I-5 MANAGED LANES PROJECT

(RED HILL AVE TO ORANGE / LOS ANGELES COUNTY LINE)

Counties of Orange and Los Angeles, California
Cities of Irvine, Tustin, Santa Ana, Orange, Anaheim, Fullerton, Buena Park, La Mirada, and Santa Fe Springs

12-Ora-5 – PM 28.9/44.4, 26.9, 27.9, 28.4
07-LA-5 – PM 0.1, 0.3, 0.6, 1.7
12-Ora-55 – PM 7.4, 8.0, 8.7, 8.9, 9.2, 9.7 9.9, 10.2
12-Ora-57 – PM 11.0, 11.3, 11.9, 12.5, 12.7, 12.9, 13.5
12-Ora-91 – PM 0.4, 0.7, 1.1, 1.3, 1.4, 1.6, 1.8, 2.0, 2.2, 2.6, 2.8, 3.4

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NATURAL ENVIRONMENT STUDY (MINIMAL IMPACTS)

Prepared for

Caltrans

CALTRANS DISTRICT 12 ORANGE COUNTY

March 29, 2023

Natural Environment Study (Minimal Impacts)

I-5 Managed Lanes Project

(Red Hill Avenue to Orange/Los Angeles County Line)

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12-Ora-55 – PM 7.4, 8.0, 8.7, 8.9, 9.2, 9.7 9.9, 10.2
12-Ora-57 – PM 11.0, 11.3, 11.9, 12.5, 12.7, 12.9, 13.5
12-Ora-91 – PM 0.4, 0.7, 1.1, 1.3, 1.4, 1.6, 1.8, 2.0, 2.2, 2.6, 2.8, 3.4

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Prepared By: _____ Date 4/14/23

Ryan Villanueva, Senior Biologist
(951) 781-9310
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614

Approved By: Stephen Anderson Date 4/17/23

Stephen Anderson, Associate Environmental Planner/District Biologist
(657) 328-6166
Division of Environmental Analysis
California Department of Transportation
District 12, Orange County
1750 East 4th Street, Suite 100
Santa Ana, California 92705

Approved By: _____ Date 4/17/23

Alben Phung, Senior Environmental Planner
(657) 328-6054
Division of Environmental Analysis
California Department of Transportation
District 12, Orange County
1750 East 4th Street, Suite 100
Santa Ana, California 92705

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Acronyms and Abbreviations

Abbreviation	Definition
°F	degrees Fahrenheit
amsl	above mean sea level
BMPs	best management practices
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CHP	California Highway Patrol
CMS	changeable message sign
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CSMP	Construction Site Monitoring Program
CWA	Clean Water Act
DAR	direct-access ramp
DC	direct connector
DPS	Distinct Population Segment
EB	eastbound
EL	Express Lane
EMP	M2 Environmental Mitigation Program
EO	Executive Order
ETC	electronic toll collection
FAST Act	Fixing America's Surface Transportation Act
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
ft	foot/feet
GP	general purpose
HD	high definition
HOV	high-occupancy vehicle
I	Interstate
IPaC	USFWS Information for Planning and Consultation
JDSA	jurisdictional delineation study area
LOS	level of service
MBTA	Migratory Bird Treaty Act
M2 NCCP/HCP	Measure M2 Natural Community Conservation Plan / Habitat Conservation Plan

Abbreviation	Definition
ML	managed lane
MMPA	Marine Mammal Protection Act
NCCP/HCP	Natural Community Conservation Plan / Habitat Conservation Plan
NEPA	National Environmental Policy Act
NES(MI)	Natural Environment Study (Minimal Impacts)
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	NOAA's National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
OC/LA	Orange County/Los Angeles
OCTA	Orange County Transportation Authority
PM	Post Mile
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
proposed Project	I-5 Managed Lanes Project
ROW	right-of-way
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
sDPS	southern distinct population segment
SHS	State Highway System
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T&R	Traffic and Revenue
TMP	Transportation Management Plan
UC	Undercrossing
UPRR	Union Pacific Railroad
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMT	vehicle miles traveled
WB	westbound

1. INTRODUCTION

This Natural Environment Study (Minimal Impacts) (NES[MI]) has been prepared to support the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) documentation for the Interstate (I) 5 Managed Lanes Project (Red Hill Avenue in Orange County to 0.5 Mile North of the Orange/Los Angeles County Line) (proposed Project) in Los Angeles and Orange Counties, California. See Figure 1, Project Location. Please note that all figures are included in Appendix A.

1.1 Project History

I-5 is the main Interstate Highway on the West Coast of the United States (U.S.), running south to north from the U.S./Mexico border to the U.S./Canada border.

The southern Project limit is the section of I-5 that intersects with Red Hill Avenue south of State Route (SR) 55 in the city of Tustin. I-5 continues north through the cities of Santa Ana, Orange, Anaheim, Fullerton, Buena Park, and La Mirada and includes three major freeway-to-freeway interchanges at SR-55, SR-22/57, and SR-91. The northern Project limit is 0.5 mile north of the Los Angeles County line in the city of La Mirada. The existing high-occupancy vehicle (HOV) direct connectors (DCs) link the I-5 HOV facility with the SR-55, SR-57, and SR-91 HOV facilities. The first HOV lanes on I-5 opened in 1992 with HOV 2+ requirements and have been highly utilized. There are several HOV Direct Access Ramps (DARs) within the Project limits at Grand Avenue, Gene Autry Way, Disney Way, and Disneyland Drive.

I-5 currently has at least one HOV lane in each direction within the Project limits that is separated with limited ingress/egress buffer openings. In mid-2021, the construction of an additional HOV lane in each direction and removal of the existing northbound and southbound DARs at Main Street was completed within the section of I-5 south of SR-55 at Red Hill Avenue and SR-57.

1.1.1 Purpose and Need

The California Department of Transportation (Caltrans), District 12, is proposing managed lanes (ML) improvements in both directions on I-5. The improvements would modify the existing HOV lanes within the proposed Project limits to address operational deficiencies. The proposed Project limits on I-5 extend from Red Hill Avenue (Post Mile [PM] 28.9) to the Orange County/Los Angeles (OC/LA) County line (12-ORA-5 PM 44.4) in the cities of Irvine, Tustin, Santa Ana, Orange, Anaheim, Fullerton, Buena Park, La Mirada, and Santa Fe Springs.

The purpose of this Project is to improve the overall movement of people and goods along this section of I 5 by:

- Improving the ML network operations
- Improving mobility and trip reliability
- Maximizing person throughput by facilitating the efficient movement of bus and rideshare users
- Applying technology to help manage traffic demand

The need, or deficiency, of the Project is the existing I-5 HOV lanes between Red Hill Avenue and the OC/LA County line experience:

- HOV lane degradation (does not meet the federal performance standards)
- Demand that exceeds existing capacity
- Operational deficiencies

Four preliminary alternatives, including three build alternatives (Alternatives 2, 3, and 4) and the No Build Alternative, are under consideration and are described below.

1.2 Project Description

The build alternatives satisfy the need and purpose of the Project and are recommended to be the programmable Project alternative.

A discussion of the relevant proposed engineering features follows each alternative below.

1.2.1 Alternative 1—No Build

Alternative 1, the No Build Alternative, does not include improvements to the existing lane configurations for I-5. Under the No Build Alternative, no additional roadway improvements would occur. This alternative includes other projects on the financially constrained project list in the adopted Southern California Association of Governments (SCAG) 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) within the proposed Project limits on I-5 and the Preferred Plan in the Orange County Transportation Authority (OCTA) 2018 Long-Range Transportation Plan (LRTP) within the proposed Project limits.

1.2.2 Alternative 2—Build Alternative: Modify Existing HOV 2+ Lanes to HOV 3+ Lanes

Alternative 2 would maintain the existing lane configurations for I-5 with a modification of the minimum HOV-lane occupancy requirement from two-plus (2+) to three-plus (3+) passengers within the current HOV system in each direction between Red Hill Avenue and the OC/LA County line. As a result of this increase in the occupancy requirement and improved trip reliability through the Transportation System Management/Transportation Design Management (TSM/TDM) elements, it would promote and encourage public and private transit such as Bus Rapid Transit (BRT) and ridesharing. Under this alternative, no additional roadway improvements would occur. Additionally, two proposed park-and-ride facilities are being evaluated as part of Alternative 2 and would be constructed within the existing freeway right-of-way (ROW). Sign replacement and pavement delineation would also be implemented to meet the latest California Manual on Uniform Traffic Control Devices (CA MUTCD) standards.

1.2.2.1 Ramps

Physical modifications of the ramp geometry will not be required where the current HOV system is converted from 2+ to 3+ passengers; however, replacement of signage at DARs will be required accordingly for Alternative 2.

1.2.2.2 Impact to Structures

Alternative 2 would not impact existing structures or create new structures (e.g., bridges) as part of its proposed design.

1.2.2.3 Drainage and Water Quality

Drainage management measures would be included in Alternative 2 to address the impacts to drainage patterns associated with new construction of the park-and-ride facilities. Proposed major drainage design features would include: maintaining existing drainage flow patterns and incorporating existing drainage systems to the maximum extent practicable; providing drainage facilities that would accommodate future improvements; and providing drainage facilities to prevent and/or reduce substantial erosion or siltation on or off site.

Some of the existing systems may be abandoned or removed to accommodate construction of Alternative 2. Best management practices (BMPs) would be included to address stormwater requirements and treatment of the added impervious area created by Alternative 2.

1.2.2.4 Tolled Components

Alternative 2 would not include the implementation of any new tolling components as part of the proposed design.

1.2.2.5 Transportation Management Plan

Alternative 2 may be implemented in phases and/or segments and procured under one or more contracts, including the option of using design/build. Construction-related delays are anticipated during construction of Alternative 2.

In accordance with Caltrans Deputy Directive (60-R2), a Transportation Management Plan (TMP) has been prepared for Alternative 2 which includes strategies that, when implemented, would minimize Project-related construction and circulation impacts.

It is anticipated that lane closures would be required, and it may be necessary to temporarily close on/off-ramps and connectors during construction of Alternative 2.

Some of the key elements recommended in the TMP include the following: Public Information/ Public Awareness Campaign; Motorist Information Strategies; Incident Management; Construction Strategies; Demand Management; and Alternate Route Strategies.

Detailed detour plans, staging plans, and traffic handling plans would also be developed during the final design phase.

1.2.2.6 Construction Staging

As no additional construction would occur with Alternative 2, there would be no stage construction impacts associated with construction activities within the freeway mainline, which are limited to signage replacement and pavement delineators along the freeway mainline. Construction staging is anticipated for the development of the park-and-ride facilities to minimize impacts to existing traffic.

Stage construction concept plans are currently being developed. Should Alternative 2 be selected as the Preferred Alternative, detailed stage construction and detour plans would be developed during final design. Detailed stage construction plans and traffic handling plans would also be developed in the final design stage.

1.2.2.7 Right-of-Way Data

Additional ROW (e.g., full acquisition, partial acquisition, aerial easements, temporary construction easements) is not anticipated for the construction of Alternative 2.

1.2.2.8 Utility and Other Owner Involvement

Alternative 2 is not expected to have any impacts to surrounding utilities, as there are no proposed utility relocations associated with its proposed design.

1.2.2.9 Nonstandard Design Features (Design Standards Risk Assessment)

Alternative 2 would not impact existing nonstandard design features or create new nonstandard design features as part of the proposed design.

1.2.2.10 Sound Walls

Alternative 2 would not impact any existing sound walls as part of the proposed design.

1.2.2.11 Transportation System Management/Transportation Demand Management

Alternative 2 would not implement any new TSM/TDM measures or features beyond the ramp metering, changeable message signs (CMS), cameras, and traffic speed detection systems that already exist within the proposed Project limits.

1.2.2.12 Highway Planting

Existing planting and irrigation systems removed during construction of the Alternative 2 park-and-ride facilities would be replaced wherever space is available. Generally, existing vegetation in and around the park-and-ride areas would be replanted to the maximum extent practicable.

Should Alternative 2 be selected as the Preferred Alternative, planting design would be provided during the final design phase; would consider safety, maintainability, and aesthetic compatibility with adjacent urban communities; and would not deviate significantly from the existing planting theme.

1.2.2.13 Erosion Control

Alternative 2 would be required to comply with the terms and conditions in accordance with Attachment D of the *NPDES Statewide Construction General Permit* (SWRCB 2020), which includes a written site-specific Construction Site Monitoring Program (CSMP). The CSMP would include implementation of specific stormwater effluent monitoring requirements to ensure that the implemented BMPs are effective in preventing discharges from exceeding any of the water quality standards.

Erosion control measures would be implemented during construction as well as after completion of Alternative 2 construction in accordance with the requirements of the Santa Ana (Region 8) and Los Angeles (Region 4) Regional Water Quality Control Boards (RWQCBs) and the current statewide National Pollutant Discharge Elimination System (NPDES) Construction General Permit. During construction, potential construction site BMPs, such as temporary fiber rolls, temporary mulch, drainage inlet protection, concrete washout facilities, street sweeping, and hydroseeding, would be used to minimize erosion. All finished slopes would receive replacement planting or vegetative erosion control application.

Should Alternative 2 be selected as the Preferred Alternative, specific erosion control measures and construction site BMP design would be developed during final design. Preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) would be required during construction.

1.2.3 Alternative 3—Build Alternative: Convert Existing HOV Lanes to Express Lanes

Alternative 3 would convert the existing HOV lane to an Express Lane (EL) in each direction between Red Hill Avenue and SR-55; convert two existing HOV lanes to ELs in each direction between SR-55 and SR-57; and convert the existing HOV lane to an EL in each direction from SR-57 to the OC/LA County line. The typical cross-section consists of a 12-foot (ft) wide EL, a 2 to 4 ft buffer, 12 ft wide general-purpose (GP) lanes, 12 ft wide auxiliary lanes, a 4 to 26 ft wide inside shoulder, and a 10 ft wide outside shoulder and would be provided to accommodate the EL. One 12 ft weave lane is proposed at locations of ingress or egress. Additionally, two proposed park-and-ride facilities are being evaluated as part of Alternative 3 and would be constructed within the existing freeway ROW. Sign replacement and pavement delineation would also be implemented to meet the latest CA MUTCD standards.

1.2.3.1 Ramps

Alternative 3 would impact several existing ramps. The affected ramps and the proposed improvements are summarized in Tables 1 and 2, below. In general, several existing ramps would be shifted to accommodate outside widening by Alternative 3. Alternative 3 is not anticipated to impact system interchanges within the proposed Project limits. Within the proposed Project limits, ramp metering is incorporated into the existing local interchange on-ramps, except at the S. Anaheim Boulevard northbound on-ramp. Where ramp improvements affect ramp metering, any ramp metering equipment would be reestablished. Existing ramp meters and equipment would be reused where possible.

For the majority of locations, physical modifications of the ramp geometry will not be required where the HOV DC is converted to an ELs Connector; however, replacement of signage and addition of tolling equipment will be required accordingly. The incorporation of weave lanes required physical modifications of the ramp gore geometry where the HOV DC is converted to an ELs Connector at the northbound Gene Autry Way off-ramp, northbound Disney Way off-ramp, southbound Gene Autry Way off-ramp, and southbound Disneyland Drive off-ramp.

Table 1: Anticipated Impacts to On-Ramps within the Proposed Project Limits—Alternative 3

	Location	Post Mile (Approx.)	Ramp Improvements
1	NB SR-55 to NB I-5 Direct Connector	30.472	X
2	Grand Ave. SB Direct-Access On-Ramp	31.794	X
3	N. Main St. SB On-Ramp	32.953	X
4	SB SR-57 to SB I-5 Direct Connector	34.222	X
5	Gene Autry Wy. SB Direct-Access On-Ramp	35.949	X
6	Gene Autry Wy. NB Direct-Access On-Ramp	35.949	X
7	EB SR-91 to SB I-5 Direct Connector	41.928	X
8	WB SR-91 to NB I-5 Direct Connector	42.42	X
9	Auto Center Dr. NB On-Ramp	42.928	X
10	Artesia Blvd. SB On-Ramp	44.271	X
	Total Number of On-Ramp Improvements:		**10**

Notes: * Existing ramp metering to be relocated and/or upgraded to latest equipment requirements.
**Ramps metered separately before joining.

EB = eastbound
I = Interstate
NB = northbound
SB = southbound
SR = State Route
WB = westbound

Table 2: Anticipated Impacts to Off-Ramps within the Proposed Project Limits—Alternative 3

	Location	Post Mile (Approx.)	Ramp Improvements
1	Grand Ave. NB Direct-Access Off-Ramp	31.532	X
2	Penn Wy. SB Off-Ramp	32.521	X
3	NB I-5 to NB SR-57 Direct Connector	33.433	X
4	Gene Autry Wy. NB Direct-Access Off-Ramp	35.466	X
5	Gene Autry Wy. SB Direct-Access Off-Ramp	36.309	X
6	Anaheim Blvd. NB Direct-Access Off-Ramp	36.072	X
7	Disneyland Dr. SB Direct-Access Off-Ramp	38.439	X
8	NB I-5 to WB SR-91 Direct Connector	41.909	X
9	SB I-5 to EB SR-91 Direct Connector	42.545	X
10	Beach Blvd. SB Off-Ramp	43.680	X
11	Artesia Blvd. NB Off-Ramp	43.996	X
	Total Number of Off-Ramp Improvements:		**11**

EB = eastbound
I = Interstate
NB = northbound
SB = southbound
SR = State Route
WB = westbound

1.2.3.2 Impact to Structures

Alternative 3 would not create new structures (e.g., bridges) but would impact one existing retaining wall to accommodate widening the mainline to avoid ROW acquisition. The affected retaining wall structure and the proposed improvements are summarized in Table 3.

Table 3: Anticipated Retaining Wall Impacts within the Proposed Project Limits—Alternative 3

Location	Post Mile	Retaining Wall Improvements		Maximum Length of Extension (Feet)
		Rebuild (R) / New(N)	Type	
SB I-5, North of E. 17th St.	32.521	R*	Special	793

Notes: *Retaining Wall/Sound Wall.
I = Interstate
SB = Southbound

1.2.3.3 Drainage and Water Quality

Drainage management measures would be included in Alternative 3 to address the impacts to drainage patterns associated with new construction. Proposed major drainage design features would include: maintaining existing drainage flow patterns and incorporating existing drainage systems to the maximum extent practicable; providing drainage facilities that would accommodate future improvements; and providing drainage facilities to prevent and/or reduce substantial erosion or siltation on or off site.

Some of the existing systems may be abandoned or removed to accommodate the construction of Alternative 3. For widened sections of the pavement for Alternative 3, the existing edge drains would be replaced and reconnected to the drainage system; final connection and location details would be developed in the final design phase. BMPs would be included to address stormwater requirements and treatment of the added impervious area created by Alternative 3.

1.2.3.4 Tolled Components

Toll Operations Policies

The ELs would require single-occupant vehicles to pay a toll. The objective is to open the tolled ELs with some level of HOV occupancy free to encourage rideshare and transit usage. Operational adjustments to the tolled ELs may be implemented based on demand, rates of speed, traffic volumes, and to meet financial covenants, maintenance, and operational obligations. This would be determined based on the Traffic and Revenue (T&R) analysis, input from the public, and Caltrans business rules. Caltrans has the authority to set the occupancy policy on the I-5 ELs.

Key Caltrans business rules may include, but are not limited to:

- Toll-free travel for vehicles that meet minimum vehicle occupancy requirements, motorcycles, and buses.

- Qualifying carpools would continue to be able to access the lanes without a charge; trucks, other than two-axle light-duty trucks, would not be allowed.
- Toll/transit credits would be available to frequent ELs transit riders.
- Emergency vehicles may use the ELs toll-free when responding to incidents.
- Qualifying Clean Air Vehicles would be given a toll discount.
- Equity Assistance Plan.

Toll Operations and Maintenance

At this time, a process is in place to develop a formal maintenance plan as part of the Caltrans and FHWA systems engineering process. It is anticipated that Caltrans would maintain the physical infrastructure, such as pavement, striping, and median barriers, as well as perform general maintenance, such as trash and graffiti removal, paid for from toll revenues. It is anticipated that Caltrans would also manage the tolling infrastructure, while the customer service centers and other back-office support facilities would be contracted to others. However, final agreements and decisions on such responsibilities will be decided in the future phases of the Project.

Toll Revenue/Pricing Structure

Time-of-day pricing and dynamic pricing methods are being analyzed for their application as part of the proposed Project. Toll rates would be set in response to vehicle demand and would be adjusted as necessary to regulate volume in the ELs to maintain traffic flow at a predetermined level of service (LOS).

The pricing structure and details would be evaluated further during final design. No tolling amount or pricing decisions have been made at this time.

Toll Collection

The I-5 ELs facility is expected to use an all-electronic toll collection (ETC) system and would not accept cash or credit card payment on the facility. This would eliminate the need for customers to stop and pay tolls at traditional tollbooths. The ETC system would require customers to have pre-paid accounts with a tolling agency and mount a nonstop automated vehicle identification transponder or toll tag on the windshield of a registered vehicle. Tolls would be collected electronically by reading the transponder at highway speeds.

Toll Enforcement

Toll enforcement is an essential element of any successful EL system, ensuring that traffic laws are enforced, customers are charged the appropriate toll based on vehicle occupancy, and toll evasion is minimized. Toll enforcement would be accomplished through California Highway Patrol (CHP) patrols, electronic systems, and facility design. The CHP is anticipated to be contracted to conduct routine and supplemental enforcement services on the I-5 ELs facility, including toll infractions, HOV eligibility occupancy infractions, buffer crossing infractions, speeding, and other moving violations. The ETC system is intended to identify both vehicles that do not have a transponder as well as the declared transponder switch setting. Caltrans would incorporate an infrared occupancy detection system into the EL enforcement. The CHP currently provides

enforcement on all of the toll roads in southern California under several different institutional arrangements.

1.2.3.5 Transportation Management Plan

The same TMP described under Alternative 2 would be utilized as part of Alternative 3. This infrastructure is detailed in Section 1.2.5, above.

1.2.3.6 Construction Staging

It is anticipated that Alternative 3 would be designed and constructed in separate phases to facilitate Project delivery based on available funding. Each phase would include construction staging to minimize impacts to existing traffic. The same number of existing mainline lanes would be kept open to traffic during construction whenever feasible.

Stage construction concept plans are currently being developed. However, Alternative 3 would require ramp closures of less than 10 days to accommodate reconstruction of pavement at or near on- and off-ramps. Closures of successive on- or off-ramps would be avoided. Should Alternative 3 be selected as the Preferred Alternative, detailed stage construction and detour plans would be developed during final design. Detailed stage construction plans and traffic handling plans would also be developed in the final design stage.

1.2.3.7 Right-of-Way Data

Additional ROW (e.g., full acquisition, partial acquisition, aerial easements, temporary construction easements) is not anticipated for the construction of Alternative 3.

1.2.3.8 Utility and Other Owner Involvement

Underground and above-ground utility conflicts are anticipated within the proposed Project limits. The anticipated utility impacts within the proposed Project limits are summarized in Table 4.

Table 4: Anticipated Impacts to Utilities within the proposed Project Limits—Alternative 3

No.	Location	Utility Owner and/or Contact Name	Wet (W) / Dry (D)	Utility Type(s)	Utility Conflict Description	H*
1	N. Main St. SB On-Ramp	AT&T	D	Telecom	Roadway Conflict	N/A
2	North of N. State College Blvd.	PacBell	D	Telecom	Overhead Sign Conflict	N/A
3	North of N. State College Blvd.	SCE	W	Electric	Overhead Sign Conflict	N/A

Notes: H* denotes high-priority utilities based on Chapter 600 of the Caltrans Encroachment Permits Manual.
AT&T = American Telephone and Telegraph Company
Caltrans = California Department of Transportation
N/A = Not Applicable
PacBell = Pacific Bell Telephone Company
SB = southbound
SCE = Southern California Edison

Should Alternative 3 be selected as the Preferred Alternative, a "positive location" verification would be performed during the final design phase, which would include surveying and boring the area in order to verify the depth and specific locations of underground utilities in the proposed Project vicinity that may be in close proximity to or conflict with proposed improvements as determined from as-built plans and utility company records. Relocation or addition of towers are not anticipated for the existing overhead electrical lines.

1.2.3.9 Nonstandard Design Features (Design Standards Risk Assessment)

A listing of major existing nonstandard design features for Alternative 3 is included in Table 5, below.

Table 5: Design Standards Risk Assessment—Alternative 3

No.	Design Standard	Probability of Design Exception Approval (None, Low, Medium, High)
1	201.1 (Stopping Sight Distance Standards)*	Medium/High
2	301.1 (Lane Width)*	Medium
3	302.1 (Shoulder Width)*	Medium/High
4	305.1 (Median Width Freeways and Expressways-Urban)**	High
5	305.1(3)(a) (Median Width)*	High
6	309.1(3)(a) (Horizontal Clearances for Highways)*	Medium /High
7	504.7 (Minimum Weave Length)*	High

Notes: *Boldface
**Underline

1.2.3.10 Sound Walls

Alternative 3 would impact one existing sound wall. The affected sound wall and the proposed improvements are summarized in Table 6**.**

Table 6: Anticipated Sound Wall Impacts within the Proposed Project Limits—Alternative 3

Location	Post Mile	Sound Wall Improvements			Maximum Length of Extension (Feet)
		Rebuild (R) / New (N)	Extension	Removal	
SB I-5, North of E. 17th St.	32.521	R*			793

Notes: *Retaining Wall/Sound Wall.
I = Interstate
SB = southbound

1.2.3.11 Transportation System Management/Transportation Demand Management

TSM/TDM aims to improve traffic flow, promote travel safety, and increase transit usage and rideshare participation. The TSM/TDM measures included as part of Alternative 3 would add TSM/TDM techniques to existing features within the proposed Project limits.

The following TSM features would be incorporated into Alternative 3's proposed design:

- Ramp metering
- Intelligent Transportation Systems
- CHP observation and enforcement areas

The following TDM measures have been incorporated into Alternative 3:

- The EL use would be incentivized for carpool, transit users, electric and clean-emissions vehicles (e.g., discounted fare, partial or full subsidized fare).
- Potential excess toll revenue would be allocated to fund projects and programs to reduce vehicle miles traveled (VMT), such as:
  - Outreach and education regarding ridesharing, transit travel, and multimodal opportunities;
  - Outreach and education regarding alternative work schedule programs and telecommuting; and
  - Construction of two park-and-ride facilities.
- Generating sustainable funding to support ongoing operations and promoting transit equity programs.
- Alternative 3 would facilitate travel for commercial buses and tourist buses to and from tourist destinations within the proposed Project area.

1.2.3.12 Highway Planting

The same erosion control features described under Alternative 2 would be included as part of Alternative 3. These are detailed in Section 1.2.12, above. Generally, existing vegetation in and around the interchange areas would be replanted; however, due to limited space between the freeway improvements and ROW, planting replacement would not always be possible along the mainline.

1.2.3.13 Erosion Control

The same erosion control features described under Alternative 2 would be included as part of Alternative 3. These are detailed in Section 1.2.13, above.

1.2.4 Alternative 4—Build Alternative: Convert Existing HOV Lanes to Express Lanes and Construct Additional Express Lanes

Alternative 4 would convert the existing HOV lane to an EL in each direction between Red Hill Avenue and SR-55; convert two existing HOV lanes to ELs in each direction between SR-55 and

SR-57; convert the existing HOV lane to an EL in each direction from SR-57 to the OC/LA County line; and construct an additional EL in each direction between SR-57 and SR-91. The typical cross-section consists of 12 ft wide ELs, a 2 to 4 ft buffer, 12 ft wide GP lanes, 12 ft wide auxiliary lanes, a 4 to 14 ft wide inside shoulder, and a 10 ft wide outside shoulder and would be provided to accommodate the ELs. One 12 ft weave lane is proposed at locations of ingress or egress. Additionally, two proposed park-and-ride facilities are being evaluated as part of Alternative 4 and would be constructed within the existing freeway ROW. Sign replacement and pavement delineation would also be implemented to meet the latest CA MUTCD standards.

1.2.4.1 Ramps

Alternative 4 would impact some existing ramps within the proposed Project limits. The affected ramps and the proposed improvements are summarized in Tables 7 and 8, below. In general, some existing ramps would be shifted to accommodate outside widening by Alternative 4. Alternative 4 is not anticipated to impact system interchanges within the proposed Project limits. Within the proposed Project limits, ramp metering is incorporated into the existing local interchange on-ramps, except at the S. Anaheim Boulevard northbound on-ramp. Where ramp improvements affect ramp metering, any ramp metering equipment would be re-established. Existing ramp meters and equipment would be reused where possible.

Table 7: Anticipated Impacts to On-Ramps within the Proposed Project Limits—Alternative 4

	Location	Post Mile (Approx.)	Ramp Improvements
1	NB SR-55 to NB I-5 Direct Connector	30.472	X
2	Grand Ave. SB Direct-Access On-Ramp	31.794	X
3	N. Main St. SB On-Ramp	32.953	X
4	SB SR-57 to SB I-5 Direct Connector	34.222	X
5	Gene Autry Wy. SB Direct-Access On-Ramp	35.949	X
6	Gene Autry Wy. NB Direct-Access On-Ramp	35.949	X
7	W. Lincoln Ave. NB On-Ramp	38.913	X
8	EB SR-91 to SB I-5 Direct Connector	41.928	X
9	WB SR-91 to NB I-5 Direct Connector	42.42	X
10	Auto Center Dr. NB On-Ramp	42.928	X
11	Artesia Blvd. SB On-Ramp	44.271	X
	Total Number of Off-Ramp Improvements:		**11**

Notes: * Existing ramp metering to be relocated and/or upgraded to latest equipment requirements.
**Ramps metered separately before joining.
EB = eastbound
I = Interstate
NB = northbound
SB = southbound
SR = State Route
WB = westbound

Table 8: Anticipated Impacts to Off-Ramps within the Proposed Project Limits—Alternative 4

	Location	Post Mile (Approx.)	Ramp Improvements
1	Grand Ave. NB Direct-Access Off-Ramp	31.532	X
2	Penn Wy. SB Off-Ramp	32.521	X
3	NB I-5 to NB SR-57 Direct Connector	33.433	X
4	Gene Autry Wy. NB Direct-Access Off-Ramp	35.466	X
5	Gene Autry Wy. SB Direct-Access Off-Ramp	36.309	X
6	Anaheim Blvd. NB Direct-Access Off-Ramp	36.072	X
7	Disneyland Dr. SB Direct-Access Off-Ramp	38.439	X
8	Lincoln Ave. SB Off-Ramp	39.471	X
9	N. Euclid St. NB Off-Ramp	39.263	X
10	NB I-5 to WB SR-91 Direct Connector	41.909	X
11	SB I-5 to EB SR-91 Direct Connector	42.545	X
12	Beach Blvd. SB Off-Ramp	43.680	X
13	Artesia Blvd. NB Off-Ramp	43.996	X
	Total Number of Off-Ramp Improvements:		**13**

EB = eastbound
I = Interstate
NB = northbound
SB = southbound
SR = State Route

For the majority of locations, physical modifications of the ramp geometry would not be required where the HOV DC is converted to an ELs Connector; however, replacement of signage and the addition of tolling equipment would be required accordingly. The incorporation of weave lanes would require physical modifications at the ramp gore where the HOV DC is converted to an ELs Connector at the following locations:

- Southbound SR-57 connector
- Northbound SR-57 connector
- Southbound Gene Autry Way on-ramp
- Northbound Gene Autry Way off-ramp
- Northbound Disney Way off-ramp
- Southbound Gene Autry Way off-ramp
- Northbound Gene Autry Way on-ramp
- Southbound Disneyland Drive off-ramp

1.2.4.2 Impact to Structures

Alternative 4 would not create new structures (e.g., bridges) but would impact existing retaining walls and create a new retaining wall. Retaining walls would be provided, where required, to

minimize and avoid ROW acquisition. The affected retaining wall structures and the proposed improvements are summarized in Table 9.

Table 9: Anticipated Retaining Wall Impacts within the Proposed Project Limits—Alternative 4

Location	Post Mile	Retaining Wall Improvements		Maximum Length of Extension (Feet)
		Rebuild (R) / New(N)	Type	
SB I-5, South of E. 17th St.	32.521	R*	Special	793
Along NB I-5 to NB SR-57 Direct Connector	34.117	R	Special	479
Along SB SR-57 to SB I-5 Direct Connector	34.124	R	Special	446

Notes: *Retaining Wall/Sound Wall.
I = Interstate SB = southbound
NB = northbound SR = State Route

1.2.4.3 Drainage and Water Quality

The same drainage and water quality features described under Alternative 3 would be constructed as part of Alternative 4. These features are detailed in Section 1.3.3, above.

1.2.4.4 Tolled Components

The same tolling infrastructure described under Alternative 3 would be constructed as part of Alternative 4. This infrastructure is detailed in Section 1.3.4, above.

1.2.4.5 Transportation Management Plan

The same TMP described under Alternative 2 would be utilized as part of Alternative 4. This infrastructure is detailed in Section 1.2.5, above.

1.2.4.6 Construction Staging

Stage construction concept plans are currently being developed. However, Alternative 4 would require several 55-hour weekend closures of the SR-57 HOV Connectors to accommodate construction of retaining walls, the median barrier, and concrete pavement. Should Alternative 4 be selected as the Preferred Alternative, detailed stage construction and detour plans would be developed during final design. Detailed stage construction plans and traffic handling plans would also be developed in the final design stage.

1.2.4.7 Right-of-Way Data

Additional ROW (e.g., full acquisition, partial acquisition, aerial easements, temporary construction easements) is not anticipated for the construction of Alternative 4.

1.2.4.8 Utility and Other Owner Involvement

Underground and above-ground utility conflicts are anticipated within the proposed Project limits. The anticipated utility impacts within the proposed Project limits are summarized in Table 10.

Table 10: Anticipated Impacts to Utilities within the Proposed Project Limits—Alternative 4

No.	Location	Utility Owner and/or Contact Name	Wet (W) / Dry (D)	Utility Type(s)	Utility Conflict Description	H*
1	N. Main St. SB On-Ramp	AT&T	D	Telecom	Roadway Conflict	N/A
2	North of N. State College Blvd.	PacBell	D	Telecom	Overhead Sign Conflict	N/A
3	North of N State College Blvd.	SCE	W	Electric	Overhead Sign Conflict	N/A
4	N. Euclid St. NB Off-Ramp	City of Anaheim	W	Water	Roadway Conflict	N/A
5	N. Euclid St. SB	City of Anaheim	W	Water	Roadway Conflict	N/A
6	N. Euclid St. SB	Sprint	D	Telecom	Roadway Conflict	N/A
7	North of N. Euclid St. SB	Sprint	D	Telecom	Roadway Conflict	N/A

Notes: H* denotes high-priority utilities based on Chapter 600 of the Caltrans Encroachment Permits Manual.
AT&T = American Telephone and Telegraph Company
Caltrans = California Department of Transportation
N/A = Not Applicable
NB = Northbound
PacBell = Pacific Bell Telephone Company
SB = Southbound
SCE = Southern California Edison

Positive location would be performed for underground utilities in the proposed Project vicinity that may be in close proximity to or conflict with proposed improvements as determined from as-built plans and utility company records.

Relocation or addition of towers are not anticipated for the existing overhead electrical lines.

1.2.4.9 Nonstandard Design Features (Design Standards Risk Assessment)

A listing of major existing nonstandard design features for Alternative 4 is included in Table 11, below.

Table 11: Design Standards Risk Assessment—Alternative 4

No.	Design Standard	Probability of Design Exception Approval (None, Low, Medium, High)
1	201.1 (Stopping Sight Distance Standards)*	Medium/High
2	201.7 (Decision Sight Distance)**	High
3	301.1 (Lane Width)*	Medium
4	302.1 (Shoulder Width)*	Medium/High
5	305.1 (Median Width Freeways and Expressways-Urban)**	High
6	305.1(3)(a) (Median Width)*	High
7	309.1(3)(a) (Horizontal Clearances for Highways)*	Medium/High
8	504.2(2) (Design of Freeways Entrances and Exits)**	Medium
9	504.7 (Minimum Weave Length)*	High

Notes: *Boldface
**Underline

1.2.4.10 Sound Walls

The same impacts to sound walls described under Alternative 3 would occur as part of Alternative 4. These are detailed in Section 1.3.10, above.

1.2.4.11 Transportation System Management/Transportation Demand Management

The same TSM/TDM measures described under Alternative 3 would also be included as part of Alternative 4. These are detailed in Section 1.3.11, above.

1.2.4.12 Highway Planting

The same highway planting impacts described under Alternative 3 would occur as part of Alternative 4. These are detailed in Section 1.3.12, above.

1.2.4.13 Erosion Control

The same erosion control impacts described under Alternative 2 would occur as part of Alternative 4. These are detailed in Section 1.2.13, above.

1.3 Biological Study Area

A Biological Study Area (BSA) was established to evaluate potential direct and indirect Project-related effects on sensitive biological resources. The BSA encompasses the existing ROW within the Project limits, as well as an approximately 300 ft buffer around the ROW to account for potential indirect construction-related effects such as noise and vibration. Figure 2, Project Impact Area and Biological Study Area (Sheets 1–5), shows the location of the Project ROW and the 300 ft BSA buffer on HD aerial photographs taken in April 2022.

2. STUDY METHODS

2.1 Regulatory Requirements

2.1.1 Review of Jurisdiction Subject to Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act

The RWQCB is responsible for the administration of Section 401 of the Clean Water Act (CWA). The RWQCB also asserts authority over waters of the State under waste discharge requirements pursuant to the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The definition of waters under the jurisdiction of the State of California is broad and includes any surface water or groundwater, including saline waters, within the boundaries of the State. Waters that meet the definition of waters of the U.S. are also considered waters of the State, but the jurisdictional limits of waters of the State may extend beyond the limits of waters of the U.S. Isolated waters that may not be subject to regulations under federal law are considered to be waters of the State and regulated accordingly. While there is no formal statewide guidance for the delineation of nonwetland waters of the State, jurisdiction generally corresponds to the surface area of aquatic features that are at least seasonally inundated, and all areas within the banks of defined rivers, streams, washes, and channels, including associated riparian vegetation. Currently, each RWQCB reserves the right to establish criteria for the regulation of nonwetland waters of the State.

In order to be considered a jurisdictional wetland water of the State, an area must meet the definition set forth in the State Water Resources Control Board's (SWRCB) 2020 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, which defines wetlands as having (1) continuous or recurrent saturation of the upper substrate caused by groundwater or shallow surface water, or both; (2) hydric substrates; and (3) the area's vegetation is dominated by hydrophytes or lacks vegetation. Each characteristic must meet a specific set of mandatory wetland criteria.

The discharge of dredged or fill material (temporarily or permanently) into waters of the State (including wetlands) requires authorization from the RWQCB pursuant to Section 401 of the CWA or pursuant to the Porter-Cologne Act in the absence of waters of the U.S.

2.1.2 Review of Jurisdiction Subject to Section 404 of the Clean Water Act

The United States Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the U.S. These waters include wetlands and nonwetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. The USACE regulatory jurisdiction, pursuant to Section 404 of the CWA and current regulatory definitions, is founded on a direct intermittent or perennial hydrological surface connection between the water body in question and waters subject to interstate commerce during typical years. In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic must meet a specific set of mandatory wetland criteria.

The discharge of dredged or fill material (temporarily or permanently) into waters of the U.S. (including wetlands) requires authorization from the USACE pursuant to Section 404 of the CWA.

2.1.3 Federal Endangered Species Act

Under provisions of Section 7(a)(2) of the Federal Endangered Species Act (FESA), a federal agency that permits, licenses, funds, or otherwise authorizes a project activity must consult with the United States Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) if the activity may affect a listed endangered or threatened species or its designated critical habitat. The purpose of this consultation is to ensure that a federal agency's actions would not jeopardize the continued existence of any listed species or destroy or adversely modify critical habitat. Chapter 4 of this NES(MI) provides details regarding the Project and federally listed plant and wildlife species known to occur in the Project vicinity.

2.1.4 Migratory Bird Treaty Act

Native bird species and their nests are protected under the Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] 703–712). The MBTA states that all migratory birds and their parts (including eggs, nests, and feathers) are protected. The MBTA prohibits the take, possession, import, export, transport, sale, purchase, barter, or offering for sale, purchase, or barter, of any migratory bird or its eggs, parts, or nests, except as authorized under a valid permit.

This treaty with Canada, Japan, Mexico, and Russia makes it unlawful to pursue, hunt, take, capture, or kill migratory birds. Section 1439 of the Fixing America's Surface Transportation Act (FAST Act) provides a temporary conditional authorization of take under the MBTA for nesting swallows on certain bridges.

2.1.5 Executive Order 11990—Protection of Wetlands

Executive Order (EO) 11990 establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative.

2.1.6 Executive Order 13112—Invasive Species

On February 3, 1999, President Clinton signed EO 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 (FHWA) guidance issued August 10, 1999, directs the use of the State's noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

2.1.7 California Endangered Species Act

The California Endangered Species Act (CESA) is administered by the California Department of Fish and Wildlife (CDFW) and prohibits the "take" of plant and animal species identified as either

threatened or endangered in the State of California by the Fish and Game Commission (California Fish and Game Code Sections 2050–2097). "Take" is defined to mean hunt, pursue, catch, capture or kill or to attempt those activities. Sections 2080.1 and 2081 of CESA allow the CDFW to authorize exceptions to the "take" prohibition for State-listed threatened or endangered plant and animal species for purposes such as public and private development provided the take is incidental to an otherwise lawful activity and the take is minimized and fully mitigated.

2.1.8 Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code designate 37 fully protected species and prohibit the take or possession at any time of such species with certain limited exceptions.

2.1.9 Bird Protections

Sections 3503, 3503.5, and 3513 of the California Fish and Game Code protect birds. Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by code or any regulation made pursuant thereto. Section 3503.5 prohibits the take, possession, or destruction of any nests, eggs, or birds in the orders Falconiformes (New World vultures, hawks, eagles, ospreys, and falcons, among others) or Strigiformes (owls). Section 3513 prohibits the take or possession of any migratory nongame bird or part thereof, as designated in the MBTA. To avoid violation of the take provisions, it is generally required that Project-related disturbance at active nesting territories be reduced or eliminated during the nesting cycle.

2.1.10 Review of Jurisdiction Subject to Section 1600 of the California Fish and Game Code

Section 1600 et seq. of the California Fish and Game Code requires notifying the CDFW prior to any project activity that might (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material where it may pass into any river, stream, or lake. If, after this notification, the CDFW determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will need to be obtained. The CDFW has not defined wetlands for jurisdictional purposes. The CDFW generally includes within the jurisdictional limits of streams and lakes any riparian habitat present. Typical riparian habitat includes willows, alders, sycamores, cottonwoods, and other vegetation associated with stream banks or lake shorelines. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas. Wetlands not associated with a lake, stream, or other regulated areas generally are not subject to CDFW jurisdiction.

2.1.11 California Native Plant Protection Act

The California Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. The NPPA gives the CDFW the power to designate native plants as "endangered" or "rare" and prohibits the take of such plants, with certain exceptions.

2.1.12 Natural Communities Conservation Planning Act

The Natural Communities Conservation Planning Act was enacted to encourage broad-based planning to provide for effective protection and conservation of the State's wildlife resources while continuing to allow appropriate development and growth. Natural Community Conservation Plans (NCCPs) may be implemented that identify measures necessary to conserve and manage natural biological diversity within the planning area, while allowing compatible and appropriate economic development, growth, and other human uses.

These plans represent collaborative planning efforts among a variety of parties, including landowners, developers, local governments, and resource agencies. The plans typically cover a variety of habitat types and plant and animal species, designate conservation areas, and provide regulatory processes for plan signatories (and, in some cases, nonparticipating landowners such as Caltrans) for projects impacting covered resources within specific land designations. The southern portion of the BSA is located within the boundaries of the Orange County Central-Coastal Subregion NCCP/Habitat Conservation Plan (HCP) from SR-55 southward. The BSA is also within OCTA's Measure 2 NCCP/HCP (M2 NCCP/HCP), but it is not listed as a covered activity.

2.1.13 Senate Bill 857: Fish Passage

Senate Bill (SB) 857 was enacted into law January 1, 2006. This bill amends Article 3.5 of the Streets and Highways Code, detailing requirements for assessing and remediating barriers to fish passage at stream crossings along the State Highway System (SHS) that currently or historically supported anadromous fish. SB 857 requires all projects that affect an anadromous fish stream to perform a fish passage assessment in accordance with NMFS and CDFW (as well as Caltrans) guidelines prior to the commencement of project design and to submit these findings to the CDFW. If it is determined that a project structure does or would block fish passage, the project is required to remediate the blockage. Since this Project will only temporarily affect the Santa Ana River, which historically supported anadromous fish, a fish passage assessment or detailed survey is not warranted or discussed further.

2.1.14 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act of 1976 was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the U.S., by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983; and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

2.1.15 Orange County Central/Coastal Subregion Natural Community Conservation Plan and Habitat Conservation Plan

The Orange County Central/Coastal Subregion NCCP/HCP was approved in 1996 and serves as a comprehensive, multijurisdictional habitat-based conservation program pursuant to Section 10(a)(1)(B) of FESA and the Natural Community Conservation Planning Act of 1991, focusing on the conservation of multiple species and their associated habitats while allowing for economic

uses that meet social and economic needs in central and coastal areas of Orange County (County of Orange 1996a, 1996b, 1996c). The NCCP/HCP is utilized to allow participating jurisdictions to authorize the "take" of both the plant and wildlife species identified within the NCCP/HCP Plan Area. Regulation of the "take" of threatened, endangered, and rare species is authorized by the wildlife resource agencies (USFWS and CDFW), which allow "Take Authorization" for otherwise lawful actions (e.g., public and private development) in exchange for the assembly and management of a coordinated NCCP/HCP Reserve System. Because Caltrans did not contribute funding or lands to the development of the NCCP/HCP and Reserve System, it is considered to be a nonparticipating landowner. The NCCP/HCP provides these nonparticipating landowners with a different mitigation option, recognizing they are required under current law to assure that impacts to listed species resulting from activities on their lands are fully mitigated consistent with CESA and FESA. These nonparticipating landowners may satisfy the requirements of FESA and CESA with respect to listed coastal sage scrub species covered under the NCCP/HCP in any of the following ways: (1) on-site avoidance of take; (2) satisfaction of applicable FESA and CESA provisions under the consultation and permit provisions of these statutes; or (3) payment of a mitigation fee to the nonprofit reserve management corporation as provided for in the NCCP/HCP and Implementation Agreement.

Approximately 3.2 miles along both I-5 and SR-55 in the southernmost portion of the BSA are located with the NCCP/HCP Plan Area (see Figure 3, NCCP and M2 NCCP/HCP Areas). However, the areas west of the I-5/SR-55 interchange are located outside the NCCP/HCP Plan Area. Caltrans is the Lead Agency for the proposed Project, and the proposed Project is not a covered project under the NCCP/HCP. Therefore, only the portion of the BSA within the NCCP/HCP qualifies for coverage under the take authorization issued to participants and nonparticipants in the NCCP/HCP. Should Caltrans seek take coverage under the NCCP/HCP, it would do so under the process for nonparticipating landowners. The BSA is not located within any portion of the NCCP/HCP Reserve (target species habitat, biodiversity habitat, habitat linkage and restoration opportunity) or Non-Reserve Areas (existing use areas, special linkages, nonreserve open space, or policy plan areas).

Chapter 4 of this NES provides an analysis of special-status species in the context of the NCCP/HCP.

2.1.16 M2 Natural Community Conservation Plan/Habitat Conservation Plan (M2 NCCP/HCP)

In 2006, Orange County voters approved the renewal of Measure M, effectively extending the half-cent sales tax to provide funding for transportation projects and programs in the County. As part of the renewed Measure M (or Measure M2), a portion of the M2 freeway program revenues were set aside for the M2 Environmental Mitigation Program (EMP) to provide funding for programmatic mitigation to offset impacts from the freeway projects in the 13 freeway segments covered by Measure M2. In 2017, Measure M2 was rebranded as OC Go. OCTA prepared a NCCP/HCP (the M2 NCCP/HCP) as a mechanism to offset potential project-related effects on threatened and endangered species and their habitats in a comprehensive manner. This plan achieves higher-value conservation than what would be expected through project-by-project mitigation in exchange for a streamlined project review and permitting process for the Measure M2 freeway program as a whole. The M2 NCCP/HCP covers 13 listed and nonlisted species that

are currently listed as threatened or endangered or that may become listed during the permit term, that may be impacted by Covered Activities, and that will benefit from related conservation and management.

The BSA is not located within core habitat areas, linkages or priority conservation areas as identified in the M2 NCCP/HCP (Figure 3). The proposed Project is not listed as a covered activity and therefore does not have coverage for minimal take of M2 NCCP/HCP covered species. For covered activities, mitigation through the M2 NCCP/HCP is not required as it has already been completed through the establishment and operation of the more than 1,300 acres of OCTA wilderness preserves.

Section 4 of this NES(MI) provides an analysis of special-status species in the context of the M2 NCCP/HCP.

2.2 Studies Required

2.2.1 Literature Search

A literature review and records search was conducted in October 2022 to identify the existence or potential occurrence of sensitive or special-status biological resources (e.g., plant and animal species) in or within the vicinity of the improvements related to the build alternatives. Federal and State lists of sensitive species were examined and are included in Appendix B, Federal and State Lists of Sensitive Species. Current and historical aerial photographs were also reviewed on Google Earth (Google Earth 2022). Current database records that were reviewed included the following:

- USFWS Information for Planning and Consultation (IPaC). Website: https://ecos.fws.gov/ipac/ (accessed October 2022) (USFWS 2022).
- National Oceanic and Atmospheric Administration (NOAA). Website: https://archive.fisheries.noaa.gov/wcr/maps_data/california_species_list_tools.html (accessed October 2022) (NOAA 2022).
- CDFW California Natural Diversity Database (CNDDB), Rarefind 5. California 7.5-minute United States Geological Survey (USGS) quadrangles searched: *Anaheim, Baldwin Park, Black Star Canyon, El Monte, El Toro, La Habra, Laguna Beach, Long Beach, Los Alamitos, Los Angeles, Newport Beach, Orange, Prado Dam, San Juan Capistrano, Seal Beach, South Gate, Tustin, Whittier and Yorba Linda* (accessed October 2022) (CDFW 2022b).
- California Native Plant Society (CNPS), Rare Plant Program. Inventory of Rare and Endangered Plants (online edition, v9-01 1.5). Website: http://www.rareplants.cnps.org. California 7.5-minute USGS quadrangles searched: *Anaheim, Baldwin Park, Black Star Canyon, El Monte, El Toro, La Habra, Laguna Beach, Long Beach, Los Alamitos, Los Angeles, Newport Beach, Orange, Prado Dam, San Juan Capistrano, Seal Beach, South Gate, Tustin, Whittier and Yorba Linda* (accessed October 2022) (CNPS 2022).

Prior biological resources survey data and environmental reports prepared for projects at or near the proposed Project location were also reviewed.

2.2.2 Survey Methods

On-site field investigations were conducted from July through October 2022 to identify existing vegetation communities, suitable habitats for special-status species, potential jurisdictional waters, and other biological resources of concern. Based on the literature review and initial field investigations, field surveys were completed as follows:

- **General Habitat Suitability Survey:** LSA biologists noted wildlife species and habitat conditions within the BSA during the course of general biological surveys conducted in July and August 2022, as well as during the focused surveys described below and conducted until October 2022. All plant and wildlife species observed during the surveys were documented and are included in Appendix C, Plant and Animal Species Observed.
- **Vegetation/Natural Communities:** Vegetation/natural communities and land cover types existing within the BSA were mapped and classified based on existing conditions at the time of the surveys using the habitat classes described in the *Methods Used to Survey the Vegetation of Orange County Parks and Open Space Areas and the Irvine Company Property, developed for the County of Orange Environmental Management Agency and Environmental Planning Division* (Jones & Stokes Associates, Inc. 1993) (see Table 13, in Chapter 3, below).
- **Bat Habitat Suitability Assessment Survey:** Concurrent with the general habitat suitability survey, a bat habitat suitability assessment was conducted within the BSA during daytime hours. This survey was conducted to ascertain whether suitable bat roosting habitat was present and was focused on structures that potentially support bat roosting habitat. The survey was conducted within the typical maternity roosting season.
- **Special-Status Plant Species Surveys:** LSA biologists conducted site visits to survey for special-status plant species potentially occurring within the BSA on August 1; September 1, 7, 16, 28, and 30; and October 14, 20, and 28, 2022. While the primary emphasis was on locating and mapping special-status plant species, LSA biologists conducted an inventory of all vascular plant species observed within the BSA during these surveys.
- **Jurisdictional Delineation:** A jurisdictional delineation was conducted in accordance with approved methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (USACE 2008), the USACE 1987 *Corps of Engineers Wetland Delineation Manual* (USACE 1987), the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2020), and other relevant agency guidelines. LSA Biologist Jeremy Rosenthal conducted the fieldwork for the jurisdictional delineation on August 1, September 1, 7, 16, 28, and 30, October 20, 2022. Additional fieldwork was conducted by Lonnie Rodriguez and Jessica Lieuw on October 13 and 14, 2022, and by Jeremy Rosenthal and Lonnie Rodriguez on October 28, 2022. The jurisdictional delineation study area (JDSA) covered herein includes the Caltrans ROW and extends out to a 300 ft buffer along the portions of I-5, SR-22, SR-55, SR-57, and SR-91 corridors associated with the Project limits. The JDSA is the same as the BSA and was surveyed on foot for both federal and State jurisdictional areas. Areas of potential jurisdiction were evaluated according to the most current regulatory criteria and guidance. A Jurisdictional Delineation Report was prepared to document the findings of the jurisdictional delineation. Refer to Appendix D, Jurisdictional Delineation, for these details.

2.3 Personnel and Survey Dates

Table 12 lists the survey data, including the survey type, date(s), and biologist(s) who conducted the various surveys within the BSA. Representative site photographs taken during the course of fieldwork are included as Appendix E, Representative Site Photographs.

Table 12: Survey Dates and Personnel

Survey Type	Survey Date(s)	Survey Personnel
General Habitat Suitability Survey	July 26 and 27 and August 1, 2022	Jeremy Rosenthal
Bat Habitat Suitability Assessment	July 26 and 27 and August 1, 2022	Jessica Lieuw, Jill Carpenter
Special-Status Plant Species Surveys	August 1; September 1, 7, 16, 28, and 30; and October 14, 20, and 28, 2022	Jeremy Rosenthal
Jurisdictional Delineation	August 1; September 1, 7, 16, 28, and 30; and October 13, 14, 20, and 28, 2022	Jessica Lieuw, Jeremy Rosenthal, Lonnie Rodriguez

Source: Compiled by LSA Associates, Inc. (2022).

The biologists involved in the field surveys are well versed in all habitat types found within the BSA and are authorized by the CDFW and the USFWS to conduct surveys for and monitor special-status species that occur within the vicinity of the BSA, including amphibians, birds, roosting bats, plants, reptiles, and mammals.

2.4 Agency Coordination and Professional Contacts

The following agency coordination has been conducted at the time of preparation of this NES(MI):

- **National Oceanic and Atmospheric Administration Fisheries Service – Long Beach (NOAA Fisheries):** Official species list received October 18, 2022.
- **United States Fish and Wildlife Service – Carlsbad (USFWS):** Unofficial USFWS species list received October 18, 2022.

The build alternatives are designed to avoid impacts to listed plant and animal species, and no adverse impacts to listed species are proposed by the build alternatives. If it is determined that the build alternatives may adversely affect a listed species, the appropriate resource agency (or agencies) would be contacted prior to construction activities. An effects determination was made for each of the listed species on the NOAA and USFWS species lists as part of agency coordination and is included in Section 5.1 of this document.

Discharges of fill material within jurisdictional aquatic resources would result from the build alternatives. Due to the anticipated discharge of fill within jurisdictional aquatic resources, coordination with USACE, RWQCB, and CDFW will be required, and regulatory permits will likely be required from these agencies prior to the start of construction activities. An analysis of the build alternatives' impacts on jurisdictional aquatic resources and regulatory permits required are included in Section 4.1.2 of this document.

2.5 Limitations That May Influence Results

The collection of biological field data is normally subject to environmental factors that cannot be controlled or reliably predicted. Consequently, the interpretation of field data must be conservative and must consider the uncertainties and limitations necessarily imposed by the

environment. It should be noted that most areas surveyed are adjacent to I-5 (and other paved areas) and are subject to regular anthropogenic disturbance and maintenance; therefore, conditions are subject to change throughout any given year. Annual rainfall was also lower than average for the 2020–2021 rainy season, which may account for the absence of some special-status plant species that are known to occur within the vicinity of the BSA. However, due to the experience and qualifications of the consulting biologists involved in the surveys and the number of prior biological resources surveys conducted in and adjacent to the BSA, this limitation is not expected to severely influence the results or substantially alter the findings.

In addition, the results of the biological resource surveys are limited where access was not available or safe. When possible, binoculars were used where access was unavailable. Although information was gathered from the entire BSA, Project impacts discussed in this report are considered for biological resources that fall within the footprint of the build alternatives and in adjacent areas that may be directly or indirectly impacted by the build alternatives. Project plans are subject to change. Please note that any change in the plans for the build alternatives could affect the conclusions discussed in this NES(MI).

3. RESULTS: ENVIRONMENTAL SETTING

As described in *The Jepson Manual* (Baldwin et al. 2012), the BSA is located in the South Coast subregion of the Southwestern California region of the California Floristic Province. The South Coast subregion is characterized by valleys and small hills extending from the coast inland to the foothills of the Transverse and Peninsular Mountain Ranges. Much of the subregion is extensively developed with urban, suburban, and agricultural uses. The natural vegetation of the subregion consists primarily of chaparral, coastal sage scrub, annual grasslands, and some riparian scrub and woodland. Much of the natural vegetation occurs in scattered, often fragmented patches on hills or in other areas not easily developed and/or protected under regional or local land use plans. Specifically, the Project is located in central and northern Orange County within extensively developed and maintained areas along portions of I-5.

3.1 Description of the Existing Biological and Physical Conditions

3.1.1 Study Area

The BSA includes portions of I-5 and developed and undeveloped portions adjacent to I-5 as shown on Figure 2 (where direct impacts would occur) as well as a minimum 300 ft buffer to account for indirect impacts related to the build alternatives such as temporary noise and vibration, along with proposed access routes. The BSA is located in Orange County, within the USGS 7.5-minute series topographic quadrangles of *Anaheim*, *Los Alamitos*, *Orange*, *Tustin* and *Whittier, California*.

3.1.2 Physical Conditions

Much of the BSA consists of urban development and other disturbed sites adjacent to a busy freeway. Prominent or natural aquatic resources (e.g., rivers, creeks, or wetlands) within the BSA include the Peters Canyon Wash, El Modena-Irvine Channel, Santiago Creek, Bitterbrush Channel, Santa Ana River, Carbon Creek, Fullerton Creek, Coyote Creek, and La Cañada Verde Creek. Undeveloped areas within the BSA are a mix of natural vegetation communities and pockets of ornamental vegetation and ruderal areas along I-5 and surrounding residential and commercial developments.

Vegetation communities or land cover types in the BSA include freshwater marsh, riverine, streambed, developed above-riverine below, developed above-streambed below, bare ground, landscaped, riprap, ruderal, and developed.

Elevations in the BSA range from approximately 45 ft above mean sea level (amsl) to 170 ft above amsl. The topography within the BSA is relatively flat with some gently sloping terrain.

The climate is classified as Mediterranean (i.e., arid climate with hot, dry summers and moderately mild, wet winters). The average annual precipitation is approximately 14.6 inches. Although most of the precipitation occurs from November through May, thunderstorms may occur at all times of the year and can cause extremely high precipitation rates. Average annual temperatures typically range between 55 and 77 degrees Fahrenheit (°F).

The BSA is located within the Coyote Creek-San Gabriel River, La Mirada Creek, Brea Creek-Coyote Creek, Fullerton Creek, Carbon Creek, Anaheim Bay, Walnut Canyon-Santa Ana River, Lower Santiago Creek, Greenville Banning Channel-Santa Ana River, Lower San Diego Creek and Peters Canyon Wash Watersheds. Soil types vary throughout the BSA, and previously undisturbed soils are absent from the BSA.

3.1.3 Biological Conditions in the Biological Study Area

The BSA primarily consists of developed areas associated with I-5 and adjacent developed areas consisting of residential, commercial, and industrial uses. Undeveloped areas adjacent to I-5 contain a limited number of vegetation types and land covers. Prominent vegetation types and land uses within the BSA are discussed in the subsection below and are shown on Figure 4, Vegetation and Land Use Map (Sheets 1–32).

3.1.3.1 Vegetation/Natural Communities

Natural communities and land cover types existing within the BSA were mapped and classified based on existing conditions at the time of the surveys using the classifications described in the *Methods Used to Survey the Vegetation of Orange County Parks and Open Space Areas and the Irvine Company Property, developed for the County of Orange Environmental Management Agency and Environmental Planning Division* (Jones & Stokes Associates, Inc. 1993) (see Table 13, below).

Table 13: Vegetation Communities and Land Cover Types Mapped within the BSA

Vegetation	Acreage Total
Bare Ground	49.51
Developed	2,876.68
Developed Above-Riverine Below	5.64
Developed Above-Streambed Below	1.81
Freshwater Marsh	0.04
Landscaped	266.11
Riprap	0.60
Riverine	22.30
Ruderal	81.01
Streambed	25.37
TOTAL	**3,329.07**

Source: LSA Associates, Inc. (2022), calculated using GIS software.
BSA = Biological Study Area
GIS = geographic information system

Detailed descriptions of each natural community and land cover type identified in the BSA are provided below.

- **Bare Ground:** Areas classified as bare ground are not developed and lack vegetation. Bare ground occurs throughout the BSA.
- **Developed Above-Riverine Below:** Areas classified as developed above-riverine below within the BSA consist of areas where riverine is located under a developed area (bridge) and

generally lack vegetative cover. Developed above-riverine below land cover occurs in the same areas as riverine within the BSA.

- **Developed Above-Streambed Below:** Areas classified as developed above-streambed below within the BSA consist of areas where streambed is located under a developed area (bridge) and generally lack vegetative cover. Developed above-streambed below land cover occurs in the same areas as several of the streambed areas within the BSA.
- **Developed Areas:** Areas classified as developed within the BSA consist of buildings, roadways, and other paved areas that generally lack vegetative cover. Developed land cover occurs throughout the BSA.
- **Freshwater Marsh:** Freshwater marsh solely occurs to the east of I-5 near the northbound Artesia Boulevard off-ramp. Plants within this habitat type include broadleaf cattail (*Typha latifolia*), narrowleaf cattail (*Typha angustifolia*), and green willow herb (*Epilobium ciliatum*).
- **Landscaped Vegetation:** Areas classified as ornamental consists of introduced trees, shrubs, and flowers, with turf grass and other nonnative grasses commonly occurring in the understory. Within the BSA, introduced ornamental plants mainly consist of ice plant species (*Carpobrotus edulis*), along with eucalyptus trees (*Eucalyptus* spp.), pepper trees (*Schinus molle and Schinus terebinthifolia*), pine trees (*Pinus* sp.), carrotwood (*Cupaniopsis anacardioides*), various palm species, and other introduced street trees and shrubs. Ornamental landscaping occurs throughout the BSA.
- **Riprap:** Areas classified as riprap within the BSA consist of installed rock and lack vegetative cover. Riprap land cover occurs in two locations associated with and adjacent to the Santa Ana River within the BSA.
- **Riverine:** The Santa Ana River and Santiago Creek, two earthen-bottom channels within the BSA, are located in the central portion of the Project site boundary. Within the BSA, the Santa Ana River is devoid of vegetation and Santiago Creek supports patches of common beggar's tick *(Bidens pilosa*), Spanish false fleabane (*Pulicaria paludosa*), common sow thistle (*Sonchus asper*), rough cocklebur (*Xanthium stramonium*), coast live oak (*Quercus agrifolia*), and California sycamore (*Platanus racemose*).
- **Ruderal Vegetation:** Areas classified as ruderal/disturbed within the BSA have been disturbed by either natural or human causes, particularly along road shoulders. Ruderal areas are dominated by weedy or pioneering plant species. Plants within this habitat type include black mustard (*Brassica nigra*), bristly ox-tongue (*Helminthotheca echioides*), prickly lettuce (*Lactuca serriola*), Russian thistle (*Salsola tragus*), red brome, and ripgut brome.
- **Streambed:** Area classified as streambed included La Cañada Verde Creek, Coyote Creek, Fullerton Creek, Carbon Creek, Crescent Retarding Basin, Bitterbrush Channel, El Modena-Irvine Channel, and Peters Canyon Wash, as well as upstream drainage features tributary to them. These features primarily consist of concrete-lined stormwater control channels, drainage channels, and earthen swales, which occur throughout the BSA.

3.1.3.2 Plant Species

Most of the 90 plant species observed within the BSA during the July through October 2022 field surveys are characteristic of those found throughout most of Southern California (a complete list

of observed or otherwise detected plant species is provided in Appendix C). No special-status plant species were observed during the field surveys.

3.1.3.3 Animal Species

Most animal species observed within the BSA during the July through October 2022 field surveys are characteristic of those found throughout most of Southern California and include 17 bird, 2 reptile, and 3 mammal species (a complete list of observed or otherwise detected animal species is provided in Appendix C). One species identified during the literature review, great blue heron (*Ardea herodias*), was observed during the field survey. No other special-status species were observed during the field survey.

3.1.3.4 Aquatic Resources

Delineated aquatic resources within the JDSA include 132 features that range from constructed, earthen-bottom stormwater control features (e.g., roadside drainages) to vegetated coastal wetlands. Of the 132 features delineated within the JDSA, 76 features may be subject to USACE, RWQCB, and CDFW jurisdiction as nonwetland waters of the U.S., nonwetland waters of the State, and streambed, respectively. Features 35 and 84, as shown on Figure 5, Jurisdictional Aquatic Resources Impact Map – Alternative 3 (Sheets 1–32) and Figure 6, Jurisdictional Aquatic Resources Impact Map – Alternative 4 (Sheets 1–32), satisfy the jurisdictional wetlands criteria and, therefore, are subject to USACE jurisdiction as wetlands under Section 404 of the CWA and as wetland waters of the State under the Porter-Cologne Act. A total of 49 features delineated within the JDSA were found to be nonjurisdictional. Five jurisdictional features delineated at the time of the jurisdictional delineation were found to wholly exist outside of the 300 ft buffer area and were excluded from inclusion. The Jurisdictional Delineation Report provides further information regarding these delineated jurisdictional features and is included as Appendix D.

3.1.3.5 Invasive Species

Exotic species are typically most numerous in disturbed habitats adjacent to roads and developed areas, and frequently border areas of ornamental landscaping. Nonnative plant species occur within the plant communities throughout the BSA, largely in areas that have been disturbed by human uses and/or development. There were 31 nonnative plants occurring on the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory identified in the BSA. Invasive species that have substantial ecological effects are given a moderate or high rating. In total, 17 invasive plant species with a moderate or high Cal-IPC rating were identified in the BSA (see Table 14, below).

3.1.4 Habitat Connectivity

Wildlife movement of both small species (e.g., reptiles and small mammals) and larger species (e.g., coyotes [*Canis latrans*]) are expected to be limited to drainage features within the BSA due to the general lack of undeveloped lands. Vegetated areas within the BSA have no connections to contiguous undeveloped lands or open space. The BSA contains 10 substantial drainage features—La Canada Verde Creek, Coyote Creek, Fullerton Creek, Carbon Creek, Crescent Retarding Basin, Santa Ana River, Bitterbrush Channel, Santiago Creek, El Modena-Irvine

Table 14: Cal-IPC Rated Moderate and High Species within the BSA

Species Scientific Name	Species Common Name	Cal-IPC Rating[1,2]
Arundo donax	Giant reed	High
Cortaderia sp.	Pampas grass	High
Carpobrotus edulis	Hottentot-fig	High
Hedera helix	English ivy	High
Avena fatua	Wild oat	Moderate
Brassica nigra	Black mustard	Moderate
Bromus diandrus	Ripgut brome	Moderate
Centaurea melitensis	Maltese star thistle	Moderate
Cynodon dactylon	Bermuda grass	Moderate
Hordeum murinum	Mouse barley	Moderate
Nicotiana glauca	Tree tobacco	Moderate
Pennisetum setaceum	African fountain grass	Moderate
Ficus carica	Edible fig	Moderate
Gazania linearis	Treasureflower	Moderate
Lythrum hyssopifolia	Hyssop loosestrife	Moderate
Schinus terebinthifolius	Brazilian peppertree	Moderate
Washingtonia robusta	Mexican fan palm	Moderate

Source = LSA Associates, Inc. (2022).

[1] High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

[2] Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, although establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

BSA = Biological Study Area Cal-IPC = California Invasive Plant Council

Channel, and Peters Canyon Wash—that may be used for movement by urban wildlife species such as raccoons (*Procyon lotor*), opossums (*Didelphis virginiana*), or similar species that live in urban environments. However, within the BSA, La Canada Verde Creek, Coyote Creek, Fullerton Creek, Bitterbrush Channel, El Modena-Irvine Channel, and Peters Canyon Wash are entirely concrete-lined, Carbon Creek is rock/riprap-lined, the Santa Ana River and Crescent Retarding Basin are a mix of unvegetated sandy soils and the Santa Ana River is rock/rip-rap lined, and Santiago Creek is a mix of vegetated and unvegetated sandy soils. All 10 drainages are maintained to some extent, with La Cañada Verde Creek, Coyote Creek, Fullerton Creek, Carbon Creek, Crescent Retarding Basin, Santa Ana River, Bitterbrush Channel, El Modena-Irvine Channel, and Peters Canyon Wash maintained relatively free of vegetation. Therefore, these channels are considered to have low functions and values to wildlife movement. No other drainages, riparian vegetation, or other commonly utilized corridors for wildlife movement occur within the BSA.

The southernmost portion of the BSA is located within the Orange County Central-Coastal Subregion NCCP/HCP, but the BSA does not contain habitat known to be occupied by species covered under the NCCP/HCP due to the abundance of development. The BSA does not contain any NCCP/HCP designated habitat linkages. The BSA is not located within and/or along core habitat areas or priority conservation areas identified in the M2 NCCP/HCP. In addition, the BSA does not correspond to any natural landscape blocks or essential connectivity areas, but the Santa

Ana River within the BSA contains an identified potential riparian connection and small natural areas (<2,000 acres), as documented in the California Essential Habitat Connectivity Project report (Spencer et al. 2010). There are also several isolated natural areas small within or adjacent to the BSA that consist of relatively small urban parks surrounded by development. The small isolated natural areas do not connect with natural landscape blocks, essential connectivity areas or potential riparian connections. Wildlife occupying urban areas, similar to those found in the BSA, are known to move using drainage channels; however, there are no designated movement corridors within the BSA.

3.1.4.1 Fish Passage

Caltrans is required by SB 857 to construct projects without presenting barriers to fish passage or to remediate existing barriers. There is no essential fish habitat or critical habitat for any fish species located within the BSA. Potentially suitable habitat for anadromous fish is limited to Coyote Creek, La Cañada Verde Creek/La Mirada Creek, and Peters Canyon Wash within the BSA as they are the only perennial waterbodies within the BSA; however, they lack suitable substrate as they are concrete-lined. Coyote Creek, Carbon Creek, Santa Ana River, and Santiago Creek do not provide suitable habitat for anadromous fish as they are ephemeral and lack suitable substrate for spawning. However, it should be noted that CDFW considers the Santa Ana River a historic steelhead stream subject to fish passage analysis. The build alternatives do not propose any work within the perennial waterbodies within the BSA, and no barriers to fish passage within these waterbodies would result from implementation of the build alternatives. Therefore, a fish passage analysis is not warranted.

3.2 Regional Species and Habitats and Natural Communities of Concern

For the purposes of this NES(MI), special-status species are considered to be those listed under FESA and/or CESA, California Fully Protected Species, animal species designated as “California Species of Special Concern” and “California Special Animals” by CDFW, and plant species with a California Rare Plant Rank (CRPR) of 1, 2, or 3. All of the plants constituting CRPRs 1A, 1B, 2A, and 2B are intended to meet the status definitions of “threatened” or “endangered” in CESA and the California Fish and Game Code, and are considered by the CNPS to be eligible for State listing. At the discretion of the CEQA Lead Agency, impacts to these species may be analyzed as such, pursuant to *State CEQA Guidelines* Sections 15125(c) and 15380. Plants in Rank 3 (limited information; review list), Rank 4 (limited distribution; watch list), or that are considered Locally Unusual and Significant may be analyzed under CEQA if there is sufficient information to assess potential significant impacts. It should also be noted that “California Species of Special Concern” and “California Special Animal” are administrative designations made by the CDFW and carry no formal legal protection status. However, Section 15380 of the *State CEQA Guidelines* indicates that these species should be included in an analysis of Project impacts if they can be shown to meet the criteria of sensitivity outlined therein. Table 15, below, lists special-status species evaluated for potential occurrence in the BSA.

There is one coastal and marine species, southern California steelhead (*Oncorhynchus mykiss irideus*), identified in the literature review as potentially occurring within the USGS topographic quadrangles surrounding the BSA (refer to Appendix B for the NOAA Fisheries Species List). This species is analyzed further in this NES(MI) (refer to Section 4.3.3).

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
PLANTS					
Abronia villosa var. *aurita*	Chaparral sand-verbena	US: – CA: – CRPR: 1B.1	Annual or perennial herb. Sandy areas (generally flats and benches along washes) in chaparral and coastal sage scrub, and improbably in desert dunes or other sandy areas, below 5,300 ft in elevation. Blooms mostly March through August.	HA	**Not expected to occur**. There is one known occurrence within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Allium marvinii	Yucaipa onion	US: – CA: – CRPR: 1B.2	Perennial bulbiferous herb. Occurs in clay soils within openings in chaparral habitats. From 2,790 ft to 3,510 ft in elevation. Blooms from April through May.	HA	**Not expected to occur.** There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. BSA is outside the known elevation range of the species. Not observed during 2022 botanical surveys.
Aphanisma blitoides	Aphanisma	US: – CA: – CRPR: 1B.2	Annual herb. Sandy or clay soils on slopes or bluffs near the ocean, usually in coastal bluff scrub, coastal dunes, or coastal scrub, below 1,000 ft in elevation. Blooms March through June.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Astragalus brauntonii	Braunton's milk-vetch	US: FE CA: – CRPR: 1B.1	Perennial herb. Considered a limestone endemic and dependent on fire. Usually on sandstone with carbonate layers following fire but may follow other disturbance and occur on stiff gravelly clay soils over granite. Typically associated with the fire-dependent chaparral habitat on limestone and on down-wash sites. From 12 to 1,920 ft in elevation. Blooms February through July.	HA	**Not expected to occur.** There are no known occurrences within a 3-mile buffer of the BSA. No suitable habitat for this species is present on site, but critical habitat is adjacent. Not observed during 2022 botanical surveys.
Astragalus hornii var. *hornii*	Horn's milk-vetch	US: – CA: - CRPR: 1B.1	Annual herb. Alkaline playas and lake margins from 200 to 2,800 ft in elevation. In California, known only from Inyo, Kern, Kings, Los Angeles, and Riverside Counties. Believed extirpated from Orange and San Bernardino Counties. Also occurs in Nevada. Blooms May through October.	HA	**Not expected to occur**. There is one known occurrence from 1896 in a 3-mile buffer of the BSA, which is noted as extirpated. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Astragalus pycnostachyus var. *lanosissimus*	Ventura Marsh milk-vetch	US: FE CA: SE CRPR: 1B	Perennial herb. Coastal salt marsh within reach of high tide or protected by barrier beaches, or more rarely near seeps on sandy bluffs, below 120 ft in elevation. Known only from Santa Barbara and Ventura Counties. Believed extirpated from Los Angeles and Orange Counties. Blooms June through October.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA, and this species is believed to be extirpated from Orange County. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Atriplex coulteri	Coulter's saltbush	US: – CA: – CRPR: 1B.2	Perennial herb. Occurs in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grasslands, usually on ocean bluffs and ridge tops in alkaline or clay soils. From 10 to 1,510 ft in elevation. Blooms March through October.	HA	**Not expected to occur**. There are three occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Atriplex pacifica	South coast saltscale	US: – CA: – CRPR: 1B.2	Annual herb. Found in alkaline soils in coastal scrub, coastal dunes, coastal playas, and coastal bluff scrub habitats below 460 ft in elevation. Blooms March through October.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Atriplex parishii	Parish's brittlescale	US: – CA: – CRPR: 1B.1	Annual herb. Found in alkaline soils within chenopod scrub, playas, and vernal pools between 80 and 6,160 ft in elevation. Blooms June through October.	HA	**Not expected to occur**. There is one known occurrence in a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	US: – CA: – CRPR: 1B.2	Annual herb. Alkaline soils in scrub and herbaceous communities from 30 to 1,500 ft in elevation. Blooms April through October.	HA	**Not expected to occur**. There are no known occurrences in a 3-mile buffer of the BSA. Suitable habitat is lacking. Not observed during 2022 botanical surveys.
Baccharis malibuensis	Malibu baccharis	US: – CA: – CRPR: 1B.1	Deciduous shrub. Occurs in chaparral, cismontane woodland, and coastal scrub, on Conejo volcanic soils, often in disturbed areas. From 490 to 850 ft in elevation. Blooms August.	HA	**Not expected to occur.** There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. BSA is outside the known elevation range of the species. Not observed during 2022 botanical surveys.
Brodiaea filifolia	Thread-leaved brodiaea	US: FT CA: SE CRPR: 1B NCCP: NC	Perennial herb. Usually on clay or associated with vernal pools or alkaline flats; occasionally in vernally moist sites in fine soils (clay loam, silt loam, fine sandy loam, loam, loamy fine sand). Typically associated with needlegrass or alkali grassland or vernal pools. Occurs from 80 to 3,700 ft in elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, San Diego, and San Luis Obispo Counties, California. Blooms March through June.	HA	**Not expected to occur.** There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Calochortus weedii var. *intermedius*	Intermediate mariposa lily	US: – CA: – CRPR: 1B.2	Perennial bulbiferous herb. Occurs in chaparral, coastal scrub, and valley and foothill grasslands. Often in dry, rocky soils from 395 to 2,805 ft in elevation. Blooms May through July.	HA	**Not expected to occur**. There is one known occurrence within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Calystegia felix	Lucky morning-glory	US: – CA: - CRPR: 1B.1	Annual or perennial rhizomatous herb. Wetland and marshy areas, sometimes alkaline, sometimes artificially watered, from 100 to 700 ft in elevation. All of the known extant occurrences are associated with well-watered landscaping on recently completed industrial, commercial, and residential developments in the City of Chino within a historical area of artesian springs. Older collections are from areas that are now heavily urbanized areas (including one from South Los Angeles and another from Pico Rivera in Los Angeles County). Known to occur only in western San Bernardino County. Presumed extirpated from Riverside and Los Angeles Counties. Blooms March through September.	HP	**Low potential to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present in the BSA. Not observed during 2022 botanical surveys.
Camissoniopsis lewisii	Lewis' evening-primrose	US: – CA: – CRPR: 3 NCCP: NC	Annual herb. Sandy or clay areas in coastal scrub, grassland, and woodland habitats below 1,000 ft in elevation. Blooms March through June.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Centromadia parryi ssp. *australis*	Southern tarplant	US: – CA: – CRPR: 1B.1	Annual herb. Occurs in vernal pools, margins of marshes and swamps, and vernally mesic valley and foothill grasslands, sometimes with saltgrass on alkaline soils. Up to 1,400 ft in elevation. Blooms May through November.	HP	**Low potential to occur**. There are six known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present in the BSA. Not observed during 2022 botanical surveys.
Centromadia pungens ssp. *laevis*	Smooth tarplant	US: – CA: – CRPR: 1B.1	Annual herb. Occurs in chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland on alkaline soils. Up to 1,575 ft in elevation. Blooms April through September.	HP	**Low potential to occur.** There are no known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present in the BSA. Not observed during 2022 botanical surveys.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	US: – CA: – CRPR: 1B.1 NCCP: NC	Annual herb. Occurs in coastal bluff scrub and coastal dunes from 9 to 300 ft in elevation. Blooms January through August.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Chloropyron maritimum ssp. *maritimum*	Salt marsh bird's beak	US: FE CA: CE CRPR: 1B.2	Annual herb. Occurs in coastal dunes, marshes and swamps (coastal salt) from 0 to 98 ft in elevation. Blooms May through October.	HA	**Not expected to occur**. There is one known occurrence in a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	US: FC CA: SE CRPR: 1B.1 NCCP: NC	Annual herb. Occurs in coastal scrub in sandy soils. From 450 to 3,660 ft in elevation. Blooms April through July.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Chorizanthe polygonoides var. *longispina*	Long-spined spineflower	US: – CA: – CRPR: 1B.2	Annual herb of clay soils in chaparral, coastal scrub, meadows and seeps, valley and foothill grassland at 100 to 4,800 ft in elevation. Occurs in Orange, Riverside, and San Diego Counties. Blooms April through July.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Comarostaphylis diversifolia ssp. *diversifolia*	Summer holly	US: – CA: – CRPR: 1B.2 NCCP: NC	Perennial evergreen shrub. Occurs in chaparral and cismontane woodland from 90 to 2,600 ft in elevation. Blooms April through June.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	US: – CA: - CRPR: 2B	Annual parasitic vine. May be extirpated in California. Formerly found sporadically in freshwater marsh on herbs including *Alternanthera*, *Dalea, Lythrum, Polygonum,* and *Xanthium* below about 500 meters (1,600 feet). Believed extirpated from California. Reported historically from Los Angeles, San Bernardino, Sonoma, Sutter, Butte, Sacramento, and Merced Counties. Also known from eastern and southern US, West Indies, and Mexico. Blooms July through October.	HP	**Low potential to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present in the BSA. Not observed during 2022 botanical surveys.
Dodecahema leptoceras	slender-horned spineflower	US: FE CA: SE CRPR: 1B	Annual herb. In the Vail Lake area, occurs in gravel soils of Temecula arkose deposits in openings in chamise chaparral. In other areas, occurs in sandy cobbly riverbed alluvium in alluvial fan sage scrub (usually late seral stage), on floodplain terraces and benches that receive infrequent overbank deposits from generally large washes or rivers, where it is most often found in shallow silty depressions dominated by leather spineflower (*Lastarriaea coriacea*) and other native annual species, and is often associated with cryptogamic soil crusts composed of bryophytes, algae and/or lichens. Occurs at 200 to 760 meters (600 to 2,500 feet) elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties, California. Blooms April through June.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Dudleya multicaulis	Many-stemmed dudleya	US: – CA: – CRPR: 1B.2	Perennial herb. Occurs in chaparral, coastal scrub, and valley and foothill grasslands, usually in heavy, often clay soils. From 45 to 2,370 ft in elevation. Blooms April through July.	HA	**Not expected to occur**. There is one known occurrence within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Dudleya stolonifera	Laguna Beach dudleya	US: FT CA: ST CRPR: 1B.1 NCCP: C	Perennial stoloniferous herb. Occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands, often in thin soil on north-facing sandstone cliffs. From 30 to 780 ft in elevation. Blooms May through July.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Eriastrum densifolium ssp. *sanctorum*	Santa Ana River woollystar	US: FE CA: SE CRPR: 1B.1	Perennial herb found in sandy or gravelly soils within chaparral and coastal scrub (alluvial fan). Between 300 and 2,000 ft in elevation. Blooms May through September.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Eryngium aristulatum Jeps. var. *parishii*	San Diego button-celery	US: FE CA: SE CRPR: 1B.1	Annual/Perennial herb. Habitat types include coastal scrub, valley and foothill grassland, and vernal pools. Occurs mesic areas between 65 ft and 2,034 ft in elevation. Blooms April through June.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Euphorbia misera	Cliff spurge	US: – CA: – CRPR: 2.2 NCCP: NC	Perennial shrub. Occurs in coastal bluff scrub, coastal scrub, and Mojavean desert scrub in rocky soils or along cliffs. From 30 to 1,500 ft in elevation. Blooms December through August.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	US: – CA: – CRPR: 1A	Perennial herb. Marshes and swamps (coastal salt and freshwater) at 30 to 1,600 ft in elevation. Blooms August through October.	HP	**Low potential to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present in the BSA. Not observed during 2022 botanical surveys.
Hesperocyparis forbesii	Tecate cypress	US: – CA: – CRPR: 1B.1 NCCP: C	Perennial evergreen tree. Occurs in closed-cone coniferous forest and chaparral. From 835 to 4,920 ft in elevation.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Hesperocyparis goveniana	Gowen cypress	US: FT CA: 1B	Perennial evergreen tree. Usually found in sandy soils on coastal terraces, closed-cone coniferous forests, and maritime chaparral (sometimes with Monterey and Bishop Pines) from 100 to 1,000 ft. Endemic to California, only known from Monterey County.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Hordeum intercedens	Vernal barley	US: – CA: – CRPR: 3.2	Annual herb. Vernal pools and saline flats and depressions below 3,300 ft in elevation. Known from many California counties. Also occurs in Mexico. Blooms March through June.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Horkelia cuneata var. *puberula*	mesa horkelia	US: – CA: 1B.1 NCCP: NC	Perennial herb. Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 200 to 2,700 ft in elevation. Known only from San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Bernardino Counties, California. Believed extirpated from Riverside and San Diego Counties. Blooms February through July (sometimes to September).	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Isocoma menziesii var. *decumbens*	Decumbent goldenbush	US: – CA: – CRPR: 1B.2	Perennial shrub. Sandy soils, often in disturbed areas, in coastal scrub and chaparral from 30 to 440 ft in elevation. Blooms April through November.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	US: – CA: – CRPR: 1B.1	Annual herb. Vernal pools and alkaline soils in marshes, playas, and similar habitats below 4,000 ft in elevation. Blooms February through June.	HA	**Low potential to occur**. There are four known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present in the BSA. Not observed during 2022 botanical surveys.
Lepechinia cardiophylla	Heart-leaved pitcher sage	US: – CA: – CRPR: 1B.2 NCCP: C	Annual herb. Occurs in coastal scrub and chaparral on dry soils. From 1,800 to 4,500 ft in elevation. Blooms January through July.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Monardella australis ssp. *jokerstii*	Jokerst's monardella	US: – CA: – CRPR: 1B.1	Perennial rhizomatous herb. Steep scree or talus slopes between breccia and secondary alluvial benches along drainages and washes, in lower montane coniferous forest and chaparral at 4,430 to 5,740 ft. Known only from the San Gabriel Mountains of San Bernardino County, California. Blooms July through September.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. BSA is outside the known elevation range of the species. Not observed during 2022 botanical surveys.
Monardella hypoleuca ssp. *intermedia*	Intermediate monardella	US: – CA: – CRPR: 1B.3	Perennial rhizomatous herb. Usually understory often found in steep, brushy areas in chaparral, cismontane woodland, and sometimes in lower montane coniferous forests from 660 to 4,100 ft. Endemic to California, only known from Orange, Riverside, and San Diego Counties. Blooms April through September.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. BSA is outside the known elevation range of the species. Not observed during 2022 botanical surveys.
Nama stenocarpum	Mud nama	US: – CA: – CRPR: 2B.	Annual to perennial herb. Occurs in marshes and swamps and along lake margins and riverbanks. From 15 to 1,640 ft in elevation. Blooms January through July.	HP	**Low potential to occur**. There is one known occurrence within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present in the BSA. Not observed during 2022 botanical surveys.
Nasturtium (Rorippa) gambelii	Gambel's watercress	US: FE CA: ST CRPR: 1B.1	Perennial rhizomatous herb. Marshes from 20 to 1,100 ft in elevation. Blooms April through September.	HP	**Low potential to occur**. There is one known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present in the BSA. Not observed during 2022 botanical surveys.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Navarretia prostrata	Prostrate vernal pool navarretia	US: – CA: – CRPR: 1B.1	Annual herb. Vernal pools, usually alkaline, from 50 to 4,000 ft in elevation. Blooms April through July.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Nemacaulis denudate var. *denudata*	Coast woolly-heads	US: – CA: – CRPR: 1B.2	Annual herb. Occurs in coastal dunes from 0 to 328 ft in elevation. Blooms April through September.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Nolina cismontana	chaparral nolina	US: – CA: 1B	Perennial shrub. Sandstone or gabbro in chaparral and coastal sage scrub at 140 to 1,275 meters (500 to 4,200 feet) elevation. Known from Orange, Riverside, San Diego, and Ventura Counties, California. Blooms May through July.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Orcuttia californica	California orcutt grass	US: FE CA: SE CRPR: 1B.2	Annual herb. Occurs in vernal pools from 49 to 2,165 ft in elevation. Blooms April through August.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Penstemon californicus	California beardtongue	US: – CA: – CRPR: 1B.2	Perennial herb of sandy or granitic soils on stony slopes and shrubby openings; in chaparral, lower montane coniferous forest, pinyon-juniper woodlands. From 3,800 to 7,600 ft in elevation. Blooms May through August.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. BSA is outside the known elevation range of the species. Not observed during 2022 botanical surveys.
Pentachaeta aurea ssp. *Allenii*	Allen's pentachaeta	US: – CA: – CRPR: 1B.1	Annual herb. Occurs in coastal scrub openings and valley and foothill grasslands from 225 to 1,560 ft in elevation. Blooms March through June.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. BSA is outside the known elevation range of the species. Not observed during 2022 botanical surveys.
Pentachaeta lyonii	Lyon's pentachaeta	US: FE CA: SE CRPR: 1B	Annual herb. Clay soils in 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, from 100 to 2,100 ft in elevation. Occurs only in the Santa Monica Mountains in eastern Ventura and western Los Angeles Counties and in the western Simi Hills in Ventura County. Based on historical records, it once occurred on the Palos Verdes Peninsula and on Santa Catalina Island, but has not been seen at these locations since 1910 and 1855, respectively, and is assumed to be extirpated from those areas. Blooms March through August.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Phacelia ramosissima var. *austrolitoralis*	South coast branching phacelia	US: – CA: - CRPR: 3.2	Perennial herb. Chaparral, coastal scrub, coastal dunes, coastal salt marsh. Sandy, sometimes rocky sites between 16 and 984 ft. Known from Alameda, Kern, Los Angeles, Monterey, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, Tulare and Ventura Counties, California. Blooms March through August.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Phacelia stellaris	Brand's star phacelia	US: – CA: - CRPR: 1B	Annual herb. Dunes and sandy openings in coastal scrub communities at 20 to 1,300 ft in elevation. In western Riverside County, this species appears to be restricted to sandy washes and benches in alluvial floodplains. Known only from Los Angeles (believed extirpated), Riverside and San Diego Counties, California. The most recent record of this species from Los Angeles County was in 1943. Blooms March through June.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Pseudognaphalium leucocephalum	White rabbit-tobacco	US: – CA: – CRPR: 2B.2	Perennial herb. Occurs in chaparral, cismontane woodland, coastal scrub, and riparian woodland on sandy and gravelly soils below 7,000 ft in elevation. Blooms August through November.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Quercus dumosa	Nuttall's scrub oak	US: – CA: – CRPR: 1B.1 NCCP: C	Perennial evergreen shrub. Occurs in closed-cone coniferous forest, chaparral, and coastal scrub in sandy, clay loam soils. From 45 to 1,200 ft in elevation. Year-round.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Ribes divaricatum var. *parishii*	Parish's gooseberry	US: – CA: - CRPR: 1A	Shrub. Deciduous shrub of willow swales in riparian habitats at 60 to 300 meters (200 to 1,000 feet) elevation. Believed to be extinct. Historical collections from Los Angeles and San Bernardino Counties. Blooms February through April.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present within the BSA. BSA is outside the known elevation range of the species. Not observed during 2022 botanical surveys. The species is considered extinct or possibly extinct.
Sagittaria sanfordii	Sanford's arrowhead	US: – CA: - CRPR: 1B	Perennial emergent herb. Marshes and swamps below 650 meters (2,100 feet) elevation. Occurs in standing or slow-moving fresh water (ponds, marshes, and ditches). Known only from Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Placer, Sacramento, Shasta, San Joaquin, and Tehama Counties. Believed extirpated from Southern California. Blooms May through October.	HP	**Low potential to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present within the BSA. Not observed during 2022 botanical surveys.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Scutellaria bolanderi ssp. *austromontana*	southern mountains skullcap	US: – CA: - CRPR: 1B	Perennial herb. Mesic areas in gravelly soils of stream banks or in oak or pine woodland (rarely chaparral) at 425 to 2,000 meters (1,400 to 6,600 feet) elevation. Known from Riverside and San Diego Counties. Believed extirpated from San Bernardino County and perhaps Los Angeles County. Blooms June through August.	HP	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present within the BSA. BSA is outside the known elevation range of the species. Not observed during 2022 botanical surveys.
Senecio aphanactis	Chaparral ragwort	US: – CA: – CRPR: 2B.2	Annual herb. Openings (especially alkaline flats) in cismontane woodland, coastal sage scrub, and chaparral at 50 to 2,600 ft in elevation. Blooms January through April.	HA	**Not expected to occur**. There is one known occurrence within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Sidalcea neomexicana	Salt spring checkerbloom	US: – CA: – CRPR: 2B.2	Perennial herb. Alkaline springs and brackish marshes below 5,000 ft in elevation. Blooms March through June.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Suaeda esteroa	Estuary seablite	US: – CA: – CRPR: 1B.2	Perennial herb. Coastal salt marshes below 15 ft in elevation. Occurs along immediate coast from Santa Barbara County to Baja California. Blooms May through October (January).	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Symphyotrichum defoliatum	San Bernardino aster	US: – CA: – CRPR: 1B.2	Perennial herb. Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 6,700 ft in elevation. Blooms July through November.	HP	**Low potential to occur**. There are three known occurrences within a 3-mile buffer of the BSA. Marginally suitable habitat for this species is present in the BSA. Not observed during 2022 botanical surveys.
Symphyotrichum greatae	Greata's aster	US: – CA: - CRPR: 1B	Perennial herb. Mesic places in canyons in chaparral and woodland habitats at 300 to 2,010 meters (1,000 to 6,600 feet) elevation. Known only from Los Angeles, San Bernardino, and Ventura Counties. Blooms June through October.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.
Verbesina dissita	Big-leaved crownbeard	US: FT CA: ST CRPR: 1B.1 NCCP: NC	Perennial herb. Occurs in southern maritime chaparral (90% of time) and coastal scrub (10% of time) habitats from 135 to 615 ft in elevation along the immediate coast. Blooms April through July.	HA	**Not expected to occur**. There are no known occurrences within a 3-mile buffer of the BSA. Suitable habitat is absent. Not observed during 2022 botanical surveys.

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Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
INVERTEBRATES					
Bombus crotchii	Crotch's bumble bee	US: - CA: C	Inhabits open grassland and scrub habitats primarily in California. Food plant genera include snapdragons (*Antirrhinum* spp.), *Phacelia* spp., *Clarkia* ssp., *Dendromecon* ssp., *Eschscholzia* ssp., and buckwheat (*Eriogonum* ssp.).	HA	**Not expected to occur.** The species is known to occur in the vicinity of the BSA. No food plant species are present within the BSA. Not expected to nest within or adjacent to any work areas.
Branchinecta sandiegonensis	San Diego fairy shrimp	US: FE CA: SA	Small, shallow (usually less than 1 ft deep), relatively clear but unpredictable vernal pools on coastal terraces. Pools must retain water for a minimum of 13 days for this species to reproduce (3 to 8 days for hatching, and 10 to 20 days to reach reproductive maturity).	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Cicindela hirticollis gravida	Sandy beach tiger beetle	US: - CA: SA	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Cicindela latesignata	Western beach tiger beetle	US: - CA: SA	Mudflats and beaches in coastal Southern California.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Cicindela senilis frosti	Senile tiger beetle	US: – CA: SA	Inhabits marine shoreline, from central California coast south to salt marshes of San Diego, also found at Lake Elsinore. Inhabits dark-colored mud in the lower zone and dried salt pans in the upper zone.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Coelus globosus	Globose dune beetle	US: – CA: SA	Inhabitant of coastal sand dune habitat, from Bodega Head in Sonoma County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Danaus plexippus (wintering sites)	Monarch – California overwintering population	US: FC CA: SA	Winter roosts are located in wind-protected tree groves (Eucalyptus, Monterey Pine, Cypress) with nectar and water sources nearby.	HP	**Low potential to occur.** Potentially suitable roosting habitat (eucalyptus trees) is present within the BSA, although wintering habitat is limited and there are no known wintering roost locations in the BSA.
Euphydryas editha quino	Quino checkerspot	US: FE CA: SA	Historically occupied open grassy sites from the vicinity of Los Angeles and Riverside south to northern Baja California, always in the vicinity of the larval food plants, California plantain (*Plantago erecta*) and purple owl's-clover (*Castilleja exserta*). In California, the species is now known from a few sites in San Diego and western Riverside Counties.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA. No food plant species are present within the BSA. Not found in coastal Orange County since the 1930s and believed to be extirpated.

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Glyptostoma gabrielense[1]	San Gabriel chestnut snail	US: – CA: SA	Little is known about the species. Habitat has been described as rocky hills and mountains at relatively low elevations. Requires logs, cactus, and other vegetative debris and rocks for cover during the dry season.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Gonidea angulata	Western ridged mussel	US: - CA: SA	Aquatic. Primarily creeks and rivers and less often lakes. Originally in most of state, now extirpated from Central and Southern California.	HP	**Low potential to occur**. There is one known occurrence within the vicinity of the Project site and marginal suitable habitat is present.
Habroscelimorpha gabbii[1]	western tidal-flat tiger beetle	US: – CA: SA	Inhabits estuaries and mudflats along the coast of Southern California.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Panoquina errans	Wandering (=saltmarsh) skipper	US: – CA: SA	Southern California coastal salt marshes. Requires moist saltgrass for larval development.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Streptocephalus woottoni	Riverside fairy shrimp	US: FE CA: SA	Warm-water vernal pools (i.e., large, deep pools that retain water into the warm season) with low to moderate dissolved solids in annual grassland areas interspersed through chaparral or coastal sage scrub vegetation. Suitable habitat includes some artificially created or enhanced pools, such as stock ponds, that have vernal pool-like hydrology and vegetation.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Trigonoscuta dorothea dorothea	Dorothy's El Segundo dune weevil	US: – CA: SA	Coastal sand dunes in Los Angeles County.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
Tryonia imitator	Mimic tryonia (=California brackishwater snail)	US: - CA: SA	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	HA	**Not expected to occur.** No suitable habitat for this species is present in the BSA.
FISH					
Catostomus santaanae	Santa Ana sucker	US: FT CA: SA	Live in the shallow portions of rivers and streams. These fish exist in flashy systems where currents range from swift in the canyons to sluggish in the bottomlands. Preferred substrates are generally coarse and consist of gravel, rubble, and boulders with growths of algae.	HP	**Low potential to occur.** There are six known occurrences within the vicinity of the BSA. Marginally suitable habitat for this species is present in the BSA.
Eucyclogobius newberryi	Tidewater goby	US: FE CA: SSC NCCP: NC	Brackish water habitats along the California coast from Agua Hedionda Lagoon (San Diego County) to the mouth of the Smith River (Del Norte County). Found in shallow lagoons and lower stream reaches.	HA	**Not expected to occur.** While there is one known occurrence within the vicinity of the BSA, no suitable habitat for this species is present in the BSA.

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Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Gila orcuttii	arroyo chub	US: – CA: SSC	Perennial streams or intermittent streams with permanent pools; slow water sections of streams with mud or sand substrates; spawning occurs in pools. Native to Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita River systems; introduced in Santa Ynez, Santa Maria, Cuyama, and Mojave River systems and smaller coastal streams.	HP	**Low potential to occur.** There are three known occurrences within the vicinity of the BSA. Marginally suitable habitat for this species is present in the BSA.
Oncorhynchus mykiss irideus	Southern California steelhead DPS	US: FE CA: SA	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	HP	**Low potential to occur.** There are three known occurrences within the vicinity of the BSA. Perennial waterways (Coyote Creek, La Canada Verde Creek/La Mirada Creek and Peters Canyon Wash) within the BSA are within the historic range of southern California steelhead DPS. However, the current range of the species is uncertain within these waterways or deemed to be very rare. Marginally suitable habitat for this species is present in the BSA.
Rhinichthys osculus ssp. 8	Santa Ana speckled dace	US: – CA: SSC	Found in the headwaters of the Santa Ana and San Gabriel River drainages. Found in riffles in small streams and shore areas with abundant gravel and rock.	HP	**Low potential to occur.** There is one known occurrence within the vicinity of the BSA. Marginally suitable habitat for this species is present in the BSA.
AMPHIBIANS					
Anaxyrus californicus	Arroyo toad	US: FE CA: SSC	Washes and arroyos with open water; sand or gravel beds; for breeding, pools with sparse overstory vegetation. Coastal and a few desert streams from Santa Barbara County to Baja California.	HP	**Low potential to occur**. There is one known occurrence within the vicinity of the BSA. Marginally suitable habitat is present in the BSA.
Spea hammondii	Western spadefoot	US: – CA: SSC	Grasslands and occasionally hardwood woodlands; largely terrestrial but requires rain pools or other ponded water persisting at least 3 weeks for breeding; burrows in loose soils during dry season. Occurs in the Central Valley and adjacent foothills, the non-desert areas of Southern California, and Baja California.	HP	**Low potential to occur.** There are 55 known occurrences within the vicinity of the BSA. Suitable habitat for this species is present in the BSA.
Taricha torosa torosa	Coast Range newt	US: - CA: SSC (Monterey County southward)	Occurs in the Coast Ranges from central Mendocino County south to northern San Diego County. Found primarily in mesic habitats, such as oak woodland. Breeds in ponds, reservoirs, or slow-moving streams.	HA	**Not expected to occur**. There is one known occurrence within the vicinity of the BSA. Suitable habitat is absent from the BSA.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
REPTILES					
Anniella stebbinsi	Southern California legless lizard	US: – CA: SSC	Inhabits coastal dunes, sandy washes, and alluvial fans where there is moist loose soil with sufficient plant cover and/or leaf litter.	HA	**Not expected to occur.** There are 19 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Arizona elegans occidentalis	California glossy snake	US: – CA: SSC	Scrub and grassland habitats, often with loose or sandy soils. Patchily distributed from the eastern portion of San Francisco Bay to southern San Joaquin Valley and in non-desert areas of southern California. Also occurs in Baja California, Mexico.	HA	**Not expected to occur.** There are four known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Aspidoscelis hyperythra	Orange-throated whiptail	US: – CA: SA	Prefers washes and other sandy areas with patches of brush and rocks, in chaparral, coastal sage scrub, juniper woodland, and oak woodland from sea level to 3,000 ft in elevation. Perennial plants required.	HA	**Not expected to occur.** There are 30 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Aspidoscelis tigris stejnegeri	Coastal whiptail	US: – CA: SSC	Wide variety of habitats including coastal sage scrub, sparse grassland, and riparian woodland; coastal and inland valleys and foothills; Ventura County to Baja California.	HP	**Low potential to occur.** There are 14 known occurrences within the vicinity of the BSA. Marginally suitable habitat for this species is present in the BSA.
Chelonia mydas	Green sea turtle	US: FT CA:-	Marine; completely herbivorous; needs adequate supply of seagrasses and algae.	HA	**Not expected to occur**. There is one known occurrence within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Crotalus ruber	Red-diamond rattlesnake	US: – CA: SSC	Desert scrub, thornscrub, open chaparral and woodland; occasional in grassland and cultivated areas. Prefers rocky areas and dense vegetation. Morongo Valley in San Bernardino and Riverside Counties to the west and south into Mexico.	HA	**Not expected to occur.** There are 11 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Emys marmorata	western pond turtle	US: – CA: SSC	Inhabits permanent or nearly permanent water. Absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Requires basking sites such as partially submerged logs, rocks, or open mud banks.	HP	**Low potential to occur.** There are 35 known occurrences within the vicinity of the BSA. Marginally suitable habitat for this species is present in the BSA.
Phrynosoma blainvillii	Coast horned lizard	US: – CA: SSC	Primarily in sandy soil in open areas, especially washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Occurs west of the deserts from northern Baja California north to Shasta County below 8,000 ft in elevation.	HP	**Low potential to occur.** There are 41 known occurrences within the vicinity of the BSA. Marginally suitable habitat for this species is present in the BSA.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Salvadora hexalepis virgultea	Coast patch-nosed snake	US: – CA: SSC	Coastal chaparral, washes, sandy flats and rocky areas. Widely distributed throughout lowlands, up to 7,000 ft in elevation, of Southern California from coast to the eastern border.	HP	**Low potential to occur.** There are four known occurrences within the vicinity of the BSA. Suitable habitat for this species is present in the BSA.
Thamnophis hammondii	Two-striped garter snake	US: – CA: SSC	Highly aquatic. Found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	HP	**Low potential to occur**. There are 5 known occurrences within the vicinity of the BSA. Marginally suitable habitat is present within the BSA along the Santa Ana River.
BIRDS					
Accipiter cooperii (nesting)	Cooper's hawk	US: – CA: SA (breeding)	Forages in a wide range of habitats, but primarily in forests and woodlands. These include natural areas as well as human-created habitats such as plantations and ornamental trees in urban landscapes. Usually nests in tall trees (20 to 60 ft) in extensive forested areas (generally woodlots of 4 to 8 hectares with canopy closure of greater than 60%). Occasionally nests in isolated trees in more open areas.	HP	**Moderate potential to occur.** There are 8 known occurrences within the vicinity of the BSA. Suitable habitat for this species is present in the BSA and the species is known to occur highly developed portions of the region.
Agelaius tricolor	Tricolored blackbird	US: – CA: ST	Open country. Forages in grassland and cropland habitats. Nests in large groups near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, or tall herbs. Seeks cover for roosting in emergent wetland vegetation, especially cattails and tules, and also in trees and shrubs.	HP	**Low potential to occur.** There are 8 known occurrences within the vicinity of the BSA. Although marginally suitable freshwater marsh habitat for this species is present in the BSA, it is limited to one location and is small in size.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	US: – CA: SA	Steep, rocky, coastal sage scrub and open chaparral habitats, particularly scrubby areas mixed with grasslands. From Santa Barbara County to northwestern Baja California.	HA	**Not expected to occur.** There are 24 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Ammodramus savannarum (nesting)	Grasshopper sparrow	US: – CA: SSC (breeding)	Grasslands, agricultural fields, prairie, old fields, and open savanna. Uncommon and very local summer resident on grassy slopes and mesas west of the deserts. Only rarely in migration and in winter. Coastal Southern California.	HP	**Low potential to occur.** There are four known occurrences within the vicinity of the BSA. Marginally suitable habitat for this species is present in the BSA.
Aquila chrysaetos	Golden eagle	US: – CA: SFP NCCP: C	Uncommon, permanent resident and migrant throughout most of California. Occurs typically in rolling foothills, mountain areas, sage-juniper flats, and desert habitats.	HP	**Not expected to occur**. There are three known occurrences within the vicinity of the BSA. Limited suitable foraging habitat is present within the BSA. The highly developed nature of the BSA generally precludes use by the species.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Ardea herodias (nesting colony)	Great blue heron	US: – CA: SA	Found in saltwater and freshwater habitats, from open coasts, marshes, sloughs, riverbanks, and lakes to backyard goldfish ponds. They also forage in grasslands and agricultural fields. Breeding birds gather in colonies or "heronries" to build stick nests high off the ground.	HP	**Present.** There is one known occurrence within the vicinity of the BSA. While some suitable foraging habitat is present, habitat for nesting colonies is absent from the BSA. This species was observed within the Santa Ana River during the August 2022 rare plant survey.
Asio otus (nesting) [1]	long-eared owl	US: – CA: SSC (breeding)	Scarce and local in forests and woodlands throughout much of the Northern Hemisphere. Rare resident in coastal southern California. Nests and roosts in dense willow-riparian woodland and oak woodland, but forages over wider areas. Breeds from valley foothill hardwood up to ponderosa pine habitat.	HA	**Not expected to occur.** There are three known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Athene cunicularia (burrow sites)	Burrowing owl	US: – CA: SSC (breeding)	Open country in much of North and South America. Usually occupies ground squirrel burrows in open, dry grasslands, agricultural and rangelands, railroad rights-of-way, and margins of highways, golf courses, and airports. Often utilizes human-made structures, such as earthen berms, cement culverts, cement, asphalt, rock, or wood debris piles. They avoid thick, tall vegetation, brush, and trees, but may occur in areas where brush or tree cover is less than 30%.	HP	**Low potential to occur.** There are 24 known occurrences within the vicinity of the BSA. Suitable habitat for this species is present in the BSA.
Buteo regalis (wintering)	Ferruginous hawk	US: – CA: SA	Forages in open fields, grasslands and agricultural areas, sagebrush flats, desert scrub, fringes of pinyon-juniper habitats, and other open country in western North America. Not known to breed in California.	HP	**Low potential to occur.** There are three known occurrences within the vicinity of the BSA. Suitable habitat for this species is present in the BSA.
Buteo swainsoni (nesting)	Swainson's hawk	US: – CA: ST	Plains, dry grassland, farmland, ranch country. Breeds in prairie regions with scattered groves of trees for nest sites. Less common in dry grassland farther west and in heavily farmed country. In migration, often pauses in fields where insect larvae may have been turned up by the plow.	HA	**Not expected to occur.** There are historical occurrences within the vicinity of the BSA. No suitable habitat for this species is currently present in the BSA. The species is generally not known to nest within Orange County or southern Los Angeles County.
Campylorhynchus brunneicapillus sandiegensis	Coastal cactus wren	US: – CA: SSC (year round)	Inhabits coastal sage scrub, nesting almost exclusively in thickets of cholla (*Opuntia prolifera*) and prickly pear (*Opuntia littoralis* and *Opuntia oricola*), typically below 500 ft in elevation. Found in coastal areas of Orange County and San Diego Counties, and extreme northwestern Baja California, Mexico.	HA	**Not expected to occur.** There are 43 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Charadrius nivosus	Western snowy plover	US: FT CA: SSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	HA	**Not expected to occur.** There are eight known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Coccyzus americanus occidentalis (nesting)	Western yellow-billed cuckoo	US: FT CA: SE	Breeds and nests in extensive stands of dense cottonwood/willow riparian forest along broad, lower flood bottoms of larger river systems at scattered locales in western North America; winters in South America.	HA	**Not expected to occur.** There are 11 known occurrences within the vicinity of the BSA. The species is not known to currently breed in the region. No suitable habitat for this species is present in the BSA.
Coturnicops noveboracensis	Yellow rail	US: – CA: SSC	Shallow marshes, and wet meadows; in winter, drier fresh-water and brackish marshes, as well as dense, deep grass, and rice fields.	HP	**Low potential to occur.** There are 2 known occurrences within the vicinity of the BSA. Although marginally suitable freshwater marsh habitat for this species is present in the BSA, it is limited to one location and is small in size.
Elanus leucurus (nesting)	White-tailed kite	US: – CA: CFP	Typically nests in riparian trees such as oaks, willows, and cottonwoods at low elevations. Forages in open country. Found in South America and in southern areas and along the western coast of North America.	HP	**Low potential to occur.** There are 25 known occurrences within the vicinity of the BSA. While some suitable foraging habitat is present, habitat for nesting is absent from the BSA.
Empidonax traillii extimus	Southwestern willow flycatcher	US: FE CA: SE	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S. and possibly extreme northwestern Mexico. Winters in Central and South America. Below 6,000 ft in elevation.	HA	**Not expected to occur.** There are five known occurrences within the vicinity of the BSA. The species is an extremely rare breeder in the region. No suitable habitat for this species is present in the BSA.
Eremophila alpestris actia	California horned lark	US: – CA: SA	Open grasslands and fields, agricultural area, open montane grasslands. Prefers bare ground such as plowed or fall-planted fields for nesting, but may also nest in marshy soil.	HP	**Low potential to occur.** There are six known occurrences within the vicinity of the BSA. Marginally suitable habitat for this species is present in the BSA.
Falco peregrinus anatum (nesting)	American peregrine falcon	US: – CA: CFP	Widespread, but scarce and local throughout North America. Wetlands near high cliffs; few known to nest in urban settings on tall buildings.	HA	**Not expected to occur.** There is one known occurrence within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Haliaeetus leucocephalus	Bald eagle	US: FD CA: SE	Nests in large trees and on platforms. Nests are commonly within 1 mi of water. Roost communally in winter.	HP	**Not expected to occur**. There is one known occurrence within the vicinity of the BSA. Marginally suitable foraging habitat is present within the BSA. The highly developed nature of the BSA generally precludes use by the species.
Icteria virens (nesting)	Yellow-breasted chat	US: – CA: SSC (breeding)	Riparian thickets of willow, brushy tangles near watercourses. Nests in riparian woodland throughout much of western North America. Winters in Central America.	HA	**Not expected to occur.** There are 15 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Laterallus jamaicensis coturniculus	California black rail	US: – CA: ST/CFP	Requires shallow water in salt marshes, freshwater marshes, wet meadows, or flooded grassy vegetation. Prefers areas of moist soil vegetated by fine-stemmed emergent plants, rushes, grasses, or sedges, with scattered small pools.	HP	**Low potential to occur.** There are 3 known occurrences within the vicinity of the BSA. Although marginally suitable freshwater marsh habitat for this species is present in the BSA, it is limited to one location and is small in size.
Pandion haliaetus	Osprey	US: – CA: SA	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	HA	**Not expected to occur.** There is one known occurrence within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Passerculus sandwichensis beldingi	Belding's Savannah sparrow	US: – CA: SE	Resident in salt marshes, with rare exception (e.g., Islas Todos Santos, Baja California), of Pacific Coast from Santa Barbara County to Baja California.	HA	**Not expected to occur.** There are nine known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Pelecanus occidentalis californicus	California brown pelican	US: – CA: CFP	Colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size that afford immunity from attack by ground-dwelling predators.	HA	**Not expected to occur**. There is one known occurrence within the vicinity of the BSA. No suitable habitat for this species is present within the BSA.
Polioptila californica californica	Coastal California gnatcatcher	US: FT CA: SSC	Inhabits coastal sage scrub in low-lying foothills and valleys up to about 1,640 ft in elevation in cismontane southwestern California and Baja California.	HA	**Not expected to occur.** There are 304 known occurrences within the vicinity of the BSA. No suitable habitat for the species is present within the BSA.
Rallus obsoletus levipes	Light-footed Ridgway's rail	US: FE CA: SE/CFP	Found in salt marshes traversed by tidal sloughs, where cordgrass and pickleweed are the dominant vegetation. Requires dense growth of either pickleweed or cordgrass for nesting or escape cover; feeds on mollusks and crustaceans.	HA	**Not expected to occur.** There are five known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Riparia riparia	Bank swallow	US: – CA: ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, and ocean to dig nesting hole.	HA	**Not expected to occur.** There are 5 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Riparia riparia	Black skimmer	US: - CA: SSC NCCP: NC	Found in coastal areas usually around sandy beaches and islands. Nesting birds use open sandy areas, gravel or shell bars with sparse vegetation, or broad mats of wrack in saltmarsh.	HA	**Not expected to occur**. There is one known occurrence within the vicinity of the BSA. No suitable habitat for the species is present in the BSA.
Setophagia petechia (nesting)	Yellow warbler	US: – CA: SSC (breeding)	Riparian woodland while nesting in the western U.S. and northwestern Baja California; more widespread in brushy areas and woodlands during migration.	HA	**Not expected to occur.** There are 10 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Sternula antillarum browni (nesting colony)	California least tern	US: FE CA: SE/CFP	Nests along the coast from San Francisco Bay south to northern Baja California. Forages in shallow water. Colonial breeder on bare or sparsely vegetated, flat substrates, sand beaches, alkali flats, landfills, or paved areas.	HA	**Not expected to occur.** There are 15 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Vireo bellii pusillus	Least Bell's vireo	US: FE CA: SE	Riparian forests and willow thickets. The most critical structural component of least Bell's vireo habitat in California is a dense shrub layer 2 to 10 ft aboveground.	HA	**Not expected to occur.** There are 79 known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
MAMMALS					
Antrozous pallidus	Pallid bat	US: – CA: SSC	Most common in open, dry habitats with rocky areas for roosting. Day roosts in caves, crevices, rocky outcrops, tree hollows or crevices, mines, and occasionally buildings, culverts, and bridges. Night roosts may be more open sites, such as porches and open buildings. Grasslands, shrublands, woodlands, and forest in western North America.	HP	**Low potential to occur for roosting and foraging.** There are four known occurrences within the vicinity of the BSA. Some suitable roosting habitat is present in structures within the BSA. Suitable foraging habitat is mostly absent and marginal in the BSA.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	US: – CA: SSC	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel in coastal scrub, chaparral, grasslands, and sagebrush, from Los Angeles County through southwestern San Bernardino, western Riverside, and San Diego Counties to northern Baja California.	HP	**Low potential to occur**. There is one known occurrence within the vicinity of the BSA. Suitable habitat for this species is present in the BSA.
Choeronycteris mexicana	Mexican long-tongued bat	US: - CA: SSC	Occasionally found in San Diego County, which is on the periphery of their range. Feeds on nectar and pollen of night-blooming succulents. Roosts in relatively well-lit caves, and in and around buildings.	HP	**Low potential for roosting and foraging.** There is one known occurrence within the vicinity of the BSA. Rare migrant in Orange County. Marginally suitable foraging and roosting habitat within the BSA.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Eumops perotis californicus	Western mastiff bat	US: – CA: SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, and tunnels. Has also been documented roosting in palm trees. Travels widely when foraging.	HP	**Low potential for roosting, moderate for foraging.** There are 19 known occurrences within the vicinity of the BSA. Suitable roosting habitat is present in structures and palm trees within the BSA. Marginally suitable foraging habitat is present within the BSA.
Lasionycteris noctivagans	Silver-haired bat	US: – CA: SA	Inhabits forested areas, where it forages in small clearings, along roadways and water-courses, and among trees. Generally roosts in trees but occasionally enters buildings or caves. Prefers old growth areas with snag densities of at least 21 per hectare. Range extends from extreme north-eastern Mexico north to Alaska and east to the Atlantic Coast.	HP	**Low potential for roosting and foraging**. There are 2 known occurrences within the vicinity of the BSA. Some suitable roosting habitat is present in structures within the BSA. Suitable foraging habitat is mostly absent and marginal in the BSA.
Lasiurus cinereus	Hoary bat	US: CA: SA	Forages over a wide range of habitats, but prefers open habitats with access to trees for roosting, and water. Ranges throughout most of California.	HP	**Low potential for roosting, moderate for foraging.** There are four known occurrences within the vicinity of the BSA. Some suitable roosting habitat is present in trees within the BSA. Suitable foraging habitat is present in the BSA.
Lasiurus xanthinus	Western yellow bat	US: – CA: SSC	Found mostly in desert and desert riparian areas of the southwest US, but also expanding its range with the increased usage of native and non-native ornamental palms in landscaping. Individuals typically roost amid dead fronds of palms in desert oases, but have also been documented roosting in cottonwood trees. Forage over many habitats.	HP	**Moderate potential for roosting and foraging.** There are two known occurrences within the vicinity of the BSA. Some suitable roosting habitat is present in palm trees within the BSA. Suitable foraging habitat is present in the BSA.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	US: – CA: SA	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats. Restricted to the cismontane areas of Southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino, and Santa Rosa Mountain ranges.	HA	**Not expected to occur**. There is one known occurrence within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Microtus californicus stephensi	South coast marsh vole	US: - CA: SSC	Tidal marshes in Los Angeles, Orange and southern Ventura counties.	HA	**Not expected to occur**. There are two known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Myotis yumanensis	Yuma myotis	US: – CA: SA	Optimal habitats are open forests and woodlands with sources of water over which to feed. Common and widespread in California. Uncommon in the Mojave and Colorado Desert regions, except for mountains. Ranging generally from sea level to 8,000 ft. Roosts in buildings, mines, caves or crevices; occasionally in swallow nests and under bridges.	HP	**Moderate potential for roosting and foraging.** There are two known occurrences within the vicinity of the BSA. Suitable roosting habitat is present in structures within the BSA. Suitable foraging habitat is present in the BSA.
Neotoma lepida intermedia	San Diego desert woodrat	US: – CA: SSC NCCP: C	Found in desert scrub and coastal sage scrub habitat, especially in association with cactus patches. Builds stick nests around cacti, or on rocky crevices. Occurs along the Pacific slope from San Luis Obispo County to northwest Baja California.	HA	**Not expected to occur.** There are two known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Nyctinomops femorosaccus	Pocketed free-tailed bat	US: – CA: SSC	Usually associated with cliffs, rock outcrops, or slopes. May roost in buildings (including roof tiles) or caves, and has also been documented roosting in palm trees. Rare in California, where it is found in Orange, Riverside, San Diego, Imperial and possibly Los Angeles Counties. Travels widely when foraging.	HP	**Low potential for roosting and foraging.** There are two known occurrence within the vicinity of the BSA. Some marginally suitable roosting habitat is present in structures and palm trees within the BSA. Marginally suitable foraging habitat is present within the BSA.
Nyctinomops macrotis	Big free-tailed bat	US: – CA: SSC	Inhabits rugged, rocky canyon country in southwestern United States, but has also been found roosting in buildings. Found from northern South America and the Caribbean Islands northward to the western United States. In the southwestern U.S., populations appear to be scattered.	HP	**Low potential for roosting and foraging.** There are four known occurrences within the vicinity of the BSA. Some marginally suitable roosting habitat is present in structures and palm trees within the BSA. Marginally suitable foraging habitat is present within the BSA.
Onychomys torridus ramona	southern grasshopper mouse	US: – CA: SSC	Believed to inhabit sandy or gravelly valley floor habitats with friable soils in open and semi-open scrub, including coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub, and annual grassland with scattered shrubs, preferring low to moderate shrub cover. More susceptible to small- and large-scale habitat loss and fragmentation than most other rodents, due to its low fecundity, low population density, and large home range size. Arid portions of southwestern California and northwestern Baja California.	HA	**Not expected to occur.** There is one known occurrence within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Perognathus longimembris pacificus	Pacific pocket mouse	US: FE CA: SSC	Historically occupied open habitats on sandy soils along the coast from Los Angeles to the Mexican border.	HA	**Not expected to occur.** There are three known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.
Sorex ornatus salicornicus	Southern California saltmarsh shrew	US: – CA: SSC	Coastal marshes with dense vegetation and woody debris for cover. Known only from Los Angeles, Ventura, and Orange Counties.	HA	**Not expected to occur.** There are two known occurrences within the vicinity of the BSA. No suitable habitat for this species is present in the BSA.

Table 15: Listed, Proposed, and Special-Status Species Potentially Occurring or Known to Occur in the Biological Study Area

Species Scientific Name	Species Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Taxidea taxus	American badger	US: – CA: SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	HP	**Low potential to occur.** There are four known occurrences within the vicinity of the BSA. Marginally suitable habitat for this species is present in the BSA.

Source: LSA (2022)

Status:
Federal
- FE = Federally Endangered
- PE = Proposed Endangered
- FT = Federally Threatened
- FC = Federal Candidate for Listing
- FSC = Federal Species of Concern
- D = Delisted

State
- SE = State Endangered
- SCE = Candidate Endangered
- ST= State Threatened
- SCT = Candidate Threatened
- SSC = California Species of Special Concern
- SA = California Special Animal
- CFP = California Fully Protected Species
- WL = Watch List

NCCP = Natural Community Conservation Plan
- C/NC = Covered/Not Covered under the Orange County Central-Coastal Natural Community Conservation Plan/Habitat Conservation Plan

CNPS = California Native Plant Society
- *CNPS California Rare Plant Ranking (CRPR) Designations:*
  - 1A = Plants presumed extinct in California
  - 1B = Plants rare and endangered in California and throughout their range
  - 2 = Plants rare, threatened, or endangered in California but more common elsewhere in their range
  - 3 = Plants needing more information (a review list)
  - 4 = Plants of limited distribution (a watch list) – not included in this list
- *CNPS CRPR Threat Codes:*
  - 0.1 = Seriously endangered in California
  - 0.2 = Fairly endangered in California
  - 0.3 = Not very endangered in California

[1] HA = Habitat Absent
HP = Habitat Present

[2] Months in parentheses are uncommon.

Definitions:
BSA = Biological Study Area
CDFW = California Department of Fish and Wildlife
DPS = distinct population segment
ft = foot/feet
P = Present (species observed within the BSA during surveys)
sDPS = southern distinct population segment

4. RESULTS: BIOLOGICAL RESOURCES, DISCUSSION OF IMPACTS, AND MITIGATION

The potential for species to occur within the BSA has been determined based on the results of the literature review, field surveys of the BSA, vegetation types present in the BSA, and experience in the region.

All impacts discussed below are limited to the maximum impact anticipated for Alternatives 2, 3, and 4. The No-Build Alternative would not impact biological resources and would have a neutral effect on existing biological resources within the BSA.

Mapped vegetation within the area of direct impacts is limited to bare ground, developed, developed above-riverine below, developed above-streambed below, freshwater marsh, landscaped, riprap, riverine, ruderal, and streambed (see Table 16, below). This includes a total of up to 192.57 acres of permanent impacts and 820.82 of temporary impacts, primarily to developed areas.

Table 16: Impacts to Vegetation Communities and Land Covers by the Build Alternatives

Vegetation Communities/Land Covers	Alternative 2		Alternative 3		Alternative 4	
	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Bare Ground	0.00	0.00	0.00	7.61	0.00	7.61
Developed	0.15	0.00	175.62	657.63	183.99	648.94
Developed Above-Riverine Below	0.00	0.00	0.82	2.79	0.82	2.79
Developed Above-Streambed Below	0.00	0.00	0.08	0.77	0.08	0.77
Freshwater Marsh	0.00	0.00	0.00	0.04	0.00	0.04
Landscaped	1.23	0.00	5.98	132.39	7.52	130.85
Riprap	0.00	0.00	0.00	0.20	0.00	0.20
Riverine	0.00	0.00	0.00	0.88	0.00	0.88
Ruderal	0.81	0.00	1.16	25.39	1.16	25.39
Streambed	0.00	0.00	0.00	3.36	0.00	3.36
TOTAL	**2.19**	**0.00**	**183.66**	**831.05**	**192.57**	**820.82**

Source: LSA Associates, Inc. (2022), calculated using GIS software.
*Totals may appear inaccurate due to rounding.
BSA = Biological Study Area
GIS = geographic information system

Avoidance and minimization measures are included as part of the build alternatives to avoid or minimize direct and indirect impacts on biological resources to the extent practicable. The applicable Project features and measures have been outlined in the sections below.

4.1 Habitats and Natural Communities of Special Concern

Habitats are considered to be of special concern based on (1) federal, State, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status plants or animals occurring in the BSA. Such sensitive habitats are often designated by the CDFW as natural communities of special concern.

Natural communities of special concern within the BSA are limited to freshwater marsh and jurisdictional aquatic resources and are discussed further. The developed above-riverine below, developed above-streambed below, riverine and streambed land covers coincide with jurisdictional aquatic resources. Therefore, discussion of jurisdictional aquatic resources in Section 4.1.2 will also cover these four land covers.

The following natural communities of special concern were identified during the literature review but do not occur within the BSA and therefore will not be impacted as a result of the build alternatives and are not discussed further: southern dune scrub, southern foredunes, southern interior cypress forest, walnut forest, valley needlegrass grassland, southern coastal salt marsh, southern cottonwood willow riparian forest, southern riparian scrub, southern willow scrub, Riversidian alluvial fan sage scrub and California walnut woodland.

4.1.1 Discussion of Freshwater Marsh

Freshwater marsh consists of areas dominated by narrow-leaved cattail (*Typha angustifolia*) and broadleaf cattail (*Typha latifolia*). Freshwater marsh often occurs in areas that meet wetland criteria (e.g., hydric soils, hydrophytic vegetation, and wetland hydrology) and is considered a riparian habitat. Such vegetation communities are usually within the jurisdiction of the USACE under the Section 404 permitting requirements, the CDFW under the Section 1600 permitting requirements, and the RWQCB under the Section 401 certification or Porter-Cologne Act requirements. Riparian habitats are often considered high-quality wildlife habitats because they provide protective cover, water, and food for a variety of native species.

4.1.1.1 Survey Results

Freshwater marsh is present in one portion of the BSA east of the I-5 northbound Artesia Boulevard off-ramp. The freshwater marsh is within a larger man-made catchment basin constructed to contain stormwater flows from I-5 and surrounding areas. The catchment basin is regularly maintained included vegetation removal as evidenced on historic aerial imagery as recent as May 2019. Freshwater marsh was also found to be a jurisdictional aquatic resource, which, along with all the other jurisdictional aquatic resources, is discussed below in Section 4.1.2.

4.1.1.2 Project Impacts

Alternative 2

Implementation of Alternative 2 would not result in temporary or permanent impacts to freshwater marsh. Table 16 depicts temporary and permanent impacts to vegetation communities in the BSA.

Alternative 3

There are no permanent impacts to freshwater marsh proposed as part of Alternative 3. However, temporary and direct impacts of Alternative 3 are anticipated to affect 0.04 acre of freshwater marsh. Vegetation removal, grubbing, or grading may occur with implementation of Alternative 3. Temporary indirect impacts during activities associated with Alternative 3 may include an increase or change in off-site runoff, erosion, and spread of invasive species during construction.

These impacts would not be new to the work site but would temporarily increase the level of indirect disturbance near the freshwater marsh during activities associated with Alternative 3.

Alternative 4

Alternative 4 will have the same impacts to freshwater marsh as Alternative 3. This includes no permanent impacts and temporary and direct impacts to 0.04 acre of freshwater marsh.

4.1.1.3 Avoidance and Minimization Efforts

The following avoidance and minimization measures would address direct and indirect temporary impacts to sensitive natural communities, including freshwater marsh:

Measures BIO-1 through BIO-6 would be implemented to avoid potential indirect impacts to freshwater marsh during construction activities. These measures will only apply to all build alternatives.

BIO-1 **Delineation of Environmentally Sensitive Areas.** Prior to Project activities, highly visible barriers (e.g., orange construction fencing) will be installed along the boundaries of the Project footprint/equipment access routes to designate Environmentally Sensitive Areas (ESAs) that are to be preserved. This will include ESA fencing along jurisdictional aquatic resources located adjacent to Project impact areas. No Project activity of any type will be permitted within the ESAs. In addition, heavy equipment, including motor vehicles, will not be allowed to operate within the ESAs. All construction equipment will be operated in a manner to prevent accidental damage to the ESAs. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones.

BIO-2 **Invasive Species Control.** All construction equipment accessing unpaved areas will be cleaned with water to remove dirt, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds before arriving to and leaving the Project site.

BIO-3 **Equipment Staging Best Management Practices (BMPs).** All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated nonsensitive upland areas. The designated upland areas will be located in such a manner as to prevent any loose soil or spill runoff from entering jurisdictional waterways or adjacent sensitive vegetation communities. All construction materials will be removed from worksites following completion of Project activities.

BIO-4 **Water Quality BMPs.** To avoid impacts to water quality during construction, stormwater and erosion control BMPs are recommended to prevent loose soil or pollutants associated with the Project from inadvertently entering the aquatic resources and sensitive vegetation communities located within and adjacent to the Biological Study Area (BSA). Example BMPs include silt fencing and straw wattle placed in such a manner that they are able to catch or filter sediment or other construction-related debris to prevent it from eroding into the nearby drainage channels.

BIO-5 **Erosion Control Material Sourcing.** Only certified weed-free straw, mulch, and/or fiber rolls will be used for erosion control. Invasive species will not be used in any landscaping palettes for the Project.

BIO-6 **On-Site Training.** All personnel involved in on-site Project construction will be required to participate in a pre-construction environmental training program to ensure they understand the avoidance and minimization measures and environmental regulations pertinent to the Project.

Measure BIO-7 would be implemented to restore temporary direct impacts to freshwater marsh during construction activities. This measure will only be applicable to Alternative 4.

BIO-7 **Vegetation.** Prior to initiation of construction, a revegetation plan will be prepared for freshwater marsh and jurisdictional aquatic resources temporarily impacted by Project activities. The goal of the revegetation plan will be to restore these areas to pre-construction condition. The revegetation plan will include the procedures to install and maintain the revegetated areas, details and timing of monitoring and maintenance activities, reporting requirements, and success criteria. The revegetation plan will be consistent with all measures identified in the jurisdictional aquatic resources permitting, including the Nationwide Permit, Streambed Alteration Agreement (SAA), and Section 401 Water Quality Certification, and will be reviewed and approved by the United States Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB) prior to its implementation.

4.1.2 Discussion of Jurisdictional Aquatic Resources

Sections 401 and 404 of the CWA, the Porter-Cologne Act, and Section 1602 of the California Fish and Game Code regulate activities affecting resources under the jurisdiction of the USACE, the RWQCB, and the CDFW, respectively. “Waters of the U.S.” under the jurisdiction of the USACE include navigable coastal and inland waters, lakes, rivers, and streams and their tributaries; interstate waters and their tributaries; wetlands adjacent to such waters; intermittent streams; and other waters that could affect interstate commerce. Waters of the State under the jurisdiction of the RWQCB will typically include all waters of the U.S. as well as areas regulated under the Porter-Cologne Act in the absence of waters of the U.S. Aquatic resources under the jurisdiction of the CDFW include rivers, streams, or lakes as well as their associated riparian areas.

4.1.2.1 Survey Results

In total, 122 distinct drainage features were delineated within the JDSA and are discussed in detail in the Jurisdictional Delineation Report (Appendix D). Of those 122 features, two features were delineated as wetland waters of the U.S. by the USACE and wetlands waters of the State by RWQCB, 76 features are considered nonwetland waters of the U.S. by the USACE and waters of the State by the RWQCB under Section 401 of the CWA or the Porter-Cologne Act. A total of 78 features are subject to jurisdiction by the CDFW under Section 1600 of the California Fish and Game Code. A total of 49 features are mapped as nonjurisdictional artificially constructed, concrete, or asphalt-lined stormwater control features (e.g., roadside drainages, v-ditches, and

flood control channels) that were constructed/excavated in uplands and convey ephemeral flows (roadside runoff) in direct response to precipitation. Five jurisdictional features delineated were found to wholly exist outside of the 300 ft buffer area and were excluded from inclusion. All features delineated are discussed and mapped in the Jurisdictional Delineation Report (Appendix D) and include those identified as Features 1 through 132. For reference, Feature 3 is Peters Canyon Wash, Feature 5 is El Modena-Irvine Channel, Feature 35 is Santiago Creek, Feature 42 is Bitterbrush Channel, Feature 43 is Santa Ana River, Feature 51 is Carbon Creek, Feature 59 and 70 are Fullerton Creek, Feature 86 is Coyote Creek, Feature 88 is La Canada Verde Creek, and Feature 95 is Crescent Retarding Basin. The total area of delineated features within the JDSA includes 0.578 acre of wetland waters of the U.S., 34.87 acres of nonwetland waters of the U.S., 34.87 acres of nonwetland waters of the State, and 52.09 acres of CDFW stream/river and riparian. These findings and conclusions should be considered preliminary until verified by the appropriate regulatory agencies.

4.1.2.2 Project Impacts

Alternative 2

Implementation of Alternative 2 would not result in temporary or permanent impacts to jurisdictional aquatic resources.

Alternative 3

Alternative 3 would temporarily impact up to 2.02 acres of nonwetland waters of the U.S., 0.22 acre of wetland waters of the U.S. and 3.29 of CDFW jurisdictional area due to modifications from construction access associated with Alternative 3 (see Table 17, Figure 5, Jurisdictional Aquatic Resources Impact Map – Alternative 3 [Sheets 1–32]). No permanent impacts to jurisdictional areas are anticipated to occur as part of Alternative 3.

Of these features anticipated to be impacted, only Features 43 (Santa Ana River) and 84 are earthen-lined and may require revegetation upon completion of Project activities. The remaining features anticipated to be impacted are concrete-lined and will not require revegetation.

Alternative 3 would implement BMPs and design practices for stormwater treatment in compliance with current standards, and no long-term or cumulative adverse impacts to current functions and values of any delineated features would occur with implementation of Alternative 3. No permanent removal of riparian or wetland vegetation would occur. Temporary removal of riparian or wetland vegetation is anticipated to occur within Feature 84. All other direct impacts to delineated features, with the exception of Feature 43, would be to concrete-lined features used and maintained for flood control purposes.

Table 17: Alternative 3—Potential Impacts to Jurisdictional Areas by Feature Number

Feature No.	USACE and RWQCB				CDFW	
	Nonwetland WOTUS/WOTS Permanent Impacts (acres)	Wetland WOTUS/WOTS Permanent Impacts (acres)	Nonwetland WOTUS/WOTS Temporary Impacts (acres)[1]	Wetland WOTUS/WOTS Temporary Impacts (acres)	Streams/Rivers/ Riparian Habitat Permanent Impacts (acres)	Streams/Rivers/ Riparian Habitat Temporary Impacts (acres)[1]
11	-	-	0.01	-	-	0.01
12	-	-	<0.01	-	-	<0.01
13	-	-	0.01	-	-	0.03
29	-	-	<0.01	-	-	<0.01
32	-	-	-	-	-	0.02
33	-	-	0.18	-	-	0.18
36	-	-	0.14	-	-	0.32
37	-	-	0.23	-	-	0.25
39	-	-	0.07	-	-	0.07
41	-	-	0.07	-	-	0.12
43	-	-	0.64	-	-	0.86
50	-	-	0.06	-	-	0.06
51	-	-	0.04	-	-	0.07
53	-	-	0.04	-	-	0.04
59	-	-	<0.01	-	-	0.01
67	-	-	<0.01	-	-	0.01
68	-	-	0.02	-	-	0.08
69	-	-	0.03	-	-	0.07
70	-	-	0.01	-	-	0.03
71	-	-	0.14	-	-	0.32
84	-	-	-	0.22	-	0.22
100	-	-	0.01	-	-	0.02
104	-	-	0.11	-	-	0.11
105	-	-	0.02	-	-	0.02
106	-	-	0.04	-	-	0.08
107	-	-	0.08	-	-	0.08
108	-	-	<0.01	-	-	<0.01
119	-	-	0.04	-	-	0.16
120	-	-	<0.01	-	-	0.02
121	-	-	0.01	-	-	0.01
122	-	-	<0.01	-	-	0.02
Total	**0**	**0**	**2.02**	**0.22**	**0**	**3.29**

Source: LSA (2023).
*Totals may appear inaccurate due to rounding.
**Features not included on the table will be avoided (no permanent or temporary impacts).
CDFW = California Department of Fish and Wildlife
NES = Natural Environment Study
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers
WOTS = Waters of the State
WOTUS = Waters of the United States

Temporary indirect impacts during construction activities include the potential for water quality-related impacts such as loose soil or pollutants inadvertently entering the drainage features located within and adjacent to the BSA. Such impacts would be avoided or minimized with implementation of the measures outlined below in Section 4.1.2.3.

Alternative 4

Alternative 4 would temporarily impact up to 0.22 acre of wetland waters of the U.S., 2.24 acres of nonwetland waters of the U.S., and 4.50 acres of CDFW jurisdictional area due to modifications from construction access (see Figure 6, Jurisdictional Aquatic Resources Impact Map – Alternative 4 [Sheets 1–32], Table 18). No permanent impacts to jurisdictional areas are anticipated to occur as part of Alternative 4.

Table 18: Alternative 4—Potential Impacts to Jurisdictional Areas by Feature Number

Feature No.	USACE and RWQCB				CDFW	
	Nonwetland WOTUS/WOTS Permanent Impacts (acres)	Wetland WOTUS/WOTS Permanent Impacts (acres)	Nonwetland WOTUS/WOTS Temporary Impacts (acres)[1]	Wetland WOTUS/WOTS Temporary Impacts (acres)	Streams/Rivers/ Riparian Habitat Permanent Impacts (acres)	Streams/Rivers/ Riparian Habitat Temporary Impacts (acres)[1]
11	-	-	<0.01	-	-	0.02
12	-	-	<0.01	-	-	<0.01
13	-	-	0.01	-	-	0.03
29	-	-	<0.01	-	-	<0.01
32	-	-	-	-	-	0.01
33	-	-	0.18	-	-	0.18
36	-	-	0.14	-	-	0.46
37	-	-	0.23	-	-	0.25
39	-	-	0.07	-	-	0.07
41	-	-	0.07	-	-	0.20
43	-	-	0.64	-	-	1.51
50	-	-	0.06	-	-	0.06
51	-	-	0.04	-	-	0.11
53	-	-	0.04	-	-	0.04
59	-	-	0.0043	-	-	0.01
67	-	-	0.0023	-	-	0.01
68	-	-	0.02	-	-	0.10
69	-	-	0.03	-	-	0.10
70	-	-	0.01	-	-	0.04
71	-	-	0.14	-	-	0.46
84	-	-	-	0.22	-	0.22
100	-	-	0.22	-	-	0.03
104	-	-	0.11	-	-	0.11
105	-	-	0.02	-	-	0.02
106	-	-	0.04	-	-	0.11
107	-	-	0.08	-	-	0.08
108	-	-	<0.01	-	-	<0.01
119	-	-	0.04	-	-	0.20
120	-	-	<0.01	-	-	0.02
121	-	-	0.01	-	-	0.01
122	-	-	<0.01	-	-	0.02
Total	**0**	**0**	**2.24**	**0.22**	**0**	**4.50**

Source: LSA (2023).
*Totals may appear inaccurate due to rounding.
**Features not included on the table will be avoided (no permanent or temporary impacts).
CDFW = California Department of Fish and Wildlife
NES = Natural Environment Study
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers
WOTS = Waters of the State
WOTUS = Waters of the United States

Alternative 4 would implement BMPs and design practices for stormwater treatment in compliance with current standards, and no long-term or cumulative adverse impacts to current functions and values of any delineated features would occur with implementation of Alternative 4. No permanent removal of riparian or wetland vegetation would occur. Temporary removal of riparian or wetland vegetation is anticipated to occur within Feature 84. All other direct impacts to delineated features, with the exception of Feature 43, would be to concrete-lined features used and maintained for flood control purposes.

Temporary indirect impacts during construction activities include the potential for water quality-related impacts such as loose soil or pollutants inadvertently entering the drainage features located within and adjacent to the BSA. Such impacts would be avoided or minimized with implementation of the measures outlined below in Section 4.1.2.3.

4.1.2.3 Avoidance and Minimization Efforts/Compensatory Mitigation

To avoid impacts to jurisdictional aquatic resources, avoidance and minimization efforts are the same as those described in Section 4.1.1.3 (i.e., Measure BIO-7). This is applicable to all build alternatives.

In addition, the following measures are to be implemented to further avoid and minimize anticipated impacts to jurisdictional aquatic resources as part of Alternative 4. No compensatory mitigation is warranted as impacts to jurisdictional aquatic resources are limited to those that are temporary. This is applicable to Alternative 4.

BIO-8 **Nationwide Permit.** Prior to initiation of construction, a permit will be obtained through the USACE pursuant to Section 404 of the Clean Water Act. As part of coordination with the USACE, a Nationwide Permit will be pursued, if appropriate. Subject to confirmation from the USACE, it is anticipated that the Project will be permitted under Nationwide Permit 14 for linear transportation projects. Any conditions and measures identified in the Section 404 permit will be implemented.

BIO-9 **Streambed Alteration Agreement.** Prior to initiation of construction, an SAA with the CDFW will be obtained and any specifications conditions and measures identified in the SAA will be implemented.

BIO-10 **Water Quality Certification.** Prior to initiation of construction, a Section 401 Water Quality Certification from the Santa RWQCB will be obtained and any specifications conditions and measures identified in the certification will be implemented.

4.2 Special-Status Plant Species

Certain plant species are recognized by federal and State resource agencies as well as private conservation organizations (i.e., the CNPS) as special-status plant species. An individual taxon (i.e., species, subspecies, or variety) is given such recognition due to the documented or perceived decline and/or limitations of its population size, geographic range, and distribution, which typically are a result of habitat loss. For the purposes of this NES(MI), listed special-status species

are considered to be those listed under FESA and/or CESA. Nonlisted special-status plant species are those plant species that are not State or federally listed but have a CRPR of 1, 2, or 3. Table 15 shows all special-status plant species considered for their potential to occur in the BSA. Refer to Section 3.2 for more information regarding specific "special-status species" definitions.

There are 61 special-status plant species considered for their potential to occur in the BSA (refer to Table 15). Many of these species have specialized habitat requirements that do not occur within the BSA, and these plants are not expected to occur within the proposed work areas. No special-status plant species, including listed species, were observed within the BSA during the 2022 surveys, none have a moderate or higher potential to occur within the BSA, and one listed plant species (Gambel's water cress [*Nasturtium gambelii*]) has a low potential to occur within the BSA, as described in Table 15.

No non-listed special-status plant species were observed within the BSA during the 2022 surveys and none were identified as having a moderate or higher potential to occur within the BSA.

Since no special-status plant species were observed and there were no nonlisted special-status plant species having a moderate to higher potential to occur in the BSA, only listed plant species with suitable habitat in the BSA are discussed in more detail below. The remaining special-status plant species identified in Table 15, which either have a low probability of occurring or are not expected to occur within the BSA, are unlikely to be adversely affected by activities associated with Alternative 4 and, therefore, are not analyzed further in this NES(MI).

4.2.1 Discussion of Gambel's Water Cress

Gambel's water cress is listed as Endangered under FESA and Threatened under CESA. This special-status plant species also has a CRPR of 1B.1 and is a perennial rhizomatous herb that occurs in marshes and swamps at elevations of 15 to 1,640 ft. The species is considered extirpated from southern California, as it is only known from a few remaining populations in San Luis Obispo and Santa Barbara Counties, including on Vandenberg Air Force Base in Santa Barbara County. Critical habitat has not been designated for the species.

4.2.1.1 Survey Results

Gambel's water cress was not observed in the BSA during the August 2022 surveys. Suitable habitat for Gambel's water cress is expected to occur within the freshwater marsh habitat within the northern portion of the BSA. There are two historical occurrences in the vicinity of the BSA, with the closest occurrence overlapping with the BSA between SR-22 and SR-55, and the species is noted as being extirpated in southern California. The next closest occurrence is approximately 10 miles to the southwest of the BSA along the Pacific Ocean. Therefore, the species is considered unlikely within the BSA.

4.2.1.2 Project Impacts

Alternative 2

Alternative 2 will not permanently or temporarily impact marginally suitable freshwater marsh habitat for Gambel's water cress. Therefore, Alternative 2 is not anticipated to impact the species, and no avoidance or minimization measures are required.

Alternative 3

A total of 0.04 acre of temporary direct impacts to marginally suitable freshwater marsh habitat for Gambel's water cress within the BSA would occur during Project activities associated with Alternative 3. No permanent impacts would occur to suitable habitat for the species. Alternative 3 would not impact critical habitat for the species as none exists within the BSA. Alternative 3 is not anticipated to impact the species, as suitable habitat present is isolated within an otherwise developed area. With implementation of the avoidance and minimization measures below, potential impacts to Gambel's water cress would be avoided to the greatest extent possible.

Alternative 4

Alternative 4 will have the same amount and type of impact to marginally suitable freshwater marsh habitat for Gambel's water cress within the BSA as Alternative 3.

4.2.1.3 Avoidance and Minimization Efforts/Compensatory Mitigation

The Project avoidance and minimization measures listed in Section 4.1.1.3 would address potential direct and indirect temporary impacts to suitable habitat for Gambel's water cress in the Project area. This is applicable to all build alternatives.

To further avoid impacts to Gambel's water cress and minimize impacts to suitable habitat areas, an avoidance and minimization effort is described below (i.e., Measure BIO-11). With successful implementation of the avoidance and minimization measure described, impacts to Gambel's water cress would be avoided, and no compensatory mitigation for Gambel's water cress is warranted. If Gambel's water cress is found during pre-construction surveys and work cannot be completed without avoiding take, Section 7 consultation with the USFWS is required. While not anticipated, compensatory mitigation may be developed in consultation with the USFWS, if necessary. With successful implementation of this measure, impacts to Gambel's water cress would be avoided, and no additional avoidance or minimization measures are warranted. This is applicable to all build alternatives.

BIO-11 **Pre-Construction Clearance Surveys.** A qualified biologist will conduct pre-construction surveys to confirm the absence of sensitive biological resources within the work areas. The pre-construction surveys will take place no more than 24 hours prior to commencement of work activities. If listed species are observed within the work area (or areas potentially indirectly affected by Project activities as determined by the qualified biologist) and the work cannot be postponed until the species is no longer present, the California Department of Transportation (Caltrans) will obtain written approval from the USFWS or the CDFW, as applicable, prior to completing Project work at these locations.

4.3 Special-Status Animal Species

Certain animal species are recognized by federal and State resource agencies as special-status species. Species are given such recognition due to the documented or perceived decline and/or limitations of its population size, geographic range, and distribution, which typically are a result of habitat loss. For the purposes of this discussion, special-status animal species are considered

to be those listed under FESA and/or CESA and species considered to be of special concern by the CDFW. Table 15 shows special-status animal species considered for their potential to occur in the BSA.

There were 82 special-status wildlife species considered for their potential to occur in the BSA (refer to Table 15). Most of these species have specialized habitat requirements that do not occur within the BSA and are not expected to occur within the proposed work areas. No listed special-status animal species were observed within the BSA in 2022. The only nonlisted special-status animal species observed within the BSA in 2022 was great blue heron (*Ardea herodias*). However, no nesting colonies for the species were observed within the BSA.

A total of eight listed special-status animals were identified as having potentially suitable habitat within the BSA, and five nonlisted special-status wildlife species were identified as having moderate or high potential to occur within the BSA. Listed special-status wildlife species with suitable habitat in the BSA and nonlisted special-status wildlife species with a moderate to high potential to occur in the BSA are discussed below.

Southern California steelhead is the only coastal and marine species identified in the literature review as potentially occurring within the USGS topographic quadrangles in which the BSA occurs (refer to Appendix B for the NOAA Fisheries Species List). Southern California steelhead was not observed in the BSA in 2022. Suitable habitat for southern California steelhead is present within the BSA, and the species is analyzed below.

None of the remaining special-status wildlife species present in Table 15 are expected to occur within the BSA or to be affected by Alternative 4and are not analyzed further in this NES(MI).

4.3.1 Discussion of Monarch Butterfly

Monarch butterfly was listed as a Candidate under FESA by the USFWS in December 2020 (USFWS 2023). Monarch butterfly is a migratory species of butterfly that typically overwinters along the west coast of the United States in groves of blue gum eucalyptus (*Eucalyptus globulus*), Monterey pine (*Pinus radiata*), and Monterey cypress (*Hesperocyparis macrocarpa*), all of which act as roost trees (USFWS 2020). Adult monarch butterflies require a diversity of blooming nectar resources during breeding and migration, which they feed on throughout their migration routes and breeding grounds (spring through fall). Monarch butterflies also need milkweed for both egg-laying and larval feeding among nectar resources. Overwintering sites are protected as sensitive habitat areas by the CDFW.

4.3.1.1 Survey Results

Monarch butterfly was not observed in the BSA during the 2022 field surveys. Marginally suitable foraging habitat that includes limited nectar sources for monarch butterfly occurs in the freshwater marsh that occurs within the BSA. Suitable roosting and overwintering habitat is located within the trees present within the landscaped areas dominated by ornamentals that occurs throughout the BSA. There are no documented occurrences of monarch butterfly roosting sites near the BSA; however, there are several roosting site occurrences along the Pacific Coast from Dana Point to Long Beach, with the closest being approximately 7 miles southwest of the BSA. Milkweed species required for egg-laying and larval feeding are not present within the BSA.

4.3.1.2 Project Impacts

Monarch butterfly is not anticipated to occur within the freshwater marsh and/or landscaped habitat that would be permanently or temporarily removed by Alternatives 2, 3 or 4. Indirect temporary effects to suitable monarch butterfly habitat through implementation of Alternatives 2, 3, and 4 may include increased noise, vibration, dust, and lighting during construction activities. In addition, because those activities will be performed on and/or along highly traveled portions of I-5, indirect impacts are expected to be minimal. Below is a discussion of direct impacts per build alternative.

Alternative 2

Up to 1.23 acres of permanent impacts to marginally suitable habitat in the form of landscaped area are anticipated to occur with implementation of Alternative 2. No temporary impacts to marginally suitable habitat will occur.

Alternative 3

Up to 5.98 acres of permanent impacts to marginally suitable landscaped area are anticipated to occur. Up to 132.43 acre of temporary impacts to marginally suitable habitat in the form of freshwater marsh (0.04 acre) and landscaped area (132.39 acres) are anticipated to occur with implementation of Alternative 3.

Alternative 4

Up to 7.52 acres of permanent impacts to marginally suitable landscaped area are anticipated to occur. Up to 130.89 acres of temporary impacts to marginally suitable habitat, in the form of freshwater marsh (0.04 acre) and landscaped area (130.85 acres) are anticipated to occur with implementation of Alternative 4.

4.3.1.3 Avoidance and Minimization Efforts/Compensatory Mitigation

The Project avoidance and minimization measure listed in Section 4.2.1.3 would address potential direct and indirect temporary impacts to monarch butterfly in the Project area. This is applicable to all build alternatives. No additional avoidance or minimization measures are warranted. With successful implementation of these measures, impacts to monarch butterfly would be avoided, and no additional avoidance or minimization measures are warranted.

4.3.2 Discussion of Santa Ana Sucker

Santa Ana sucker was listed as Threatened under FESA in May 2000. Santa Ana sucker is a small, short-lived, resident fish species. The species occurs in perennial waters in southern California. Its current range is limited to the upper reaches of the Los Angeles River and San Gabriel River watersheds and the middle reach of the Santa Ana River Watershed (USFWS 2017). Several sources of threat occur in their range, including past and ongoing habitat loss through hydrological modifications. Critical habitat for the species was established in 2004 and revised in 2005 and 2010.

4.3.2.1 Survey Results

The BSA contains suitable habitat in the form of perennial waters, including Coyote Creek, La Cañada Verde Creek, and Peters Canyon Wash. Stream flows within these three waterways were limited during the 2022 surveys, but the waterways are perennial. However, no fish were observed in the perennial waterways during the 2022 field surveys. Coyote Creek, La Cañada Verde Creek, and Peters Canyon Wash are able to support Santa Ana sucker year-round; however, they are considered to be of marginal habitat quality due to their narrow width, shallow depth, and concrete-lined substrate within the BSA. No other suitable Santa Ana sucker habitat is present in the BSA. It should be noted that several other ephemeral and intermittent drainage features, including a reach of the Santa Ana River, occur in the BSA, but these areas generally only contain flow immediately following rain events and are not considered perennial or suitable for Santa Ana sucker. Santa Ana sucker is not known to occur within the BSA. Critical habitat for Santa Ana sucker is absent from the BSA and areas adjacent to the BSA.

4.3.2.2 Project Impacts

Alternative 2

Activities associated with Alternative 2 within Coyote Creek, La Cañada Verde Creek, or Peters Canyon Wash are not planned as part of Alternative 2. No modifications to suitable habitat are proposed, and no barriers to fish passage would be created by Alternative 2. Temporary indirect impacts, including increases or changes in off-site runoff due to construction activities, are not anticipated as Project activities are a minimum of 4 miles from the respective waterways that provide suitable habitat. Alternative 2 will not impact critical habitat for the species as it is absent from the BSA and areas adjacent to the BSA.

Alternatives 3 and 4

Activities associated with Alternatives 3 and 4 within Coyote Creek, La Cañada Verde Creek, or Peters Canyon Wash are not planned as part of Alternative 3 or 4. No modifications to suitable habitat are proposed, and no barriers to fish passage would be created by Alternative 3 or 4. Temporary indirect impacts during construction activities may include an increase or change in off-site runoff due to construction activities. In addition, because those activities will be performed on highly traveled portions of I-5, indirect impacts are expected to be minimal. Alternatives 3 and 4 have been designed, to the extent feasible, to avoid impacts to fish, including Santa Ana sucker. Alternatives 3 and 4 will not impact critical habitat for the species as it is absent from the BSA and areas adjacent to the BSA.

4.3.2.3 Avoidance and Minimization Efforts

Implementation of Measures BIO-1 through BIO-4 and BIO-6 (defined in Section 4.1.1.3, above) would ensure that direct and indirect impacts to suitable habitat for Santa Ana sucker are avoided and minimized, respectively. This is applicable to Alternatives 3 and 4.

4.3.3 Discussion of Southern California Steelhead Trout

Southern California steelhead trout (southern steelhead) is an anadromous, or ocean-going, form of the species *Oncorhynchus mykiss*. The resident form that stays within freshwater is rainbow trout. Populations of rainbow trout are abundant, but populations of steelhead are not (Titus et al. 2010). After the NMFS reviewed all West Coast steelhead populations, the southern steelhead was listed as endangered under FESA on August 18, 1997. In January 2006, a final listing determination was issued for the southern California steelhead Distinct Population Segment (DPS). Critical habitat for the species was established in 2000 and revised in 2005.

The Santa Ana River is considered one of the major steelhead watersheds in the southern portion of the Recovery Planning Area (NMFS 2012). Several sources of threat in the Santa Ana River Watershed include channelization, levee construction, and other flood control activities.

4.3.3.1 Survey Results

The BSA contains suitable habitat in the form of perennial waterways including Coyote Creek, La Cañada Verde Creek, and Peters Canyon Wash. However, no fish were observed in the perennial river present in the BSA during the 2022 field surveys. All three drainages have potential to support steelhead year-round as they are perennial; however, they are all considered to be of marginal habitat quality due to their narrow channel width, shallow depth, and concrete-lined substrate within the BSA. The species stock was previously noted as extinct from the San Gabriel River of which Coyote Creek is a tributary (NMFS 2005). However, the species was noted as having a few relict populations persisting in the headwaters of the San Gabriel River (NMFS 2016). It should be noted that several other ephemeral and intermittent drainage features, including a reach of the Santa Ana River, occur in the BSA, but these areas generally only contain flow immediately following rain events and are not considered perennial or suitable for Santa Ana sucker. Critical habitat for southern steelhead is absent from the BSA and areas adjacent to the BSA.

4.3.3.2 Project Impacts

Alternative 2

Activities associated with Alternative 2 within Coyote Creek, La Cañada Verde Creek, or Peters Canyon Wash are not planned as part of each of Alternative 2. No modifications to suitable habitat are proposed, and no barriers to fish passage would be created by Alternative 2. Temporary indirect impacts, including increases or changes in off-site runoff due to construction activities, are not anticipated as Project activities are a minimum of 4 miles from the respective waterways that provide suitable habitat. Alternative 2 will not impact critical habitat for the species as it is absent from the BSA and areas adjacent to the BSA.

Alternatives 3 and 4

Activities associated with Alternatives 3 and 4 within Coyote Creek, La Cañada Verde Creek, or Peters Canyon Wash are not planned as part of Alternative 3 or 4. No modifications to suitable habitat are proposed, and no barriers to fish passage would be created by Alternative 3 or 4. Temporary indirect impacts during construction activities may include an increase or change in

off-site runoff due to construction activities. In addition, because those activities will be performed on highly traveled portions of I-5, indirect impacts are expected to be minimal. Alternatives 3 and 4 are planned, to the extent feasible, to avoid impacts to fish, including steelhead. Alternatives 3 and 4 will not impact critical habitat for the species as none occurs within or adjacent to the BSA or downstream of any of the drainages that occur within the BSA.

4.3.3.3 Avoidance and Minimization Efforts

Implementation of Measures BIO-1 through BIO-4 and BIO-6 (defined in Section 4.1.1.3, above) would ensure that direct and indirect impacts to suitable steelhead habitat are avoided and minimized, respectively. This is applicable to all build alternatives.

4.3.4 Discussion of Arroyo Toad

Arroyo toad was listed as Endangered under FESA in January 1995. Arroyo toad is a small, stocky, warty toad that is found in coastal and desert drainages in central and southern California, and Baja California, México. Arroyo toad breeding streams have low-gradient sections of slow-moving current with shallow pools, nearby sandbars, and adjacent stream terraces, and are either intermittent or perennial streams. Outside of the breeding season (March to May, and sometimes into late June or July), arroyo toads are terrestrial utilizing sand bars, alluvial terraces that lack vegetation or contain low to moderate vegetative cover including alluvial scrub, coastal sage scrub, chaparral, grassland, and oak woodland. Critical habitat for the species was established in 2005 and revised in 2011.

4.3.4.1 Survey Results

Arroyo toad was not observed in the BSA during the 2022 field surveys. The BSA contains three perennial waterways, including Coyote Creek, La Cañada Verde Creek, and Peters Canyon Wash. Stream flows within these three waterways were limited during the 2022 survey, but the waterways are perennial. All three perennial waterways are marginally suitable habitat, as they are all concrete-lined, and also lack suitable adjacent or upland habitat required by the species within the BSA. Although there are several other drainage features present within the BSA, all of them are ephemeral or intermittent and generally lack suitable habitat for arroyo toad, including suitable adjacent upland habitat. No other suitable arroyo toad habitat is present in the BSA. Critical habitat for arroyo toad is absent from the BSA and areas adjacent to the BSA.

4.3.4.2 Project Impacts

Alternatives 2, 3 and 4

Implementation of Alternatives 2, 3, and 4 would not modify marginally suitable habitat within Coyote Creek, La Cañada Verde Creek, and Peters Canyon Wash. Temporary indirect impacts during activities associated with Alternative 4 are not anticipated as the BSA lacks suitable habitat and downstream extensions of those perennial features present within the BSA are in the same or similar conditions as those within the BSA. Activities associated with Alternative 4 will not impact critical habitat for the species as none occurs within or adjacent to the BSA or downstream of any of the drainages that occur within the BSA.

4.3.4.3 Avoidance and Minimization Efforts

To avoid indirect impacts to arroyo toad and minimize impacts to suitable habitat areas, implementation of avoidance and minimization efforts are the same as those described in Sections 4.1.1.3 (BIO-1 through BIO-6). This is applicable to all build alternatives.

4.3.5 Discussion of Tri-Colored Blackbird

Tri-colored blackbird was listed as Threatened under CESA in March 2019. Tri-colored blackbird is a small songbird that typically nests in colonies and forages in freshwater marshes dominated by cattails or tules (*Scirpus* spp.) and other riparian areas and also forages in adjacent grasslands and farmland. The species is a permanent resident of California. In California, nearly all of the population's breeding adults occur in the Central Valley, and the species is a rare breeder in other parts of the State. The species is not listed under FESA; therefore, critical habitat has not been established for the species.

4.3.5.1 Survey Results

Freshwater marsh is present in the BSA in one location; however, it is largely considered marginal for foraging and not suitable for nesting as it occurs immediately adjacent to I-5, where high levels of human activity occur and is small in size. In addition, the area where the freshwater marsh is located is subject to maintenance activities including vegetation removal as observed on aerial imagery as recent as May 2019. Tri-colored blackbird was not observed within the BSA during the 2022 field surveys. The closest documented occurrences of tri-colored blackbird within the vicinity of the BSA are located approximately 2.5 miles southeast of the BSA adjacent to I-5 and 4.3 miles northeast of the BSA within Peters Canyon Regional Park. The species is not anticipated to nest within the vicinity of the BSA, given the absence of suitable nesting habitat and the species' limited breeding population located outside the Central Valley, and is not anticipated to forage within the BSA, given the small amount of marginal suitable foraging habitat and high levels of human activity.

4.3.5.2 Project Impacts

Alternative 2

No direct impacts are anticipated with the implementation of Alternative 2. Indirect temporary effects to suitable tri-colored blackbird foraging habitat are not anticipated is it is located a minimum of 7 miles from Project activities associated with Alternative 2.

Alternatives 3 and 4

Tri-colored blackbird is not anticipated to occur within the freshwater marsh habitat that would be temporarily removed by Alternatives 3 and 4. No permanent impact and up to 0.04 acre of temporary impacts to marginally suitable foraging habitat (in the form of freshwater marsh habitat) are anticipated to occur as a result of Alternatives 3 and 4. No impacts would occur to suitable nesting habitat for the species as none occurs within the BSA. Indirect temporary effects to suitable tri-colored blackbird foraging habitat associated with Alternatives 3 and 4 may include increased noise, vibration, dust, lighting, and predation during Project activities. In addition,

because those activities will be performed on highly traveled portions of I-5, indirect impacts are expected to be minimal. Alternatives 3 and 4 are planned to avoid impacts to nesting birds, including tri-colored blackbird.

4.3.5.3 Avoidance and Minimization Efforts/Compensatory Mitigation

Because tri-colored blackbird typically forages and nests within freshwater marshes, a sensitive natural community, avoidance and minimization efforts are the same as those described in Section 4.1.1.3 (i.e., Measures BIO-1 through BIO-6), along with Measures BIO-12 through BIO-15 below for nesting migratory birds. Although impacts to suitable foraging habitat for tri-colored blackbird are limited to Alternatives 3 and 4, measures to protect nesting birds are applicable to all build alternatives. With successful implementation of these measures, impacts to tri-colored blackbird would be avoided, and no additional avoidance or minimization measures are warranted.

BIO-12 **Avoidance of Breeding and Nesting Bird Season.** Project activities will occur outside the nesting season (February 1–September 30) to the fullest practicable extent.

BIO-13 **Pre-Construction Nesting Bird Survey.** If Project activities with potential to indirectly disturb suitable avian nesting habitat within 500 feet (ft) of the work area would occur during the nesting season (as determined by a qualified biologist), a qualified biologist with experience in conducting breeding bird surveys will conduct a nesting bird survey no more than 3 days prior to the initiation of Project activities to detect the presence/absence of migratory and resident bird species occurring in suitable nesting habitat. Project activities may begin no more than 3 days after the completion of the nesting bird survey in the absence of active bird nests. An additional nesting bird survey will be conducted if Project activities fail to start within 3 days of the completion of the pre-construction nesting bird survey.

BIO-14 **Nesting Bird Exclusionary Buffers.** Should nesting birds be found during the pre-construction nesting bird survey, an exclusionary buffer will be established by the qualified biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction will not be conducted in this zone until the biologist determines that the young have fledged or the nest is no longer active. Work may only occur during the breeding season if nesting bird surveys indicate the absence of any active nests within the work area. Without the written approval of the CDFW and/or the USFWS, no work will occur if listed or fully protected bird species are found to be actively nesting within 500 ft of the areas subject to construction activities.

BIO-15 **Trash and Waste Removal.** During construction, trash and food waste will be removed from work sites on a daily basis to avoid the attraction of predators that prey on sensitive wildlife species.

If tri-colored blackbird is found during pre-construction surveys or work cannot be completed without avoiding take, Section 2081 consultation with the CDFW will be required. While not

anticipated, compensatory mitigation may be developed in consultation with the CDFW, if necessary. No additional avoidance or minimization measures are warranted.

4.3.6 Discussion of Bats

The loss of roosting and foraging habitat is among the biggest threats to bat populations, particularly in heavily urbanized Southern California. As natural roost sites become scarcer due to urban development and changes in land use, the use of human-made structures (e.g., bridges, culverts, and buildings) for roost sites by some bat species has increased as bats seek alternative roosting options. The importance and ecological value of anthropogenic structures as roosts has consequently increased to the point that many of these "artificial" roost sites are becoming essential to the survival of local bat populations. However, these human-made roosting sites are also highly vulnerable because bats may be driven out or killed once they are discovered occupying these structures. Therefore, as urban and suburban development occurs across the landscape, many of these areas may act as habitat "sinks" where bats may at first appear to be relatively common and may even be attracted to human-made structures but then decrease in abundance over time as development of that area continues. The protection of bat-roosting habitat, particularly habitat identified as maternity or nursery sites, is vitally important to prevent adverse effects to, and further loss of, remaining bat populations.

Various regulations afford protections to bats, which are classified as indigenous nongame mammal species regardless of their status under both CESA and FESA. These regulations include Title 14, Section 251.1 of the California Code of Regulations (CCR), which prohibits harassment (defined in that section as an intentional act that disrupts an animal's normal behavior patterns, including breeding, feeding, or sheltering) of nongame mammals (e.g., bats), and California Fish and Game Code Section 4150, which prohibits "take" or possession of all nongame mammals or parts thereof. Any activities resulting in bat mortality (e.g., the destruction of an occupied bat roost that results in the death of bats), disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), or various modes of nonlethal pursuit or capture may be considered "take" as defined in Section 86 of the California Fish and Game Code by the CDFW.

Several bat species have the potential to occur within the BSA and are discussed in detail below.

4.3.6.1 Survey Results

Daytime bat habitat assessment surveys were conducted in July and August 2022 throughout the BSA concurrent with the general habitat suitability survey. The probability of bats roosting within select portions of the BSA that included bridges and culverts was determined to be high during the bat habitat assessment.

Potential roosting habitat within the BSA was confirmed during the habitat assessment at the following bridges over I-5:

- Alondra Boulevard
- Valley View Avenue
- Western Avenue
- Beach Boulevard

- Stanton Avenue
- Orangethorpe Avenue
- Magnolia Street
- La Palma Avenue
- Brookhurst Street
- I-5/Euclid Street southbound on- and off-ramps
- Euclid Street
- Lincoln Avenue
- Broadway
- Union Pacific Railroad (UPRR) north of Santa Ana Street
- Santa Ana Street
- I-5/Disneyland Drive SB and NB ramps
- Ball Road
- Harbor Boulevard
- Gene Autry Way
- La Veta Avenue
- Broadway
- Main Street
- Lincoln Avenue
- 4th Street
- 1st Street
- Tustin Ranch Road
- Jamboree Road

Potential roosting habitat within the BSA was confirmed during the habitat assessment at the following bridge locations:

- I-5 and Firestone Boulevard over La Cañada Verde Creek
- I-5 and Firestone Boulevard over Coyote Creek
- I-5 over Artesia Boulevard
- I-5, Auto Center Drive, and UPRR over Fullerton Creek
- SR-91/I-5 interchange:
    - NB I-5 to EB SR-91
    - NB I-5 to WB SR-91
    - SB I-5 to EB SR-91
    - SB I-5 to WB SR-91

  - WB SR-91 to SB I-5
  - WB SR-91 to NB I-5
  - EB SR-91 to SB I-5
  - EB SR-91 to NB I-5
- I-5 over Anaheim Boulevard
- I-5 over Disney Way
- I-5 over Katella Avenue
- I-5 over Orangewood Avenue
- I-5 over The City Drive
- I-5 over Chapman Avenue
- I-5 over the Santa Ana River
- I-5/SR-57 interchange:
  - NB I-5 to NB SR-57
  - SB SR-57 to SB I-5
  - SB SR-57 to WB SR-22
- SR-22 over I-5
- I-5/SR-22 interchange:
  - SR-22 over I-5
  - EB SR-22 to SB I-5
  - SB I-5 to WB SR-22, over the Santa Ana River
  - SB I-5 to EB SR-22
- I-5 over 17th Street
- I-5 over Grand Avenue
- I-5 over Main Street
- I-5/SR-55 interchange:
  - SB I-5 HOV to SB SR-55
  - NB SR-55 HOV and non-HOV to NB I-5
  - SB SR-55 to SB I-5
  - SB I-5 exit for Newport Avenue
- I-5 over Newport Avenue
- I-5 over Red Hill Avenue
- I-5 over El Modena-Irvine Channel
- I-5 over SR-261

- I-5 over Peters Canyon Wash
- Main Street over SR-55
- McFadden Avenue of SR-55
- SR-55 over railroad
- SR-55 over Edinger Avenue
- Warner Avenue over SR-55
- SR-55 over Dyer Road
- SR-57 over Chapman Avenue
- SR-57 over Orangewood Avenue
- SR-57 over Santa Ana River
- SR-57 over railroad
- SR-57 over Katella Avenue
- Gene Autry Way over Santa Cruz Street
- SR-91 over Euclid Street
- SR-91 over Brookhurst Street
- SR-91 over Gilbert Street
- SR-91 over Stanton Avenue
- SR-91 over Beach Boulevard
- SR-91 over Western Avenue
- SR-91 over Knott Avenue

Suitable bat roosting habitat also occurs in the various culverts that exist within the BSA. There are also Mexican fan palm (*Washingtonia robusta*), pine (*Pinus* sp.), and other trees present within the BSA, which provide suitable bat-roosting habitat.

A maternity colony of Yuma myotis (*Myotis yumanensis*) and a small population of Mexican free-tailed bats (*Tadarida brasiliensis*) have been documented in the bat panels installed on the SR-91 crossing over the Santa Ana River, which is approximately 3.6 miles east of the BSA. Yuma myotis is a nonlisted special-status animal species and Mexican free-tailed bat is a common animal species. Both species have potential to roost within the BSA, and given the proximity to known roosts, these two species are the most likely bat species to roost within the BSA. Additional special-status bat species that have potential to roost within the BSA include those species identified as having habitat present in Table 15, above. This includes pallid bat (*Antrozous pallidus*), Mexican long-tongued bat (*Choeronycteris mexicana*), western mastiff bat (*Eumops perotis californicus*), silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*), western yellow bat (*Lasiurus xanthinus*), pocketed free-tailed bat (*Nyctinomops femorasaccus*), and big free-tailed bat (*Nyctinomops macrotis*), as well as nonspecial-status bat species.

4.3.6.2 Project Impacts

Alternative 2

Alternative 2 is not anticipated to directly impact bridges and culverts that provide suitable day-roosting and/or night-roosting bat habitat. However, it is anticipated to permanently impact 1.23 acres of landscaped area that contains trees which may provide suitable day-roosting and/or night-roosting habitat.

Indirect construction-related impacts are not anticipated to deter access to adjacent and potential roost sites in the crevices of adjacent bridges, culverts, and overhead structures but may deter access to adjacent suitable roosting habitat in trees. Because those activities will be performed adjacent to highly traveled roadways, indirect impacts (i.e., noise, dust, night lighting, and human encroachment) are expected to be minimal. Alternative 2 includes measures to avoid adverse effects to roosting bats to the fullest extent practicable, as detailed in the section below.

Alternatives 3 and 4

Direct and permanent impacts would occur on the following bridges above where suitable bat-roosting habitat is located:

- I-5 over Artesia Boulevard
- I-5 over Fullerton Creek
- I-5 over Carbon Creek
- I-5 over Anaheim Street
- I-5 over Katella Avenue
- I-5 over State College Boulevard
- I-5 over Santa Ana River
- I-5 over Santiago Creek
- I-5 over 17th Street
- I-5 over Grand Avenue
- I-5 over Newport Avenue
- I-5 over Red Hill Avenue

Direct and permanent impacts would occur underneath the following bridges, below where suitable bat-roosting habitat is located:

- I-5 under Western Avenue
- I-5 under Beach Boulevard
- I-5 under Orangethorpe Avenue
- I-5/SR-91 interchange:
  - EB SR-91 over I-5
  - WB SR-91 over I-5

  - NB I-5 to WB SR-91
  - SB I-5 to EB SR-91
- I-5 under Magnolia Avenue
- I-5 under La Palma Avenue
- I-5 under Brookhurst Street
- I-5 under Euclid Avenue
- I-5 under Lincoln Avenue
- I-5 under Broadway
- I-5 under Santa Ana Street
- I-5 under Disneyland Drive
- I-5 under Ball Road
- I-5 under Gene Autry Way
- I-5 under Orangewood Avenue
- I-5 under State College Boulevard
- I-5/SR-57 interchange:
  - NB I-5 to NB SR-57
  - SB SR-57 to SB I-5
  - SB SR-57 to WB SR-22
- I-5/SR-22 interchange:
  - SR-22 over I-5
  - EB SR-22 to SB I-5
  - SB I-5 to WB SR-22, over the Santa Ana River
  - SB I-5 to EB SR-22
- I-5 under Main Street
- I-5 under Lincoln Avenue
- I-5 under Irvine Boulevard
- I-5 under 1st Street
- I-5/SR-55 interchange:
  - SB I-5 HOV to SB SR-55
  - NB SR-55 HOV and non-HOV to NB I-5

Bat-roosting habitat is subject to direct impacts from implementation of Alternatives 3 and 4, as construction activities would occur on roadways under or on top of several bridges and would remove several trees, including palm trees, that provide potentially suitable day-roosting and/or night-roosting habitat within the BSA. Construction activities proposed on top of the bridges

above where bats are likely to roost are not anticipated to directly impact bat roosting habitat. Impacts to the underside of these bridges where bats are likely to roost would not occur as part of Alternatives 3 and 4. In addition, impacts would occur on highly traveled portions of I-5, SR-22, SR-55, SR-57, SR-91, SR-261, and other highly traveled roads.

Indirect construction-related impacts could temporarily deter access to roost sites in the crevices of bridges, culverts, and overhead structures. Because those activities will be performed on highly traveled roadways, indirect impacts (i.e., noise, dust, night lighting, and human encroachment) are expected to be minimal. Alternatives 3 and 4 include measures to avoid adverse effects to roosting bats to the fullest practicable extent, as detailed in the section below.

4.3.6.3 Avoidance and Minimization Efforts/Compensatory Mitigation

The following measures are recommended to avoid or minimize potential impacts to bats for all build alternatives:

BIO-16 **Pre-Construction Bat Surveys.** At bridge and culvert structures where construction activities will occur on or below that structure, and where there is also potential for maternity roosting, nighttime bat surveys should be performed by a qualified bat biologist during the peak period (June or July) of the bat maternity season (April 1–August 31) to confirm whether maternity colonies are present. These surveys should be performed by a qualified bat biologist at least 1 year in advance of construction so that appropriate site-specific and species-specific minimization measures can be developed in coordination with the CDFW and a qualified bat biologist.

BIO-17 **Avoidance of the Bat Maternity Season.** Within 500 ft of structures where maternity roosting is confirmed, activities that pose adverse impacts to roosting bats through elevated noise and vibration, such as demolition and pile-driving activities, shall avoid the recognized bat maternity season (April 1–August 31) to prevent potential mortality of flightless young bats. Any such construction activities at structures housing maternity colonies shall be coordinated with a qualified bat biologist and the CDFW prior to work within the bat maternity season.

BIO-18 **Humane Eviction and Exclusion.** Direct impacts to bats and bat-roosting habitat are not anticipated from the proposed Project. If direct impacts to bat-roosting habitat are anticipated, humane evictions and exclusions of roosting bats should be performed under the supervision of a qualified bat biologist in the fall (September or October) prior to any work activities that would result in direct impacts or direct mortality to roosting bats. This action will be performed in coordination with the CDFW. To avoid potential mortality of flightless juvenile bats, evictions and exclusions of bats cannot be performed during the maternity season (April 1–August 31). Winter months are also inappropriate for bat eviction because not all individuals in a roost will emerge on any given night. In addition, long-distance movements to other roost sites are more difficult during the winter, when prey availability is scarce, resulting in high mortality rates of evicted bats.

BIO-19 **Night Work Lighting.** If night work (i.e., between dusk and dawn) is anticipated within 100 ft of structures where bat roosting is confirmed, night lighting shall be used only in areas of active work and shall be focused on the direct area(s) of work and away from the culvert entrances to the greatest extent practicable.

BIO-20 **Obstruction of Bat Roosting Features.** Airspace access to and from the roost features of the structures shall not be obstructed except in direct work areas, and construction personnel shall not be present in non-active areas beneath the structures or near the entrances to the structures.

BIO-21 **Construction Equipment Staging.** To the extent practicable, internal combustion equipment (e.g., generators and vehicles) is not to be parked or operated beneath or adjacent to the structures unless it is required for Project-related work on that structure.

BIO-22 **Replacement Lighting Locations.** The proposed Project includes the replacement of lighting in various areas. Siting of these lights should avoid overspill into bat-roosting sites, and light shields should be installed for lights adjacent to suitable foraging habitat to avoid permanent impacts to roosting and foraging bats.

BIO-23 **Swallow Nest Removal.** If swallow nests are removed to prevent swallows from nesting in the Project area during construction activities, the nests should be inspected for roosting bats by a CDFW-approved bat biologist and removed in the fall (September or October) in a manner that ensures they do not fall to the ground before lack of occupancy has been established.

BIO-24 **Tree Trimming and Removal.** To the greatest extent feasible, tree trimming/ removal activities shall be performed outside the bat maternity season (April 1–August 31) to avoid direct impacts to nonvolant (flightless) young that may roost in trees within the study area. This period also coincides with the typical bird nesting season. If trimming or removal of trees during the bat maternity season cannot be avoided, a qualified biologist shall monitor tree trimming and removal activities.

BIO-25 **Compensation for Direct Impacts to Bats.** If permanent, direct impacts to bat-roosting habitat are anticipated and/or a humane eviction/exclusion is performed, alternate roosting habitat shall be provided to ensure no net loss of bat-roosting habitat. The design, numbers, and locations of these roost structures should be determined in consultation with a qualified bat biologist. This action shall be coordinated with Caltrans, the CDFW, and a qualified bat biologist to ensure that the installed habitat will provide adequate mitigation for impacts.

BIO-26 **Construction Night Lighting.** All lighting used at night for Project construction will be of the lowest illumination necessary for human safety and will be selectively placed and directed at the immediate work area and away from adjacent habitats. Light glare shields will be used to reduce the extent of illumination into habitats.

With implementation of the avoidance and minimization measures identified above, the potential for adverse effects to bat species and bat colonies will be reduced to the greatest extent feasible. Compensatory mitigation (Measure BIO-20) would only be required, based on consultation with the CDFW, if a maternity roost would be impacted by Alternative 4. The avoidance and minimization measures listed above are considered sufficient at this time based on the results of the habitat assessment.

4.3.7 Discussion of Other Nonlisted Special-Status Animal Species and Nesting Birds (Class Aves)

One nonlisted special-status animal species, great blue heron, was observed in or adjacent to the BSA during 2022 surveys. Great blue heron is designated as a California Special Animal that occupies saltwater and freshwater habitats, from open coasts, marshes, sloughs, riverbanks, and lakes to backyard goldfish ponds. The species also forages in grasslands and agricultural fields and nests colonially in large trees adjacent to perennial waterways. Although the species is noted as a special-status species, only its colonial nesting sites are considered sensitive and are therefore protected.

There is at least a moderate potential of occurrence for Cooper's hawk (*Accipiter cooperii*), a nonlisted special-status animal species, within the BSA (refer to Table 15 for discussions of suitable habitat for the species).

Cooper's hawk is designated as a California Species of Special Concern. Cooper's hawk forages in a wide range of habitats, but primarily in forests and woodlands, including plantations and ornamental trees in urban landscape. It usually nests in tall trees in extensive forest areas but can also nest in isolated trees in open areas.

The vegetation communities within the BSA also provide suitable nesting habitat for a wide variety of bird species, including raptors. The California Fish and Game Code includes provisions for the protection of nesting birds and raptors, as does the federal MBTA.

4.3.7.1 Survey Results

Although great blue heron was observed during the field surveys, no known rookeries are present within the BSA and none were observed during the field surveys. However, there are tall trees adjacent to Peters Canyon Wash, one of a handful of perennial waterways, within the BSA that could support nesting activity for the species. Foraging habitat is generally limited to aquatic resources, such as the perennial waterways or freshwater marsh, although the species may also forage in ephemeral waterways in the presence of water. Suitable foraging and nesting habitat for great blue heron is considered marginal within the BSA due to its proximity to I-5 and other high-use areas and the limited amounts of perennial surface waters.

Cooper's hawk was not observed during field surveys. Suitable nesting habitat for Cooper's hawk is present within select portions of the BSA that support ornamental trees in proximity to urban development (refer to Figure 4). Cooper's hawk may also forage over ruderal areas. Please refer to Table 15 for specific locations where suitable habitat is present for Cooper's hawk.

In total, 13 bird species protected under the MBTA and California Fish and Game Code were observed in the BSA during the field surveys (see Appendix C), and many of these species have potential to nest in the BSA. Some species utilize ornamental vegetation or could even nest on structures within the BSA (such as swifts utilizing holes under existing bridges).

4.3.7.2 Project Impacts

Alternative 2

Alternative 2 is not anticipated to directly impact marginally suitable foraging habitat or suitable large, nesting trees adjacent to Peters Canyon Wash for great blue heron. Adverse modifications to suitable foraging and nesting habitat for Cooper's hawk are proposed as part of Alternative 2 in the form of landscaped vegetation. Vegetation removal activities associated with Alternative 2 also have the potential to directly impact nesting birds during the typical avian nesting season (February–September).

Indirect temporary effects to suitable habitats may occur with the implementation of Alternative 2 and include increased noise, vibration, dust, lighting, and predation during activities associated with Alternative 2. Direct and indirect impacts would be minimized through implementation of Project avoidance and minimization features, which include nesting bird avoidance, pre-construction clearance surveys, seasonal work windows, biological resources monitoring, and BMPs to avoid indirect disturbance to habitats. Alternative 2 is not anticipated to have any adverse effects on nonlisted special-status animal species.

Alternatives 3 and 4

Adverse modifications in the form of temporary impacts to marginally suitable foraging habitat for great blue heron are proposed as part of Alternatives 3 and 4. No direct impacts are anticipated during activities associated with Alternatives 3 and 4 for suitable large, nesting trees adjacent to Peters Canyon Wash.

Adverse modifications to suitable foraging and nesting habitat for Cooper's hawk are proposed as part of Alternatives 3 and 4 in the form of landscaped vegetation and ruderal areas. Vegetation removal activities associated with Alternatives 3 and 4 also have the potential to directly impact nesting birds during the typical avian nesting season (February–September).

Indirect temporary effects to suitable habitats may occur with the implementation of Alternative 4 and include increased noise, vibration, dust, lighting, and predation during activities associated with Alternatives 3 and 4. Direct and indirect impacts would be minimized through implementation of Project avoidance and minimization features, which include nesting bird avoidance, pre-construction clearance surveys, seasonal work windows, biological resources monitoring, and BMPs to avoid indirect disturbance to habitats. Alternatives 3 and 4 is not anticipated to have any adverse effects on nonlisted special-status animal species.

4.3.7.3 Avoidance and Minimization Efforts/Compensatory Mitigation

To avoid impacts to nonlisted special-status animal species and minimize impacts to suitable habitat areas, avoidance and minimization efforts are the same as those described in Section 4.3.5.3 (i.e., Measures BIO-12 through BIO-15). This is applicable to all build alternatives.

With successful implementation of the avoidance and minimization measures described, impacts to non-listed special-status animals would be avoided, and no compensatory mitigation for nonlisted special-status animal species is warranted. No additional avoidance or minimization measures are warranted.

4.4 Discussion of NOAA Species List

There is a low potential of occurrence for the following special-status animal species within the BSA based on the results of the literature review of the NOAA species list (refer to Table 15 for discussions of suitable habitat for the species):

- Southern California steelhead distinct population segment

There is no potential for occurrence of the following groups of species within the BSA based on the results of the literature review of the NOAA species list:

- Groundfish Essential Fish Habitat
- Coastal Pelagics Essential Fish Habitat
- Marine Mammal Protection Act (MMPA) pinnipeds

Southern California steelhead is discussed above in Section 4.3.3.

The Pacific groundfish group, as identified by NOAA, includes 90-plus groundfish species. Groundfish generally fall into one of several categories, including rockfish, flatfish, roundfish, sharks and skates, and other species. These fish occupy diverse habitats at all stages in their life histories. Some species are widely dispersed during certain life stages, particularly those with pelagic eggs and larvae (i.e., those that float with the currents). The essential fish habitat for this group is summarized as including seven composite habitats along the western coast of the U.S.: estuarine, rocky shelf, nonrocky shelf, canyon, continental slope/basin, neritic zone, and oceanic zone.

The coastal pelagics group, as identified by NOAA, includes Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicas*), jack mackerel (*Trachurus symmetricus*), northern anchovy (*Engraulis mordax*), market squid (*Doryteuthis opalescens*), and krill or Euphausiids (*Euphausia pacifica*, *Thysanoessa spinifera*, *Nyctiphanes simplex*, *Nematoscelis difficilis*, *Thysanoessa gregaria*, *Euphausia recurve*, *Euphausia gibboides,* and *Euphausia eximia*). The essential fish habitat for this group generally occupies depths from the surface to 1,000 meters deep, typically above the continental shelf. The essential fish habitat for this group is summarized as seven composite habitats: estuarine, rocky shelf, nonrocky shelf, canyon, continental slope/basin, neritic zone, and oceanic zone.

The MMPA, as passed in 1972, protects all pinnipeds (seals and sea lions), including, but not limited to, California sea lion (*Zalophus californianus*). Pinnipeds spend most of their time in water but return to land or ice for activities such as resting or giving birth.

Although Groundfish Essential Fish Habitat, Coastal Pelagics Essential Fish Habitat, and MMPA pinnipeds are noted within the results of the literature review of the NOAA species list, the BSA does not occur within essential fish habitat and does not provide suitable habitat for pinnipeds. Coyote Creek, La Cañada Verde Creek, and Peters Canyon Wash are perennial but surface waters

are shallow and narrow and do not provide suitable habitat for pinnipeds. A number of other ephemeral and intermittent drainages occur within the BSA, but surface waters are shallow and narrow when present, and they are predominantly concrete-lined. This includes named waterways such as Carbon Creek, the Santa Ana River, and Santiago Creek. These ephemeral and intermittent drainages also do not provide suitable habitat for pinnipeds. The BSA is located a minimum of approximately 4 miles inland from essential fish habitat or habitat that may be suitable for pinnipeds. Therefore, these groups of species are considered absent from the BSA, would not be impacted by Alternative 4, and are not discussed further.

5. CONCLUSIONS AND REGULATORY DETERMINATIONS

All conclusions and determinations discussed below are limited to the build alternatives. The No Build Alternative is anticipated to have a neutral effect on existing biological resources within the BSA and is not anticipated to conflict with regulatory standings.

5.1 Federal Endangered Species Act Consultation Summary

Under the provisions of FESA, Section 7(a)(2), a federal agency that permits, licenses, funds, or otherwise authorizes a project activity with impacts to federally listed species must consult with the USFWS and/or the NMFS to ensure that the federal agency's actions would not jeopardize the continued existence of any listed species or destroy or adversely modify critical habitat. This NES(MI) provides details on Alternative 4'simpacts to federally listed plant and wildlife species. Consistent with Section 7 consultation guidance, findings of effect are based on one of three conclusions as defined below.

"No effect" means there will be no impacts, positive or negative, to listed or proposed resources. Generally, this means no listed resources will be exposed to action and its environmental consequences. Concurrence from the USFWS is not required.

"May affect, but not likely to adversely affect" means that all effects are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact and include those effects that are undetectable, are not measurable, or cannot be evaluated. Discountable effects are those extremely unlikely to occur. These determinations require written concurrence from the USFWS.

"May affect, and is likely to adversely affect" means that listed resources are likely to be exposed to the action or its environmental consequences and will respond in a negative manner to the exposure.

Unofficial and official species lists were received from the USFWS and the NOAA on October 18, 2022 (Appendix B). A *No Effect* determination was made for each species on the federal lists or additional literature review sources (see Table 19, below). If listed species are found during pre-construction surveys and work cannot be postponed until the species is not present in the area, or the scope of work changes such that newly designated critical habitat or listed species may be adversely affected, Section 7 consultation would be required prior to such activities.

A federal Section 7 consultation between Caltrans and the USFWS is not expected to be required due to implementation of any of the build alternatives because they would not destroy or adversely modify critical habitat and are not anticipated to adversely affect any listed species as currently planned and designed.

Table 19: Effects Determination for Species Identified by the Federal Species Lists

Scientific Name	Common Name	Status		General Habitat Description	Effects Determination
		USFWS	CDFW		
Mammals					
Perognathus longimembris pacificus	Pacific pocket mouse	FE	SSC	Historically occupied open habitats on sandy soils along the coast from Los Angeles to the Mexican border.	No effect
Birds					
Charadrius nivosus nivosus	Western snowy plover	FT	SSC	Sandy coastal beaches, lakes, alkaline playas. Scattered locations along coastal California and Channel Islands, inland at Salton Sea, and at various alkaline lakes.	No effect
Empidonax traillii extimus	Southwestern willow flycatcher	FE	SE	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S. and possibly extreme northwestern Mexico. Winters in Central and South America. Below 6,000 ft in elevation.	No effect
Polioptila californica californica	Coastal California gnatcatcher	FT	SSC	Inhabits coastal sage scrub in low-lying foothills and valleys up to about 1,640 ft in elevation in cismontane southwestern California and Baja California.	No effect
Rallus obsoletus levipes	Light-footed Ridgway's rail	FE	SE/CFP	Found in salt marshes traversed by tidal sloughs, where cordgrass and pickleweed are the dominant vegetation. Requires dense growth of either pickleweed or cordgrass for nesting or escape cover; feeds on mollusks and crustaceans.	No effect
Sterna antillarum browni	California least tern	FE	SE/CFP	Nests along the coast from San Francisco Bay south to northern Baja California. Forages in shallow water. Colonial breeder on bare or sparsely vegetated, flat substrates, sand beaches, alkali flats, landfills, or paved areas.	No effect
Vireo bellii pusillus	Least Bell's vireo	FE	SE	Riparian forests and willow thickets. The most critical structural component of least Bell's vireo habitat in California is a dense shrub layer 2 to 10 ft aboveground.	No effect
Fish					
Catostomus santaanae	Santa Ana sucker	FT	SA	Live in the shallow portions of rivers and streams. These fish exist in flashy systems where currents range from swift in the canyons to sluggish in the bottomlands. Preferred substrates are generally coarse and consist of gravel, rubble, and boulders with growths of algae.	No effect
Oncorhynchus mykiss irideus	Southern California steelhead DPS	FE	SA	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	No effect
Invertebrates					
Danaus plexippus (wintering sites)	Monarch – California overwintering population	FC	SA	Winter roosts are located in wind-protected tree groves (e.g., eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	No effect
Streptocephalus woottoni	Riverside fairy shrimp	FE	SA	Warm-water vernal pools (i.e., large, deep pools that retain water into the warm season) with low to moderate dissolved solids in annual grassland areas interspersed through chaparral or coastal sage scrub vegetation. Suitable habitat includes some artificially created or enhanced pools, such as stock ponds, that have vernal pool-like hydrology and vegetation.	No effect

Table 19: Effects Determination for Species Identified by the Federal Species Lists

Scientific Name	Common Name	Status		General Habitat Description	Effects Determination
		USFWS	CDFW		
Flowering Plants					
Astragalus pycnostachyus var. *lanosissimus*	Ventura marsh milk-vetch	FE	SE	Occurs in coastal dunes, coastal scrub, marsh and swamps (edges, coastal salt or brackish) from 3 to 114 ft in elevation.	No effect
Cordylanthus maritimus ssp. *maritimus*	Salt marsh bird's beak	FE	SE	Coastal dunes and salt marshes. In California, known from Los Angeles, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties. Historical collections referred to this taxon from alkaline meadow in the vicinity of San Bernardino Valley and from interior San Diego County are intermediate to *C. maritimus* ssp. *canescens.* Also occurs in Mexico.	No effect

Sources = USFWS (2022), NOAA (2022)
CDFW = California Department of Fish and Wildlife
CFP = California Fully Protected
DPS = distinct population segment
FC = Federal Candidate
FE = Federally Endangered
ft = foot/feet
FT = Federally Threatened
NOAA = National Oceanic and Atmospheric Administration
SA = California Special Animal
SE = State Endangered
ST = State Threatened
SSC = State Species of Concern
U.S. = United States
USFWS = United States Fish and Wildlife Service

5.2 California Endangered Species Act Consultation Summary

CESA protects plant and animal species that are listed as rare, threatened, or endangered. The CDFW authorizes take of endangered, threatened, or candidate species through the provisions of Sections 2081 and 2080.1 of the California Fish and Game Code. Authorization from the CDFW (under Sections 2081 or 2080.1 of the California Fish and Game Code) for take of any Endangered, Threatened, or Candidate species is not expected to be required because take of State-listed species is not expected. With implementation of the avoidance and minimization measures described in this NES(MI), all build alternatives would avoid impacts and direct take of CESA-listed species. If CESA-listed species are found during pre-construction surveys or unavoidable impact to CESA-listed species occurs during construction, consultation with CDFW will be initiated and additional measures will be developed.

5.3 Federal Fisheries and Essential Fish Habitat Consultation Summary

As discussed in Section 4.3.8, no federal fisheries or essential fish habitat are located within the BSA. Therefore, no FESA Section 7 consultation related to federal fisheries or essential fish habitat will be required for implementation of the build alternatives.

5.4 Wetlands and Other Waters Coordination Summary

A jurisdictional delineation was conducted from August through October 2022 for the Project (refer to Appendix D). The jurisdictional delineation was conducted to determine the potential for federal and State jurisdictional waters and wetland resources. The JDSA contains potentially jurisdictional waters at 132 locations, including 10 named primary features, which include La Cañada Verde Creek, Coyote Creek, Fullerton Creek, Carbon Creek, Crescent Retarding Basin, the Santa Ana River, Bitterbrush Channel, Santiago Creek, El Modena-Irvine Channel, and Peters

Canyon Wash. The jurisdictional status of such features should be verified by the appropriate resource agencies if any access or modifications are proposed.

5.4.1 Alternative 2

As discussed in Section 4.1.2, Alternative 2 would not result in temporary or permanent impacts to jurisdictional aquatic resources. Therefore, jurisdictional authorizations or permits from the USACE, RWQCB, and CDFW or compensatory mitigation would not be required.

5.4.2 Alternative 3

As discussed in Section 4.1.2, Alternative 3 would result in temporary impacts at 31 drainages. Up to 0.22 acre of wetland waters of the U.S., 2.02 acres of nonwetland waters of the U.S., and 3.29 acres of CDFW jurisdictional area would be temporarily impacted where they occur in required construction access areas. Therefore, jurisdictional authorizations or permits from the USACE, RWQCB, and CDFW are anticipated. Compensatory mitigation is not anticipated or warranted due to the absence of permanent impacts to jurisdictional aquatic resources.

5.4.3 Alternative 4

As discussed in Section 4.1.2, Alternative 4 proposes temporary activities at 32 drainages. Up to 0.22 acre of wetland waters of the U.S., 2.24 acres of nonwetland waters of the U.S., and 4.50 acres of CDFW jurisdictional area would be temporarily impacted where they occur in required construction access areas. Permanent impacts to jurisdictional waters are not anticipated to be impacted by construction activities. Therefore, jurisdictional authorizations or permits from the USACE, RWQCB, and CDFW are anticipated. Compensatory mitigation is not anticipated or warranted due to the absence of permanent impacts to jurisdictional aquatic resources.

5.5 Invasive Species

In total, 17 invasive plant species with a moderate or high Cal-IPC rating were identified in the BSA (see Table 14, above). The build alternatives have a minimal potential to spread invasive species to native habitat in the BSA, as native habitat is limited to less than 0.05 acre throughout the BSA. However, the build alternatives do have potential to spread invasive species to native habitats outside the BSA through the entering and exiting of contaminated construction equipment.

In compliance with EO 13112, Measures BIO-2 and BIO-5 (refer to Section 4.1.1.3) and standard measures will be implemented to minimize the importation of nonnative plant material during and after construction. Eradication strategies would be employed should an invasion occur. During Project activities, the construction contractor will inspect and clean construction equipment prior to transporting equipment from one Project location to another. All construction equipment accessing unpaved areas will be cleaned with water to remove dirt, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds before arriving to and leaving the Project sites. Only certified weed-free straw, mulch, and/or fiber rolls will be used for erosion control.

5.6 Other

5.6.1 Wildlife Movement

Wildlife movement of both small species (e.g., reptiles and small mammals) and larger species (e.g., coyotes) is limited to the following 10 drainage features within the BSA: La Cañada Verde Creek, Coyote Creek, Fullerton Creek, Carbon Creek, Crescent Retarding Basin, the Santa Ana River, Bitterbrush Channel, Santiago Creek, El Modena-Irvine Channel, and Peters Canyon Wash. These drainage features provide low function and value to wildlife movement and are not anticipated to be impacted as a result of the build alternatives. See Section 3.1.4 for additional details regarding wildlife movement.

Implementation of the build alternatives is not expected to permanently affect wildlife movement or decrease the functionality of any wildlife crossings. Active construction activities may temporarily deter wildlife movement due to increased noise and human activity, but wildlife is expected to continue to use drainages during construction or when construction work is not occurring, particularly at dawn and dusk. No permanent barriers would be placed within any known wildlife movement corridors. As such, implementation of the build alternatives would not permanently affect wildlife movement or decrease the functionality of any wildlife crossings; therefore, there would be no Project-specific mitigation required.

5.6.2 Migratory Bird Treaty Act and CDFW Nesting Bird Regulations

As discussed in Section 4.3.7.2, potential effects to nesting raptors, special-status birds, and other migratory bird species may occur during the bird breeding season. The typical breeding season is from February 15 through September 330. Effects related to all build alternatives can be avoided by implementing Measures BIO-12 through BIO-15 (Section 4.3.7.3).

5.6.3 Anadromous Fish Passage

One anadromous fish species, steelhead, which is discussed in Section 4.3.3, has potential to occur within the BSA. Coyote Creek, La Cañada Verde Creek, and Peters Canyon Wash are the only rivers/streams present within the BSA that have potential to support anadromous fish, although suitable breeding habitat is absent from the BSA. No modifications to Coyote Creek, La Cañada Verde Creek and Peters Canyon Wash are proposed, and no barriers to fish passage would be created by the build alternatives. Therefore, there are no impacts to anadromous fish associated with the build alternatives, and no Project-specific mitigation is required.

5.6.4 Marine Mammal Protection Act

As discussed in Section 4.3.8, pinnipeds protected by the MMPA are not anticipated to occur within the BSA due to the narrow width and shallow waters present in perennial waterways (Coyote Creek, La Cañada Verde Creek, and Peters Canyon Wash) and the ephemeral nature of other drainages present within the BSA. No suitable habitat for pinnipeds occurs within the BSA. The only suitable habitat for pinnipeds occurs within open water, with deep-water access located outside the BSA, distant from the proposed work areas.

Impacts to mammals protected by the MMPA are not anticipated as no modifications to open water are proposed. Work activities would not result in disruptive noise or vibrations within such waters, and no barriers to pinnipeds would be created by the build alternatives.

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Appendices available upon request.