wildfire

a, b, c, d) <u>No Impact</u>

Based on the California Department of Forestry and Fire Protection's map of Fire Hazard Severity Zones in State Responsibility Areas, the Project is not located in or near a state responsibility area or land classified as very high fire hazard severity zone (CAL FIRE, 2007).

MANDATORY FINDINGS OF SIGNIFICANCE

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
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)?	☐	☐	☒	☐
c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

CEQA Significance Determinations for Mandatory Findings of Significance

a, b, c) <u>Less Than Significant Impact</u>

The Project would be completed within Caltrans or City right of way, and includes improvements to an existing transportation facility. No Project activities will occur in the Los Angeles River itself. Project improvements would be completed on existing paved roadways, or on vegetated slopes adjacent to the freeway. Existing drainage facilities and utilities would be protected in place or relocated within the Project Area.

Because of the developed nature of the Project Area, and as described above in the analyses within this checklist, the Project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species or cause their populations to drop below self-sustaining levels, substantially reduce the number or restrict the range of rare or endangered species, or eliminate important

examples of California history or prehistory. Impacts will be less than significant. No mitigation is required.

The Project would include improvements along a 1.4-mile segment of an existing transportation facility. No Project activities will occur in the Los Angeles River itself. Project improvements would be completed on existing paved roadways, or on vegetated slopes adjacent to the freeway. Existing utilities would be protected in place within the Project Area. Because Project activities would be limited to Caltrans or City right of way in an area that is either occupied by, or directly adjacent to, existing transportation facilities, the Project would not have adverse effects on any resources with implementation of Project features, avoidance and minimization measures, and mitigation measures. Other past, present, and reasonably foreseeable actions listed in **Table 6** (see "Cumulative Impacts" above in Chapter 2) would also be required to implement project features, avoidance and minimization measures, and mitigation measures to reduce any adverse effects. Therefore, as discussed in Sections 2.1, 2.2, and 2.3 above, the proposed Project, in conjunction with past, present, and reasonably foreseeable actions, would not result in a cumulatively adverse effects on any resources and mitigation would not be required.

In addition, because all improvements would be completed within Caltrans or City right of way, avoidance and minimization measures would be implemented as part of the Project, and the Project would include context sensitive solutions, the Project does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. Impacts will be less than significant. No mitigation is required.

3.3 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 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.

3.3.1 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 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. The Federal Highway Administration 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 including, but not limited to, the following:

Executive Order S-3-05 (June 1, 2005): The goal of this Executive Order 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 Executive Order S-3-05, while further mandating that the California Air Resources Board 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 the California Air Resources Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. The California Air Resources Board 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 the California Air Resources Board to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" 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.

Executive Order B-16-12 (March 2012) orders State entities under the direction of the Governor, including the California Air Resources Board, 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.

Executive Order 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 the California Air Resources Board 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 Executive Order 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 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.

[1] GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO_2 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.

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 the California Air Resources Board to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

Executive Order 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.

Executive Order 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 Executive Order also directs the California Air Resources Board 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.

3.3.2 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 mainly residential, with some light industrial and commercial buildings. State Route 91 is a major east-west transportation route for international, interstate, interregional, and intraregional movement of people goods throughout Los Angeles, Orange, Riverside, and San Bernardino counties. It provides access to the Ports of Los Angeles and Long Beach and serves the largest center for warehousing and transloading in the Los Angeles basin, at the southwest quadrant of State Route 91 and I-710 interchange. Also serving as a key commute route for southern Los Angeles County, Orange County, and Riverside County, State Route 91 experiences substantial congestion in the Project Area. The Regional Transportation Plan/Sustainable Communities Strategy by the Southern California Association of Governments (SCAG) guides transportation and housing development in the Project Area. The City of Long Beach Long Beach Sustainability City Action Plan addresses GHGs in the Project Area.

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 California Air Resources Board does so for the state, as required by H&SC Section 39607.4.

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 MMTCO2e GHG emissions in 2016, 81% consist of CO_2, 10% are CH_4, and 6% are N_2O; the balance consists of fluorinated gases (U.S. EPA 2018). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

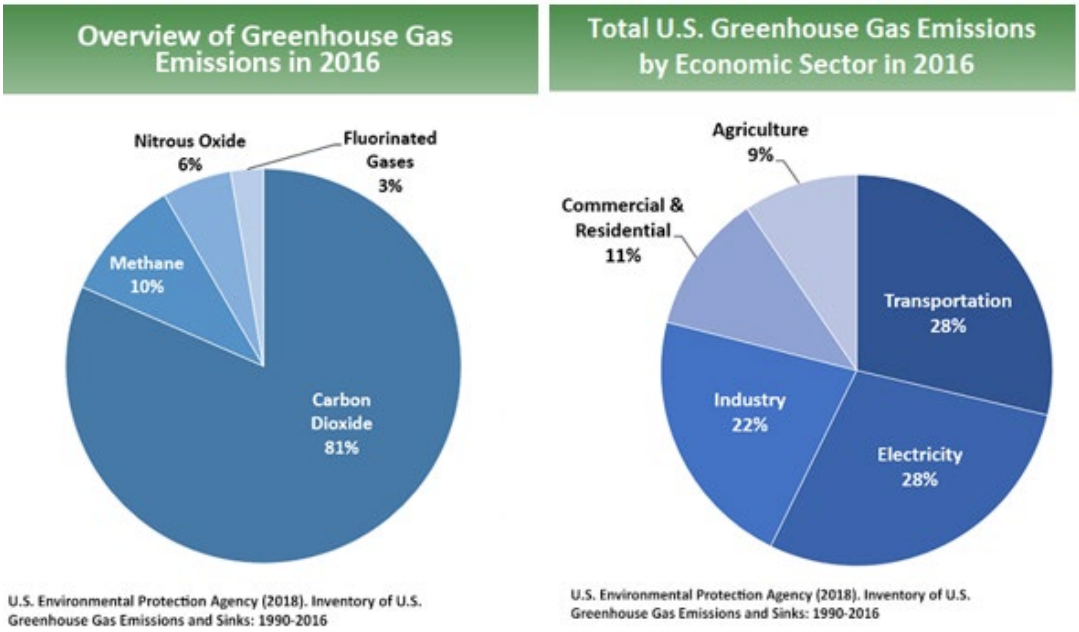

Figure 20: U.S. 2016 Greenhouse Gas Emissions

State GHG Inventory

The California Air Resources Board 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% of total GHGs. It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (ARB 2019a).

AB 32 required the California Air Resources Board 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. The California Air Resources Board 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 Executive Order 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.

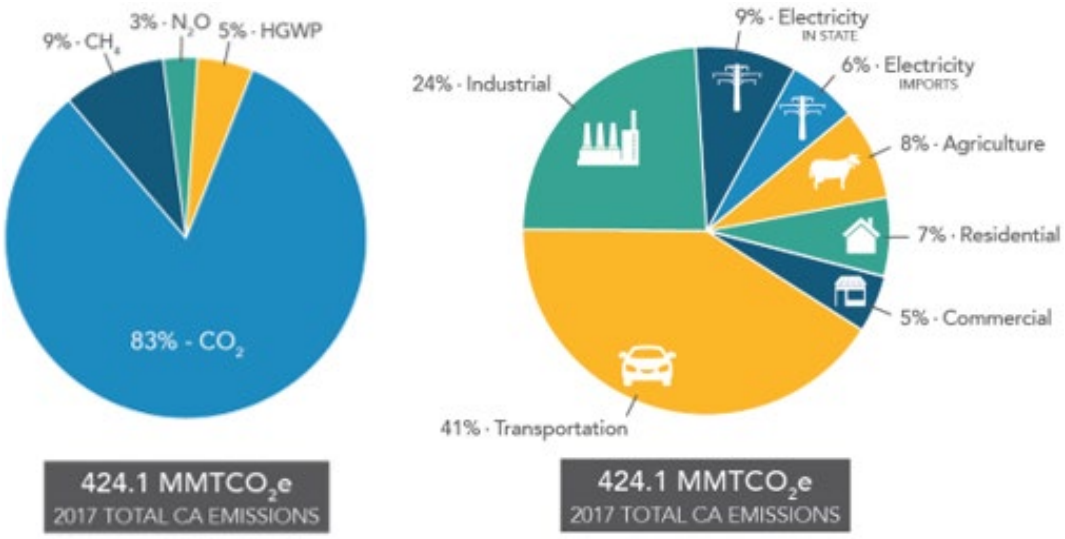

Figure 21: California 2017 Greenhouse Gas Emissions

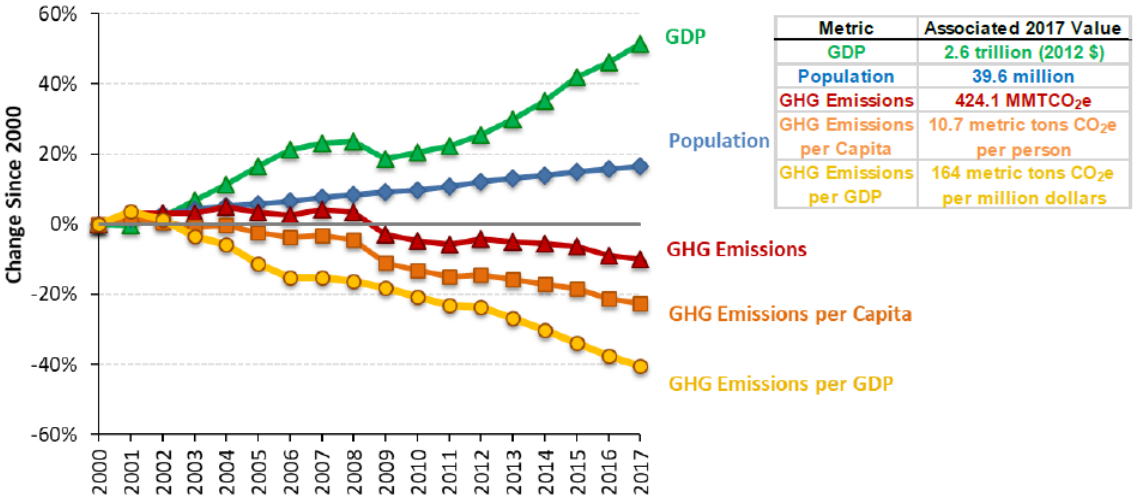

Figure 22: Change in California GDP, Population, and GHG Emissions since 2000 (Source: California Air Resources Board 2019b)

Regional Plans

The California Air Resources Board sets regional targets for California's 18 MPOs to use in their Regional Transportation Plan/Sustainable Communities Strategy (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 Project is included in the Regional Transportation Plan/Sustainable Communities Strategy for the SCAG. The regional reduction targets for SCAG are 8 percent by 2020 and 19 percent by 2035 (ARB 2019c).

The SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy identifies the following GHG reduction policies and strategies:

- Protect and preserve what we have first, supporting 'Fix it First' principle, including the consideration of life cycle costs beyond construction
- Support continued system preservation funding and augment as necessary
- Focus on achieving maximum productivity through strategic investments in system management and demand management. Focus on adding capacity primarily (but not exclusively) to:
    - Close gaps in the system
    - Improve access where needed
- Support policies and system improvements that will encourage the seamless operation of our roadway network from a user perspective
- Consider safety in all roadway improvement projects
- Assure that any new roadway capacity project is developed with consideration and incorporation of congestion management strategies, including demand management measures, operational improvements, transit and Intelligent Transportation Systems
- Focus on addressing non-recurring congestion with new technology
- Implement Complete Streets consistent with California's Complete Streets Act

3.3.3 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

The purpose of the Project is to enhance safety conditions on the Eastbound State Route 91 mainline, reduce congestion, and improve Eastbound freeway operations (both mainline and ramps). The auxiliary lane would be less than 1 mile long and would not increase the vehicle capacity of the roadway. This type of project generally causes minimal or no increase in operational GHG emissions and is generally considered a non-capacity increasing project for purposes of Caltrans GHG analysis. However, because the Air Quality Report (November 2020) evaluated the Project as capacity-increasing, a quantitative analysis of operational GHG emissions is provided below.

Motor vehicle operational emissions were quantified for existing, Opening Year 2024 and Design Year 2045 conditions. Emissions were quantified using the CT-EMFAC2017 version 1.0.2 computer program based, in part, on traffic data provided for this project (Iteris 2020). Estimated annual operational mobile-source GHG emissions and traffic conditions for the Project Study Area are summarized in **Table 38**.

The traffic data used in the Air Quality Report indicates increases in VMT from existing to 2024 and 2045 No-Build and Build conditions, with Build Alternatives slightly higher than No-Build in both years. However, as depicted in **Table 38**, mobile-source GHG emissions within the Project Study Area are shown to decrease in the future compared to existing conditions of approximately 24,266 $MTCO_2e$ in 2019. Under the Build Alternative, in opening year 2024, GHG emissions would be 22,400 $MTCO_2e$/year, a decrease of 8 percent from existing. In 2045, GHG emissions would be 20,008 $MTCO_2e$/year, a decrease of 18 percent compared to existing.

Under No Build Alternative year 2024 and 2045 conditions, mobile-source GHG emissions within the Project Study Area are predicted to total approximately 21,829 $MTCO_2e$/year and 19,502 $MTCO_2e$/year, respectively. In comparison to existing conditions, the No Build Alternative would result in an approximately 10 percent decrease in mobile-source GHG emissions under 2024 conditions and an approximately 20 percent decrease under 2045 conditions. While the proposed Build Alternative is predicted to increase mobile-source GHGs by approximately 3 percent compared to the No-Build Alternative in both 2024 and 2045, in all cases GHG emissions would be less than existing.

Although VMT is projected to increase from existing conditions to year 2024 and 2045 conditions (No-Build and Build), mobile-source GHG emissions are anticipated to decrease in future years due to implementation of fuel regulations, improved fleet average fuel economy, and the gradual removal of older vehicles from the roads.

Table 38: Summary of Comparative GHG Emissions and Traffic Conditions

Scenario/Analysis Year	Annual VMT	$MTCO_2e$/Year (Percent Change)
Existing – Year 2019	62,572,570	24,266.30
No-Build Alternative – Opening Year 2024	62,797,055	21,828.97
No-Build Alt. 2024 Compared to Existing:		-2,437.33 (-10 precent)
Build Alternative – Opening Year 2024	64,423,184	22,400.16
Build Alt. Compared to Existing:		-1,866.15 (-8 percent)
Build Alt. Compared to No-Build Alt. 2024:		571.19 (3%)
No-Build Alternative – Design Year 2045	63,634,314	19,501.81
No-Build Alt. 2045 Compared to Existing:		-4,764.50 (-20 percent)
Build Alternative – Design Year 2045	65,274,642	20,007.55
Build Alt. 2045 Compared to Existing:		-4,258.75 (-18 percent)
Build Alt. 2045 Compared to No-Build Alt. 2045:		505.75 (3 precent)

Source: AMBIENT Air Quality and Noise Consulting, 2020
Notes: VMT = vehicle miles traveled; $MTCO_2e$ = metric tons of carbon dioxide equivalents
Emissions were quantified using EMFAC2017 emission factors and traffic data provided for this project.
Annual VMT is derived from Daily VMT multiplied by 347 (California Air Resources Board [ARB] methodology [ARB, 2008]).
There is no significant difference in projected traffic volumes/data between year 2040 and year 2045. Therefore, 2045 traffic data is presented as the Horizon/Design Year (2040) for purposes of this table.

This analysis accounts for the effects of the US National Highway Traffic Safety Administration and Environmental Protection Agency SAFE (Safer Affordable Fuel-Efficient) Vehicles Rule. Part One revoking California's authority to set its own GHG emissions standards was published on September 27, 2019 and effective November 26, 2019. The SAFE Vehicles Rule Part Two became effective June 30, 2020. It amended existing Corporate Average Fuel Economy (CAFE) and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026. The rule retains the model year 2020 standards for both programs through model year 2026. In June 2020, the California Air Resources Board 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 (California Air Resources Board, 2020). CO_2 and $MTCO_2e$ values have been scaled based on California Air Resources Board's adjustment factors.

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. GHG emissions can also be reduced by the use of cleaner more efficient equipment. The Project would comply with applicable State, Federal, and/or local rules, regulations, and control and mitigation measures.

Construction-generated GHG emissions were estimated using the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Road Construction Emissions Model, Version 9.0.0 and are summarized in **Table 39**. Construction of the Build Alternative would occur over an approximately 24-month period and would generate a total of approximately 1,647 metric tons of CO_2e.

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 California Air Resources Board emission reduction regulations; and Section 14-9.02, Air Pollution Control, 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. In addition, Project-level GHG reduction strategies would be implemented (see **PF-AQ-1**, **PF-AQ-5**, **PF-AQ-8**, and **PF-AQ-12** in Section 3.3.4 below).

Table 39: Construction-Generated GHG Emissions

Construction Phase	$MTCO_2e$
Land Clearing/Grubbing	55.67
Grading/Excavation	1,065.09
Drainage/Utilities/Sub-Grade	419.56
Paving	106.51
Maximum/Phase:	*1,065.09*
Project Total:	*1,646.84*

Source: AMBIENT Air Quality and Noise Consulting, 2020
Notes: $MTCO_2e$ = metric tons of carbon dioxide equivalents
Maximum/Phase refers to the amount of $MTCO_2e$ emissions resulting from the construction phase that generates the highest GHG emissions (Grading/Excavation).

CEQA Conclusion

While the proposed Project will result in GHG emissions during construction, it is anticipated that the Project will not result in any 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.

3.3.4 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*.

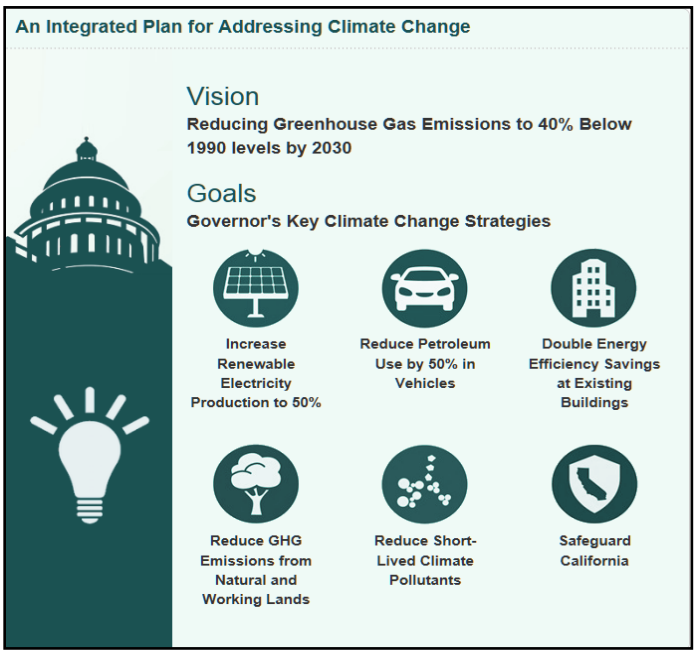

Figure 23: California Climate Strategy

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).

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 California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Executive Order 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 CO_2 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 Regional Transportation Plan/Sustainable Communities Strategy; 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 measures will also be implemented in the Project to reduce GHG emissions and potential climate change impacts from the Project.

The Project will include Transportation System Management measures to improve operations, such as improved ramp metering, coordinated traffic signals, and intelligent transportation system elements, among others. Smoother operation helps reduce vehicle emissions.

PF-AQ-1 The construction contractor must comply with the Caltrans' Standard Specifications in Section 14-9 (2018).

- Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

PF-AQ-5 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.

PF-AQ-8 Construction activities involving the extended idling of diesel equipment or vehicles will be limited near air sensitive receptors to the extent feasible.

PF-AQ-12 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.

3.3.5 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 Federal Highway Administration 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).

Federal Highway Administration order 5520 (Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events, December 15, 2014) established Federal Highway Administration policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The Federal Highway Administration has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (Federal Highway Administration 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.

Executive Order 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.

Executive Order 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.

Executive Order B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This Executive Order recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of Executive Order 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

The Caltrans 2019 Climate Change Vulnerability Assessments, District 7 Technical Report, discusses climate change stressors in the district, which include temperature, wildfire, sea level rise, storm surge, and cliff retreat, as follows:

- Temperature rise is a direct outcome of increased concentrations of GHGs in the atmosphere.
- Increasing temperatures, changing precipitation patterns, and resulting changes to land cover, are expected to affect wildfire frequency and intensity.
- Historic sea level rise in the Los Angeles area has been at a rate of around a third of an inch per year (or one millimeter per year).
- Sea level rise will exacerbate the effects of coastal storm surges, as more forceful waves reach higher on shore.
- Storm events can lead to erosion, scour, and washouts underneath the highway itself, and can result in cliff retreat.

The District 7 Technical Report includes a prioritization method for those facilities with high exposure to climate change risk.

SCAG's 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy includes policies and strategies aimed to reduce GHG emissions (see above Section 3.3.2, Environmental Setting, under "Regional Plans"). SCAG is developing a Regional Climate Adaptation Framework to help local and regional jurisdictions plan and prepare for the effects of sea level rise, extreme heat, increased wildfires, and other climate-related issues. In addition, the City of Long Beach adopted a Sustainable City Action Plan (adopted February 2010), which identifies sustainability goals to reduce GHG emissions. These goals include improving transit options, expanding bicycle infrastructure, promoting a less car dependent lifestyle, and reducing port-related air emissions.

As discussed above in Section 3.3.3, Project Analysis, the Project would not increase operational GHG emissions and would include measures to minimize construction generated GHG emissions. Therefore, the Project would not conflict with policies and strategies adopted for the purpose of reducing GHG emissions.

Climate-change risk analysis involves uncertainties as to the timing and intensity of potential risks. However, the Project Area is not located within an area with high hazard risks, as discussed below. In addition, the Project would not exacerbate the effects of climate change related to flooding, hazards, and wildfire.

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

The Project is not located within a 100-year base floodplain. Accordingly, direct impacts to transportation facilities due to flooding are not expected. The Caltrans District 7 Climate Change Vulnerability Assessment notes that precipitation is likely to come in fewer, more-intense events with climate change. It maps changes in the 100-year storm precipitation depth, a metric commonly used in highway design. The Project Area is shown in a location likely to experience a less than 5 percent increase in storm precipitation depth through 2085 (Caltrans 2019). The proposed Project would increase impervious surface area that could increase the volume and velocity of stormwater runoff. Existing treatment BMPs would be retained or replaced, and Project feature PF-WQ-3 would provide permanent BMPs to minimize runoff effects from the new impervious surface area. With these features, the Project would likely be resilient to effects of a relatively small potential increase in storm precipitation.

WILDFIRE

The Project is in a built-up, urban location. Based on the California Department of Forestry and Fire Protection's map of Fire Hazard Severity Zones in State Responsibility Areas, the Project is not located in or near a state responsibility area or land classified as very high fire hazard severity zone (refer to **Figure 24**) (CAL FIRE, 2007). The District 7 Climate Change Vulnerability Assessment shows the Project location is not considered exposed roadway or in an area of wildfire concern through 2085. Caltrans 2018 revised Standard Specification 7-1.02M(2) mandates fire prevention procedures during construction, including a fire prevention plan. Accordingly, direct impacts to transportation facilities due to wildfire are not expected.

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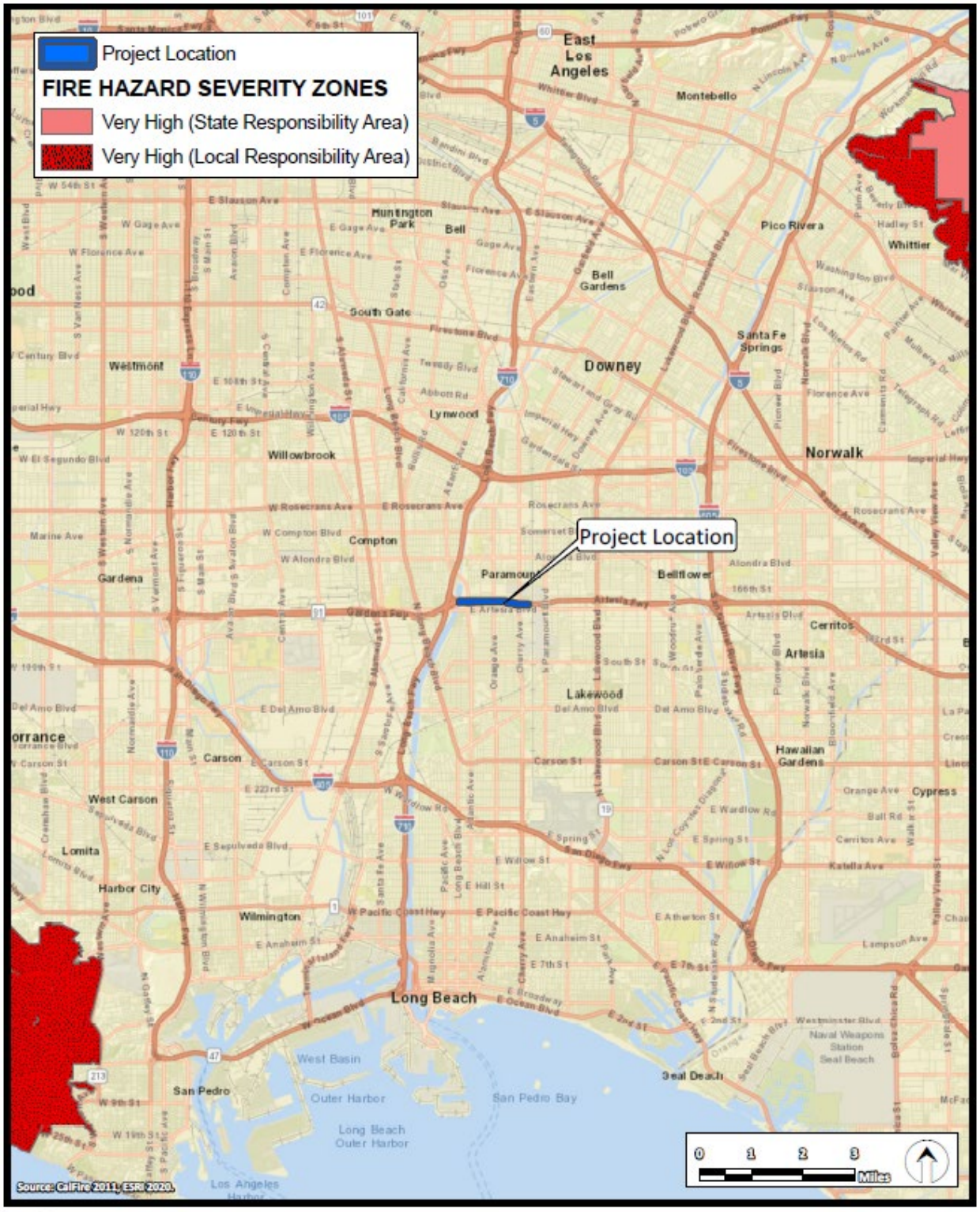
Figure 24: Fire Hazard Severity Zones



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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 necessary scope of environmental documentation and the level of analysis required, and to 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 meetings, public notices, and Project Development Team (PDT) meetings. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

Public Participation

To comply with the requirements of CEQA and NEPA, a joint IS/EA was prepared to evaluate the potential environmental effects from the Project. Caltrans is the lead agency under CEQA and NEPA. The Draft IS/EA will be circulated to the public for at least 30 days, and responses to public comments will be included in the Final IS/EA. Public and agency coordination will continue to be documented through the CEQA/NEPA process.

A Notice of Availability/Notice of Intent to Adopt a Mitigated Negative Declaration (NOA/NOI) and Notice of Opportunity for a Public Hearing will be mailed to the distribution list in Chapter 6 below and to residents in proximity to the Project Area (owners or occupants of properties to the south of East 68th Street, to the north Artesia Boulevard, to the east of I-710, and to the west of the Union Pacific Railroad that runs between Cherry and Paramount Avenues). The public noticing mailing limits were selected based on roadways and the Union Pacific Railroad, as these linear transportation facilities typically serve as delineators of neighborhood boundaries. In addition, the public noticing mailing limits were selected in consideration of areas where potential direct and indirect impacts could result from Project construction and operation.

The NOA/NOI and Notice of Opportunity for a Public Hearing will also be published in two local newspapers, the Long Beach Press-Telegram (English) and La Opinion (Spanish). The Draft IS/EA is available at https://www.metro.net/projects/i-605-corridor-hot-spots-program/SR-91-early-action-projects/.

Interagency Coordination Meetings

At the onset of the Project, the PDT met with the City of Long Beach to provide an overview of the Project and to obtain feedback for coordination efforts moving forward. The City of Long Beach notified the PDT that a proposed greenbelt, the Hamilton Loop (also known as the State Route 91 Embankment Greenbelt), is planned in Caltrans right of way within the Project Area. Coordination is being conducted with the City of Long Beach so that the Project will not preclude the proposed greenbelt.

A meeting was held with the City of Long Beach on September 30, 2020 to discuss project updates and coordination related to the Hamilton Loop. The PDT also met with the City of Long Beach and District 9 Council Member Rex Richardson on October 26, 2020 to discuss additional project updates, the public outreach process, and City comments related to the Project, including landscape design, the aesthetics of proposed retaining or soundwalls, and

coordination on irrigation, electrical layout, and Project features. Ongoing meetings are being held between Metro, Caltrans, Gateway Cities Council of Governments, and the City of Long Beach to coordinate on the Project, and this coordination will continue throughout the Project development process.

The proposed Project was submitted to SCAG's Transportation Conformity Working Group (TCWG) for review on September 22, 2020. The TCWG determined that the proposed Project is not considered a project of air quality concern (POAQC) for particulate matter (PM) because it does not meet the definition of a POAQC as defined in U.S. EPA's Transportation Conformity Guidance. The Project TCWG review forms submitted for interagency consultation is included in Appendix C of this report.

Native American Consultation

An inquiry was submitted to the Native American Heritage Commission on May 30, 2019 to obtain a list of Native American Tribes. The Native American Heritage Commission responded on June 14, 2019 and provided the contact information for five Tribes:

- Gabrieleño Band of Mission Indians-Kizh Nation – Andrew Salas
- 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 – Charles Alvarez

Combined AB52/Section 106 consultation letters were sent on behalf of Caltrans on May 8, 2020, and follow-up occurred via email and phone calls on May 15, 2020. The following groups were contacted with combined AB52/Section 106 letters:

- Gabrieleño Band of Mission Indians-Kizh Nation – Andrew Salas
- Gabrieleno/Tongva San Gabriel Band of Mission Indians – Anthony Morales

Section 106 letters were sent on behalf of Caltrans on May 8, 2020, and follow-up occurred via email and phone on May 15, 2020. The following groups were contacted with Section 106 letters:

- Gabrielino/Tongva Nation – Sandonne Goad
- Gabrielino Tongva Indians of California Tribal Council – Robert Dorame
- Gabrielino-Tongva Tribe – Charles Alvarez

As of June 23, 2020, responses have been received from Anthony Morales, Andrew Salas, and Robert Dorame. Their responses are below:

- On May 15, 2020, Mr. Morales expressed a concern for the Project's location near the Los Angeles River and the cultural significance the area holds for his people. He indicated that due to proximity to the Los Angeles River and Compton Creek the area is sensitive for Gabrielino sites. He also indicated that the discovery of human remains near the intersection of the SR-22 and the I-405 a few months ago seems like a similar situation with the elevated

roadbed of the Project. He requested that Native American monitoring and Archaeological monitoring be undertaken during excavation.

- Between May 2019 and May 2020, the Gabrieleño Band of Mission Indians-Kizh Nation consulted nine separate times with Caltrans and/or DUKE CRM (the preparer of the Archaeological Survey Report), on behalf of Caltrans, including meetings, phone calls, and email. In summary, the Tribe has repeatedly maintained that the area is sensitive for cultural resources and recommended archaeological and Native American monitoring. The Tribe provided extensive information about the background of the Project Area, the history of the Los Cerritos land grant, various Native place-names, and the historic Gabrielino occupation and settlement of the area surrounding the Project.

- On May 15, 2020, Mr. Dorame requested and was emailed the consultation letter and maps. To follow up with Mr. Dorame, the consultation letter and map was emailed on June 17, 2020 and he was called later that day. Over the phone Mr. Dorame requested that in the event of the discovery of cultural material and burials from the Tongva people, that the Gabrielino Tongva Indians of California Tribal Council be notified, regardless of any finding about Most Likely Descendent decisions by the Native American Heritage Commission.

Further outreach to Mr. Morales was conducted on October 2, 2020 summarizing edits made to this document and stating that it is Caltrans' and Metro's intent to implement a limited monitoring program to be described in a Monitoring Plan. Mr. Morales has not responded.

Consultation with Gabrieleno Band of Mission Indians-Kizh Nation took place throughout the planning process. In a meeting held on July 9, 2019 with the Gabrieleno Band of Mission Indians-Kizh Nation, Chairperson Andrew Salas and Matthew Teutimez provided information about the prehistoric land use of the Project vicinity for consideration during this study. Mr. Salas and Mr. Teutimez shared that the Project location is between two known ethnohistoric villages: *Tibahangna* located about 2.5 miles to the south and *Abahangna* located about 7.2 miles to the north. They also stated a *Jabonera* (soap production facility) was situated within Rancho Los Cerritos, in the area of the Project, as well as another in the area of *Abahangna*. Mr. Teutimez explained that *Jaboneras* were historically established in areas containing resources available for soap production and, as would be expected, these resources were managed and used by local Native American communities prior to colonization. Such resources would have been part of a village's resource use area. For this reason, the locations of *Jaboneras* are good indicators of the locations of ancient village sites. Mr. Teutimez also stated that Artesia Boulevard to the south was an old trade route that ran in an east-west direction, and that the Los Angeles River was another north-south trending trade route. In addition to this information, Mr. Salas and Mr. Teutimez provided references to additional sources of information, including historic maps, news accounts of archaeological finds, and ethnographic studies. These sources were examined for this study, and only those relevant to the Study Area and vicinity have been included in this report.

In a follow-up meeting with the Tribe held on March 14, 2020, Mr. Teutimez pointed out that the Project was located along the meandering course of the Los Angeles River and that a Gabrieleno trade route traversed in a north-south direction along present-day Cherry Avenue. This route was the precursor to the Union Pacific Railroad that runs between Cherry and Paramount Avenues. The Tribe reiterated the fact that two ethnohistoric villages, *Tibahangna* and *Abahangna*, were located in the area of the Project.

In a final meeting on September 8, 2020, Caltrans staff reviewed all of the information provided by the Tribe and provided an overview of the results of the current archaeological investigation. Mr. Salas and Mr. Teutimez objected to the placement of village locations on the maps as these may give researchers the wrong impression that villages were contained within a small area. They also pointed out that boundaries of villages were fluid and encompassed resource procurement areas; so, a dot on a map does not capture the complexity and fluidity of Gabrieleno settlements. They requested that all maps showing village locations be removed from the report. Mr. Salas and Mr. Teutimez concluded the consultation by stating that the Project location is situated in the vicinity of three Gabrieleno travel routes that followed the present-day course of the Los Angeles River on the west, the San Gabriel River on the east, and Artesia Boulevard on the south. In addition, two ethnohistoric villages are known to have been located some distance to the north and south of the Project. This would place the Project's Area of Potential Effects at the center of a heavily trafficked area and, thus, it is an area of concern for the Tribe. For this reason, the Tribe requests archaeological and Native American monitoring to confirm that no cultural resources will be affected during Project construction.

Following this meeting, Caltrans staff confirmed with Mr. Salas and Mr. Teutimez via email (dated September 17, 2020) that a limited archaeological and Native American monitoring program will be prepared to outline the conditions and procedures for monitoring.

For a complete record of all consultation efforts, see Appendix C of this document.

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The following Department staff and consultants contributed to the preparation of this IS/EA.

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Megan Wilson, Archaeologist. Contribution: Archaeological Survey Report.

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Federal Agencies (Continued)

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List of Technical Studies

Air Quality Report, AMBIENT Air Quality and Noise Consulting

Archaeological Survey Report, DUKE CRM

Combined Paleontological Identification and Evaluation Report, DUKE CRM

Community Impact Assessment, GPA Consulting

District Preliminary Geotechnical Report, Geo-Advantec

Historic Property Survey Report, GPA Consulting

Initial Site Assessment, TRC

Natural Environment Study (Minimal Impacts), GPA Consulting

Noise Abatement Decision Report, TRC

Noise Study Report, AMBIENT Air Quality and Noise Consulting

PM Conformity Hot Spot Analysis Project Summary Form for Interagency Consultation, AMBIENT Air Quality and Noise Consulting

SB 743 – VMT based Transportation Impact Significance Determination, TRC

Traffic Management Plan, TRC

Traffic Operations Analysis Report, Intueor Consulting

Traffic Volumes Report, Iteris

Minor Level Visual Impact Assessment, Tatsumi and Partners

References

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

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Appendix A. Avoidance, Minimization and/or Mitigation Summary

In order to be sure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record [ECR] which follows) would be implemented. During project design, avoidance, minimization, and /or mitigation measures will be incorporated into the Project's final plans, specifications, and cost estimates, as appropriate. All permits will be obtained prior to implementation of the Project. During construction, environmental and construction/engineering staff will ensure that the commitments contained in this ECR are fulfilled. Following construction and appropriate phases of project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. As the following ECR is a draft, some fields have not been completed, and will be filled out as each of the measures is implemented. Note: Some measures may apply to more than one resource area. Duplicative or redundant measures have not been included in this ECR.

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
Utilities/Emergency Services	**PF-COM-1**: Prior to construction, Metro will coordinate with and notify impacted community facilities owners (e.g., medical facilities, churches, and educational facilities and districts) to ensure access is maintained at all times during construction.	Environmental Document	Project Manager	Pre-construction	No (Project Feature [PF])
Utilities/Emergency Services	**PF-ES-1**: Prior to construction, Metro would coordinate with local emergency service providers and communicate with the surrounding community to minimize service delays and disruptions during construction.	Environmental Document	Project Manager	Pre-construction	No (PF)
Traffic and Transportation/Pedestrian and Bicycle Facilities	**PF-COM-2**: Prepare a Traffic Management Plan and Traffic Handling Plan. The Traffic Management Plan would include a Public Awareness Campaign.	Environmental Document	Project Manager	PS&E	No (PF)
Traffic and Transportation/Pedestrian and Bicycle Facilities	**PF-COM-3**: Prepare a Construction Staging Plan.	Environmental Document	Project Manager	PS&E	No (PF)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
Traffic and Transportation/Pedestrian and Bicycle Facilities	**PF-TR-1:** Prior to construction, Metro will coordinate with public transportation agencies (Long Beach Transit and Metro bus service) to provide rerouting information, including operating schedules, to the public at least one month in advance of any service disruptions.	Environmental Document	Project Manager	Pre-construction	No (PF)
Visual/Aesthetics	**AVM-VIS-1**: Soundwalls, retaining walls, and other structures may receive aesthetic treatments, which would be consistent with applicable aesthetic corridor plans. Pilasters may be added to soundwalls and places where deemed necessary by engineers. However, final aesthetics will adhere to guidelines to be determined by the State Route 91 Aesthetics Master Plan Committee with concurrence by Caltrans, Metro, the City of Long Beach, and local communities during the construction documentation phase.	Environmental Document	Landscape Architect Resident Engineer	PS&E, Construction	No (Avoidance and Minimization Measure [AVM])
Visual/Aesthetics	**AVM-VIS-2**: Where feasible, drought tolerant trees, shrubs, and groundcover will be incorporated within the Project right of way to help improve the overall visual quality of this area. The plant palette will be developed in consultation with a Caltrans landscape architect.	Environmental Document	Landscape Architect Resident Engineer	PS&E, Construction	No (AVM)
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.	Environmental Document	Resident Engineer	Construction	No (PF)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
Cultural Resources	**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 Native American Heritage Commission, who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent. 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 Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.	Environmental Document	Resident Engineer	Construction	No (PF)
Cultural Resources	**PF-CUL-3**: Metro will implement a limited archaeological and Native American monitoring program with interested Tribes as detailed in the Archaeological and Native American Monitoring Plan prior to and during Project construction.	Environmental Document	Resident Engineer Cultural Resources Unit	Pre-construction, Construction	No (PF)
Water Quality and Storm Water Runoff	**PF-WQ-1:** During construction, Caltrans' Resident Engineer or designated contractor will ensure that all applicable construction site Best Management Practices follow the latest edition of the Caltrans Construction Site Best Management Practice Manual to	Environmental Document	Resident Engineer or Designated Contractor	Construction	No (PF)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	address temporary impacts associated with Project construction, including those associated with waste management, non-storm water management, tracking controls, and other Best Management Practices as applicable. In addition to applicable Best Management Practices in the Caltrans Construction Site Best Management Practice Manual, the following measures will also be implemented: • Good housekeeping • Erosion control • Sediment control				
Water Quality and Storm Water Runoff	**PF-WQ-2**: During construction, Caltrans' Resident Engineer or designated contractor will ensure compliance with the provision of the National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System No. CAS000002 as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ) and any subsequent amendment or renewal, as they relate to construction activities for the Project. This will include submission of the Permit Registration Documents, including a Notice of Intent, risk assessment, site map, Storm Water	Environmental Document	Resident Engineer or Designated Contractor	Construction	No (PF)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	Pollution Prevention Plan, annual fee, and signed certification statement to the State Water Resources Control Board via the Stormwater Multi-Application and Report Tracking System at least seven days prior to the start of construction. Construction activities will not commence until a Waste Discharger Identification number is received from the Stormwater Multi-Application and Report Tracking System. The Storm Water Pollution Prevention Plan will be prepared by a qualified Storm Water Pollution Prevention Plan developer and will meet the requirements of the Construction General Permit: • Identifying potential pollutant sources associated with construction activities; • Identifying non-storm water discharges; • Developing a water quality monitoring and sampling plan; • Implementing and maintaining Best Management Practices to reduce or eliminate pollutants associated with construction sites.				
Water Quality and Storm Water Runoff	**PF-WQ-3**: Existing permanent Design Pollution Prevention and treatment Best Management Practices will be protected in place or replaced in-kind to minimize downstream effects, stabilize slopes, control runoff, and treat water quality volume generated from new impervious surface area.	Environmental Document	Project Manager	PS&E, Construction	No (PF)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
Water Quality and Storm Water Runoff	**PF-WQ-4:** Procedures in the Caltrans Stormwater Quality Handbooks, Project Planning and Design Guide will be followed for maintaining existing treatment Best Management Practices (gross solids removal devices) to the Maximum Extent Practicable. Additionally, all treatment Best Management Practices will be consistent with the requirements of applicable permits, including the Caltrans municipal separate storm sewer systems permit, and will be inspected/monitored to ensure effectiveness.	Environmental Document	Resident Engineer	Construction	No (PF)
Geology/Soils/Seismic/ Topography	**PF-GEO-1**: All finished slopes will be planted with non-water succulent plants as soon as practical after grading.	Environmental Document	Resident Engineer	Construction	No (PF)
Geology/Soils/Seismic/ Topography	**PF-GEO-2**: During construction, the Resident Engineer will ensure that safe work practices in accordance with Caltrans and Cal/OSHA are implemented to mitigate the risk to workers. This includes sloping and/or shoring of excavations to prevent collapse of unstable soils. Sloping and/or shoring of excavations would be constructed in accordance with Caltrans Shoring Manual, Cal/OSHA, and any local standards.	Environmental Document	Resident Engineer	Construction	No (PF)
Geology/Soils/Seismic/ Topography	**PF-GEO-3**: During final design, the geotechnical engineer and/or engineering geologist will prepare a quality assurance/quality control plan that will be implemented during construction. The quality	Environmental Document	Geotechnical Engineer and/or Engineering Geologist	PS&E	No (PF)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	assurance/quality control plan is a document that would include requirements for observation, monitoring, and testing by a geotechnical engineer and/or engineering geologist during construction to confirm that geotechnical/geologic recommendations are followed, or if different site conditions are encountered, ensure appropriate changes are made to accommodate such issues. The geotechnical engineer will prepare field observation reports while grading and construction activities are underway.				
Paleontology	**MM-PALEO-1**: A Paleontological Mitigation Plan, following the Caltrans SER, Chapter 8, will be prepared by a Principal Paleontologist.	Environmental Document	Project Manager Principal Paleontologist	Pre-construction	Yes (Mitigation Measure [MM])
Paleontology	**MM-PALEO-2**: The Principal Paleontologist will attend the pre grade conference. At this meeting, the Paleontologist will explain the likelihood for encountering paleontological resources, what resources may be discovered, and the methods of recovery that will be employed.	Environmental Document	Project Manager Principal Paleontologist	Pre-construction	Yes (MM)
Paleontology	**MM-PALEO-3**: During construction excavation, a qualified Paleontological Monitor shall be present on a full-time basis initially whenever excavation will occur within the sediments that have a high paleontological sensitivity (greater	Environmental Document	Project Manager Paleontological Monitor	Construction	Yes (MM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	than 5 feet below the original ground surface) and on a spot-check basis for excavation in sediments that have low sensitivity (non-fill sediment above 5 feet below the ground surface (bgs)). Monitoring may be reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating (monitoring reductions, when they occur, will be determined by the qualified Principal Paleontologist).				
Paleontology	**MM-PALEO-4:** The Monitor shall inspect fresh cuts and/or spoils piles to recover paleontological resources. The monitor shall be empowered to temporarily divert construction equipment away from the immediate area of the discovery. The monitor shall be equipped to rapidly stabilize and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, Caltrans will consider using heavy equipment on site to assist in the removal and collection of large materials. Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, it is recommended that these sediments occasionally be spot-screened on site through 1/8 - to 1/20-inch mesh screens to determine whether microfossils are present. If microfossils are encountered, sediment samples (up to 6,000 pounds) shall be collected and processed through 1/20-	Environmental Document	Project Manager Paleontological Monitor	Construction	Yes (MM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	inch mesh screens to recover additional fossils.				
Paleontology	**MM-PALEO-5**: Recovered specimens shall be prepared to the point of identification and permanent preservation. This includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume of storage for the repository and storage cost, and the addition of approved chemical hardeners/stabilizers to fragile specimens.	Environmental Document	Project Manager Paleontological Monitor	Construction	Yes (MM)
Paleontology	**MM-PALEO-6**: Specimens shall be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institutions usually charge a one-time fee based on volume, so removing surplus sediment is important. The repository institution may be a local museum or university with a curator who can retrieve the specimens on request. Caltrans requires that a draft curation agreement be in place with an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities	Environmental Document	Project Manager Paleontological Monitor	Construction	Yes (MM)
Paleontology	**MM-PALEO-7**: A Paleontological Mitigation Report documenting completion of the Paleontological Mitigation Plan for the Lead Agency	Environmental Document	Project Manager Paleontological Monitor	Construction, Post-construction	Yes (MM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	(Caltrans) will be prepared and submitted.				
Hazardous Waste/Materials	**AVM-HW-1**: A subsurface investigation would be required during the design phase to confirm the depth to groundwater is between 10 to 15 feet, as well to determine actual groundwater flow direction, if needed. If groundwater is encountered at this time, additional sampling and analysis of the groundwater would be warranted to ensure worker safety and for waste profiling purposes.	Environmental Document	Project Manager Hazardous Waste Unit	PS&E	No (AVM)
Hazardous Waste/Materials	**AVM-HW-2**: A soil site investigation (SI) for aerial deposits of lead (ADL) and organochlorine pesticides would be conducted to the maximum lateral and vertical extent of proposed soil excavation for all unpaved areas, including roadway improvements, retaining walls and soundwalls, overhead signs and traffic signs. This shall be done during the design phase.	Environmental Document	Project Manager Hazardous Waste Unit	PS&E	No (AVM)
Hazardous Waste/Materials	**AVM-HW-3**: Asbestos-Containing Material (ACM) and Lead Based Paint (LBP) surveys should be conducted for the 4 bridges within the Project Area during the design phase. ACM and LBP surveys would also be conducted for retaining walls and soundwalls connected to retaining walls or other structures. Freestanding soundwalls do not require ACM or LBP studies.	Environmental Document	Project Manager Hazardous Waste Unit	PS&E	No (AVM)
Hazardous Waste/Materials	**AVM-HW-4**: It is assumed that the removal of pavement markings and	Environmental Document	Project Manager	PS&E	No (AVM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	treated wood will produce hazardous waste. Removal plans for both lead based paint (such as in yellow thermoplastic striping) and treated wood waste will be determined during the design phase.		Hazardous Waste Unit		
Air Quality	**PF-AQ-1**: The construction contractor must comply with the Caltrans' Standard Specifications in Section 14-9 (2018). • Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-2**: Water or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-3**: Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-4**: Trucks will be washed as they leave the right of way, as necessary, sufficient to prevent track-out of material onto paved surfaces for the purposes of controlling fugitive dust emissions. Other measures, such as	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	the use of track-out devices or gavel pads, may also be used.				
Air Quality	**PF-AQ-5**: 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.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-6**: 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.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-7**: 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.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-8**: Construction activities involving the extended idling of diesel equipment or vehicles will be limited near air sensitive receptors to the extent feasible.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-9**: 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.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-10**: 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	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	minimize the emission of dust during transportation.				
Air Quality	**PF-AQ-11**: Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-12**: 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.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Air Quality	**PF-AQ-13**: Mulch will be installed, or vegetation planted as soon as practicable after grading to reduce windblown PM in the area.	Environmental Document	Project Manager Construction Contractor	Construction	No (PF)
Noise	**PF-NOI-1**: Sound control will conform to the provisions in Section 14-8.02, Noise Control, of the Caltrans Standard Specifications. According to requirements of these specifications, construction noise cannot exceed 86 dBA L_{max} at 50 feet from the job site activities from 9:00 p.m. to 6:00 a.m.	Environmental Document	Project Manager Noise Unit	Construction	No (PF)
Noise	**PF-NOI-2**: All equipment will have sound-control devices no less effective than those provided on the original equipment. Each internal combustion engine used for any purpose on the job or related to the job will be equipped with a muffler of a type recommended by the manufacturer. No internal	Environmental Document	Project Manager Noise Unit	Construction	No (PF)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	combustion engine will be operated on the job site without an appropriate muffler. Additionally, construction methods or equipment that will provide the lowest level of noise impact will be used and idling equipment will be turned off.				
Noise	**PF-NOI-3**: Existing noise barrier, EXB-2, would be demolished due to roadway and bridge widening as part of the Project implementation. This existing noise barrier would be replaced in-kind (length and height), at minimum.	Environmental Document	Project Manager Noise Unit	PS&E, Construction	No (PF)
Noise	**AVM-NOI-1**: Demolition of the existing noise barrier and construction of the proposed noise barrier on top of the retaining wall would be conducted in four segments along the Project Area to minimize traffic noise impacts on nearby residences. Construction within each segment would include demolishing the existing barrier, constructing the retaining wall, and then constructing the proposed noise barrier.	Environmental Document	Project Manager Noise Unit	Construction	No (AVM)
Noise	**AVM-NOI-2**: Though construction noise and vibration would be temporary and sporadic and would not present any long-term impacts, the following practices would reduce noise and vibration level increases produced by Project construction equipment at nearby noise-sensitive residential land uses: • Construction activities shall comply with the Long Beach Municipal Code, which states that	Environmental Document	Project Manager Noise Unit	Construction	No (AVM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	construction activities shall only occur on weekdays from 7:00 a.am. to 7:00 p.m. and Saturdays from 9:00 a.m. to 6:00 p.m., • Property owners and occupants located within 200 feet of the Project boundary shall be sent a notice, at least 15 days prior to commencement of construction of each phase, regarding the construction schedule of the proposed project. A sign, legible at 50 feet shall also be posted at the Project construction site. All notices and signs shall be reviewed and approved by Caltrans, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints. • Construction noise reduction methods shall be implemented, such as: o Replacing worn, loose, or unbalanced machine parts that cause vibration, o Keeping machine parts well lubricated to reduce friction, o Erecting acoustical enclosures and barriers around generators, o Installing sound absorbing material and vibration isolation systems on hand tools,				

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	○ Turning off equipment when not in use, ○ And placing stationary construction equipment such that emitted noise is directed away from sensitive noise receivers.				
Noise	**AVM-NOI-3**: The following procedures shall be implemented to minimize the potential for annoyance from construction vibration: • Use cast-in-drilled-hole piles or sonic or vibratory pile drivers, where feasible, to avoid the use of impact-type pile drivers near residences. • When there is a possibility of human annoyance from pile driving, conduct activities during weekday daytime hours when residents may be away from their homes. • Avoid high vibration–generating activities during the same time in proximity to each other to the maximum extent practicable. • Contact residents prior to pile driving to notify them that this activity will be occurring.	Environmental Document	Project Manager Noise Unit	Construction	No (AVM)
Noise	**MM-NOI-1:** Based on the studies completed to date, the Project would incorporate Barrier BA-4 at PM LA R12.149 to LA R13.073, with a length of 4,864 feet and a height of 14 to 16 feet, consistent with existing noise	Environmental Document	Project Manager Noise Unit	PS&E, Construction	Yes (MM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	barrier EXB-4 that has a height of 14 feet. These measures may change based on input received from the public. The final decision on noise abatement will be made upon completion of the Project design.				
Energy	**AVM-EN-1**: During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including the reuse of existing rail, steel, and lumber wherever possible, such as for falsework, shoring, and other applications during the construction process.	Environmental Document	Project Manager	Construction	No (AVM)
Energy	**AVM-EN-2**: During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including recycling asphalt taken up from roadways, if practicable and cost-effective.	Environmental Document	Project Manager	Construction	No (AVM)
Energy	**AVM-EN-3**: During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including using newer, more energy-efficient equipment where feasible, and maintaining older construction equipment to keep in good working order.	Environmental Document	Project Manager	Construction	No (AVM)
Energy	**AVM-EN-4**: During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including scheduling of construction operations to efficiently use construction equipment (e.g., only haul waste when haul trucks are full and combine smaller dozer operations	Environmental Document	Project Manager	Construction	No (AVM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	into a single comprehensive operation, where possible).				
Energy	**AVM-EN-5**: During construction, Metro and Caltrans will implement construction efficiency measures, as feasible, including promoting construction employee carpooling.	Environmental Document	Project Manager	Construction	No (AVM)
Biology	**AVM-BIO-1**: Prior to construction, a qualified biologist would conduct rare plant surveys within the construction area. Surveys would be conducted during the appropriate blooming period for species with potential to be in the construction area, to the extent feasible.	Environmental Document	Project Manager Qualified Biologist	Pre-construction	No (AVM)
Biology	**AVM-BIO-2**: If a special-status plant species is found during pre-construction surveys, high visibility Environmentally Sensitive Area (ESA) protective fencing would be installed around the special-status plants to prevent construction staff or equipment from entering this area. The ESA protective fencing buffer would be species specific, with a minimum buffer radius based on the guidance from a qualified biologist.	Environmental Document	Project Manager Qualified Biologist	Pre-construction	No (AVM)
Biology	**AVM-BIO-3**: All excluded areas with ESA protective fencing would be monitored to determine whether exclusion measures were successful and to identify any outstanding concerns. Exclusionary measures would be monitored throughout construction to ensure they are functioning correctly and would be removed following construction	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
Biology	**AVM-BIO-4**: Construction during bird nesting season (typically February 1 to September 1) would be avoided to the extent feasible.	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)
Biology	**AVM-BIO-5**: If construction is required during the nesting season, vegetation removal would be conducted outside of the nesting season (typically February 1 to September 1), wherever feasible.	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)
Biology	**AVM-BIO-6**: If construction is scheduled to begin during nesting bird season, nesting bird surveys would 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 would be conducted within 150 feet for songbirds and 500 feet for raptors, or as otherwise determined by the qualified biologist. Surveys would be repeated if construction activities are suspended for five days or more.	Environmental Document	Project Manager Qualified Biologist	Pre-construction, Construction	No (AVM)
Biology	**AVM-BIO-7**: If nesting birds/raptors are found within 500 feet of the construction area, appropriate buffers consisting of orange flagging/fencing or similar (typically 150 feet for songbirds, and 500 feet for raptors, or as directed by a qualified biologist) would be installed and maintained until nesting activity has ended, as determined in coordination	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	with the qualified biologist and regulatory agencies, as appropriate.				
Biology	**AVM-BIO-8**: In the event that trimming, or removal of vegetation and trees must be conducted during bird nesting season, nesting bird surveys would be completed within 500 feet of the vegetation to be trimmed or removed by a qualified biologist no more than 72 hours prior to trimming or cleaning activities to determine if nesting birds are within the affected vegetation. Surveys would be conducted within 150 feet for songbirds and 500 feet for raptors, or as otherwise determined by the qualified biologist. Nesting bird surveys would be repeated if trimming or removal activities are suspended for five days or more.	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)
Biology	**AVM-BIO-9**: In the event that any bird species is observed foraging within the construction site, it would be allowed to move away from the site prior to initiating any construction activities that could result in direct injury of the individual.	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)
Biology	**AVM-BIO-10**: Where feasible, tree removal would be conducted after October 31, which is outside of the maternal and non-active seasons for bats.	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)
Biology	**AVM-BIO-11**: During the summer months (June to August) prior to construction, a thorough bat roosting habitat assessment would be	Environmental Document	Project Manager Qualified Biologist	Pre-construction	No (AVM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	conducted of all trees and structures within 100 feet of the construction area. Visual and acoustic surveys would be conducted for at least two nights during appropriate weather conditions to assess the presence of roosting bats. If presence is detected, a count and species analysis would be completed to help assess the type of colony and usage.				
Biology	**AVM-BIO-12**: No fewer than 30 days prior to construction, and during the non-breeding and active season (typically October), bats would be safely evicted from any roosts to be impacted by the Project. The eviction plan would be developed by, and completed under the direction of, a qualified biologist. Once bats have been safely evicted, exclusionary devices would be installed to prevent bats from returning and roosting in these areas prior to removal. Roosts not impacted by the Project would be left undisturbed.	Environmental Document	Project Manager Qualified Biologist	Pre-construction	No (AVM)
Biology	**AVM-BIO-13**: No fewer than two weeks prior to construction, all excluded areas would be surveyed to determine whether exclusion measures were successful and to identify any outstanding concerns. Exclusionary measures would be monitored throughout construction to ensure they are functioning correctly and would be removed following construction	Environmental Document	Project Manager Qualified Biologist	Pre-construction	No (AVM)
Biology	**AVM-BIO-14**: If the presence or absence of bats cannot be confirmed in	Environmental Document	Project Manager	Construction	No (AVM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	potential roosting habitat, a qualified biologist would be onsite during removal or disturbance of this area. If the biologist determines that bats are being disturbed during this work, work would be suspended until bats have left the vicinity on their own or can be safely excluded under direction of the biologist. Work would resume only once all bats have left the site and/or approval, is given by a qualified biologist.		Qualified Biologist		
Biology	**AVM-BIO-15**: In the event that a maternal colony of bats is found, no work would 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. No equipment, personnel, or construction activities would be allowed within the buffer unless authorized in advance by a qualified biologist.	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)
Biology	**AVM-BIO-16**: Prior to construction, inactive cliff swallow nests and other nests would be removed under supervision of a qualified biologist during the non-breeding season for cliff swallows (typically September 16 to February 14). The inactive nests would also be checked for bats prior to removal. During the nesting season for cliff swallows (typically February 1 to September 15), the Project Area would be monitored as necessary to ensure that no new nests are built, and any	Environmental Document	Project Manager Qualified Biologist	Pre-construction	No (AVM)

Category	Task and Brief Description	Source	Responsible Staff	Implementation Phase/Timing	CEQA Mitigation
	partially-built nests would be removed from the bridge during construction to prevent swallows from nesting on the bridge structure. Monitoring and nesting deterrence would continue until birds no longer attempt to nest.				
Biology	**AVM-BIO-17**: The Landscape Concept Design for the Project would be prepared in consultation with the Caltrans Landscape Architect, which would include replanting ratios, vegetation types, and establishment criteria.	Environmental Document	Project Manager Qualified Biologist	PS&E	No (AVM)
Biology	**AVM-BIO-18**: Invasive vegetation removed from the Biological Study Area would be treated and disposed of in a manner that would prevent the spread of invasive species onsite or offsite.	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)
Biology	**AVM-BIO-19**: New landscaping materials, including erosion control seed mixes and other plantings, would be composed of non-invasive species and would be clear of weeds, and all erosion control and landscape planting would be conducted in a manner that would not result in the spread of invasive species.	Environmental Document	Project Manager Qualified Biologist	Construction	No (AVM)
Biology	**AVM-BIO-20**: Plants listed in the Pest Ratings of Noxious Weed Species and Noxious Weed Seed (United States Department of Agriculture, 2003) would not be used as part of the Project.	Environmental Document	Project Manager Qualified Biologist	PS&E, Construction	No (AVM)

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Appendix B. Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY — Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
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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

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

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Appendix C. Consultation Letters and Responses

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RTIP ID# *(required)* LA0G1453

TCWG Consideration Date: September 22, 2020

Project Description *(clearly describe project)* The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the Gateway Cities Council of Governments (GCCOG) and the California Department of Transportation (Caltrans) District 7, propose to develop and implement an auxiliary lane on Eastbound (EB) State Route 91 (SR-91) within a 1.4-mile segment from the southbound Interstate 710 (I-710) interchange connector to eastbound SR-91, to Cherry Avenue. The project is located in the City of Long Beach and adjacent to the city of Paramount, California.

The Build Alternative (Alternative 2) would include the addition of an auxiliary lane on EB SR-91 from the Atlantic Avenue on-ramp to the Cherry Avenue off-ramp. The proposed alternative would require modifications to the following bridges:

- Myrtle Avenue Undercrossing (Bridge No. 53-2121) 1-span widening
- Orange Avenue Undercrossing (Bridge No. 53-2122) 1-span widening
- Walnut Avenue Undercrossing (Bridge No. 53-2127) 1-span widening

The Design Options within the Build Alternative would extend the auxiliary lane westerly to the SB I-710/EB SR-91 Connector, and easterly to the Cherry Avenue undercrossing. The westerly extension would require:

- The Atlantic Avenue Undercrossing (Bridge No. 53-2124), 2-span to be widened on the south side
- Restriping of the SB I-710/EB SR-91 Connector from one lane to two lanes
- Restriping of the Atlantic Avenue off-ramp

All other aspects of the Design Options would be the same as the Build Alternative, including the proposed bridge modifications.

Project limits are depicted in Figure 1.

Type of Project *(use Table 1 on instruction sheet)*
Change to Existing State Highway

County	**Narrative Location/Route & Postmiles:**
Los Angeles	SR-91; PM R11.8 to R13.2 **Caltrans Projects – EA#** 07-354600

Lead Agency: Caltrans District 7

Contact Person	**Phone#**	**Fax#**	**Email**
Andrew Yoon P.E.	213.266.6892	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)		**EA or Draft EIS**	**FONSI or Final EIS**	**PS&E or Construction**	**Other**
		x				

Scheduled Date of Federal Action: 2020

NEPA Assignment – Project Type *(check appropriate box)*

Exempt	**Section 326 –Categorical Exemption**		**Section 327 – Non-Categorical Exemption**
		x	

Current Programming Dates *(as appropriate)*

	PE/Environmental	ENG	ROW	CON
Start	2018	2020	2020	2021
End	2020	2021	2021	2024

Project Purpose and Need (Summary): *(attach additional sheets as necessary)*

PROJECT PURPOSE

The purpose of the Eastbound (EB) State Route 91 (SR-91) Atlantic Avenue to Cherry Avenue Auxiliary Lane Improvements Project (Project) is to enhance safety conditions on the EB SR-91 mainline, reduce congestion, and improve EB freeway operations (both mainline and ramps).

PROJECT NEED

Eastbound SR-91 experiences substantial congestion due to operational deficiencies within the project area, which is forecast to increase if no physical and operational improvements are made to the facility. The Project is needed to address operational safety due to the short weaving distance along EB SR-91 between the closely spaced interchanges of the I-710 on-ramps, Atlantic Avenue, and Cherry Avenue which impacts mainline congestion.

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*

Nearby land uses consist of a mix of land uses, including commercial, public, and residential uses. The nearest residential land uses are generally located adjacent to SR-91, to the north and south of SR-91. A church/preschool is located south of SR-91, east of Orange Avenue. Commercial land uses are generally located south of SR-91, near Atlantic Avenue and Cherry Avenue, and to the north of SR-91, east of Cherry Avenue. Diesel truck traffic in the area is predominantly generated by nearby industrial land uses. The proposed project would not significantly affect overall traffic or truck volumes. Nearby land uses are depicted in Figure 1.

Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Overall vehicle AADT, truck AADT, and truck percentages for opening year are summarized in Table 2. Freeway segment levels of service for opening year, without project weaving, are summarized in Table 4 and Table 5, respectively. Freeway segment levels of service for opening year, with project weaving, are summarized in Table 6 and Table 7, respectively.

RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Overall vehicle AADT, truck AADT, and truck percentages for design year conditions are summarized in Table 3. Freeway segment levels of service for design year, without project weaving, are summarized in Table 8 and Table 9, respectively. Freeway segment levels of service for design year, with project weaving, are summarized in Table 10 and Table 11, respectively.

Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build Intersection AADT, % and # trucks, truck AADT

Opening year intersection LOS data is summarized in Table 12.

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 intersection LOS data is summarized in Table 13.

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 2. SR-91 Average Daily Traffic & Truck Volumes - Opening Year 2024

Segment	Average-Daily Traffic Volumes								
	No-Build Conditions			Build Conditions			Change from No-Build Conditions		
	Total	Truck	%Truck	Total	Truck	%Truck	Total	Truck	%Truck
EB SR-91 HOV Lane at I-710 (Butler)	14,745	0	0%	14,745	0	0%	0	0	0%
EB SR-91 at I-710	29,274	1,171	4%	30,082	1,203	4%	808	32	3%
I-710 NB to SR-91 EB Ramp Direct Connector	39,155	2,738	7%	40,301	2,821	7%	1,186	83	3%
EB SR-91 between 710 NB Direct Connector & 710 SB Direct Connector	68,389	3,419	5%	70,383	3,519	5%	1,994	100	3%
I-710 SB to SR-91 EB Ramp Direct Connector	35,224	2,466	7%	36,292	2,540	7%	1,068	75	3%
EB SR-91 between I-710 SB Direct Connector and EB Atlantic Ave On-ramp	103,613	12,434	12%	106,675	12,801	12%	3,062	367	3%
EB Atlantic Ave On-ramp	11,716	351	3%	12,071	362	3%	355	11	3%
EB SR-91 Atlantic Ave to Cherry Ave (with cross-weave net difference)	115,329	13,839	12%	118,746	14,250	12%	3,417	410	3%
Cross-weave net difference	2,539	0	0%	2,539	0	0%	0	0	0%
EB SR-91 HOV Lane at Cherry Ave	17,284	0	0%	17,284	0	0%	0	0	0%
EB Cherry Ave Off-ramp	5,802	683	11%	5,977	657	11%	175	19	3%
EB SR-91 Between Cherry Off-ramp & On-ramp	106,988	12,839	12%	110,230	13,228	12%	3,242	389	3%
EB Cherry Ave On-ramp	12,885	773	6%	12,885	773	6%	0	0	0%
EB SR-91 Cherry Ave to Paramount Blvd	119,873	14,385	12%	123,115	14,774	12%	3,242	389	3%
EB Paramount Blvd Off-ramp	7,663	766	10%	7,663	766	10%	0	0	0%
EB SR-91 Between Paramount Off-ramp & Onramp	112,210	13,465	12%	115,452	13,854	12%	3,242	389	3%
EB Paramount Blvd On-ramp	8,341	918	11%	8,341	918	11%	0	0	0%
EB SR-91 East of Paramount Blvd	120,551	14,466	12%	123,793	14,855	12%	3,242	389	3%

Table 3. SR-91 Average Daily Traffic & Truck Volumes - Design Year 2045

Segment	Average-Daily Traffic Volumes								
	No-Build Conditions			Build Conditions			Change from No-Build Conditions		
	Total	Truck	%Truck	Total	Truck	%Truck	Total	Truck	%Truck
EB SR-91 HOV Lane at I-710 (Butler)	14,876	0	0%	14,876	0	0%	0	0	0%
EB SR-91 at I-710	29,169	1,750	6%	29,949	1,797	6%	780	47	3%
I-710 NB to SR-91 EB Ramp Direct Connector	40,419	2,829	7%	41,643	2,915	7%	1,224	86	3%
EB SR-91 between 710 NB Direct Connector & 710 SB Direct Connector	69,588	4,871	7%	71,592	5,011	7%	2,004	140	3%
I-710 SB to SR-91 EB Ramp Direct Connector	35,230	2,466	7%	36,297	2,541	7%	1,067	75	3%
EB SR-91 between I-710 SB Direct Connector and EB Atlantic Ave On-ramp	104,818	16,771	16%	107,889	17,262	16%	3,071	491	3%
EB Atlantic Ave On-ramp	12,116	363	3%	12,498	375	3%	382	11	3%
EB SR-91 Atlantic Ave to Cherry Ave (with cross-weave net difference)	116,934	18,709	16%	120,387	19,262	16%	3,453	552	3%
Cross-weave net difference	2,562	0	0%	2,562	0	0%	0	0	0%
EB SR-91 HOV Lane at Cherry Ave	17,438	0	0%	17,438	0	0%	0	0	0%
EB Cherry Ave Off-ramp	6,434	708	11%	6,616	728	11%	182	20	3%
EB SR-91 Between Cherry Off-ramp & On-ramp	107,938	17,270	16%	111,209	17,793	16%	3,271	523	3%
EB Cherry Ave On-ramp	14,004	840	6%	14,004	840	6%	0	0	0%
EB SR-91 Cherry Ave to Paramount Blvd	121,942	19,511	16%	125,213	20,034	16%	3,271	523	3%
EB Paramount Blvd Off-ramp	8,916	892	10%	8,916	892	10%	0	0	0%
EB SR-91 Between Paramount Off-ramp & Onramp	113,026	18,084	16%	116,297	18,608	16%	3,271	523	3%
EB Paramount Blvd On-ramp	9,218	1,014	11%	9,218	1,014	11%	0	0	0%
EB SR-91 East of Paramount Blvd	122,244	19,559	16%	125,515	20,082	16%	3,271	523	3%

Table 4. Opening Year 2024 Without Project Basic Freeway Segment Analysis

Segment Location	AM Peak Hour				PM Peak Hour			
	HOV		General Purpose		HOV		General Purpose	
	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
West of I-710 NB Connector	10.7	A	12.2	B	75.4	F	30.4	D
I-710 NB Connector to I-710 SB Connector	10.7	A	19.7	C	75.4	F	45.1	F
I-710 SB Connector to Atlantic Avenue On-Ramp	10.7	A	24.6	C	75.4	F	67.4	F
Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	18.5	C	30.8	D	56.2	F	59.4	F
Paramount Blvd Off-Ramp to Paramount Boulevard On-Ramp	18.5	C	30.5	D	56.2	F	46.9	F
East of Paramount Boulevard On-Ramp	18.5	C	27.0	D	56.2	F	45.1	F

[1]Density in passenger cars per mile per lane (pc/mi/ln)

Table 5. Opening Year 2024 Without Project Weaving Freeway Segment Analysis

Weave Type	AM Peak Hour				PM Peak Hour			
	HOV		General Purpose		HOV		General Purpose	
	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp								
Conventional weave between auxiliary lane and the freeway mainline	N/A[2]	N/A[2]	28.3	C	N/A[2]	N/A[2]	50.3	F
Managed lane access segment with cross-weaving	22.1	C	22.1	C	56.9	F	56.9	F
Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp								
Conventional weave between auxiliary lane and the freeway mainline	18.5	C	28.0	D	56.2	F	52.8	F

[1]Density in passenger cars per mile per lane (pc/mi/ln)

[2] Not applicable because HOV LOS analysis is evaluated as part of the subsequent weave analysis

Table 6. Opening Year 2024 With Project Basic Freeway Segment Analysis

Segment Location	AM Peak Hour				PM Peak Hour			
	HOV		General Purpose		HOV		General Purpose	
	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
West of I-710 NB Connector	10.7	A	11.9	B	71.8	F	27.0	D
I-710 NB Connector to I-710 SB Connector	10.7	A	19.3	C	71.8	F	40.9	E
I-710 SB Connector to Atlantic Avenue On-Ramp	10.7	A	20.1	C	71.8	F	53.2	F
Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	18.5	C	31.7	D	54.2	F	61.2	F
Paramount Blvd Off-Ramp to Paramount Boulevard On-Ramp	18.5	C	31.4	D	54.2	F	48.3	F
East of Paramount Boulevard On-Ramp	18.5	C	27.7	D	54.2	F	46.3	F

[1]Density in passenger cars per mile per lane (pc/mi/ln)

Table 7. Opening Year 2024 With Project Weaving Freeway Segment Analysis

Weave Type	AM Peak Hour				PM Peak Hour			
	HOV		General Purpose		HOV		General Purpose	
	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp								
Conventional weave between auxiliary lane and the freeway mainline	N/A[2]	N/A[2]	22.2	C	N/A[2]	N/A[2]	37.7	E
Managed lane access segment with cross-weaving	19.5	C	19.5	F	48.3	F	48.3	F
Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp								
Conventional weave between auxiliary lane and the freeway mainline	18.5	C	28.8	D	54.2	F	54.2	F

[1]Density in passenger cars per mile per lane (pc/mi/ln)

[2] Not applicable because HOV LOS analysis is evaluated as part of the subsequent weave analysis

Table 8. Horizon Year 2045 Without Project Basic Freeway Segment Analysis

Segment Location	AM Peak Hour				PM Peak Hour			
	HOV		General Purpose		HOV		General Purpose	
	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
West of I-710 NB Connector	10.8	A	13.0	B	76.1	F	30.6	D
I-710 NB Connector to I-710 SB Connector	10.8	A	20.7	C	76.1	F	46.2	F
I-710 SB Connector to Atlantic Avenue On-Ramp	10.8	A	26.3	D	76.1	F	70.2	F
Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	18.7	C	32.5	D	56.8	F	61.8	F
Paramount Blvd Off-Ramp to Paramount Boulevard On-Ramp	18.7	C	32.3	D	56.8	F	48.6	F
East of Paramount Boulevard On-Ramp	18.7	C	28.6	D	56.8	F	47.0	F

[1]Density in passenger cars per mile per lane (pc/mi/ln)

Table 9. Horizon Year 2045 Without Project Weaving Freeway Segment Analysis

Weave Type	AM Peak Hour				PM Peak Hour			
	HOV		General Purpose		HOV		General Purpose	
	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp								
Conventional weave between auxiliary lane and the freeway mainline	N/A[2]	N/A[2]	30.0	D	N/A[2]	N/A[2]	52.3	F
Managed lane access segment with cross-weaving	22.7	C	22.7	C	57.7	F	57.7	F
Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp								
Conventional weave between auxiliary lane and the freeway mainline	18.7	C	29.5	D	56.8	F	55.0	F

[1]Density in passenger cars per mile per lane (pc/mi/ln)

[2] Not applicable because HOV LOS analysis is evaluated as part of the subsequent weave analysis

Table 10. Horizon Year 2045 With Project Basic Freeway Segment Analysis

Segment Location	AM Peak Hour				PM Peak Hour			
	HOV		General Purpose		HOV		General Purpose	
	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
West of I-710 NB Connector	10.8	A	12.7	B	72.5	F	27.1	D
I-710 NB Connector to I-710 SB Connector	10.8	A	20.3	C	72.5	F	42.0	E
I-710 SB Connector to Atlantic Avenue On-Ramp	10.8	A	21.4	C	72.5	F	55.4	F
Cherry Avenue Off-Ramp to Cherry Avenue On-Ramp	18.7	C	33.5	D	54.8	F	63.6	F
Paramount Blvd Off-Ramp to Paramount Boulevard On-Ramp	18.7	C	33.2	D	54.8	F	50.1	F
East of Paramount Boulevard On-Ramp	18.7	C	29.3	D	54.8	F	48.3	F

[1]Density in passenger cars per mile per lane (pc/mi/ln)

Table 11. Horizon Year 2045 With Project Weaving Freeway Segment Analysis

Weave Type	AM Peak Hour				PM Peak Hour			
	HOV		General Purpose		HOV		General Purpose	
	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS	Density[1]	LOS
Atlantic Avenue On-Ramp to Cherry Avenue Off-Ramp								
Conventional weave between auxiliary lane and the freeway mainline	N/A[2]	N/A[2]	23.6	C	N/A[2]	N/A[2]	39.2	E
Managed lane access segment with cross-weaving	19.9	C	19.9	C	48.9	F	48.9	F
Cherry Avenue On-Ramp to Paramount Boulevard Off-Ramp								
Conventional weave between auxiliary lane and the freeway mainline	18.7	C	30.3	D	54.8	F	56.5	F

[1]Density in passenger cars per mile per lane (pc/mi/ln)

[2] Not applicable because HOV LOS analysis is evaluated as part of the subsequent weave analysis

Table 12. Opening Year 2024 Intersection LOS Analysis

#	Intersection	Traffic Control Type	No-Build Alternative				Build Alternative			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Long Beach Blvd/SR-91 WB Ramps	Signalized	101.2	F	44.8	D	101.2	F	44.8	D
2	Long Beach Blvd/SR-91 EB Ramps	Signalized	34.5	C	36.7	D	34.5	C	36.7	D
3	Atlantic Ave/68th St	2-Way Stop	> 300.0	F	266.8	F	> 300.0	F	266.8	F
4	Atlantic Ave/SR-91 WB Ramps	Signalized	19.1	B	29.3	C	19.1	B	29.3	C
5	Atlantic Ave/SR-91 EB Ramps	Signalized	18.8	B	40.5	D	18.6	B	42.3	D
6	Atlantic Ave/Artesia Blvd	Signalized	51.0	D	53.6	D	51.0	D	53.6	D
7	Orange Ave/68th St	2-Way Stop	32.0	D	33.7	D	32.0	D	33.7	D
8	Orange Ave/67th St	Signalized	6.2	A	5.6	A	6.2	A	5.6	A
9	Orange Ave/Artesia Blvd	Signalized	44.1	D	36.9	D	44.1	D	36.9	D
10	Cherry Ave/68th St	Signalized	38.2	D	42.6	D	38.2	D	42.6	D
11	Cherry Ave/SR-91 WB Ramps	Signalized	34.3	C	40.8	D	34.4	C	40.9	D
12	Cherry Ave/SR-91 EB Ramps	Signalized	24.5	C	19.4	B	24.7	C	19.6	B
13	Cherry Ave/Artesia Blvd	Signalized	53.6	D	52.9	D	53.6	D	52.9	D
14	Paramount Blvd/SR-91 WB Ramps	Signalized	26.9	C	27.6	C	26.9	C	27.6	C
15	Paramount Blvd/SR-91 EB Ramps	Signalized	27.9	C	26.7	C	27.9	C	26.7	C

Table 13. Horizon Year 2045 Intersection LOS Analysis

#	Intersection	Traffic Control Type	No-Build Alternative				Build Alternative			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Long Beach Blvd/SR-91 WB Ramps	Signalized	105.7	F	54.0	D	105.7	F	54.0	D
2	Long Beach Blvd/SR-91 EB Ramps	Signalized	36.6	C	38.3	D	36.6	C	38.3	D
3	Atlantic Ave/68th St	2-Way Stop	> 300.0	F	> 300.0	F	> 300.0	F	> 300.0	F
4	Atlantic Ave/SR-91 WB Ramps	Signalized	21.2	C	37.6	D	21.2	C	37.5	D
5	Atlantic Ave/SR-91 EB Ramps	Signalized	18.1	B	40.9	D	18.1	B	42.7	D
6	Atlantic Ave/Artesia Blvd	Signalized	65.6	E	61.2	E	65.6	E	61.2	E
7	Orange Ave/68th St	2-Way Stop	51.7	F	42.7	E	51.7	F	42.7	E
8	Orange Ave/67th St	Signalized	6.3	A	5.6	A	6.3	A	5.6	A
9	Orange Ave/Artesia Blvd	Signalized	49.6	D	39.3	D	49.6	D	39.3	D
10	Cherry Ave/68th St	Signalized	41.1	D	44.6	D	41.1	D	44.6	D
11	Cherry Ave/SR-91 WB Ramps	Signalized	35.5	D	41.8	D	35.6	D	41.8	D
12	Cherry Ave/SR-91 EB Ramps	Signalized	24.7	C	20.4	C	25.0	C	20.5	C
13	Cherry Ave/Artesia Blvd	Signalized	70.7	E	60.3	E	70.7	E	60.3	E
14	Paramount Blvd/SR-91 WB Ramps	Signalized	27.8	C	27.9	C	27.8	C	27.9	C
15	Paramount Blvd/SR-91 EB Ramps	Signalized	28.4	C	27.9	C	28.4	C	27.9	C

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;*

In comparison to no-build conditions, the proposed build alternative would not significantly increase the number of diesel vehicles operating within the project study area. Refer to Table 2 and Table 3.

(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;*

As noted above and depicted in Table 2 and Table 3, the project would not result in significant increases in overall traffic or truck volumes along area roadways. As depicted in Table 12 and Table 13, the proposed build alternative would not result in significant changes in intersection operations. Based on this information, the proposed build alternative would not significantly increase the number of diesel vehicles operating within the project study area, nor would the proposed build alternative adversely impact nearby intersections 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*

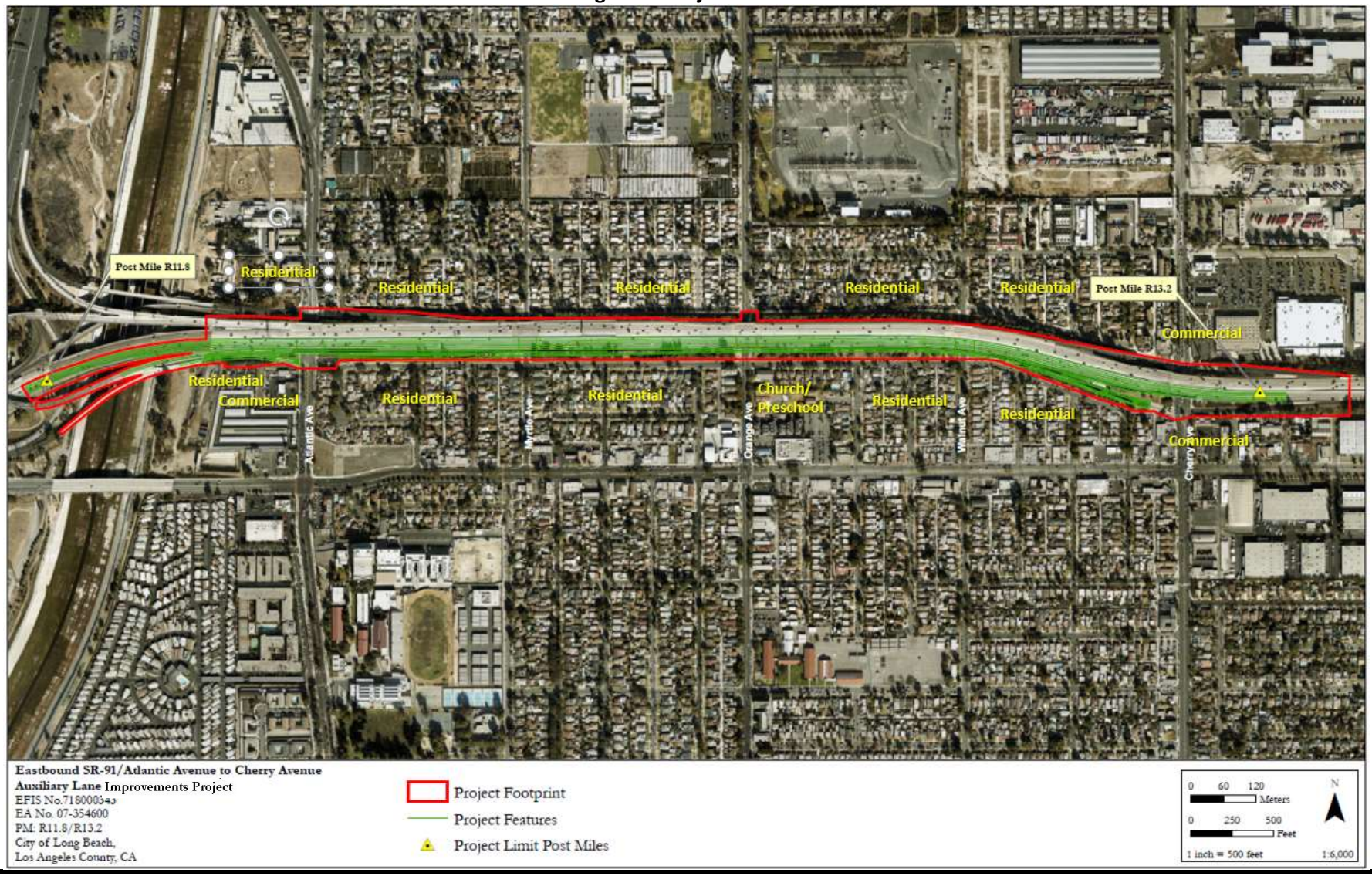
The project is not a new or expanded bus or rail terminal, nor would the project adversely impact transfer points that have a significant number of diesel vehicles congregating at a single location.

(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 located in nor would 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



2019 Federal Transportation Improvement Program
Los Angeles County
State Highway - Project Listing
Including Amendments 1 - 22
(In $000`s)

FTIP ID	LA0G1453	*FTIP Amendment*	LA County (METRO) 19-12	*Conform Category*	NON-EXEMPT	*Total Project Cost*	$8,349
Lead Agency	LOS ANGELES COUNTY MTA			*Modeling*	YES		
County	Los Angeles	*Primary Program Code*	CAX62 - HIGHWAY/ROAD IMP-LANE ADD'S W/ HOV LN: RS	*Air Basin*	SCAB	*RTP ID*	1163S005
System	State Hwy						
Project Limits	Route 91 , From Atlantic Avenue to Cherry Ave, Milepost Begins at 11.85 Ends at 13.35 of Length 1.5						
Description	Add one eastbound auxiliary lane from I-710 ramps at Atlantic Avenue to past Cherry Avenue undercrossing.						

Phase	Fund Source (in $000s)	Prior	18/19	19/20	20/21	21/22	22/23	23/24	Future	Total
PE	MR20H - Measure R 20% Highway	-	$349	$4,000	$4,000	-	-	-	-	$8,349
	Total Preliminary Engineering	-	$349	$4,000	$4,000	-	-	-	-	$8,349
	Total Programmed	**-**	**$349**	**$4,000**	**$4,000**	**-**	**-**	**-**	**-**	**$8,349**

The postmiles in the 2019 FTIP are being updated as part of formal 2019 amendment #19-27 (see below). However, this does not affect regional air quality conformity modeling as the RTP postmiles are correct.

Los Angeles Metropolitan Transportation Authority
2019 Federal Transportation Improvement Program ($000)

TIP ID **LA0G1453** Implementing Agency **Los Angeles County MTA**

Project Description: Add one eastbound auxiliary lane from I-710 to Cherry Avenue undercrossing.

SCAG RTP Project #: 1163S005
Study:N/A Is Model: YES Model #:
PM: Lucy Olmos - (213) 922-7099
Email: olmosl@metro.net
LS: N LS GROUP#:
Conformity Category: NON-EXEMPT

System :State Hwy Route :91 Postmile: 11.8 to 13.2 Distance: 1.4 Phase: Environmental Document/Pre-Design Phase (PAED) Completion Date 12/31/2024

Lane # Extd: 6 Lane # Prop: 7 Imprv Desc: Auxiliary lane.

Air Basin: SCAB Envir Doc: INITIAL STUDY/NEGATIVE DECLARATION - CEQA - 05/30/2021

Toll Rate: 0.00 Toll Calc Loc: Toll Method: Hov acs eg loc:

Uza: Los Angeles-Long Beach-Santa Ana Sub-Area: Sub-Region:

CTIPS ID: EA #: PPNO:

Program Code: CAX62 - HIGHWAY/ROAD IMP-LANE ADD'S W/ HOV LN: RS 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		$349	$4,000	$4,000					$8,349
	RW		$0	$0	$0					$0
	CON		$0	$0	$0					$0
	SUBTOTAL		$349	$4,000	$4,000					$8,349
	TOTAL		**$349**	**$4,000**	**$4,000**					**$8,349**

TOTAL PE: $8,349 **TOTAL RW: $0** **TOTAL CON: $0** **TOTAL PROGRAMMED: $8,349**

- **General Comment:** Revised postmiles to be consistent with environmental document. Does not impact modeling/consistent with Connect SoCal 2020 RTP-SCS.
- **Modeling Comment:** No significant change made.
- **TCM Comment:** No significant change made.
- **Amendment Comment:** No significant change made.
- **CMP Comment:** No significant change made.
- **Narrative:**

Last Revised **Amendment 19-27 - Accepted** **Change reason:** MINOR CHANGE **Total Project Cost** **$8,349**

Page 1 Sunday, August 23, 2020

Los Angeles Metropolitan Transportation Authority

2021 Federal Transportation Improvement Program ($000)

TIP ID **LA0G1453** Implementing Agency **Los Angeles County MTA**

Project Description: Add one eastbound auxiliary lane from I-710 to Cherry Avenue undercrossing.

SCAG RTP Project #: 1163S005
Study:N/A Is Model: YES Model #:
PM: Lucy Olmos - (213) 922-7099
Email: olmosl@metro.net
LS: N LS GROUP#:
Conformity Category: NON-EXEMPT

System :State Hwy | Route :91 | Postmile: 11.8 to 13.2 | Distance: 1.4 | Phase: Environmental Document/Pre-Design Phase (PAED) | Completion Date 12/31/2024

Lane # Extd: 6 Lane # Prop: 7 Imprv Desc: Auxiliary lane.

Air Basin: SCAB | Envir Doc: INITIAL STUDY/NEGATIVE DECLARATION - CEQA - 05/30/2021

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: | FA #: | PPNO:

Program Code: CAX62 - HIGHWAY/ROAD IMP-LANE ADD'S W/ HOV LN: RS Stop Loc:

	PHASE	PRIOR	20/21	21/22	22/23	23/24	24/25	25/26	BEYOND	PROG TOTAL
MR20H - Measure R 20% Highway	PE	$4,349	$4,000							$8,349
	RW	$0	$0							$0
	CON	$0	$0							$0
	SUBTOTAL	$4,349	$4,000							$8,349
	TOTAL	**$4,349**	**$4,000**							**$8,349**

TOTAL PE: $8,349 **TOTAL RW: $0** **TOTAL CON: $0** **TOTAL PROGRAMMED: $8,349**

- **General Comment:** Project description and postmiles changed to reflect latest PA&ED project description.
- **Modeling Comment:** No significant change made.
- **TCM Comment:** No significant change made.
- **Amendment Comment:** No significant change made.
- **CMP Comment:**
- **Narrative:**

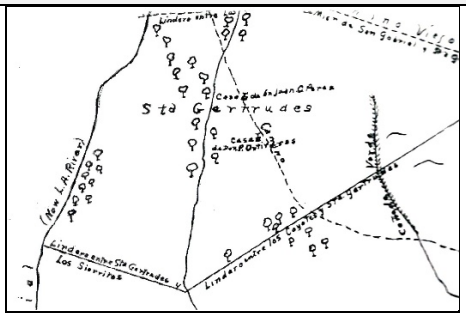
Last Revised **Adoption 21-00 - SCAG PENDING** **Change reason**:Carry over from 19TIP **Total Project Cost** **$8,349**

California Department of Transportation
SR-91 Atlantic to Cherry Auxiliary Lane Project
On-going Section 106 Consultation/Communication Log

Updated October 2, 2020

DATE	FROM	TO	DESCRIPTION
5-30-2019	DUKE CRM	Native American Heritage Commission (NAHC)	Sacred lands file search request
6-4-2019	Caltrans	NAHC	Sacred lands file search request
6-14-2019	NACH	DUKE CRM	Letter providing results of the sacred lands file search, which were negative, and five Tribes.
6-19-2019	NAHC	Caltrans	Letter providing results of the sacred lands file search, which were negative, and five Tribes.
7-9-2019	Caltrans	Andrew Salas and Matthew Teutimez, Gabrieleño Band of Mission Indians – Kizh Nation	Meeting at Tribal office to discuss the SR-91 Auxiliary Lane Project. Mr. Salas and Mr. Teutimez stated that they needed more information on the project elements for the Tribe to assess the potential for the project to affect Tribal cultural resources. Ms. Dahdul did not have that information as the Department is in the early stages of project design; she stated that she would provide this information as soon as it is available. In the meantime, Mr. Salas and Mr. Teutimez provided information about prehistoric land use of the area to be considered during the cultural studies, as follows. • The project is situated between two known ethnohistoric village sites (see below). • The village of *Tibahangna* was once located about 2.5 miles south of the project area. Historic maps also show that the location of the village was later within the boundaries of Rancho Los Cerritos and that a Jabonera (soap factory) was established within the rancho. • The second village (*Abahangna*?) was located about 7.2 miles north of the project area. This was also the location of another Jabonera. • Mr. Teutimez explained that Jaboneras were established in areas containing the resources available for soap production. As would be expected, these resources were originally managed and used by local Native American populations and were part of a village's resource use area. Therefore, the locations of Jaboneras (as plotted in historic maps) are good indicators of the locations of ancient village sites. • Mr. Teutimez also shared a December 1864 map that shows the location of the project as situated between two old riverbeds

DATE	FROM	TO	DESCRIPTION
			associated with the San Gabriel River. The same map shows a Jabonera Road to the east of the project. An 1881 map shows the San Gabriel River flowing to the west of the project area. • Artesia Boulevard (to the south of the project) is considered to have been an old trade route that ran in an east-west direction. • Mr. Teutimez suggested that the Department also research the following items, which may provide more information on the land use history of the project location: a) California Cooperative Colony Tract – shown on USGS (?) 1898 map b) Lemuel Carpenter: proprietor of soap factory at Pico's crossing on the San Gabriel River. c) McCawley 1996:58? d) Bernice Eastman Johnston ethnography published by the Southwest Museum in 1962. e) There was a Barnes or Barton wagon trail in a nearby rancho (Rancho Barton? or Barnes?). Historic maps show Indian workcamps associated with the rancho. Mr. Salas believes these may have been in proximity to the project, but he could not be sure without looking at the historic maps. Ms. Dahdul stated that she may have these maps for another project along SR-91 and that she would check the Department's files. f) 710 South cultural studies report – there is a black and white map that the Tribe provided for that study that shows the location of the Jaboneras (see July 9 email below). In a follow-up **email** dated **July 9, 2019**, Mr. Salas provided a snapshot of a Rancho map, which is currently in the Bixby Ranch area. The email also provides information on the map from a local historian, Doug, as well as links to additional information on Rancho Los Alamitos. http://www.rancholosalamitos.com/aboutus/woodbridge_architectural_narrative.pdf

DATE	FROM	TO	DESCRIPTION
			 In a second email on the same day (July 9), Mr. Salas provided a link to an LA Times article that discusses the discovery of an Indian burial site at Arco's Carson refinery, as well as another link to a map of the location. • Arco's Carson Refinery article: https://www.latimes.com/archives/la-xpm-1998-dec-11-me-52990-story.html • Mr. Salas also provided this link to a map: Gabrieleno Indians 's Location
7-15-2019	Caltrans	Andrew Salas, Gabrieleño Band of Mission Indians – Kizh Nation	Follow-up email (10:58 am) providing a summary of the consultation meeting, and action items. Specifically, Caltrans will provide the archaeological consulting firm with the summary of the consultation meeting and request that the consultant work with the Tribe on gathering information for the cultural studies.
4-14-2020	Caltrans	Andrew Salas and Matthew Teutimez, Gabrieleño Band of Mission Indians – Kizh Nation	Teleconference call to discuss the SR-91 Auxiliary Lane Project. Mr. Salas and Mr. Teutimez provided additional information about prehistoric land use of the area to be considered during the cultural studies, as follows. Historically, the project was located along the meandering course of the Los Angeles River and that a Gabrieleno trade route traversed in a north-south direction along present-day Cherry Avenue. This route was the precursor to the Union Pacific Railroad that runs between Cherry and Paramount Avenues. Mr. Salas further stated that the project lies between two ethnohistoric villages: *Tibahangna* and *Abahangna*. In two follow-up emails on the same day, Mr. Salas provided the two additional maps that show the locations of the two villages. Both maps provide different spellings for the villages, but these are consistent with *Tibahangna* and *Abahangna* that were discussed in our July 9, 2019 meeting.

DATE	FROM	TO	DESCRIPTION
			Because the project is located along the historic course of the Los Angeles River and between two known ethnohistoric Gabrieleno village sites connected by an ancient trade route, the Tribe is concerned that the project may impact unknown subsurface archaeological deposits at this location. Therefore, the Tribe is requesting specific information about the exact location and extent of all ground disturbing activities in the project area as well as archaeological and Native American monitoring of the project location.
4-20-2020	Caltrans	Andrew Salas, Gabrieleño Band of Mission Indians – Kizh Nation	Follow-up email (11:52 am) providing a summary of the consultation meeting, and action items. Specifically, Caltrans will provide the archaeological consulting firm with the summary of the consultation meeting and request that the consultant work with the Tribe on gathering information for the cultural studies.
5-8-2020	DUKE CRM on behalf of Caltrans	Andrew Salas, Gabrieleño Band of Mission Indians – Kizh Nation	Section 106 and AB-52 on going consultation letter and request for information regarding any cultural resources or sacred lands that may be of concern as a result of the proposed project. Letter and map sent via Certified Mail.
5-8-2020	DUKE CRM on behalf of Caltrans	Anthony Morales, Gabrieleno/ Tongva San Gabriel Band of Mission Indians	Section 106 and AB-52 initial consultation letter and request for information regarding any cultural resources or sacred lands that may be of concern as a result of the proposed project. Letter and map sent via Certified Mail.
5-8-2020	DUKE CRM on behalf of Caltrans	1. Charles Alvarez, Gabrielino-Tongva Tribe 2. Robert Dorame, Gabrielino Tongva Indians of California Tribal Council 3. Sandonne Goad, Gabrielino/ Tongva Nation	Section 106 initial consultation letter and request for information regarding any cultural resources or sacred lands that may be of concern as a result of the proposed project. Letters and maps sent via Certified Mail.
5-15-2020	DUKE CRM on behalf of Caltrans	Andrew Salas, Gabrieleño Band of Mission Indians – Kizh Nation	Voice mails left on Mr. Sala's cell phone and office lines (10:17am) and an email (10:46) to follow up with Chairperson Salas and to inform him of the negative reconnaissance-level survey results.
5-15-2020	DUKE CRM on behalf of	Anthony Morales, Gabrieleno/	Voice mails left on Mr. Morales's cell phone and office lines (10:55am) and an email (11:01) to follow up with Chairperson

DATE	FROM	TO	DESCRIPTION
	Caltrans	Tongva San Gabriel Band of Mission Indians	Morales and to inform him of the negative reconnaissance-level survey results.
5-15-2020	DUKE CRM on behalf of Caltrans	1. Charles Alvarez, Gabrielino-Tongva Tribe 2. Sandonne Goad, Gabrielino/ Tongva Nation	Voice mail left on Mr. Alvarez's phone lines (11:38am) and an email (11:49) to follow up with him and to inform him of the negative reconnaissance-level survey results. Voice mail left on Chairperson Goad's phone line (11:40 am) and an email (11:57) to follow up and to inform Chairperson Goad of the negative reconnaissance-level survey results
5-15-2020	DUKE CRM on behalf of Caltrans	Robert Dorame, Gabrielino Tongva Indians of California Tribal Council	Called and spoke with Chairperson Dorame (11:38am). He requested an email with the consultation request letter and map. DUKE CRM followed up with him with the results of the reconnaissance level survey and requested materials (11:59am).
5-15-2020	Andrew Salas and Matthew Teutimez, Gabrieleño Band of Mission Indians – Kizh Nation	DUKE CRM on behalf of Caltrans	Mr. Salas and Mr. Teutimez called DUKE CRM (2:11pm) and discussed the sensitivity of the Project at length. Mr. Salas indicated that the area is sensitive for prehistoric sites and Gabrieleño villages. In particular he finds that the Project is within the area known as Tiba (alternately called Tivaaxa'Anga). because this is the area that later became the Los Cerritos Land Grant. He thinks that the land grant area is equivalent to the place name because the Gabrieleño people of the place formed the inhabitants of the land grant. He informed DUKE CRM that archaeologists make mistakes by indicating a location like Tiba as a single dot on a map. He indicated that the correct way to think of this place name, as with many Gabrieleño villages, is as a wide area. He thinks that Spanish baptismal records support this interpretation as so many indicate that a few thousand *idios* would be baptized from a location like Los Cerritos Land Grant, but as they did not live in concentrated locations of a few thousand, the baptismal record means an area, not a single location. During the course of the phone call, Mr. Salas and Mr. Teutimez emailed DUKE CRM, see below.
5-15-2020	Andrew Salas and Matthew Teutimez, Gabrieleño Band of Mission Indians – Kizh Nation	DUKE CRM on behalf of Caltrans	Mr. Salas emailed DUKE CRM (2:48, 2:52, 3:05, and 3:12pm) during the 5/15 phone call. Mr. Salas provided supplemental materials as attachments including Rancho Gertudes map, a newspaper clipping from 1927, an article by P. Spitzzeri *All Over the Map: Spanish and Mexican, Ranchos of Los Angeles County, 1929*, and a single page excerpt from McCawly 1996.
5-19-2020	Anthony Morales, Gabrieleno/ Tongva San Gabriel Band	DUKE CRM on behalf of Caltrans	Chairperson Morales called DUKE CRM (4:05pm) and expressed concern the Project could impact cultural resources and water resources. He indicated that due to proximity to the LA River and Compton Creek the area is sensitive for Gabrielino sites. He also indicated that the discovery of human remains near the

DATE	FROM	TO	DESCRIPTION
	of Mission Indians		intersection of the 22 and 405 a few months ago seems like a similar situation with the elevated roadbed of the Project. He requested that Native American monitoring and Archaeological monitoring be undertaken during excavation.
5-20-2020	Andrew Salas Band of Mission Indians – Kizh Nation	DUKE CRM on behalf of Caltrans	Mr. Salas emailed DUKE CRM (10:51) and provided supplemental materials as links including a website and documents. The website was: https://www.rancholoscerritos.org/about-hub/history-hub/
6-17-2020	DUKE CRM on behalf of Caltrans	Robert Dorame, Gabrielino Tongva Indians of California Tribal Council	DUKE CRM emailed Chairperson Dorame the NA consult letter on behalf of Caltrans (1:38pm) as preparation of a follow-up phone call (3:06pm). Mr. Dorame recommends that in the event of the discovery of cultural material and burials from the Tonga people, that the Gabrielino Tongva Indians of California Tribal Council be notified, regardless of any finding about MLD decisions by the NAHC.
9-8-2020	Caltrans	Andrew Salas and Matthew Teutimez, Gabrieleño Band of Mission Indians – Kizh Nation	Discussed contents of graphic in the draft ASR showing village locations. The Kizh Nation objected to the placement of village locations on the maps as these may give the reader the wrong impression that villages were contained within a small area. They also stated that the boundaries of villages were fluid and encompassed resource procurement areas; so a dot on a map does not capture the complexity and fluidity of Gabrieleño settlements. For this reason, you requested that all maps showing village locations be removed from the report. Caltrans agreed to remove the graphic from the ASR and incorporate text regarding Gabrieleño exploitation of the entire regions and trails connecting major villages. The Kizh Nation expressed continued concerns regarding the possibility that buried deposits may be impacted by the project. Ms. Dahdul of Caltrans summarized the report findings, i.e. research and survey did not discover cultural resources and that the project will be conducted in fill. It was determined that Metro (in coordination with Caltrans and other stakeholders) will implement a limited monitoring program that will ensure Kizh Nation concerns are satisfactorily resolved. A monitoring plan will be prepared and will outline the conditions and procedures for monitoring.
10-2-2020	DUKE CRM on behalf of Caltrans	Anthony Morales, Gabrieleno/ Tongva San Gabriel Band of Mission Indians	Voicemail (1:35) and email (2:00) summarizing the results of the meetings between Caltrans and groups representing Native American interests in the region. The message and email stated: • The graphic in the draft ASR showing village locations has been removed. • Text has been edited to reflect the fluid boundaries of villages that encompassed resource procurement areas within the region, as well the presence to established trails connecting villages.

Updated October 2, 2020

DATE	FROM	TO	DESCRIPTION
			• It has been determined that Metro (in coordination with Caltrans and other stakeholders) will implement a limited monitoring program that will ensure Native American concerns are satisfactorily resolved. A monitoring plan will be prepared and will outline the conditions and procedures for monitoring.

Appendix D. Species Lists

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EB State Route 91 – Atlantic Avenue to Cherry Avenue Auxiliary Lane Improvement Project
List of Species Observed in the BSA on January 22, 2018

Scientific Name	Common Name	Native Status
Plant Species		
ANGIOSPERMS (EUDICOTS)		
AIZOACEAE	FIG-MARIGOLD FAMILY	
Carpobrotus edulis	sea fig	invasive non-native
ANACARDIACEAE	SUMAC FAMILY	
Cupaniopsis anacardioides	carrotwood	non-native
Pistacia chinensis	Chinese pistache	non-native
Schinus terebinthifolius	Brazilian pepper tree	invasive non-native
APOCYNACEAE	DOGBANE FAMILY	
Nerium oleander	oleander	non-native
ASTERACEAE	ASTER FAMILY	
Baccharis salicifolia	mule fat	native
Baccharis pilularis	coyote brush	native
Bidens pilosa	hairy beggarticks	non-native
Encelia californica	California brittlebush	native
Galinsoga parviflora	gallant soldier	non-native
Helminthotheca echioides	bristly ox-tongue	invasive non-native
Lactuca serriola	prickly lettuce	non-native
Sonchus oleraceous	common sow thistle	non-native
BIGNONIACEAE	TRUMPET-CREEPER FAMILY	
Jacaranda mimosifolia	jacaranda	non-native
BRASSICACEAE	CABBAGE FAMILY	
Raphanus sativus	cultivated radish	invasive non-native
Sisyimbrium irio	London rocket	native
CHENOPDIACEAE	GOOSEFOOT FAMILY	
Chenopodium album	lambs quarters	non-native
Salsola tragus	Russian thistle	invasive non-native
CRASSULACEAE	STONECROP FAMILY	
Crassula ovata	jade plant	non-native
EUPHORBIACEAE	SPURGE FAMILY	
Euphorbia maculata	spotted spurge	non-native
Ricinus communis	castor bean	invasive non-native
FABACEAE	PEA FAMILY	
Acacia longifolia	Sydney golden wattle	non-native
Acacia melanoxylon	blackwood acacia	invasive non-native
Acacia redolens	bank catclaw	non-native
Ceratonia siliqua	carob	non-native
FAGACEAE	BEECH FAMILY	
Quercus ilex	holly oak	non-native
GERANIACEAE	GERANIUM FAMILY	
Erodium botrys	broad leaf filaree	non-native
Erodium cicutarium	red stemmed filaree	invasive non-native

LAMIACEAE	MINT FAMILY	
Lavendula sp.	lavender	non-native
Rosmarinus officinalis	rosemary	non-native
LYTHRACEAE	LOOSESTRIFE FAMILY	
Lagerstroemia indica	crape myrtle	non-native
MALVACEAE	MALLOW FAMILY	
Ceiba speciosa	floss silk tree	non-native
Malva parviflora	cheeseweed	non-native
MYRTACEAE	MYRTLE FAMILY	
Corymbia citriodora	lemon-scented gum	non-native
Eucalyptus camaldulensis	red gum	non-native
Eucalyptus polyanthemos	silver dollar gum	non-native
Eucalyptus sideroxylon	red iron bark	non-native
Malaleuca viminalis	weeping bottlebrush	non-native
Syzygium australe	brush cherry	non-native
NYCTAGINACEAE	FOUR-O'CLOCK FAMILY	
Bougainvillea spectabilis	great bougainvillea	non-native
PLATANACEAE	PLANE-TREE FAMILY	
Platanus racemosa	California sycamore	native
PLUMBAGINACEAE	LEADWORT FAMILY	
Plumbago auriculata	Cape leadwort	non-native
SAPINDACEAE	SOAPBERRY	
Koelreuteria bipinnata	goldenrain tree	non-native
SIMAROUBACEAE	QUASSIA FAMILY	
Ailanthus altissima	tree of heaven	invasive non-native
TROPAEOLACEAE	NASTURTIUM FAMILY	
Tropaeolum majus	nasturtium	non-native
ULMACEAE	ELM FAMILY	
Ulmus parvifolia	Chinese elm	non-native
VERBENACEAE	VERBENA FAMILY	
Lantana camara	lantana	invasive non-native
VITACEAE	GRAPE FAMLY	
Vitis californica	California grape	native
ANGIOSPERMS (MONOCOTS)		
AGAVACEAE	CENTURY PLANT FAMILY	
Agava americana	American century plant	non-native
ARECACEAE	PALM FAMILY	
Phoenix canariensis	Canary Island date palm	non-native
Phoenix dactylifera	date palm	non-native
Trachycarpus fortunei	windmill palm	non-native
Washingtonia robusta	Mexican fan palm	invasive non-native
ASPARAGACEAE	ASPARAGUS FAMILY	
Asparagus setaceus	asparagus fern	non-native
ASPHODELACEAE	ASPHODEL FAMILY	
Aloe sp.	aloe	non-native

Hemerocallis sp.	daylily	non-native
POACEAE	GRASS FAMILY	
Cynodon dactylon	bermuda grass	invasive non-native
Bromus diandrus	ripgut brome	invasive non-native
Pennisetum setaceum	crimson fountaingrass	invasive non-native
Stipa miliacea	smilo grass	non-native
GYMNOSPERMS		
PINACEAE	PINE FAMILY	
Pinus canariensis	Canary Island pine	non-native
Syagrus romanzoffiana	queen palm	non-native
Scientific Name	**Common Name**	**Native Status**
Wildlife Species		
BIRDS		
Anas platyrhynchos	mallard	native
Aphelocoma californica	California scrub-jay	native
Buteo jamaicensis	red-tailed hawk	native
Calypte anna	Anna's hummingbird	native
Columba livia	rock pigeon	non-native
Corvus brachyrhynchos	American crow	native
Corvus corax	common raven	native
Falco peregrinus anatum	American peregrine falcon	native
Haemorhous mexicanus	house finch	native
Larus occidentalis	western gull	native
Mimus polyglottos	mockingbird	native
Passer domesticus	house sparrow	non-native
Psaltriparus minimus	bushtit	native
Sayornis nigricans	black phoebe	native
Petrochelidon pyrrhonota	cliff swallow	native
Setophaga coronata	yellow-rumped warbler	native
Sturnus vulgaris	European starling	native
INVERTEBRATES		
Apis mellifera	western honey bee	non-native
Nymphalis antiopa	mourning cloak butterfly	native
Papilio rutulus	western tiger swallowtail butterfly	native
Pieris rapae	cabbage white butterfly	non-native
MAMMALS		
Felis domesticus	house cat	domesticated
REPTILES		
Sceleporous occidentalis occidentalis	western fence lizard	native

Table 1: Listed and Proposed Special-Status Natural Communities with Potential to be in the BSA

Common Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Community Presence/Absence
	Federal USFWS	State CDFW			
Natural Communities					
California Walnut Woodland	--	S2.1	California Walnut Woodlands are comprised of open tree canopies locally dominated by the California black walnut (*Juglans californica*).	A	There are no California Walnut Woodland communities in the BSA. Therefore, this community is absent from the BSA.
Southern Coastal Salt Marsh	--	S2.1	Southern Coastal Salt Marsh communities are found in bays, lagoons, and estuaries along the coast from Point Conception to the Mexican border. This community consists of highly productive, herbaceous, and salt-tolerant hydrophytes that form moderate to dense cover. Characteristic species include Watson's saltbush (*Atriplex watsonii*), Saltwort (*Batis maritima*), California boxthorn (*Lycium californicum*), Shore grass (*Monanthochloe littoralis*), California seablite (*Suaeda californica*), and Parish's glasswort (*Arthrocnemum subterminale*).	A	There are no bays, lagoons, or estuaries in the BSA. Therefore, this community is absent from the BSA.
Southern Sycamore Alder Riparian Woodland	--	S4	The Southern Sycamore Alder Riparian Woodland community consists of tall, open, broad-leafed, winter-deciduous streamside woodland dominated by western sycamore (*Platanus racemosa*) and often also white alder (*Alnus rhombifolia*). These stands seldom form closed canopy forests, and even may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species.	A	There is no streamside woodland within the BSA. Therefore, this community is absent from the BSA.
Walnut Forest	--	S1.1	Walnut forests are cold-deciduous woodlands dominated by California walnut. The understories are composed of coastal	A	There are no California walnut woodlands in the BSA. Therefore, this

			scrub, chaparral, and non-native grass species.		community is absent from the BSA.

Table Key: Absent [A] – The vegetation community was not observed in the BSA during the biological survey. Habitat Present [HP] – There is habitat present within the BSA. State Rare (SR); S1 = Critically Imperiled - extreme rarity (often five 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.

**Information for the habitat requirements was obtained from the following* sources: (*Holland, 1986)*, *(Jepson eFlora Project, 2019),* and *(Sawyer, Keeler-Wolf, & Evans, 2012).*

Table 1: Listed and Proposed Special-Status Plant Species with Potential to be in the BSA

Common and Scientific Names	Status			General Habitat Description*	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CNPS			
Plants						
Aphanisma blitoides Aphanisma	--	--	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 absent; therefore, this species is not expected to be in the BSA.
Arenaria paludicola Marsh sandwort	FE	SE	1B.1	The marsh sandwort is a perennial stoloniferous herb found in marshes and swamps on sandy substrate. This species grows up through dense mats of *Typha*, *Juncus*, *Scirpus*, etc. in freshwater marsh. Typical blooming period: May to August Typical elevation range: 10 to 558 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

Astragalus brauntonii Braunton's milk-vetch	FE	--	1B.1	The Braunton's milk-vetch is a perennial herb found in chaparral, coastal scrub, and valley and foothill grassland. This species may be found in recently burned or naturally disturbed areas. This species is restricted to carbonate limestone substrates within the Santa Monica, San Gabriel, and Santa Ana Mountain ranges. Typical blooming period: January to August Typical elevation range:13 to 2,100 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA. In addition, this species was not observed during the biological surveys, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Astragalus pycnostachyus var. *lanosissimus* Ventura Marsh milk-vetch	FE	SE	1B.1	The Ventura Marsh milk-vetch is a perennial herb generally found in coastal dunes, coastal scrub and marshes within reach of high tide or protected by barrier beaches. Typical blooming period: June to October Typical elevation range: Three to 115 feet	A	The habitat typically preferred by this species is absent; 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 plant found in coastal bluff scrub, coastal dunes, and coastal prairie habitats. This species is found in moist, sandy depressions of bluffs or dunes along and near the Pacific Ocean. Typical blooming period: March to May Typical elevation range: Three to 147 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

Atriplex coulteri Coulter's saltbush	--	--	1B.2	The Coulter's saltbrush 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 absent; therefore, this species is not expected to be in the BSA.
Atriplex pacifica South coast saltscale	--	--	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 absent; therefore, this species is not expected to be in the BSA.
Atriplex parishii Parish's brittlescale	--	--	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 absent; therefore, this species is not expected to be in the BSA.
Atriplex serenana var. *davidsonii* Davidson's saltscale	--	--	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	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				Typical elevation range: 32 to 656 feet		
Berberis nevinii Nevin's barberry	FE	SE	1B.1	The Nevin's barberry is a perennial evergreen shrub, found in chaparral, cismontane woodland, coastal scrub, and riparian scrub. This species often grows on steep, north facing slopes or in low grade sandy washes. Typical blooming period: February to June Typical elevation range: 230 to 2,707 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
*Calochortus catalinae** Catalina mariposa-lily	--	--	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 absent; therefore, this species is not expected to be in the BSA.
Calochortus plummerae Plummer's mariposa-lily	--	--	4.2	The Plummer's mariposa-lily is a perennial bulbiferous herb inhabiting dry rocky slopes, brushy areas, and openings of chaparral. This species may occasionally be found in coastal scrub, valley and foothill grassland, cismontane	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				woodland, and lower montane coniferous forest from the Santa Monica Mountains to the San Jacinto Mountains. This species prefers granitic or alluvial material and can be very common after fire. Typical blooming period: May to July Typical elevation range: 328 to 5,577 feet		
Calochortus weedii var. *intermedius* Intermediate mariposa-lily			1B.2	The intermediate mariposa-lily is a perennial bulbiferous herb found on dry, rocky, open slopes and rock outcrops, especially near sandstone cliffs, in chaparral, coastal scrub, and valley and foothill grassland. Typical blooming period: May to June Typical elevation range: 344 to 2,805 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
Calystegia felix Lucky morning-glory	--	--	1B.1	The lucky morning-glory is an annual rhizomatous herb found in meadows, seeps, stream banks, and riparian scrub. This species is associated with somewhat poorly drained alkali silt loam substrate and is generally found on floodplains with an average slope of one percent. This species is endemic to the inland basins of the Los Angeles, San Gabriel, and Santa Ana River watersheds and has not been seen in Los Angeles County since 1902.	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				Typical blooming period: March to September Typical elevation range: 98 to 705 feet		
*Calystegia peirsonii** Peirson's morning glory	--	--	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 often found in disturbed areas, along roadsides, or in grassy, open areas. Typical blooming period: May to June Typical elevation range: 98 to 4,921 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
*Camissoniopsis lewisii** Lewis' evening-primrose	--	--	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 absent; therefore, this species is not expected to be in the BSA.
Centromadia parryi ssp. *australis* Southern tarplant	--	--	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	HP	There are moist, disturbed areas at the western extent of the BSA under the SR-91 overpass; therefore, there is potential for this species to be

				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		in the BSA.
Centromadia pungens ssp. *laevis* Smooth tarplant	--	--	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 absent; therefore, this species is not expected to be in the BSA.
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 absent; therefore, this species is not expected to be in the BSA.

*Clinopodium mimuloides** Monkey-flower savory	--	--	4.2	The monkey-flower savory is a perennial herb found along streambanks and in mesic sites in north coast coniferous forest and chaparral habitats in the Central Coast, Outer South Coast, and Western Transverse Ranges, and San Gabriel Mountains. Typical blooming period: June to October Typical elevation range: 1,000 to 5,905 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
*Convolvulus simulans** Small-flowered morning-glory	--	--	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 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 absent; therefore, this species is not expected to be in the BSA.
Cuscuta obtusiflora var. *glandulosa* Peruvian dodder	--	--	2B.2	The Peruvian dodder is an annual vine (parasitic) that is found in freshwater marshes and swamps. This species is thought to be extirpated in California. Typical blooming period: July to October Typical elevation range: Zero to 164 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

Dudleya multicaulis Many-stemmed dudleya	--	--	1B.2	The many-stemmed dudleya is a perennial herb found in chaparral, coastal scrub, and valley and foothill grassland. This species is often associated with heavy clay soils in barrens, dry stony places, or thinly vegetated openings. Typical blooming period: May to September Typical elevation range: 49 to 2,592 feet	A	The habitat typically preferred by this species is absent; 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 2035 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
*Erysimum suffrutescens** Suffrutescent wallflower	--	--	4.2	The suffrutescens wallflower is a perennial herb found along coastal bluff scrub, 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 absent. In addition, this species was not observed during the biological surveys, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	--	--	1A	The Los Angeles sunflower is a perennial rhizomatous herb found in coastal salt and freshwater marshes and swamps, damp meadows,	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				springs, and streams. With the exception of recent observations in the Newhall Ranch area, sightings of this species in California are historical and this species is considered to have been extirpated by urbanization. Typical blooming period: August to October Typical elevation range: 32 to 5,495 feet		
*Hordeum intercedens** Vernal barley	--	--	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 absent; therefore, this species is not expected to be in the BSA.
Horkelia cuneata var. *puberula* Mesa horkelia	--	--	1B.1	The mesa horkelia is a perennial herb found in chaparral (maritime), oak woodland, and coastal scrub habitat in sandy or gravelly soils. This species was historically found in the hills and plains of Los Angeles, western Riverside, southwestern San Bernardino, and northwest San Diego Counties. The majority of these populations have been destroyed by urbanization.	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				Typical blooming period: February to September Typical elevation range: 229 to 2,657 feet		
Isocoma menziesii var. *decumbens* Decumbent goldenbush	--	--	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 absent; therefore, this species is not expected to be in the BSA.
*Juglans californica** Southern California black walnut	--	--	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 absent; therefore, this species is not expected to be in the BSA.
Juncus acutus ssp. *leopoldii** Southwestern spiny rush	--	--	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	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				2,952 feet		
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	--	--	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 absent; therefore, this species is not expected to be in the BSA.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	--	--	4.3	The Robinson's pepper-grass is an annual herb found in chaparral and coastal scrub. This species is found on dry soils. Typical blooming period: January to July Typical elevation range: Three to 2,904 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
*Lycium californicum** California box-thorn	--	--	4.2	The California box-thorn is a perennial shrub found on the Northern and Southern Channel Islands and along the South Coast in coastal bluff scrub and coastal scrub habitat. Typical blooming period: December to August Typical elevation range: 16 t0 492 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
Nama stenocarpa Mud nama	--	--	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	A	The habitat typically preferred by this species is absent. In addition, this species was not observed during the biological surveys, which were conducted during the typical

				feet		blooming period for this species. Therefore, this species is not expected to be in the BSA.
Nasturtium gambelii Gambel's watercress	FE	ST	1B.1	Gambel's watercress is a perennial herb known from interior wetland areas of San Diego, San Bernardino, and Los Angeles Counties as well as coastal wetland areas of San Luis Obispo and Santa Barbara Counties. This species is aquatic or semi-aquatic, its herbage sometimes floats on standing water or sprawls over wet ground. This species is likely to be found in undisturbed, brackish, and freshwater habitats. This species is found along lake margins, streams, swamps, marshes, and ponds. Typical blooming period: April to October Typical elevation range: 16 to 2,559 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
Navarretia fossalis Spreading navarretia	FT	--	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, often surrounded by other habitat types. Typical blooming period: April to June	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				Typical elevation range: 98 to 4,265 feet		
Navarretia prostrata Prostrate vernal pool navarretia	--	--	1B.1	The prostrate vernal pool navarretia is an annual herb found in coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools. This species is found in alkaline soils in grassland or in vernal pools. Typical blooming period: April to July Typical elevation range: Nine to 3,970 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
Nemacaulis denudata var. *denudata* Coast woolly-heads	--	--	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 absent; therefore, this species is not expected to be in the BSA.
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 absent; therefore, this species is not expected to be in the BSA.
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,	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				compact, clay soils of volcanic origin that exhibit a microbiotic crust. The Lyon's pentachaeta prefers edges of openings in fire-adapted coastal sage scrub and chaparral on saddles between hills, on the tops of small knolls, or in flat areas at the base of slopes, particularly where soil crust results in less competition from annual grasses. This species also prefers areas with little disturbance and few competitors and often occupy pocket grassland sites that integrate with shrublands, and the edges of roads and trails. Typical blooming period: February to August Typical elevation range: 98 to 2,263 feet		
*Phacelia hubbyi** Hubby's phacelia			4.2	The Hubby's phacelia is an annual herb found in chaparral, coastal scrub, and valley and foothill grassland in gravelly or rocky slopes, and talus slopes, mostly away from the immediate coast. Typical blooming period: April to July Typical elevation range: Zero to 3,281 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
Phacelia stellaris Brand's star phacelia	--	--	1B.1	The Brand's star phacelia is an annual herb that is found in sandy open places, dunes, sandy	A	The habitat typically preferred by this species is absent; therefore, this species is not

				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		expected to be in the BSA.
Pseudognaphalium leucocephalum White rabbit-tobacco	--	--	2B.2	The white rabbit-tobacco is a perennial herb found in riparian woodland, cismontane woodland, coastal scrub and chaparral. This species is found on sandy, gravelly benches, dry stream bottoms, canyon bottoms arroyos, areas of oak-sycamore, oak-pine, to pine woodlands, and commonly in riparian vegetation. Typical blooming period: July to December Typical elevation range: Zero to 6,890 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
Quercus dumosa Nuttall's scrub oak	--	--	1B.1	The Nuttall's scrub oak is a perennial evergreen shrub found in closed-cone coniferous forest, chaparral, and coastal scrub. This species is generally found on sandy soils near the coast, sometimes on clay loam. Typical blooming period: February to August Typical elevation range: 49 to 1,312	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				feet		
Ribes divaricatum var. *parishii* Parish's gooseberry	--	--	1A	The Parish's gooseberry is a perennial deciduous shrub found in willow riparian woodland habitats. Typical blooming period: May to July Typical elevation range: 213 to 984 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
*Romneya coulteri** Coulter's matilija poppy	--	--	4.2	The Coulter's matilija poppy is a perennial rhizomatous herb found in chaparral and coastal scrub habitats in dry washes and canyons, often in burned areas. This species is found generally away from the coast in the mountain foothills and Santa Ana Mountains. Typical blooming period: March to July Typical elevation range: 65 to 3,937 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.
Scutellaria bolanderi ssp. *austromontana* Southern mountains skullcap	--	--	1B.2	The southern mountains skullcap is a perennial rhizomatous herb found in mesic sites in the San Bernardino, San Jacinto, and Desert Mountains, Peninsular Ranges, and Mojave Desert. This species may be found in chaparral, coniferous forest, oak or pine woodland and streambanks on gravelly soils. Typical blooming period: June to August	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

				Typical elevation range: 1,394 to 6,561 feet		
Sidalcea neomexicana Salt spring checkerbloom	--	--	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 clay or loamy 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 absent; therefore, this species is not expected to be in the BSA.
Suaeda esteroa Estuary seablite	--	--	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 absent. In addition, this species was not observed during the biological surveys, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
*Suaeda taxifolia** Woolly seablite	--	--	4.2	The wooly seablite is a perennial evergreen shrub found in coastal bluff scrub, coastal dunes, and marshes and swamps (margins of coastal salt). Typical blooming period: January to December Typical elevation range: Zero to 164 feet	A	The habitat typically preferred by this species is absent. In addition, this species was not observed during the biological surveys, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Symphyotrichum	--	--	1B.2	The San Bernardino aster is a	A	The habitat typically preferred

defoliatum San Bernardino aster				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		by this species is absent; therefore, this species is not expected to be in the BSA.
Symphyotrichum greatae Greata's aster	--	--	1B.3	The Greata's aster is a perennial rhizomatous herb that is endemic to the San Gabriel mountains. This species is found in mesic areas in the canyons of the southern slopes above the Los Angeles basin. Typical blooming period: June to October Typical elevation range: 984 to 6,594 feet	A	The habitat typically preferred by this species is absent; therefore, this species is not expected to be in the BSA.

Table Key: Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Status: Federal Endangered (FE); Federal Threatened (FT); State Endangered (SE); State Threatened (ST); Fully Protected (FP); Proposed Federally Threatened (FPT); Federally Delisted (DL); Watch List (WL); State Species of Special Concern (SSC); 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; 0.3 = Not very threatened in California.

** = 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 CDFW 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 and species range was obtained from the following sources: (CNPS, 2019a), (CDFW CNDDB, 2020)*, and (Sawyer, Keeler-Wolf, & Evans, 2012).*

Table 2: Listed and Proposed Special-Status Wildlife Species with Potential to be in the BSA

Common and Scientific Names	Status		General Habitat Description*	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Invertebrates					
*Anodonta californiensis** California floater	--	S2	The California floater is found in fresh water habitats, muddy or sandy habitats in large rivers, reservoirs, lakes, and in low-gradient creeks and streams with steady water levels.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
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 *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Carolella busckana Busck's gallmoth	--	SH	The Busck's gallmoth is found in coastal dunes and coastal scrub habitats.	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	--	S2	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.
Cicindela senilis frosti Senile tiger beetle	--	S1	The senile tiger beetle is found in coastal mud flats, salt marsh edges, and inland alkali mud flats.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Danaus plexippus pop. 1 Monarch - California overwintering population	--	S2S3	The monarch butterfly requires closed-cone coniferous forests and milkweed for breeding and as a food source for larvae. This species roosts in groves of eucalyptus, Monterey pines, and Monterey cypresses in California. Nectar and nearby water sources are required. The California overwintering population migrate to the coast	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

			of California and overwinter from Mendocino County in the north to Baja California in the south. This population arrives in California in September and overwinters until February.		
Glaucopsyche lygdamus palosverdesensis Palos Verdes blue butterfly	FE	S1	The Palos Verdes blue butterfly is found in coastal scrub on the seaward side of Palos Verdes Hills, Los Angeles County. The host plant for this species is locoweed (*Astragalus trichopodus* var. *lonchus*) and deerweed (*Acmispon glaber*).	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Glyptostoma gabrielense San Gabriel chestnut	--	S2	The San Gabriel chestnut is an air-breathing land snail found in moist condition and often near water. This species is commonly found in piles of weathered rock. During dry seasons they move below the rock piles to the soil in order to stay moist, and the snails are found in different depths of the rock piles depending on moisture conditions	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
*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,	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

			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. The western ridged mussel is often present in areas with seasonally turbid streams but is absent from areas with continuously turbid water. This species requires a host fish to complete reproduction and dispersal.		
Habroscelimorpha 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.
*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, Los Angeles County.	A	The habitat preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Tryonia imitator Mimic tryonia	--	S2	The mimic tryonia is found in coastal lagoons, estuaries and	A	The habitat typically preferred by this species is

(=California brackishwater snail)			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 withstand a wide range of salinities.		not in the BSA; therefore, this species is not expected to be in the BSA.
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 bushes in sunny areas and dunes stabilized with bush lupine and mock heather. This species can also be found under surface objects such as rocks, boards, driftwood, and logs.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Arizona elegans occidentalis	--	SSC	The California glossy snake is found in arid scrub, rocky	A	The habitat typically preferred by this species is

California glossy snake			washes, grasslands, and chaparral habitat, often is loose or sandy soils. This species is patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California.		not in the BSA; therefore, this species is not expected to be in the BSA.
*Aspidoscelis hyperythra** Orange-throated whiptail		WL	The orange-throated whiptail is found in low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. This species prefers washes and other sandy areas with patches of brush and rocks. The primary food source for the orange-throated whiptail is termites.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Aspidoscelis tigris stejnegeri Coastal whiptail	--	SSC	The coastal whiptail is found primarily in hot and dry open areas with sparse foliage, including chaparral, woodland, and riparian areas. This species is also found in woodland and riparian areas where the ground may be firm soil, sandy, or rocky.	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	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

			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.		
*Crotalus ruber** Red-diamond rattlesnake	--	SSC	The red-diamond rattlesnake is found in chaparral, woodland, and grassland habitats from San Diego County to the eastern slopes of the mountains. This species is found in rocky areas and areas of dense vegetation. The red-diamond rattlesnake requires rodent burrows or cracks in rocks for cover.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
*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	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

			barren areas by restricting movements to areas of surface litter or herbaceous vegetation. The San Bernardino ringneck snake feds on small salamanders, tadpoles, small frogs, small snakes, lizards, worms, and insects.		
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.
Phrynosoma blainvillii Coast horned lizard	FE	SE	The blunt-nosed leopard lizard is a resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. This species does not excavate their own burrows and seeks cover in mammal burrows, under shrubs or structures such as fence posts.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
*Salvadora hexalepis virgultea**	--	SSC	The coast patch-nosed snake is found in semi-arid brushy areas	A	The habitat typically preferred by this species is

Coast patch-nosed snake			and chaparral in canyons, rocky hillsides, and plains. This species requires small mammal burrows for refuge and overwintering sites. The coast patch-nosed snake feeds on lizards, small mammals, and amphibians.		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. This species is often found along streams with rocky beds and old growth riparian and has an elevational range from sea level to approximately 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 garter snake	--	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. This species 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.
Birds					

*Accipiter cooperi** Cooper's hawk	--	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 nests mainly in old growth riparian of deciduous trees, often in canyon bottoms on river floodplains, and will also nest in live oaks.	HP (Nesting) HP (Foraging)	The BSA contains trees that could be used for nesting and foraging. Therefore, there is potential for this species to forage and nest in the BSA.
*Accipiter striatus** Sharp-shinned hawk	--	WL	The sharp-shinned hawk is found in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. This species prefers riparian areas with north-facing slopes, containing plucking perches as critical requirements. Nests are usually within 275 feet of water.	A (Nesting) HP (Foraging)	There is open water adjacent to the western end of the BSA, and this species may use trees and structures within the BSA while foraging in the river. Therefore, there is potential for this species to forage in the BSA, but it is not expected to nest in the BSA.
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 and vicinity where this species forages in fields and farms. This species breeds in large freshwater marshes, in dense strands of cattails or bulrushes.	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.

			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.		
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	--	WL	The 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 (*Lotus scoparius*), giant rye (*Leymus condensatus*), white sage (*Salvia apiana*), manzanita (*Arctostaphylos* spp.), poison oak (*Toxicodendron diversiloba*), coastal goldenbush (*Isocoma menziesii* var. *vernonioides*), morning glory (*Calystegia macrostegia*), and various bunchgrass. They	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.

			also thrive in recent burn areas where the habitat is open and undisturbed		
*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 wetland habitats surrounded by shrubs or trees. This species nests in marshes, bogs, wet meadows, and other moist habitats.	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	--	FP/WL	The golden eagle is found in open and semi-open country with native vegetation and primarily found in mountains, canyons, and riverside cliffs and bluffs. This species avoids developed areas and uninterrupted stretches of forest. Cliff-walled canyons and large trees provide nesting habitat in most parts of their range.	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 alba** Great egret	--	S4	The great egret is found in brackish marsh, estuary,	A	The habitat typically preferred by this species is

			freshwater marsh, riparian forests, and wetlands. This species nests colonially in large trees. The rookery sites are located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes. The great egret feeds mainly on small fish, but will also eat amphibians, reptiles, small mammals, and invertebrates.	(Nesting) A (Foraging)	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. The rookery sites are in close proximity to foraging areas. Colonies need to be protected from human disturbances, which often cause nest desertion.	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.
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. Also, common in	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.

			disturbed areas, including roadsides, and may develop burrows in debris piles.		
*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.
*Baeolophus inornatus** Oak titmouse	--	S4	The oak titmouse is found in oak woodland and pinyon-juniper habitat. This species nests in natural tree cavities or woodpecker holes.	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.
Buteo regalis Ferruginous hawk	--	S3S4/WL	The ferruginous hawk is found in grasslands, sagebrush country, saltbrush-greasewood shrublands, and edges of pinyon-juniper forests at low to moderate elevations. This species avoids areas of intensive agriculture, urban, and suburban development and nests on cliffs, outcrops, and in tree groves. When nesting in trees, the nest tree is often isolated, or in a transition zone to an adjacent community. The ferruginous hawk eats mostly lagomorphs (hare-shaped), ground squirrels, and mice.	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.
Buteo swainsoni	--	ST	The Swainson's hawk breeds in	A	The habitat typically

Swainson's hawk			grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. This species requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations. The current distribution of Swainson's hawks is in the Central Valley and northeastern California from Butte Valley east to Nevada, south-central Modoc County, and eastern Lassen County. The range does not extend to the North Coast of California.	(Nesting) A (Foraging)	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, may also use various chaparral and riparian areas. Dominant species may include chamise, laurel sumac, buckwheat, California lilac, and coffeeberry. This species nests in sparsely leaved shrubs or small trees, and sometimes in yucca or	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.

			cactus.		
*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, a natural vegetation community of low, semi-woody vegetation found only in coastal and near-coastal portions of the state. These areas have a plant species diversity that is relatively high and includes such dominant components as buckwheat (*Eriogonum fasiculatum*), California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), and Black Sage (*Salvia mellifera*), and prickly pear and cholla cacti (*Opuntia* spp.). While some coastal birds have been observed using riparian woodland areas below 2,000 feet, this species is unlikely that this habitat type is used for nesting. Characteristic trees and tree-like shrubs in their preferred habitat can include California black walnut (*Juglans californica*), elderberry (*Sambucus Mexicana*), laurel sumac (*Malosma laurina*), and lemonade berry (*Rhus integrifolia*). This species nests almost exclusively in prickly	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.

			pear and coastal cholla (*Opuntia prolifera*).		
*Cardinalis cardinalis** Northern cardinal	--	WL	The northern cardinal is found in brushy woodlands, streamside thickets, orchards, swamps, suburban gardens, and parks. The great majority of the state's northern cardinals are naturalized birds from escaped or introduced stock.	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.
*Chaetura vauxi** Vaux's swift	--	SSC	Vaux's swift breeding range includes the forested coastal regions from Del Norte County to Santa Cruz County, with a small breeding population possibly also existing on the Big Sur coast of Monterey County. There are also local breeding populations in low densities through northeastern California and south in the Sierra Nevada to Tulare County. Migrant Vaux's Swifts are found throughout southern California, in late spring and fall. This species shows a preference for foraging over rivers and lakes and feeds low over water. For roosting, migrant Vaux's swifts require some kind of shelter, and will utilize hollow structures such as decayed or burned trees, chimneys, barns, outbuildings,	A (Nesting) HP (Foraging)	There is the Los Angeles River adjacent to the BSA 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.

			or building shafts, if available.		
*Charadrius alexandrinus nivosus** Western snowy plover	FT	SSC	The Pacific coast population of the western snowy plover breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. The population breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries.	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.
*Chldonias niger**	--	SSC	The black tern is found near	A	The habitat typically

Black tern			freshwater lakes, ponds, marshes, and agricultural fields. During migration, this species is found in coastal lagoons and estuaries. The black tern breeds primarily in the Modoc Plateau region, with some breeding in the Sacramento and San Joaquin Valleys.	(Nesting) A (Foraging)	preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
*Circus cyaneus** Northern harrier	--	SSC	The northern harrier is a widespread migrant and winter visitor through California. The breeding range includes coastal areas, Central Valley, northeastern California, and Sierra Nevada region up to 3,600 feet. This species breeds and forages in a variety of open (treeless) habitats that provide adequate vegetative cover, an abundance of suitable prey, and scattered hunting, plucking, and lookout perches such as shrubs or fence posts. In California, such habitats include freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands (including those with vernal pools), weed fields, ungrazed or lightly grazed pastures, some croplands,	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.

			sagebrush flats, and desert sinks. This species nests on ground in shrubby vegetation, usually at marsh edges; nests are built of a large mound of sticks in wet areas.		
*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 bugs, moths, and beetles.	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. Large blocks of riparian habitat appear to be required for nesting. This species forages on caterpillars and large insects, and occasionally on small lizards, frogs, eggs, and young birds.	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.
*Contopus cooperi**	--	SSC	The olive-sided flycatcher is a	A	The habitat typically

Olive-sided flycatcher			summer resident and migrant mainly from mid-April through early October; the breeding season in California extends from early May to late August. This species is found in lower and upper montane coniferous forests and redwood forests. These flycatchers are mostly associated with edges, openings, and natural and human-created clearings in otherwise relatively dense forests, but they also occupy semi open forests. Nests in California are mostly in conifers but may be in a variety of species, including willows (*Salix* spp.), alders (*Alnus* spp.), oaks (*Quercus* spp.), and eucalyptus.	(Nesting) A (Foraging)	preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Coturnicops noveboracensis Yellow rail	--	SSC	The yellow rail is a rare summer California resident of fresh-water marshlands in the eastern Sierra Nevada mountains in Mono County. Small numbers winter regularly in a few coastal marshes and the Suisun Marsh region, where the Central Valley merges with the San Francisco Bay estuary. The yellow rail is found in shallow marshes and wet meadows. During the winter,	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.

			this species is found in drier fresh-water and brackish marshes, as well as dense, deep grass, and rice fields. During the summer, the yellow rail is found in large wet meadows or shallow marshes dominated by sedges and grasses.		
*Cypseloides niger** Black swift	--	SSC	The black swift is found in the coastal belt of Santa Cruz and Monterey Counties; central and southern Sierra Nevada; San Bernardino and San Jacinto mountains. The black swift breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf. This species eats flying insects, primarily flying ants and beetles, and often forages in small groups.	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 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. Fulvuous whistling-ducks feed nocturnally and are almost	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.

			totally granivorous as adults.		
*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 forages in shallow water for fish, insects, and crustaceans, and 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.
*Elanus leucurus** White-tailed kite	--	FP	The white-tailed kite is found in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. This species favors open grasslands, meadows, or marshes for foraging, close to isolated, dense-topped trees for nesting and perching.	A (Nesting) HP (Foraging)	There is open water adjacent to the western end of the BSA, and this species may use trees and structures within the BSA while foraging in the river. Therefore, there is potential for this species to forage in the BSA, but it is not expected to nest in the BSA.
*Empidonax traillii** Willow flycatcher	--	SE	The willow flycatcher is a common spring (mid-May to early June) and fall (mid-August to early September) migrant at lower elevations, primarily in riparian habitats, throughout the state exclusive of the North	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.

			coast. This species is found in meadows and seeps, riparian scrub, riparian woodland, and wetland habitats. This species requires moist brushy thickets, open second-growth, and riparian woodland, especially with willow and buttonbush.		
Empidonax traillii extimus Southwestern willow flycatcher	FE	SE	The southwestern willow flycatcher is found in extensive riparian thickets composed of native broadleaf species near surface water or saturated soil. This species' 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.	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.
*Eremophila alpestris actia** California horned lark	--	WL	The California horned lark is found in coastal regions, chiefly from Sonoma County to San Diego County. This species is also found in the main part of San Joaquin Valley and east to the foothills. The California horned lark is found in short-grass prairie, "bald" hills,	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.

			mountain meadows, open coastal plains, fallow grain fields, and alkali flats.		
*Falco columbarius** Merlin	--	S3S4/WL	The merlin is a winter migrant in California and breeds in Alaska and Canada. This species frequents open habitats at low elevation near water and tree stands. The species favors coastlines, lakeshores, and wetlands.	A (Nesting) HP (Foraging)	There is open water adjacent to the western end of the BSA, and this species may use trees and structures within the BSA while foraging in the river. Therefore, there is potential for this species to forage in the BSA, but it is not expected to nest in the BSA.
*Falco mexicanus** Prairie falcon	--	S4/WL	The prairie falcon is found in grasslands, shrubby deserts, shrub-steppe (a low rainfall grassland) and other open areas up to about 10,000 feet elevation. In the winter, the majority of this species are found in the Great Plains and Great Basin, where they feed mostly on other birds such as horned larks and meadowlarks. In the summer, this species eats mostly small mammals, such as ground squirrels, pikas, birds and insects. The prairie falcon nests on ledges, cavities, and crevices of cliff faces, or uses abandoned nests of eagles, hawks, or ravens.	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	Delisted	Delisted/FP	The American peregrine falcon	A	There is open water

*anatum** 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.	(Nesting) HP (Foraging)	adjacent to the western end of the BSA, and this species may use trees and structures within the BSA while foraging in the river. Therefore, there is potential for this species to forage in the BSA, but it is not expected to nest in the BSA.
*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.

*Ixobrychus exilis** Least bittern	--	SSC	Suitable breeding habitats for Least Bitterns include freshwater and brackish marshes with tall, dense emergent vegetation and clumps of woody plants over deep water. This species is restricted to dense reeds with permanent water and is capable of colonizing new areas. This species is a colonial nester in marshlands and borders of ponds and reservoirs which provide ample cover. Nests are usually placed low in tules, over water.	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.
*Lanius ludovicianus** Loggerhead shrike	--	SSC	The loggerhead shrike is found in semi-open country with lookout posts, such as wires, trees, and scrub. This species builds nests in thorny vegetation in semi-open terrain, from large clearings in wooded regions to open grassland or desert with a few scattered trees or large 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.
*Larus californicus** California gull	--	WL	The California gull is a fairly common nester at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades, and an abundant visitor to coastal and interior lowlands in nonbreeding season. Inland, this species	A (Nesting) HP (Foraging)	There are open areas within the BSA that 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

			frequents lacustrine, riverine, and cropland habitats, landfill dumps, and open lawns in cities. This species needs undisturbed, isolated islands for nesting.		expected to nest in the BSA.
*Melanerpes lewis** Lewis' woodpecker	--	S4	Lewis's Woodpeckers require open habitat with scattered or edge trees. Large open areas are necessary for foraging. Trees are used as hawking perches and for nesting. Large-diameter trees, either living, with partial decay, or dead, with more advanced decay, are especially valuable for nest sites. A diverse ground cover of low shrubs, grasses, and herbaceous plants that produce berries or provide habitat for insects is an important habitat component. Three distinct habitats are used by the species: open forest or grassland with scattered trees, riparian forests adjacent to open areas, and burns.	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.
*Nycticorax nycticorax** Black-crowned night heron	--	S4	The black-crowned night heron is found in marshes, swamps, riparian forests, riparian woodlands, and wetlands. The rookery sites are usually located near aquatic or emergent foraging sites within	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.

			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.		
*Pandion haliaetus** Osprey	--	WL	The osprey is found near ocean shores, bays, fresh-water lakes, and larger streams. This species builds large nests in tree-tops within approximately 15 miles of a body of water where fish are abundant.	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, within which 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*, *Distichlis*),	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.

			pickleweed (*Salicornia* spp.), and iodine bush (*Allenrolfea* spp.).		
Pelecanus occidentalis californicus California brown pelican	Delisted	Delisted/FP	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.
*Phalacrocorax auratus** Double crested cormorant	--	WL	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. This species feeds on fish and other aquatic life near the mid to upper levels of the water. In addition, this species 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**	FE	SSC	The short-tailed albatross	A	The habitat typically

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.	(Nesting) A (Foraging)	preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
*Piranga rubra** Summer tanager	--	SSC	The summer tanager is found in riparian forests and requires cottonwood-willow riparian habitat for nesting and foraging. This species is a summer resident of desert riparian habitats along the lower Colorado and in California deserts.	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 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.
*Progne subis** Purple martin	--	SSC	The purple martin is a summer migrant found in valley foothill and montane hardwood/hardwood-conifer,	A (Nesting) A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected

			coniferous habitats and riparian habitats. The purple martin nests in tall, old, isolated trees or snags in open forest or woodlands and in close proximity to a body of water. The species 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.	(Foraging)	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, willows, mesquite, 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 ridgeway's rail	FE	SE/FP	The light-footed clapper rail is found exclusively in salt marshes between Santa Barbara, California and San Quintin Bay, Baja California, Mexico. This species nets primarily in dense cordgrass, wrack 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.
Riparia riparia	--	ST	The bank swallow is a	A	The habitat typically

Bank swallow			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. There are no known nesting colonies within Napa County. 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. This species forages in locations with high insect biomass, typically in close proximity to water, riparian scrub, riparian woodland, and grasslands.	(Nesting) A (Foraging)	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. This species nests in old growth and north coast coniferous forest habitats in berry tangles, shrubs and conifers. This species prefers to	A (Nesting) HP (Foraging)	There are nectar producing flowers along the EB SR-91 sound wall in the BSA which could be used as foraging habitat, but there is no suitable nesting habitat. Therefore, there is potential for this species to forage in

			forage in locations with a high density of nectar producing flowers.		the BSA, but it is not expected to nest in the BSA.
*Setophaga petechia** Yellow warbler	--	SSC	The yellow warbler is found in riparian forest, riparian scrub, and riparian woodland habitats in close proximity to water. This species is frequently found nesting and foraging in willow shrubs and thickets, and can also be found in cottonwoods, sycamores, ash, and alders.	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. They 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.
*Spinus lawrencei** Lawrence's goldfinch	--	S3S4	The Lawrence's goldfinch is found in valley foothill hardwood and valley foothill hardwood-conifer habitats in northern California and desert riparian, palm oasis, pinon and juniper woodlands, and lower montane habitats in southern California. This species has a narrow breeding range within the woodlands of California and Baja California. This species	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.

			nests in dense foliage near water in open, arid woodlands with a preference to oaks, but may nest in chaparral. Even within their normal California range, the breeding status and distribution of these goldfinches is poorly understood.		
*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.
Sterna 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	A (Nesting) A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected

			lagoons, estuaries, or bays.	(Foraging)	to be in the BSA.
*Thalasseus elegans** Elegant tern	--	WL	The elegant tern is found near coastal waters along the Pacific Coast. Nests on low, flat, sandy islands on 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.
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 primarily occupies riparian habitats that typically feature dense cover within three to seven feet of the ground and a dense, stratified canopy.	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.
*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 nesting 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,	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.

			and in low marsh vegetation. The species was not recorded on the coastal slope of Los Angeles County during 1995 to 2000 atlas surveys.		
Crustaceans					
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					
*Catostomus santaanae** Santa Ana sucker	FT	S1	The Santa Ana sucker is endemic to Los Angeles basin south coastal streams. This species is a habitat generalist and prefers sand-rubble-boulder bottoms, cool, clear water, and algae	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-	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

			moving water with emergent vegetation.		
*Gila orcuttii** Arroyo chub	--	SSC	The arroyo chub is native to streams from Malibu Creek to San Luis Rey River basin. This species was introduced into streams in Santa Clara, Ventura, Santa Ynez, Mohave, and San Diego River basins. This species is found in slow water stream sections with mud or sand bottoms, and feeds heavily on aquatic vegetation and associated invertebrates.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Oncorhynchus mykiss irideus pop. 10* Steelhead - southern California DPS	FE	S1	Habitat includes low elevation lakes, slow-moving small to large rivers, sloughs, backwaters, sluggish sandy pools, and reservoirs (Lee et al. 1980, Moyle 2002, Page and Burr 2011). Spawning occurs in small streams or shallow 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.
Rhinichthys osculus ssp. 3* Santa Ana speckled dace	--	SSC	The Santa Ana speckled dace is found in perennial streams fed by cool springs that maintain summer water temperatures below 68 degrees Fahrenheit. This species is found in streams with gravel, cobble, sand, or boulder substrates. The Santa Ana speckled dace is found in the	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

			headwaters of the Santa Ana and San Gabriel Rivers and may be extirpated from the Los Angeles River system.		
Siphateles bicolor mohavensis Mojave tui chub	FE	SE	The Mojave tui chub is endemic to the Mojave River basin and is adapted to alkaline, mineralized waters. This species needs deep pools, ponds, or slough-like areas. This species also needs vegetation 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					
*Rana draytonii** California red-legged frog	FT	SSC	The California red-legged frog is found in lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Suitable habitat includes freshwater ponds or streams with calm stable water, and good water quality. Seasonal water is required for up to five months to allow for egg laying, hatching and metamorphosis.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Spea hammondii Western spadefoot	--	SSC	The western spadefoot is found in open areas with sandy or gravelly soils in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

			floodplains, alluvial fans, foothills, and mountains. Grasslands with shallow temporary pools are optimal habitats for this species. The western spadefoot 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.		
*Taricha torosa** Coast range newt	--	SSC	The coast range newt is found in coastal drainages from Mendocino County to San Diego County. This species nests along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis spp., and mesquite in wet forests, oak forests, chaparral, and grasslands. Breeding takes place in ponds, reservoirs, and streams. Terrestrial individuals will migrate up to 0.25 mile to upland habitat.	A	The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Mammals					
Antrozous pallidus Pallid bat	--	SSC	The pallid bat is found year-round in a variety of low-	HP	Bridge expansion joints and trees in the BSA could

			elevation habitats in most parts of California, including grasslands, shrub lands, woodlands, and forests. This species is thought to prefer open, dry habitats with rocky areas for roosting. This species day roosts in caves, crevices, mines, hollow trees, buildings, and bridges, and night roosts in more open sites, such as porches, open buildings and bridges. Roosts must protect bats from high temperatures, and this species will move deeper into cover if temperatures rise. This species is highly sensitive to disturbance.		provide suitable roosting habitat for this species. Therefore, there is potential for this species 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	HP	There are buildings, trees, and bridges in the BSA that could provide suitable roosting habitat for this species. Therefore, there is potential for this species to be in the BSA.

			buildings), trees, or tunnels. Because of their large size, this species typically requires a larger drop distance from roosting sites.		
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.
Lasiurus blossevillii Western red bat	--	SSC	The western red bat roosts in forests and woodlands from sea level up through mixed conifer forests. This species roosts primarily in trees, sometimes shrubs; roost sites often are in edge habitats adjacent to streams, fields, or urban areas. This species forages over a wide variety of habitats including grasslands,	HP	Trees in the BSA could provide suitable roosting habitat for this species. Therefore, there is potential for this species to be in the BSA.

			shrublands, open woodlands and forests, and croplands.		
Lasiurus cinereus Hoary bat	--	S4	The hoary bat is found in a wide variety of habitats and elevations in California. This species generally roosts in dense foliage of medium to large trees, and prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding.	HP	Trees in the BSA could provide suitable roosting habitat for this species. Therefore, there is potential for this species to be in the BSA.
Lasiurus xanthinus Western yellow bat	--	SSC	The western yellow bat is uncommon in California, and is found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species roosts in trees, particularly palms, and forages over water and among trees.	HP	There are palm trees in the BSA could provide suitable roosting habitat for this species. Therefore, there is potential for this species to be in the BSA.
*Microtus californicus stephensi** South coast marsh vole	--	SSC	The south coast marsh vole is found in tidal marshes in Los Angeles, Orange, and southern Ventura Counties. This species is found in wetland communities and associated grasslands in the immediate coastal zone.	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.	HP	Bridge expansion joints in the BSA could provide suitable roosting habitat for this species. Therefore, there is potential for this

			This species primarily roosts in crevices in caves, but also uses mines, and occasionally buildings and bridges.		species to be in the BSA.
Myotis yumanensis Yuma myotis	--	S4	The Yuma myotis is found in open forests and woodlands with sources of water over which to feed but has been documented in many urban areas. This species roosts in buildings, mines, caves, or crevices. The species also has been seen roosting in abandoned swallow nests and under bridges.	HP	Bridge expansion joints, swallow nests under the bridge, and trees in the BSA could provide suitable roosting habitat for this species. Therefore, there is potential for this species to be in the BSA.
*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	--	SSC	The pocketed free-tailed bat is found in pinyon-juniper	HP	Bridge expansion joints in the BSA could provide

bat			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.		suitable roosting habitat for this species. Therefore, there is potential for this species 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.	HP	Bridge expansion joints and trees in the BSA could provide suitable roosting habitat for this species. Therefore, there is potential for this species 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.
Sorex ornatus	--	SSC	The southern California saltmarsh shrew is found in	A	The habitat typically

salicornicus southern California saltmarsh shrew			coastal marshes in Los Angeles, Orange and Ventura Counties. This species requires dense salt marsh vegetation and woody debris for cover.		preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
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, 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] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Status: Federal Endangered (FE); Federal Threatened (FT); SH = possibly extirpated in the state; State Endangered (SE); State Threatened (ST); Fully Protected (FP); Federally Delisted (DL); Watch List (WL); State Species of Special Concern (SSC);S1 = critically imperiled, less than 1,000 individuals; S2 = imperiled, 1,000 to 3,000 individuals; S3 = vulnerable, 3,000 to 10,000 individuals; S4 = apparently secure within California, there is narrow habitat.

** = 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 CDFW 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 and species range was obtained from the following sources: (NatureServe, 2019), (CDFW, 2020), (Cornell Lab of Ornithology, 2019), (iNaturalist, 2019), (National Audubon Society, 2019), and (USFWS, 2020).