BIOLOGICAL ENVIRONMENT

2.15 Wetlands and Other Waters

2.15.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344) is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army of Engineers (USACE) with oversight by the United States Environmental Protection Agency (U.S. EPA).

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

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations [CFR] Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system

(waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this EO states that a federal agency, such as the FHWA and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction, and (2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCB), and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600–1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see Section 2.9, Water Quality and Storm Water Runoff, for additional details.

2.15.2 Affected Environment

The information in this section is based on the *Natural Environment Study (Minimal Impacts)* (NES[MI], 2015) and the *Jurisdictional Delineation* (2014) for the proposed project. The *Jurisdictional Delineation*, which was conducted in accordance with current USACE and CDFW criteria, is provided in Appendix C in the NES(MI).

All channelized storm water and drainage features along the project segment of State Route 55 (SR-55) eventually discharge into Peters Canyon Channel, San Diego Creek, or the Santa Ana-Delhi Channel, all of which are tributaries to Upper Newport Bay. The Upper Newport Bay connects directly to the Pacific Ocean (a navigable water of the United States), thereby establishing a nexus to navigable waters as defined by USACE guidance.

Nine drainage features identified within the Biological Study Area (BSA) are designated as Drainage Features A through I and are shown on Figure 2.15-1, included at the end of the section. Features A, C, D, F, G, and I are entirely surrounded by urban development, lack associated riparian habitat, and were excavated on dry land. These six features convey sheet flows from adjacent areas to the storm drain system that eventually leads to San Diego Creek or Upper Newport Bay. The USACE is not expected to assert jurisdiction over Drainages A, C, D, F, G, and I.

Drainages B, E, and H are human-altered and surrounded by urban habitat but convey flows from large drainage areas and likely historically contained flows. These three drainage features eventually flow to Upper Newport Bay. The USACE is expected to assert jurisdiction over Drainages B, E, and H.

The *Jurisdictional Delineation* indicated there are a total of 1.24 acres (ac) of nonwetland waters that are potentially subject to USACE jurisdiction and 0.09 ac of nonwetland drainage features that are not considered to be subject to USACE jurisdiction in the BSA. There are no areas in the BSA satisfying the USACE wetland criteria.

There is no public guidance on determining RWQCB jurisdictional areas. For this study, RWQCB jurisdiction was determined based on the Federal definition of wetlands (three-parameter) and other waters of the U.S. ordinary high water mark (OHWM) as recommended by the September 2004 Workplan. Since there are areas within the BSA subject to USACE and CDFW jurisdiction, RWQCB jurisdiction in this case is coincident with USACE jurisdiction for purposes of Section 401

certification. The total area of potential RWQCB jurisdiction is the same as the USACE jurisdiction (i.e., 1.24 ac).

Tables 2.15.1 and 2.15.2 provide the width in feet and area in acres of each of the nine potentially jurisdictional and nonjurisdictional drainage features, respectively, in the BSA.

Table 2.15.1 Potentially Jurisdictional Drainage Feature Length and Area Measurements

Drainage Feature	Length (linear feet)	USACE		CDFW	
		Average Width (feet)	Potential Jurisdictional Nonwetland Area (acres)	Average Width (feet)	Potential Jurisdictional Area (acres)
B	3,360	2	0.19	5	0.40
E (Lane Channel)	3,60	14	1.01	34	2.46
H	270	7	0.04	34	0.21
Total	**7,530**	**N/A**	**1.24**	**N/A**	**3.07**

Source: *Natural Environment Study (Minimal Impacts)* (2015).
CDFW = California Department of Fish and Wildlife
N/A = Not Applicable
USACE = United States Army Corps of Engineers

Table 2.15.2 Potentially Nonjurisdictional Drainage Feature Length and Area Measurements

Drainage Feature	Length (linear feet)	USACE		CDFW	
		Average Width (feet)	Potential Nonjurisdictional Nonwetland Area (acres)	Average Width (feet)	Potential Nonjurisdictional Area (acres)
A	635	1	0.01	3	0.04
C	150	4	0.02	8	0.03
D	60	2	0.01	8	0.05
F	860	1	0.02	3	0.06
G	850	1	0.02	12	0.23
I	200	1	0.01	2	0.01
Total	**2,755**	**N/A**	**0.09**	**N/A**	**0.42**

Source: *Natural Environment Study (Minimal Impacts)* (2015).
CDFW = California Department of Fish and Wildlife
N/A = Not Applicable
USACE = United States Army Corps of Engineers

All the areas satisfying the USACE jurisdictional criteria for waters of the U.S. listed in Table 2.15.1 are also subject to CDFW jurisdiction pursuant to Section 1602 of the California Fish and Game Code. In addition, streambed banks extending beyond the limits of USACE jurisdiction are considered subject to CDFW jurisdiction. There

were no areas within the BSA where riparian vegetation, potentially subject to CDFW jurisdiction, extended beyond the streambed banks. The total area in the BSA subject to CDFW jurisdiction is 3.07 ac as shown in Table 2.15.1.

The drainages that are likely to be considered nonjurisdictional by the USACE and that also lack riparian vegetation are concrete-lined, do not appear to support any aquatic or terrestrial wildlife, do not appear to function as a river, lake, or stream, and are also unlikely to be considered jurisdictional by the CDFW. Those drainages are listed in Table 2.15.2.

2.15.3 Environmental Consequences

The discussions regarding the potential temporary and permanent project impacts on jurisdictional and nonjurisdictional waters in the following sections should be considered preliminary until verified by the USACE, CDFW, and RWQCB.

2.15.3.1 Temporary Impacts

Alternatives 1, 2, 3, and 4 (Build Alternatives)

USACE Jurisdictional and Nonjurisdictional Areas

Table 2.15.3 shows the temporary and permanent impacts to USACE jurisdictional and nonjurisdictional areas in the BSA by Build Alternative.

All the Build Alternatives are expected to result in 1.01 ac of temporary impacts to nonwetland waters subject to USACE jurisdiction due to the realignment of Lane Channel (Drainage E). As shown in Table 2.15.3, all the Build Alternatives propose to realign and reconfigure Lane Channel (Drainage E) between Dyer Road and MacArthur Boulevard. Lane Channel is currently a trapezoidal channel with 1.01 ac of potential USACE jurisdiction within the BSA. Due to the reconfiguration of Lane Channel, the new channel will be a rectangular channel, which will enlarge the potential USACE jurisdiction to 1.53 ac within the BSA. Therefore, there will be a net increase to area subject to USACE jurisdiction in the amount of 0.52 ac as a result of the Build Alternatives.

The Build Alternatives would not result in any temporary impacts to nonjurisdictional USACE areas as shown on Table 2.15.3.

Table 2.15.3 Temporary and Permanent Project Impacts to USACE Jurisdictional and Nonjurisdictional Areas

Build Alternative	Potential Jurisdictional Areas		Potential Nonjurisdictional Areas	
	Temporary Effects (acres)[1]	Permanent Effects (acres)	Temporary Effects (acres)	Permanent Effects (acres)[2]
Alternative 1	1.01	0.00	0.00	0.01
Alternative 2	1.01	0.00	0.00	0.01
Alternative 3	1.01	0.00	0.00	0.02
Alternative 4	1.01	0.00	0.00	0.02

Source: *Natural Environment Study (Minimal Impacts)* (2015).
[1] All temporary effects to USACE potential jurisdictional areas are to Drainage E (Lane Channel).
[2] All permanent effects to USACE potential non-jurisdictional areas are to Drainage F.
USACE = United States Army Corps of Engineers

CDFW Jurisdictional Areas

The results of the delineation indicated a total of 3.07 ac CDFW potentially jurisdictional streambeds within the BSA, of which 2.46 ac occur in Drainage E (Lane Channel) as shown in Table 2.15.4. Table 2.15.4 shows the amount of temporary and permanent impacts to CDFW jurisdictional and non-jurisdictional areas in the BSA by Build Alternative. As shown, all four Build Alternatives will result in the temporary removal of 1.01 ac of nonwetland water subject to CDFW jurisdiction as a result of the realignment and reconfiguration of Lane Channel (Drainage E) between Dyer Road and MacArthur Boulevard. Due to the reconfiguration of Lane Channel, as described for the USACE jurisdiction above, CDFW jurisdiction within the new channel will be the same as the USACE jurisdiction, 1.53 ac. Therefore, there will be a net decrease of 0.93 ac of area subject to CDFW jurisdiction associated with Drainage E (Lane Channel).

Table 2.15.4 Temporary and Permanent Project Impacts to CDFW Jurisdictional and Nonjurisdictional Areas

Build Alternative	Potential Jurisdictional Areas		Potential Nonurisdictional Areas	
	Temporary Impacts (acres)[1]	Permanent Impacts (acres)[2]	Temporary Impacts (acres)	Permanent Impacts (acres)
Alternative 1	1.01	0.93	0	0.04
Alternative 2	1.01	0.93	0	0.04
Alternative 3	1.01	0.93	0	0.04
Alternative 4	1.01	0.93	0	0.04

Source: *Natural Environment Study (Minimal Impacts)* (2015).
[1] The temporary impacts to CDFW potential jurisdictional areas are to Drainage E (Lane Channel).
[2] The permanent impacts include the net loss of CDFW jurisdictional area as a result of the reconfiguration of Drainage E (Lane Channel).
[3] All permanent impacts to CDFW potential non-jurisdictional areas are to Drainage F.
ac = acres
CDFW = California Department of Fish and Wildlife

RWQCB Jurisdictional and Nonjurisdictional Areas

As noted earlier, Table 2.15.3 shows the temporary impacts to USACE areas by Build Alternative. The temporary impacts to RWQCB areas would be the same as shown in Table 2.15.3 for the USACE areas, 1.01 ac.

No Build Alternative

None of the proposed improvements to SR-55 would be constructed under the No Build Alternative. Therefore, the No Build Alternative would not result in adverse temporary impacts to USACE, CDFW, or RWQCB areas in the BSA.

2.15.3.2 Permanent Impacts

Alternative 1

USACE Jurisdictional and Nonjurisdictional Areas

The Build Alternatives will not result in the permanent loss of any nonwetland waters potentially subject to USACE jurisdiction (i.e., Drainages B, E, and H).

All the Build Alternatives will result in permanent impacts to Drainage F, a drainage considered not to be subject to USACE jurisdiction. These impacts would result from the realignment of the eastbound East Dyer Road on-ramp to northbound SR-55 and undergrounding of the existing portion of Drainage F located south of the on-ramp.

As part of the permanent reconfiguration of Lane Channel under all four Build Alternatives, the new channel would be a rectangular channel, which will enlarge the potential USACE jurisdictional area from the existing 1.01 ac (which would be temporarily removed during construction as described earlier) to a total of 1.53 ac (which represents a permanent net increase in the area subject to USACE jurisdiction of 0.52 ac). As a result, all four Build Alternatives, including Alternative 1, would result in a permanent net increase to areas subject to USACE jurisdiction (nonwetland waters of the U.S.) in Drainage E (Lane Channel). As shown in Table 2.15.3, Alternative 1 would not result in any permanent impacts to nonwetland waters potentially subject to USACE jurisdiction.

CDFW Jurisdictional Areas

As part of the permanent reconfiguration of Drainage E (Lane Channel) under all four Build Alternatives, the new channel would be a rectangular channel. The changes at Drainage E (Lane Channel) under all four Build Alternatives would result in a permanent reduction in the total CDFW jurisdictional acreage in Lane Channel from 2.46 ac to 1.53 ac, which represents a permanent net decrease in the area subject to CDFW jurisdiction of 0.93 ac, as shown in Table 2.15.4. As also shown in Table

2.15.4, Alternative 1 would result in permanent impacts to 0.93 ac of area subject to CDFW jurisdiction associated with Drainage E (Lane Channel).

As shown earlier, all four Build Alternatives will result in permanent impacts to Drainage F, a drainage considered not to be subject to CDFW jurisdiction. These impacts will result from the realignment of the eastbound East Dyer Road on-ramp to northbound SR-55 and the undergrounding of the existing portion of Drainage F that is located south of the on-ramp.

RWQCB Jurisdictional and Nonjurisdictional Areas

The permanent impacts to RWQCB areas under Alternative 1 would be the same as shown in Table 2.15.3 for the USACE areas.

Alternative 2

USACE Jurisdictional and Nonjurisdictional Areas

Similar to Alternative 1, Alternative 2 would also result in a 0.52 ac permanent net increase in the USACE jurisdictional area at Drainage E (Lane Channel).

Alternative 2 would also result in permanent impacts up to 0.01 ac in Drainage F, a drainage considered not to be subject to USACE jurisdiction as shown in Table 2.15.3. Those impacts would result from the realignment of the eastbound East Dyer Road on-ramp to northbound SR-55 and undergrounding of the existing portion of Drainage F located south of the on-ramp.

CDFW Jurisdictional Areas

Similar to Alternative 1, Alternative 2 would result in a 0.93 ac permanent net decrease in the USACE jurisdictional area at Drainage E (Lane Channel). As shown in Table 2.15.4, Alternative 2 would also permanently affect 0.04 ac of CDFW nonjurisdictional areas associated with Drainage F as a result of the realignment of the eastbound East Dyer Road on-ramp to northbound SR-55.

RWQCB Jurisdictional and Nonjurisdictional Areas

The permanent impacts to RWQCB areas under Alternative 2 would be the same as discussed earlier under Alternative 1 for the USACE jurisdictional and nonjurisdictional areas.

Alternative 3

USACE Jurisdictional and Nonjurisdictional Areas

Similar to Alternative 1, Alternative 3 would result in a 0.52 ac permanent net increase in the USACE jurisdictional area at Drainage E (Lane Channel).

Alternative 3 would also result in permanent impacts up to 0.02 ac in Drainage F, a drainage considered not to be subject to USACE jurisdiction as shown in Table 2.15.3. Those impacts would result from the realignment of the eastbound East Dyer Road on-ramp to northbound SR-55 and undergrounding of the part of Drainage F located south of the on-ramp.

CDFW Jurisdictional Areas

Similar to Alternative 1, Alternative 3 would result in a 0.93 ac permanent net decrease in the USACE jurisdictional area at Drainage E (Lane Channel). As shown in Table 2.15.4, Alternative 3 would also permanently affect 0.04 ac of CDFW nonjurisdictional areas associated with Drainage F as a result of the realignment of the eastbound East Dyer Road on-ramp to northbound SR-55.

RWQCB Jurisdictional and Nonjurisdictional Areas

The permanent impacts to RWQCB areas under Alternative 3 would be the same as discussed earlier under Alternative 1 for the USACE jurisdictional and nonjurisdictional areas.

Alternative 4

USACE Jurisdictional and Nonjurisdictional Areas

Similar to Alternative 1, Alternative 4 would result in a 0.52 ac permanent net increase in the USACE jurisdictional area at Lane Channel.

Alternative 4 would also result in permanent impacts up to 0.02 ac in Drainage F, a drainage considered not to be subject to USACE jurisdiction as shown in Table 2.15.3. Those impacts would result from the realignment of the eastbound East Dyer Road on-ramp to northbound SR-55 and undergrounding of the existing portion of Drainage F located south of the on-ramp.

CDFW Jurisdictional Areas

Similar to Alternative 1, Alternative 4 would result in a 0.93 ac permanent net decrease in the USACE jurisdictional area at Lane Channel. As shown in Table 2.15.4, Alternative 4 would also permanently affect 0.04 ac of CDFW

nonjurisdictional areas associated with Drainage F as a result of the realignment of the eastbound East Dyer Road on-ramp to northbound SR-55.

RWQCB Jurisdictional and Nonjurisdictional Areas

The impacts to RWQCB areas under Alternative 4 would be the same as discussed earlier under Alternative 1 for the USACE jurisdictional and nonjurisdictional areas.

No Build Alternative

None of the proposed project improvements would be constructed or operated under the No Build Alternative. Therefore, the No Build Alternative would not result in adverse permanent impacts to USACE, CDFW, or RWQCB areas in the BSA.

2.15.4 Avoidance, Minimization, and/or Mitigation Measures

The USACE has the authority to develop Special Area Management Plans (SAMPs) for certain areas designated by that agency. With a SAMP, the USACE undertakes a comprehensive review of aquatic resources in an entire watershed. The goal is to analyze potential impacts at the watershed scale in order to identify priority areas for preservation, identify potential restoration areas, determine the least environmentally damaging locations for proposed projects, and establish alternative permitting processes appropriate for the SAMP areas. The alternative permitting process facilitates reasonable economic development and infrastructure while also providing for aquatic resource protection. SAMPS are designed to be conducted in geographic areas of special sensitivity under development pressure. A SAMP for the San Diego Creek Watershed implementation was completed in March 2012.

The San Diego Creek Watershed SAMP (2012) identifies restoration priorities and compensatory mitigation areas in the San Diego Creek Watershed as Aquatic Resource Integrity Areas. The Build Alternatives would not impact any Aquatic Resource Integrity Areas.

The potential project impacts on waters are subject to an abbreviated alternative permitting process associated with the SAMP because the Build Alternatives do not affect any Aquatic Resource Integrity Areas. After consultation with the USACE and other applicable agencies (the RWQCB and the CDFW), if the project is found to be consistent with the San Diego Creek Watershed SAMP by the resource agencies, a Letter of Permission (LOP)/Watershed Streambed Alteration Agreement (WSAA) would be issued to authorize the discharge of dredged and/or fill materials into waters of the U.S. and waters of the State, respectively. After consultation with the resource agencies, if the project is found not to be consistent with the San Diego Creek

Watershed SAMP, an Individual Permit from the USACE and a standard Streambed Alteration Agreement (SAA) from the CDFW would be required.

While specific compensatory mitigation is not expected to be required by the resource agencies for the Build Alternatives, measures are expected to be required as conditions of the LOP/WSAA. "Proposed General Conditions for the San Diego Creek Watershed Letter of Permission" included in the SAMP list specific conditions that may be included in an LOP for a project. A detailed list of those conditions is provided in Appendix E of the NES(MI) and summarized in Table 2.15.5. Although these conditions have not yet been approved, it is likely some or all of these will be conditions of the LOP/WSAA for any of the Build Alternatives.

Table 2.15.5 Summary of Proposed General Conditions for the San Diego Creek Watershed Letter of Permission Procedures

LOP Condition Number	Summary of LOP Conditions
1	Description of measures to minimize discharges to jurisdictional waters
2	Identification of whether the project is ineligible due to potential effects on compensatory mitigation sites or soft-bottomed channels
3	Compliance with the SAMP mitigation framework and the Strategic Mitigation Plan
4	Incorporation of soil erosion and siltation controls in the project
5	Measures to reduce soil disturbance by construction equipment
6	No discharge of unsuitable materials into jurisdictional waters
7	Management of water flows to approximate or maintain pre-construction conditions
8	Removal of temporary fill and restoration of areas affected by temporary fill
9	Measures to prevent pollutants from entering watercourses
10	Siting of staging areas to avoid material entering waterways
11	Fencing of project disturbance limits
12	Avoidance of avian breeding seasons
13	Invasive species management and removal
14	Site inspections by the USACE
15	Posting of the LOP conditions at the project site and inclusion in all bid packages
16	Post-project maps of affected and avoided water and photographs
17	401 Water Quality Certification
18	California state coastal zone management consistency determination
19	Protection of endangered species
20	Compliance with the requirements of Section 106
21	Air quality emission and impact analysis

Source: *Natural Environment Study (Minimal Impacts)* (2015).
LOP = Letter of Permission
SAMP = Special Area Management Plan
USACE = United States Army Corps of Engineers

If compensatory mitigation is ultimately required by the resource agencies for the project impacts on waters, that mitigation will be determined in coordination with the regulatory agencies based on the quality and quantity of jurisdictional resources affected by the project. If required, compensatory mitigation will be provided through the Measure M2 Freeway Environmental Mitigation Program.

In order to implement the above requirements, the measures below would be implemented to avoid, minimize, and/or mitigate impacts to wetlands and other waters:

WET-1 Prior to initiation of construction, a permit will be obtained through the United States Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act. As part of coordination with the USACE, a Letter of Permission (LOP) will be pursued, if appropriate.

WET-2 Prior to initiation of construction, either a Watershed Streambed Alteration Agreement (WSAA; in combination with an LOP) or a Streambed Alternation Agreement (SAA; in combination with an Individual Permit) with the California Department of Fish and Wildlife (CDFW) will be obtained and any specifications in the WSAA or SAA will be implemented.

WET-3 Prior to initiation of construction, a Section 401 Water Quality Certification from the Santa Ana Regional Water Quality Control Board (RWQCB) will be obtained and any specifications in the Certification will be implemented.

LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

0 100 200
FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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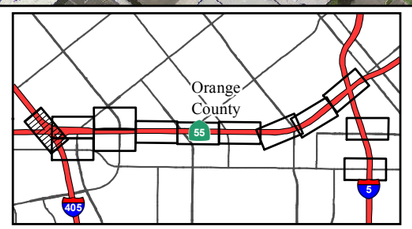

FIGURE 2.15-1
Sheet 1 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

12-ORA-55 PM 6.4/10.3
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LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

0 100 200
FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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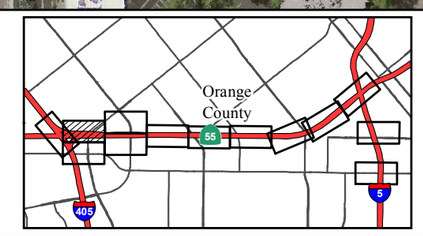

FIGURE 2.15-1
Sheet 2 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

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LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

0 100 200
FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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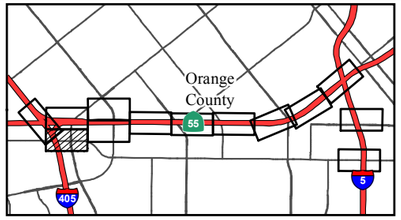

FIGURE 2.15-1
Sheet 3 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

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S SYCAMORE ST
W MURPHY AVE
S ALDER ST
S MAIN ST
E MACARTHUR BLVD
MACARTHUR PL
E SANDPOINTE AVE
MACARTHUR PL
FIRST AMERICAN WAY
E COLUMBINE AVE
Drainage B
Drainage B
Drainage D
Drainage E
LANE CHANNEL

LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

0 100 200
FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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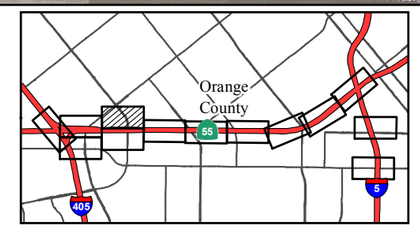

FIGURE 2.15-1
Sheet 4 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

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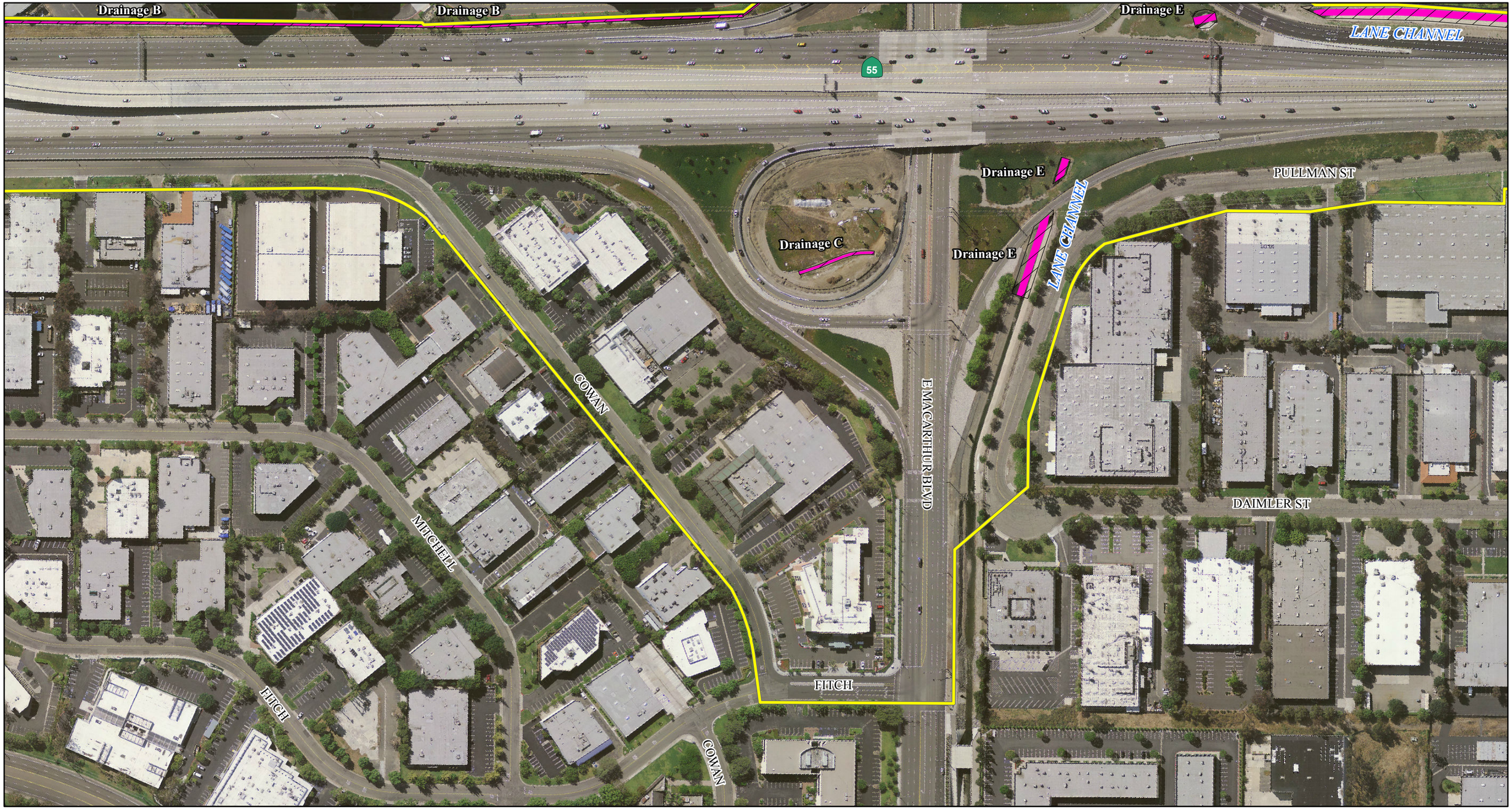

LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

0 100 200
FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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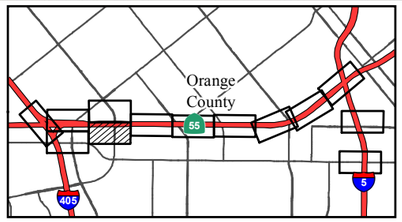

FIGURE 2.15-1
Sheet 5 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

12-ORA-55 PM 6.4/10.3
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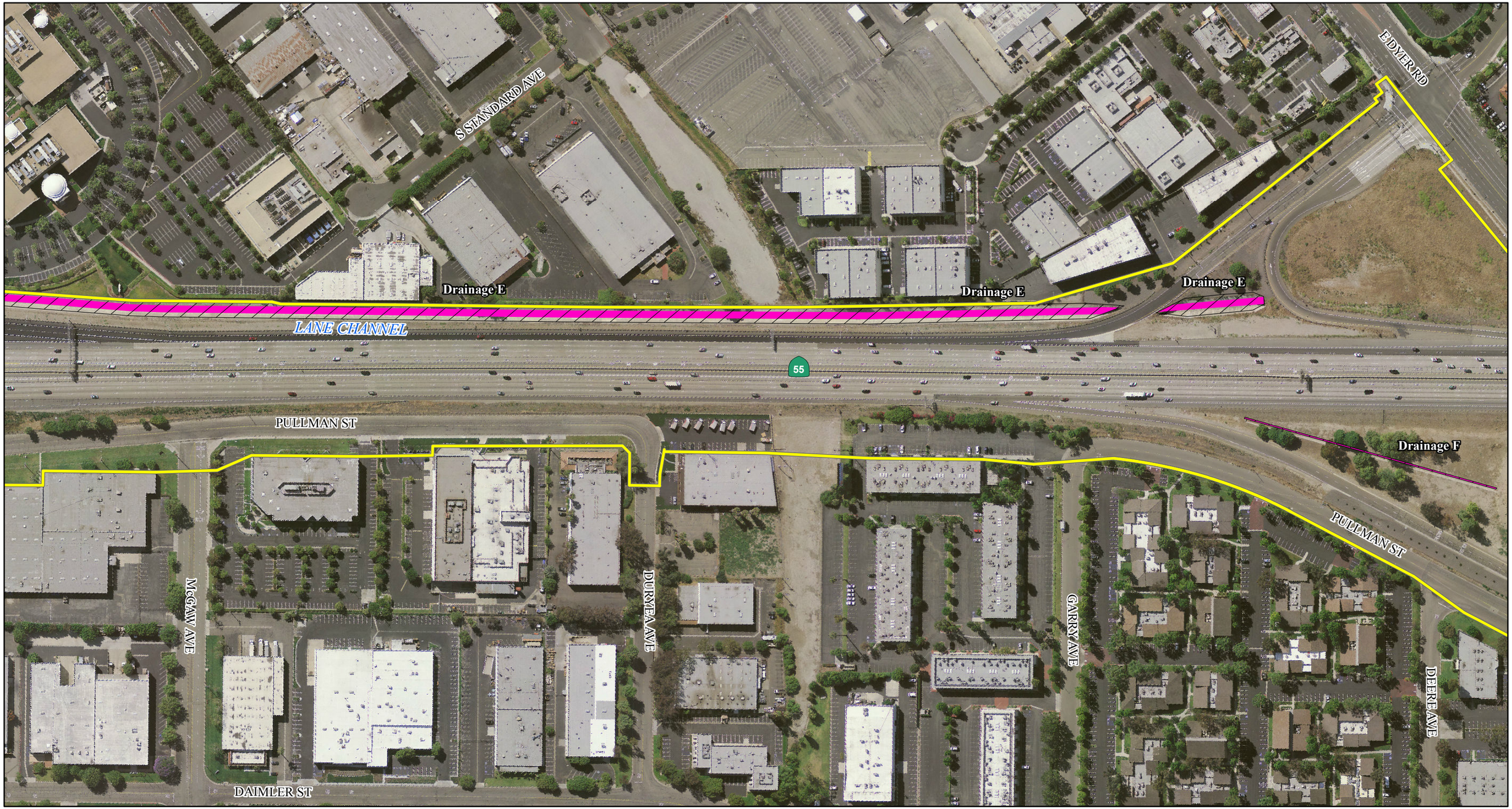

LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

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FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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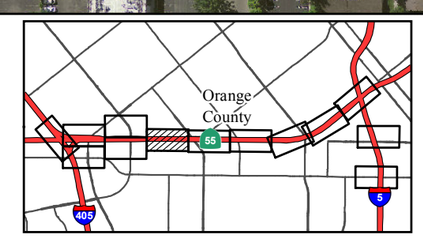

FIGURE 2.15-1
Sheet 6 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

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LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

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FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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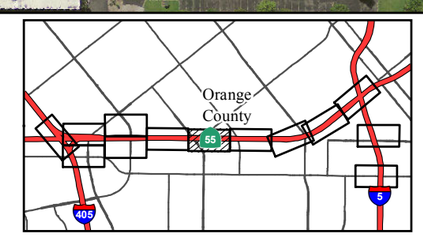

FIGURE 2.15-1
Sheet 7 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

12-ORA-55 PM 6.4/10.3
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BROOKHOLLOW DR
E NEWPORT CIR
E ST ANDREW PL
S RITCHEY ST
55
S PULLMAN ST
E WARNER AVE
BELL AVE

LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

0 100 200
FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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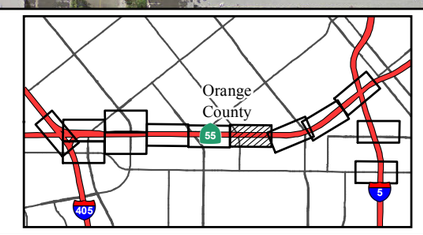

FIGURE 2.15-1
Sheet 8 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

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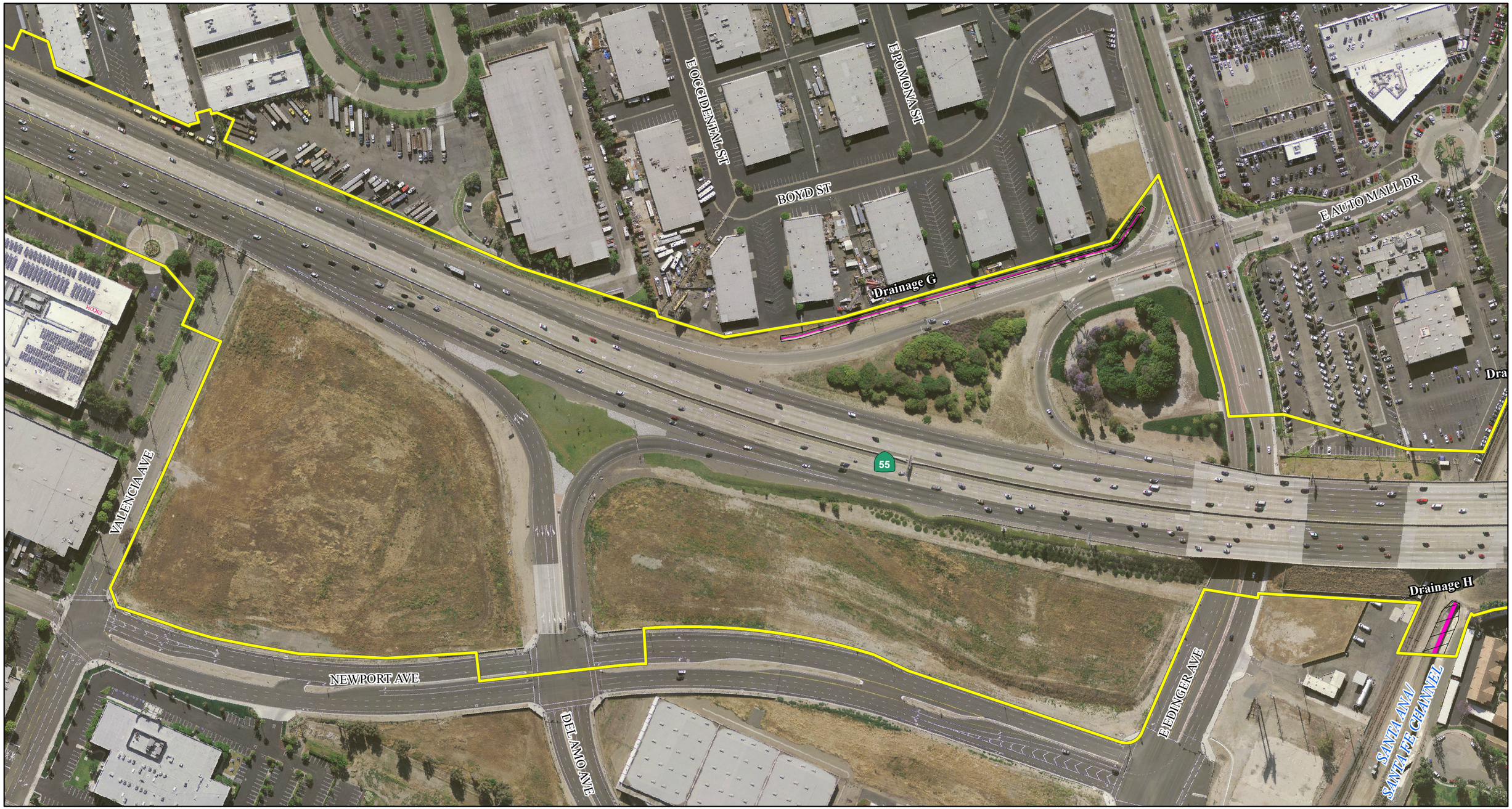

LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

0 100 200
FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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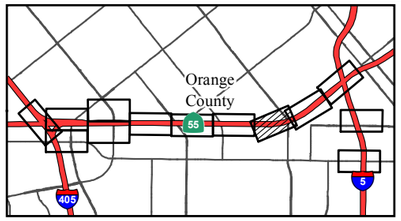

FIGURE 2.15-1
Sheet 9 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

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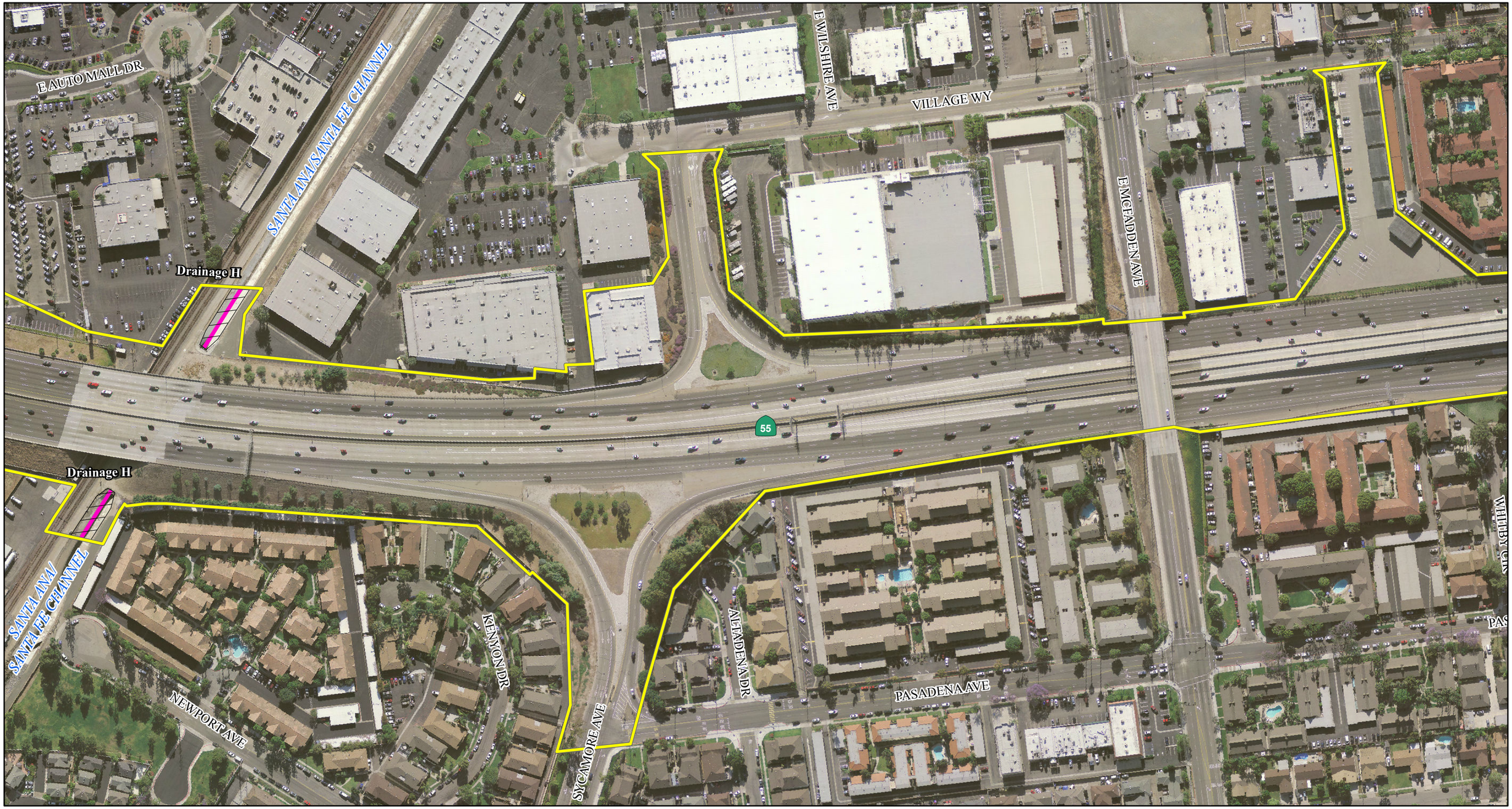

LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

0 100 200
FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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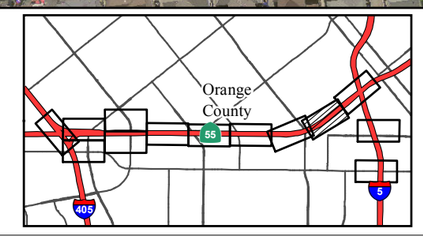

FIGURE 2.15-1
Sheet 10 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

12-ORA-55 PM 6.4/10.3
EA 0J3400/EFIS 1200020328

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TUSTIN VILLAGE WY
E BALBOA LN
STONEGLASS
MOIR CT
DONWEST
55
Drainage I
WHITBY CIR
CARLANN CIR
PASADENA AVE
5
W MAIN ST
PASADENA AVE
S MYRTLE AVE

LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

0 100 200
FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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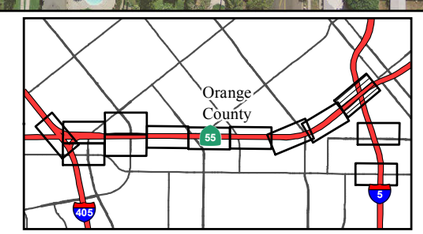

FIGURE 2.15-1
Sheet 11 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

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LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

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FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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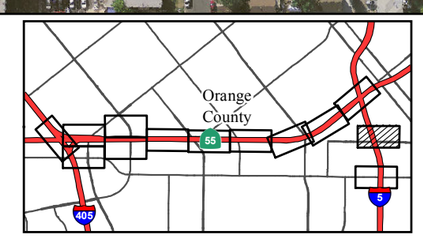

FIGURE 2.15-1
Sheet 12 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

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LEGEND

- Biological Study Area
- Potential USACE Jurisdiction
- Potential CDFG Jurisdiction

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FEET

SOURCE: Eagle Aerial (4/2011); ESRI (2008); TBM (2008)

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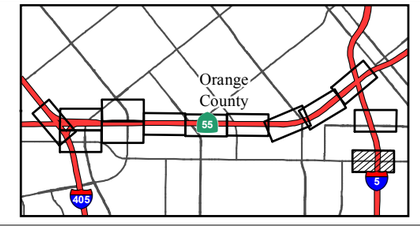

FIGURE 2.15-1
Sheet 13 of 13

State Route 55 (SR-55) Improvement Project between Interstate 405 (I-405) and Interstate 5 (I-5)

Drainage Features

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2.16 Plant Species

2.16.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). The proposed project would not impact any species listed or proposed for listing as threatened or endangered as discussed earlier in the introduction to Chapter 2.

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

The regulatory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), CA Public Resources Code, Sections 2100-21177.

2.16.2 Affected Environment

The information in this section is based on the *Natural Environment Study (Minimal Impacts)* (2015) prepared for the project.

A literature review and records search were conducted to identify the existence or potential occurrence of sensitive or special-interest plant species located within or in the vicinity of the Biological Study Area (BSA). The results of the literature review indicated 14 special-status plant species as potentially occurring in the BSA.

Of the 14 special-status plant species, 6 are federally and/or State-listed endangered or threatened species and are not discussed in this section. As noted earlier in the

introduction to Chapter 2, there are no threatened or endangered species in or near the BSA; therefore, the Build Alternatives will not impact any threatened or endangered species. As a result, threatened and endangered species are not discussed further in this document. The remaining 8 special-status plant species identified as potentially occurring in or near the vicinity of the BSA, which are discussed in this section, are:

- Coulter's saltbush (*Atriplex coulteri*);
- Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*);
- Southern tarplant (*Centromadia parryi* ssp. *australis*);
- Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*);
- Vernal barley (*Hordeum intercedens*);
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*);
- Allen's pentachaeta (*Pentachaeta aurea* ssp. *allenii*); and
- San Bernardino aster (*Symphyotrichum defoliatum*).

None of these special-status plant species were observed or otherwise detected in the BSA at the time of the surveys. The BSA does not contain, nor is it adjacent to, suitable habitat for any special-status plant species identified in the literature search, with the possible exception of southern tarplant.

In addition to the literature review, a reconnaissance-level field survey was conducted on November 7, 2011, to characterize the general biological resources and to ascertain the presence or absence of special-status plant species and the likelihood of their occurrence in or near the BSA. A follow-up field survey on vacant land south of State Route 55 (SR-55) at the northbound Edinger Avenue on- and off-ramps at Del Amo Avenue and at the southbound Dyer Road off-ramp at South Grand Avenue was conducted on July 18, 2012, to determine the presence of southern tarplant. No special-status plant species (i.e., listed, proposed for listing, or candidate species) were observed or otherwise detected in the BSA during the 2011 and 2012 field surveys.

The BSA is composed of disturbed habitat, and landscaped and nonvegetated urban/developed areas. Plant species occurring in the BSA are characteristic of those found in landscaped and regularly disturbed areas, including castor bean (*Ricinus communis*), shortpod mustard (*Hirschfeldia incana*), Russian-thistle (*Salsola tragus*), cheeseweed (*Malva parviflora*), brome grass (*Bromus* sp.), perennial sowthistle (*Sonchus arvensis*), Bermuda grass (*Cynodon dactylon*), annual bluegrass (*Poa annua*), western sycamore (*Platanus racemosa*), eucalyptus (*Eucalyptus* sp.),

Hottentot-fig (*Carpobrotus edulis*), English ivy (*Hedera helix*), lantana (*Lantana camara*), Peruvian pepper (*Schinus molle*), Brazilian pepper (*Schinus terebinthifolius*), and Mexican fan palm (*Washingtonia robusta*).

2.16.2.1 Southern Tarplant

The southern tarplant is not a federally or State-listed species, but it has a CNPS Rare Plant Rank of 1B. Plants with a Rare Plant Rank of 1B are rare throughout their range and have declined significantly over the last century. The majority of them are endemic to California. All the plants constituting California Rare Plant Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the California Fish and Game Code, and are eligible for State listing.

Southern tarplant occurs in wet areas such as edges of marshes and vernal pools, at the edges of roads and trails, and in other areas of compacted, poorly drained, or alkaline soils below 1,400 feet (ft) in elevation, where competition from other plants is limited. There is potentially suitable habitat for southern tarplant in the field at South Grand Avenue, and the northernmost and southernmost parts of the field at Del Amo Avenue. However, during the July 18, 2012 site visit, it was determined that there are not suitable habitat conditions at the South Grand Avenue field or at the southernmost part of the Del Amo Avenue to support southern tarplant. Specifically, well-drained soils in the southernmost field do not allow sufficient ponding, and the dense, nonnative vegetation precludes opportunities for southern tarplant to become established.

The July 18, 2012, site visit did determine that suitable habitat and/or conditions exist in the northernmost part of the field at Del Amo Avenue to support southern tarplant. However, subsequent to that visit, construction began on a new commercial project in that northernmost field. As a result of this development, there is no longer potential for the southern tarplant to become established in that area.

In summary, there is no potential for the southern tarplant or any other special-interest plant species to occur in the BSA.

2.16.3 Environmental Consequences

The proposed project has been determined to have no effect on any of the federally listed species identified as potentially occurring within the vicinity of the proposed project (refer to Table 2.16.1).

2.16.3.1 Temporary Impacts

Alternatives 1, 2, 3, and 4 (Build Alternatives)

Based on the literature search, suitable habitat for southern tarplant may be present on vacant land in two parts of the BSA. However, based on field surveys conducted in those areas, it was determined that suitable habitat conditions do not exist to support southern tarplant, and there is no potential for southern tarplant to occur in the BSA. As a result, the construction of Alternatives 1, 2, 3, and 4 would not result in temporary impacts on southern tarplant or other special-interest plant species.

No Build Alternative

The No Build Alternative would not include construction of any of the proposed project improvements and, as noted above, there is no suitable habitat for the southern tarplant in the BSA. Therefore, the No Build Alternative would not result in temporary impacts to southern tarplant or other special-status plant species.

2.16.3.2 Permanent Impacts

Alternatives 1, 2, 3, and 4 (Build Alternatives)

As noted above, it was determined that suitable habitat does not exist to support southern tarplant; therefore, there is no potential for southern tarplant to occur in the BSA. As a result, the construction and operation of Alternatives 1, 2, 3, and 4 would not result in permanent impacts on southern tarplant or other special-interest plant species.

No Build Alternative

The No Build Alternative would not include construction of any of the proposed project improvements and, as noted above, there is not suitable habitat for southern tarplant in the BSA. Therefore, the No Build Alternative would not result in adverse permanent impacts to southern tarplant or special-status plant species.

2.16.4 Avoidance, Minimization, and/or Mitigation Measures

There is no potential for southern tarplant to occur in the BSA, and the Build Alternatives would not result in temporary or permanent impacts to southern tarplant or other special interest species. No mitigation is required.

Table 2.16.1 United States Fish and Wildlife Service Species Effect Determination for Plant Species

Common/Scientific Name	Federal Status	Species Requirements	Species Habitat Present/Absent	Rationale	Effect Determination
Flowering Plants					
Big-leaved crownbeard/ *Verbesina dissita*	Threatened	Steep, rocky, primarily north-facing slopes in maritime chaparral at 45 to 210 m (150 to 700 ft) elevation within 1.5 mi of the ocean, and rarely in coastal sage scrub near the bottoms of south-facing slopes opposite north-facing slopes of maritime chaparral. Known only from Orange County in central and southern areas of Laguna Beach, and from Baja California.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
Laguna Beach liveforever/ *Dudleya stolonifera*	Threatened	Rocky areas (generally north-facing sandstone cliffs) at 10 to 260 m (30 to 850 ft) elevation. Known only from Orange County, California near Laguna Beach, with most occurrences in Laguna Canyon west of SR-73.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
Salt marsh bird's-beak/ *Chloropyron maritimum ssp. maritimum* (formerly *Cordylanthus maritimus* ssp. *maritimus*)	Endangered	Typically associated with coastal dunes or coastal salt marshes and swamps. Occurs from 0 to 30 m (0 to 99 ft) elevation. Known only from Los Angeles, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo and Ventura Counties, California.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
San Diego button-celery/ *Eryngium aristulatum* var. *parishii*	Endangered	Vernal pools and similar mesic habitats in coastal scrub and grassland at 15 to 620 m (50 to 2,000 ft) elevation. In California, known only from Riverside and San Diego Counties. In Riverside County, this species is known only from the Santa Rosa Plateau. Also occurs in Mexico.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.

Table 2.16.1 United States Fish and Wildlife Service Species Effect Determination for Plant Species

Common/Scientific Name	Federal Status	Species Requirements	Species Habitat Present/Absent	Rationale	Effect Determination
Thread-leaved brodiaea/ *Brodiaea filifolia*	Threatened	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 25 to 1,120 m (80 to 3,700 ft) elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, San Diego, and San Luis Obispo Counties, California.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
Ventura marsh milk-vetch/ *Astragalus pycnostachyus* var. *lanosissimus*	Endangered	Coastal salt marsh within reach of high tide or protected by barrier beaches, or more rarely near seeps on sandy bluffs, below 35 m (120 ft) elevation. Known only from Santa Barbara and Ventura Counties. Believed extirpated from Los Angeles and Orange Counties.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.

ft = feet
m = meters
mi = miles
SR-73 = State Route 73

2.17 Animal Species

2.17.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. The proposed project would not impact any animal species listed or proposed for listing as threatened or endangered as discussed earlier in the introduction to Section 2.0. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Endangered Species Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the California Fish and Game Code
- Section 4150 and 4152 of the California Fish and Game Code

2.17.2 Affected Environment

The information in this section is based on the *Natural Environment Study (Minimal Impacts)* (2015) prepared for the project.

2.17.2.1 Literature Review, Records Search, and Field Visits

A literature review and records search were conducted to identify the presence or potential occurrence of sensitive or special-interest animal species within or in the vicinity of the Biological Study Area (BSA). Official species lists were obtained from the USFWS on December 17, 2012, and September 1, 2015, and are provided in Chapter 3. The following seven special-interest animal species that are not federally

and/or State-listed endangered or threatened were identified in the literature and record searches as potentially occurring in or near the BSA:

- Grasshopper sparrow (*Ammodramus savannarum*)
- Burrowing owl (*Athene cunicularia*)
- Mexican long-tongued bat (*Choeronycteris mexicana*)
- Red-diamond rattlesnake (*Crotalus ruber*)
- White-tailed kite (*Elanus leucurus*)
- California horned lark (*Eremophila alpestris actia*)
- Western mastiff bat (*Eumops perotis californicus*)

A reconnaissance-level field survey was conducted on November 7, 2011, to characterize the general biological resources and to ascertain the presence or absence of special-status animal species and the likelihood of their occurrence in and near the BSA. A field survey on the vacant parcel south of State Route 55 (SR-55) at the northbound Edinger Avenue on- and off-ramps at Del Amo Avenue and at the southbound Dyer Road off-ramp at South Grand Avenue was conducted on July 18, 2012, to determine the presence of burrowing owls or whether conditions are suitable for potential future occurrence of burrowing owls.

A habitat suitability assessment for bats was conducted on September 4 and 8, 2015, to examine suitable roosting habitat (e.g., crevices or cavities) at various bridge and culvert structures, as well as for the presence of bats or bat sign (e.g., guano, staining, or vocalizations) within the BSA. Adjacent arterial streets and concrete culverts situated within 200 feet (ft) of the BSA were also surveyed.

No special-status animal species (i.e., listed, proposed for listing, or candidate species) were observed or otherwise detected in the BSA during the field surveys. The BSA does not contain, nor is it adjacent to, suitable habitat for any special-status animal species identified in the literature search, with the possible exception of burrowing owls and bats. Due to the presence of suitable site conditions and the occurrence of small mammal burrows on the vacant land described above, there is potential for burrowing owls to move onto that parcel in the future.

The BSA consists of disturbed habitat and nonvegetated urban/developed areas. Wildlife species occurring in the BSA are characteristic of those found in a well-developed urban setting and are adapted to noise and other human-related disturbances. During the site visits for the bat habitat suitability assessment, a coyote

was observed in Lane Channel (a 31.5 ft wide concrete trapezoidal channel adjacent to the west side of SR-55 between the MacArthur Boulevard and Dyer Road interchanges), which is discussed further below. Common animal species in the BSA include bushtit (*Psaltriparus minimus*), common raven (*Corvus corax*), rock pigeon (*Columba livia*), red-tailed hawk (*Buteo jamaicensis*), house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida macroura*), lesser goldfinch (*Spinus psaltria*), American kestrel (*Falco sparverius*), black phoebe (*Sayornis nigricans*), great egret (*Ardea alba*), Myotis bat (likely Yuma myotis [*Myotis yumanensis*]), coyote (*Canis latrans*), and California ground squirrel (*Spermophilus beecheyi*).

2.17.2.2 Burrowing Owl and Other Avian Species

The burrowing owl is a California Species of Concern. It is also protected under the Migratory Bird Treaty Act (MBTA; 16 United States Code [USC] Sections 703–711) and under Sections 3503 and 3800 of the California Fish and Game Code.

The BSA does not contain, nor is it adjacent to, suitable habitat for any special-status species with the exception of burrowing owls and bats. The July 18, 2012, visit determined that suitable conditions did not exist in the South Grand Avenue field or at the northernmost field at Del Amo Avenue to support burrowing owls. However, as described earlier, there are suitable conditions for the burrowing owl at the southernmost field at Del Amo Avenue. The available habitat for burrowing owls on that southernmost field is of marginal quality, and no owls or owl signs (burrows, scat, tracks, or feathers) were observed during the field surveys. Therefore, the probability of burrowing owls occurring on the southernmost field at Del Amo Avenue is low. Nonetheless, due to the presence of suitable site conditions and small mammal burrows (which the burrowing owl may use) on the site, it is possible for burrowing owl to move onto this site.

Migratory birds are protected under the MBTA. In addition, Sections 3503, 3503.5, and 3800 of the California Fish and Game Code prohibit the take, possession, or destruction of migratory birds, their nests, or their eggs.

2.17.2.3 Special-Status Bridge/Culvert- and Crevice-Dwelling Animal Species

Special-status bridge/culvert and crevice-dwelling wildlife species identified as potentially occurring in the area, but not necessarily within the BSA, include Mexican long-tongued bat (*Choeronycteris mexicana*) and western mastiff bat (*Eumops perotis californicus*). Both of these species are considered Species of Special Concern by the

CDFW. The Mexican long-tongued bat occurs in Orange County only as a rare migrant and is not expected to occur within the BSA. There is a low probability that the western mastiff bat may forage or roost within the BSA. The Yuma myotis (*Myotis yumanensis*), a California Special Animal,[1] is also known to occur in the area, and several myotis individuals that likely belong to this species were observed during the bat habitat suitability assessment.

There were 21 structures (11 bridge undercrossing/overcrossing structures and 10 concrete double-box culverts) within the BSA that were examined during the daytime bat habitat assessment for the presence of structural features that may be used by day- and/or night-roosting bats, and for the presence of bats or bat sign (e.g., guano, urine staining, or vocalizations) indicating potential use by bats. Structural features suitable as day roosts for bats include crevices, such as those found in expansion joints and hinges, and cavities of any size that provide shelter from wind and light.

Potential day-roosting habitat is present within 6 of the 7 bridge undercrossing structures within the project area. Based on the relatively low quality of the surrounding habitat for foraging and the lack of bats or bat sign (e.g., guano, urine staining, or vocalizations) observed at these structures, there is a low probability that bats utilize any of these structures for day or night roosting. The majority of suitable day-roosting habitat in the BSA was observed in expansion joints inside 6 of the 10 culverts along the various channels, particularly around the I-405/SR-55 interchange, along Lane Channel, and at the Santa Ana/Santa Fe Channel (adjacent to the South Tustin Overhead). Small numbers of roosting myotis bats (likely Yuma myotis) were observed day roosting in some of the expansion joints. In addition, there is potential for maternity roosting in these structures due to the availability of crevice habitat in close proximity to high-quality foraging habitat. In addition, night-roosting habitat is present in all 10 of the culvert structures examined, and bat guano confirming night-roosting activity was observed in one of the culverts.

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[1] The Special Animals List is comprised of taxa that are tracked by the CDFW via the California Natural Diversity Database (CNDDB) and are being monitored due to decline or potential decline. Species from that list that are referred to as "Special Animals" are those taxa that are tracked by CDFW but are not officially designated as Species of Special Concern or otherwise listed (e.g., under the California Endangered Species Act [CESA]).

Although roosts in anthropogenic structures such as bridges and culverts can be relatively easy to identify, tree roosts are more cryptic and require close examination. Since roosting activity in trees is difficult to confirm (foliage-roosting species tend to roost singly, beneath leaves, and may roost in a different location each night), trees were not closely examined during the bat habitat suitability assessment. However, mature palm trees (*Washingtonia* spp.) with untrimmed fronds that were observed throughout the right-of-way may provide roosting habitat for western yellow bat (*Lasiurus xanthinus*), a CDFW Species of Special Concern that roosts in the dead fronds of palm trees. Western mastiff bats have also been documented occasionally roosting in palm trees.

There are no special-status bridge- and crevice-dwelling bird species with the potential to occur within the BSA. However, as discussed below, there is a potential for non-listed bird species to roost or nest in the BSA.

Since bats and other bridge- and crevice-nesting species (i.e., white-throated swifts [*Aeronautes saxatilis*], swallows [*Hirundinidae* sp.], and black phoebes) are highly mobile animals, it is possible they may begin roosting or nesting in suitable habitat at any time. Small numbers of bats may begin roosting within abutment crevices or weep holes of bridge structures within the BSA.

2.17.2.4 Wildlife Movement

Wildlife crossings are generally structural passages beneath or above roadways. “Wildlife crossing” is the umbrella term encompassing underpasses, overpasses, and culverts. All of these structures provide seminatural corridors above or below roads, and in some cases adjacent to roads, so that animals can safely cross without endangering themselves and motorists. Species of primary interest in this wildlife corridor assessment are medium-sized mammals such as coyote (*Canis latrans*).

Wildlife movement in the BSA has been substantially constrained for many years by human-made barriers (e.g., lack of suitable vegetative cover, existing roadways, storm water conveyance structures, and fencing, along with the associated surrounding development). The urban setting of the BSA provides limited opportunities for habitat continuity. Nevertheless, evidence of coyote presence was observed in Lane Channel during the site visits for the bat habitat suitability assessment in September 2015. However, coyotes are well adapted to the urban environment and are increasingly present in urban drainage channels such as Lane Channel. Lane Channel does not connect to any upstream natural habitat and

therefore does not serve as a corridor. Beginning just south of Dyer Avenue and continuing northward, Lane Channel becomes an underground storm drain. The section of Lane Channel that is within the BSA is likely to be the northernmost extent that is used by coyotes, which likely travel up the channel from San Diego Creek.

2.17.3 Environmental Consequences

The proposed project has been determined to have no effect on any of the federally listed species identified as potentially occurring within the vicinity of the proposed project (refer to Table 2.17.1).

2.17.3.1 Temporary Impacts

Alternatives 1, 2, 3, and 4 (Build Alternatives)

All four Build Alternatives include construction in the vicinity of the southernmost field at Del Amo Avenue. All four Build Alternatives may use that southernmost field at Del Amo Avenue as a staging area for equipment during construction. Alternatives 3 and 4 would require a temporary construction easement (TCE) on a portion of the parcel that includes the field. No burrowing owls or owl signs were observed during the field survey of the southernmost field at Del Amo Avenue; however, due to the presence of suitable site conditions and the occurrence of small mammal burrows, burrowing owls may move onto this site prior to construction. Therefore, if any burrowing owls are present on the site, all four Build Alternatives would temporarily impact those owls during construction. The temporary impacts could include removal of burrows and, potentially, the need to relocate owls away from areas proposed for staging and TCEs.

Construction of the four Build Alternatives could also impact nesting birds protected under the MBTA and the California Fish and Game Code either directly as a result of the removal of trees occupied by nesting birds or disturbances to bridge and crevice habitat, or indirectly as a result of disturbances near trees occupied by nesting birds.

Construction activities associated with the four Build Alternatives at the 6 undercrossings or 10 culvert structures described above could result in temporary impacts to bats and other bridge- and crevice-nesting special-status species. During construction activities, indirect temporary impacts to bats and bat-roosting habitat include impacts from dust, lighting, and noise in the vicinity of the roost sites. Direct temporary impacts include destruction or loss of roosting habitat through demolition or removal of a structure or portions of a structure that contain roost features.

Table 2.17.1 United States Fish and Wildlife Service Species Effect Determination for Animal Species

Common/Scientific Name	Federal Status	Species Requirements	Species Habitat Present/Absent	Rationale	Effect Determination
Crustaceans					
Riverside fairy shrimp/ *Streptocephalus woottoni*	Endangered	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 some stock ponds, that have vernal pool like hydrology and vegetation. Known from areas within about 50 mi of the coast from Ventura County south to San Diego County and Baja California.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
San Diego fairy shrimp/ *Branchinecta sandiegonensis*	Endangered	Small, shallow (usually less than 30 centimeters 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). Known from Orange and San Diego Counties, and Baja California.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
Birds					
California least tern/ *Sterna antillarum browni*	Endangered	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.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
Coastal California gnatcatcher/ *Polioptila californica californica*	Threatened	Inhabits coastal sage scrub in low-lying foothills and valleys up to about 500 m (1,640 ft) elevation in cismontane southwestern California and Baja California.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.

Table 2.17.1 United States Fish and Wildlife Service Species Effect Determination for Animal Species

Common/Scientific Name	Federal Status	Species Requirements	Species Habitat Present/Absent	Rationale	Effect Determination
Least Bell's vireo/ *Vireo bellii pusillus*	Endangered	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 (0.6–3.0 m) above ground. Nests from central California to northern Baja California. Winters in southern Baja California.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
Light-footed clapper rail/ *Rallus longirostris levipes*	Endangered	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.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
Southwestern willow flycatcher/ *Empidonax traillii extimus*	Endangered	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 elevation.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
Western snowy plover/ *Charadrius alexandrinus nivosus*	Threatened	Sandy coastal beaches, lakes, alkaline playas. Scattered locations along coastal California and Channel Islands, inland at Salton Sea and at various alkaline lakes.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.
Mammals					
Pacific pocket mouse/ *Perognathus longimembris pacificus*	Endangered	Historically occupied open habitats on sandy soils along the coast from Los Angeles to the Mexican border. Now known from only four sites in Orange and San Diego Counties.	Absent	Suitable habitat for this species does not occur in the proposed project area.	The proposed project would have no effect on this species.

ft = feet
m = meters
mi = miles

Humane eviction and exclusion of bats from a roost would be considered a temporary impact if alternative habitat is provided and if the bats are permitted to recolonize the original roost site following construction. In addition, construction of the four Build Alternatives could also impact tree-roosting habitat for bats through the removal of palm trees or their fronds within the BSA.

Construction activities associated with the four Build Alternatives within Lane Channel would temporarily discourage coyote presence in that relatively short section of the channel, but coyotes would likely continue to utilize the channel south of the BSA to San Diego Creek and beyond. Therefore, construction of the four Build Alternatives would not result in any adverse temporary impacts to wildlife movement.

No Build Alternative

The No Build Alternative would not include construction of any improvements and would not result in any disturbance on or near the southernmost field at Del Amo Avenue or to any structures with suitable bat habitat. Therefore, the No Build Alternative would not result in temporary impacts to special-status animal species in the BSA, including burrowing owls, bats, and nesting birds.

2.17.3.2 Permanent Impacts

Alternatives 1, 2, 3, and 4 (Build Alternatives)

No permanent project improvements would be constructed on the southernmost field at Del Amo Avenue, and the Build Alternatives would not result in the permanent use of any part of that field. As a result, the four Build Alternatives would not result in permanent direct impacts on the burrowing owl. Indirect noise impacts on the owl from traffic on SR-55 and area streets would be expected to be the same as existing conditions. In summary, the operation of the four Build Alternatives would not result in permanent impacts to burrowing owl and burrowing owl habitat.

The four Build Alternatives would not result in any permanent direct impacts on nesting birds. Indirect noise impacts on nesting birds from traffic on SR-55 and area streets would be expected to be the same as existing conditions.

Construction activities that may result in permanent impacts to bats and bat-roosting habitat include destruction or loss of roosting habitat through demolition or removal of a structure (6 undercrossing or 10 culvert structures) or portions of a structure that contain roost features. Humane eviction and exclusion of bats from a roost would be considered a permanent impact if the roost site remained sealed.

Indirect noise impacts to bat species from traffic on SR-55 and area streets would be expected to be the same as from existing conditions.

Since the BSA does not appear to function as a wildlife movement corridor, the four Build Alternatives would not result in any permanent impacts to coyotes or to wildlife movement.

No Build Alternative

The No Build Alternative would not include the operation of any of the project improvements. Therefore, the No Build Alternative would not result in permanent impacts to special-status animal species in the BSA, including burrowing owls, bats, and nesting birds.

2.17.4 Avoidance, Minimization, and/or Mitigation Measures

The following measure would avoid and/or minimize potential impacts to burrowing owls and migrating birds during construction of the Build Alternatives.

AS-1 Within 30 days prior to the commencement of any phase of construction, a qualified biologist will conduct pre-construction surveys to determine if any burrowing owls are present within the construction limits that could be adversely affected by construction activities. If the pre-construction surveys determine burrowing owls are present within the construction limits, the qualified biologist will coordinate with the California Department of Fish and Wildlife (CDFW) immediately to determine the specific measures that will be implemented regarding the burrowing owls present in the construction limits.

If burrowing owls are determined to be present within the construction limits, one or more of the following measures may be required based on the coordination with CDFW:

1. Avoidance of active nests and surrounding buffer area during construction activities
2. Passive relocation of individual owls
3. Active relocation of individual owls
4. Preservation of on-site habitat with long-term conservation value for the owl

The following measure would reduce potential impacts to tree or vegetation nesting birds during construction of the Build Alternatives.

AS-2 To avoid effects to nesting birds, the construction contractor will conduct any vegetation or tree (native or exotic) trimming or removal activities outside the nesting bird season (i.e., February 15 through August 31). In the event that vegetation clearing or trimming is necessary during the nesting season, a qualified biologist will conduct a pre-construction survey to identify the locations of any active bird nests. Should birds be found actively nesting in the construction limits, an exclusionary buffer will be installed where indicated by the biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or clearing activity will not be conducted within the buffer area until the biologist determines the young have fledged or the nest is no longer active.

The following measures would avoid and/or minimize potential impacts to bats and bridge- and crevice-nesting species during construction of the Build Alternatives.

AS-3 If during final design it is determined that construction activities will directly impact weep holes or crevice habitat on any undercrossing structure except Newport Avenue, additional surveys will be required to be performed by a qualified bat biologist prior to construction to ascertain whether roosting bats are present in the affected areas.

AS-4 Prior to the initiation of construction activities, pre-construction nighttime surveys will be conducted by a qualified biologist during the summer months (June through mid-August) when bat foraging activity is highest and when maternity roosting occurs, in order to more accurately determine the presence and approximate number and species of bats utilizing the culvert structures for day and/or night roosting. Nighttime surveys will include acoustic monitoring and exit counts at each culvert structure that will be subject to direct impacts from project construction. If maternity roosting is confirmed within any of the culverts structures, construction activities would be prohibited at those structures during the recognized bat maternity season (April 1 through August 31).

AS-5 During construction activities, nighttime work will be avoided at all of the culverts to the greatest extent practicable. If nighttime work cannot be avoided, the following measures will be implemented:

- Night lighting shall only be used on the portions of the structure actively being worked on, and shall be focused on the direct areas of work.
- Airspace access to and from the roost features of the structures shall not be obstructed except in direct work areas.
- Construction personnel shall not be present in non-active areas beneath the structure.

AS-6 If bat day-roosting habitat at any structure will be directly affected by modification or removal during project construction, a humane eviction or exclusion will be performed by a qualified bat biologist to avoid potential direct mortality to roosting bats. The eviction/exclusion will be performed in the fall (September or October) preceding construction to avoid potential direct impacts to bats. The materials used for the eviction/exclusion are at the discretion of the qualified bat biologist. All humane bat eviction/exclusion techniques will be coordinated between the California Department of Transportation (Caltrans) District Biologist and the CDFW.

AS-7 If bats are evicted or excluded from roosting habitat within any of the six culverts identified as containing day-roosting habitat, the placement of alternate roosting habitat will be needed to mitigate for temporary and/or permanent loss of roosting habitat. The alternate roosting habitat must be in place prior to the eviction/exclusion, and should be placed on or within an adjacent culvert structure. Inclusion of bat roosting habitat in the design of the new structures may also serve as mitigation for permanent impacts to bat-roosting habitat.

The following measure would avoid and/or minimize potential impacts to tree-roosting bat species during construction of the Build Alternatives.

AS-8 During construction, the removal of palm trees or their fronds will be avoided to the maximum extent practicable. If palm tree removal or palm frond trimming is necessary for project construction, this activity

will be performed outside the bat maternity season (April 1 through August 31) to avoid impacts to flightless young. In the event that palm tree removal or trimming is necessary during the bat maternity season, a qualified biologist will monitor the removal or trimming and will examine the fronds for nonvolant (nonflying) juvenile bats prior to disposal. Any injured or potentially injured bats should be transported by the qualified biologist to a CDFW-licensed bat rehabilitator within 48 hours.

The following measure would reduce potential impacts to bridge- and crevice-nesting birds during construction of the Build Alternatives.

AS-9 All construction work conducted between February 15 and September 1 (during the nesting bird season) on existing bridges or culverts with areas of potential habitat will require the removal of all unoccupied bird nests prior to construction under the guidance and observation of a qualified biologist prior to February 15 of that year, which would be before the nests become active (i.e., containing eggs). Removal of nests that are under construction must be repeated as frequently as necessary to prevent nest completion or until a nest exclusion device is installed (such as netting or a similar mechanism that keeps birds from building nests). Nest removal and exclusion device installation will be monitored by a qualified biologist. Such exclusion efforts must be continued to keep the structures free of nesting birds until September 1 or the completion of construction. All nest exclusion techniques would be coordinated between the Caltrans District Biologist and the CDFW.

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2.18 Invasive Species

2.18.1 Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (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 invasive species list currently maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

2.18.2 Affected Environment

The information in this section is based on the *Natural Environment Study (Minimal Impacts)* (2015) prepared for the project.

The California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory highlights nonnative plants that are serious problems in wildlands (i.e., natural areas that support native ecosystems, including national, State, and local parks, ecological reserves, wildlife areas, national forests, Bureau of Land Management lands). The inventory categorizes plants as High, Moderate, or Limited based on each species' negative ecological impact in California. Plants categorized as High have severe ecological impacts. Plants categorized as Moderate have substantial and apparent, but not severe, ecological impacts. Plants categorized as Limited are invasive, but their ecological impacts are minor on a statewide level.

As shown in Table 2.18.1, a total of 11 nonnative plant species occurring on the Cal-IPC Invasive Plant Inventory (3 High, 4 Moderate, and 4 Limited) were identified in the Biological Study Area (BSA).

No invasive animal species were observed in the BSA.

Table 2.18.1 Invasive Plant Species in the Biological Study Area

Scientific Name	Common Name	Rating
Aizoaceae	**Carpet-Weed Family**	
Carpobrotus edulis	Hottentot-fig	High
Anacardiaceae	**Sumac Family**	
Schinus molle	Peruvian pepper tree	Limited
Schinus terebinthifolius	Brazilian pepper tree	Limited
Araliaceae	**Ginseng Family**	
Hedera helix	English Ivy	High
Arecaceae	**Palm family**	
Washingtonia robusta	Mexican fan palm	Moderate
Brassicaceae	**Mustard family**	
Hirschfeldia incana	Shortpod mustard	Moderate
Chenopodiaceae	**Goosefoot Family**	
Salsola tragus	Russian-thistle	Limited
Euphorbiaceae	**Spurge family**	
Ricinus communis	Castor bean	Limited
Myrtaceae	**Myrtle family**	
Eucalyptus sp.	Eucalyptus	Moderate
Tamaricaceae	**Tamarisk Family**	
Tamarix ramosissima	Mediterranean tamarisk	High
Poaceae	**Grass family**	
Cynodon dactylon	Bermuda grass	Moderate

Source: Personal observation in February 2013 by Elizabeth Hohertz, Field Biologist, LSA Associates, Inc.

2.18.3 Environmental Consequences

2.18.3.1 Temporary Impacts

Alternatives 1, 2, 3, and 4 (Build Alternatives)

Potential impacts from invasive species associated with construction and operation of transportation projects are considered permanent. Refer to Section 2.18.3.2, Permanent Impacts, for discussion regarding invasive species.

No Build Alternative

The No Build Alternative would not include the construction of any of the proposed project improvements. As a result, as described under permanent impacts, the No Build Alternative would not result in new impacts related to invasive species. Locations in the SR-55 right-of-way where invasive species currently occur would not be modified under the No Build Alternative.

2.18.3.2 Permanent Impacts

Alternatives 1, 2, 3, and 4 (Build Alternatives)

As noted earlier, potential impacts from invasive species associated with construction and operation of transportation projects are considered permanent because the introduction of invasive species into previously undisturbed areas would result in

permanent impacts to any affected native habitats. However, although invasive plant species are present in the BSA as described earlier, the BSA is not located adjacent to any native or open space areas. Because the BSA is fully developed and not adjacent to any native habitats or open space areas, the Build Alternatives are not expected to cause an increase in the spread of invasive species into native and open space areas. As a result, construction and operation of the Build Alternatives would not result in adverse impacts related to invasive species.

No Build Alternative

The No Build Alternative would not include the construction or operation of any of the proposed project improvements. Therefore, the No Build Alternative would not result in impacts related to invasive species.

2.18.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would reduce the potential impacts of the Build Alternatives related to invasive species:

IS-1 The final design plans will include specifications that species listed as having a High or Moderate rating on the California Invasive Plant Council Invasive Plant Inventory will not be planted in any revegetated areas or used in any landscaping installed as part of the project.

IS-2 During construction, the construction contractor will perform weed control Best Management Practices to minimize the importation of nonnative plant material during and after construction.

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