INITIAL STUDY
FOR THE
EL CAMINO REAL ROADWAY WIDENING PROJECT
ARENAL ROAD TO LA COSTA AVENUE

Project No. CDP2022-0030, HMP2022-0004, HDP2022-0001, SUP2022-0003 FEMA FLOOD ZONE A, SUP2022-0004 EL CAMINO CORRIDOR (CIP NO. 6051)

Prepared for:

City of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92008-7314

Prepared by:

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October 2025

Initial Study

1. **PROJECT NAME:** EL CAMINO REAL ROADWAY WIDENING PROJECT, ARENAL ROAD TO LA COSTA AVENUE

2. **PROJECT NO:** CDP2022-0030, HMP2022-0004, HDP2022-0001, SUP2022-0003 FEMA FLOOD ZONE A, SUP2022-0004 EL CAMINO CORRIDOR (CIP NO. 6051)

3. **LEAD AGENCY:**

   City of Carlsbad
   1635 Faraday Avenue
   Carlsbad, CA 92008

4. **PROJECT APPLICANT:**

   City of Carlsbad Department of Public Works
   1635 Faraday Avenue
   Carlsbad, CA 92008

5. **LEAD AGENCY CONTACT PERSON:** Scott Donnell, Senior Planner, (442) 339-2618, scott.donnell@carlsbadca.gov

6. **PROJECT LOCATION:** El Camino Real between Arenal Road and La Costa Avenue

7. **GENERAL PLAN LAND USE DESIGNATION:** Open Space (OS), Local Shopping Center (L)

8. **ZONING:** Planned Community (PC), Local Shopping Center (CL)

9. **PROJECT DESCRIPTION:**

   The City of Carlsbad (city) proposes to widen the roadway segment of El Camino Real from Arenal Road to La Costa Avenue as part of the El Camino Real Roadway Widening Project, Arenal Road to La Costa Avenue (project). The proposed project is located in the City of Carlsbad (see **Figure 1**). Improvements would provide a third **southbound** lane and buffered bike lane on this stretch of roadway (see **Figure 2A-C**). Pedestrian facilities (i.e., separated pedestrian bridge structures) would be installed on both sides of the existing vehicle bridge over the San Marcos Creek to accommodate pedestrian traffic (see **Figure 3**). Elements of the proposed project include the following:

   - El Camino Real will be widened between Arenal Road and La Costa Avenue from two southbound vehicular travel lanes to three vehicular travel lanes.
   - An 8-foot bike lane and 3-foot buffer will be provided in the southbound and northbound directions.
   - New sidewalk will be constructed between Arenal Road and the San Marcos Creek Bridge to close a portion of the sidewalk gap on the west side.
   - New pedestrian bridges will be constructed on the east and west side of the San Marcos Creek Bridge to provide pedestrian travel in both directions. Two retaining walls will be constructed near the West Pedestrian Bridge to minimize fill within the environmentally sensitive area.

- Two new overlooks will be constructed, allowing southbound pedestrians to view Batiquitos Lagoon from designated public viewing areas.
- The existing, unsheltered bus stop at El Camino Real and Costa del Mar Road will be demolished and replaced by a new stop with a shelter featuring solar powered illumination and a trash receptacle.
- The southbound approach to Arenal Road will be restriped to provide three southbound lanes with a buffered bike lane.
- Curb ramps at El Camino Real/La Costa Ave. will be reconstructed to provide ADA compliant curb ramps.
- Stormwater treatment facilities within the median and westerly landscaped area will be installed.
- A new 12" PVC water main will be installed along the pedestrian bridge.
- Five streetlights will be installed along the southbound side between Arenal Road and La Costa Ave.

In addition to the proposed project elements outlined above, implementation of the proposed project would improve lighting, install crosswalks, improve aesthetics (e.g., bell streetlights, landscaping), and provide stormwater treatment. The proposed project seeks to incorporate elements to enhance the mobility for all users (i.e., motorists, pedestrians, bicyclists, and transit users) along this portion of El Camino Real that would be consistent with the goals and objectives of the Mobility Element and Sustainability Mobility Plan outlined in the city's General Plan (City of Carlsbad 2015a). The proposed project would also be compliant with Americans with Disabilities Act (ADA) accessibility requirements. Design elements would follow the City of Carlsbad Engineering Standards, including requirements such as minimal sidewalk width, maximum cross slope, maximum vertical grades, and curb ramp design. The proposed 8-foot width of the pedestrian bridges exceeds the minimal pedestrian path width per ADA compliance guidelines. Furthermore, the proposed project would be compliant with the City of Carlsbad Safer Streets Together Plan by providing engineering solutions to support the safe movement of people through various modes of travel.

Existing Conditions

Currently, the southbound lanes taper from three lanes north of Arenal Road to two lanes from Arenal Road to La Costa Avenue, and open to three lanes again approaching La Costa Avenue. This lane reduction increases travel times within the proposed project site. A small segment of sidewalk exists at La Costa Avenue along the southbound roadway and stops before the southern end of the bridge that spans San Marcos Creek. At the intersection of Costa Del Mar Road along the southbound side of El Camino Real, there is a bus stop that does not connect to other pedestrian facilities. Formal pedestrian facilities are not provided along the remainder of the southbound roadway to Arenal Road. On the northbound side, pedestrian facilities are provided along the roadway from La Costa Avenue to Arenal Road except at the bridge that spans over San Marcos Creek.

Project Scope

The existing median would be reconfigured and the roadway widened on the southbound side of El Camino Real to accommodate a third travel lane and a buffered bike lane. Approximately 800 feet north of Arenal Road, lanes would be restriped to accommodate three southbound lanes through the proposed project site. Pedestrian facilities (i.e., sidewalks) would be installed along both the northbound and southbound sides of El Camino Real to complete pedestrian pathways on either side of the road. At the existing bridge location, single-span steel truss pedestrian bridges would be installed on the western and eastern sides of El Camino Real. Pedestrian bridge facilities would be supported by abutments at the northern and southern ends to span San Marcos Creek. On the southbound side of El Camino Real, the pedestrian bridge would be approximately 203'-6" in length, and on the northbound side, the pedestrian bridge would be approximately 200 feet in length. Pedestrian facilities on the southbound side of the road would include a complete sidewalk from south of the existing bridge to Arenal Road. Additionally, two viewing areas would be constructed to provide views of Batiquitos Lagoon for southbound pedestrians. One of the viewing areas would provide seating in addition to a pathway, while the other would widen the pathway only for pedestrians to be able to stand clear of the walking path and enjoy the lagoon views. The Batiquitos Lagoon Foundation has plans for a future trail, the Batiquitos Lagoon Boardwalk/South Trail, which would connect with the proposed Project's pedestrian facility improvements just north of Costa Del Mar Rd. and the proposed overlook.

Curb ramps at the intersection of Costa Del Mar Road and El Camino Real and La Costa Ave and El Camino Real would also be updated to meet current ADA accessibility requirements. Within the roadway, medians would receive streetscape and landscape improvements to match existing medians along El Camino Real. Along the southbound side of the roadway, a landscaped parkway would separate the roadway and proposed pedestrian improvements by approximately five feet. Five new light posts would be installed along the new roadway alignment to match the existing mission bell light posts along El Camino Real. Step lighting would be installed along the pedestrian bridges at the bottom of the vertical railings, and solar powered illumination would be installed at the bus stop location. In all instances, lighting would be shielded away from Batiquitos Lagoon due to adjacent sensitive habitats and species. Additionally, the proposed project would construct biofiltration stormwater facilities adjacent to the proposed sidewalk and within the median to treat stormwater runoff from El Camino Real before entering the lagoon. The 12-inch potable water main line that currently runs under San Marcos Creek would be abandoned and a new potable 12-inch diameter by 850-foot-long water line would be installed within the existing roadway and attached to the eastern pedestrian bridge as part of the proposed project (see **Figure 3**). The existing 8-inch diameter recycled water main, shown as bridge-mounted utilities, would be protected in place on the existing bridge (see **Figure 3**).

Widening of the existing roadway and installation of the pedestrian bridges would require increasing the current footprint, which is anticipated to extend outside of the existing right-of-way boundary in

some locations. To the west, encroachment into the existing hardline conservation area, as defined by the city's Habitat Management Plan (HMP) (City of Carlsbad 2004), would occur temporarily during construction and permanently in localized areas (see **Figure 4**). As a result, modifications to boundaries of the open space and hardline preserve areas are required. The proposed project would convert 0.44 acre (19,225.5 square feet) of open space land use, which would require a City Council determination of project exemption from open space boundary adjustment requirements pursuant to Open Space, Conservation, and Recreation Element Policy 4-P.6 (see **Figure 5**). An amendment to the HMP consistent with the Carlsbad Municipal Code (CMC) Section 21.210.080 would also be required to perform an HMP hardline boundary adjustment to accommodate the proposed project's permanent removal of 0.201 acre (8755.56 square feet) of hardline preserve areas.

Additionally, right-of-way acquisition would be required at the northernmost parcel, west of El Camino Real and south of Arenal Road, along the proposed project alignment in private land owned by the Batiquitos Lagoon Foundation to accommodate permanent roadway widening and sidewalk improvements. Right-of-way acquisition would not be required in parcels owned by the California Department of Fish and Wildlife (CDFW) within Batiquitos Lagoon, adjacent to El Camino Real on the western side, although a temporary construction easement would be required in a portion of CDFW's property anticipated for bank stabilization. To the east, the current right-of-way is parallel to the existing roadway. Acquisition on the eastern side of the bridge would be required on privately owned land to accommodate the proposed pedestrian bridge. Relocation of existing utilities adjacent to the roadway is not anticipated.

Construction of the proposed project is anticipated to start in 2026, and continue for approximately 9 months. Construction would be phased, and would include the following activities: mobilization and site preparation, grading, installation of retaining walls, pedestrian bridge construction, paving and installation of hardscaped features (i.e., curbs, gutters, sidewalks, paving), installation of landscaping, and demobilization from the proposed project site. Site preparation would include removal of existing hardscape features like asphalt and concrete. Existing vegetation would also be removed, as needed, to support temporary construction access and final design. Equipment such as dump trucks, front-end loaders, excavators, concrete trucks, and supporting concrete pump machines would be used to construct the proposed project. Equipment and materials staging and worker parking would occur within the limits of the proposed project. To install the pedestrian bridges, the use of a drill rig and crane is anticipated. Traffic would be accommodated during construction to allow movement through the area by designating lanes for vehicular and bicycle traffic, managing speed limits through the construction zone, etc., to minimize interference with traffic flow. A Traffic Control Plan has been prepared and will be submitted by the construction contractor for review and approval by the city as part of the right-of-way permit and prior to project construction.

10. **ENVIRONMENTAL SETTING/SURROUNDING LAND USES:** Several entities own land adjacent to the existing roadway, including the State of California (i.e., CDFW) and the City of Carlsbad (Fire Station No. 2) (see **Figure 6A-C**). The area around the proposed project features a mix of commercial

development, open space, residential, and local shopping centers adjacent to the roadway (see **Figure 7**). The proposed project is in the Coastal Zone and within the city and California Coastal Commission (CCC) state permitting jurisdiction (see **Figure 8A-C**). Coastal Zone areas regulated by the state are subject to the California Coastal Act (CCA), while the city's jurisdiction is regulated by the City of Carlsbad Local Coastal Program (LCP). The city's LCP outlines regulations to address resources such as public access to the coast, environmentally sensitive habitat, water quality, and coastal hazards (City of Carlsbad 2019a). Batiquitos Lagoon is on the western side of El Camino Real and consists of native habitats used by sensitive species such as the light-footed Ridgway's rail (*Rallus obseletus levipes*), coastal California gnatcatcher (*Polioptila californica californica*), and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*). Coastal sage scrub is primarily adjacent to El Camino Real on the western side of the roadway with areas of disturbed habitat, open water, and southern coastal saltmarsh concentrated near the existing bridge. Two bat species, the Mexican free-tailed bat (*Tadarida brasiliensis*) and Yuma myotis (*Myotis yumanensis*), roost under the bridge that spans San Marcos Creek.

11. **OTHER REQUIRED AGENCY APPROVALS** (e.g., permits, financing approval or participation agreements): The list below outlines permits, consultations, and approvals that could be required for implementation of the proposed project. This reflects a conservative list of approvals that could be required for project implementation; the final set of approvals and permits would depend on the final project components.

- CCC Coastal Development Permit (CDP)
- CDFW Right-of-Entry Permit
- CDFW Streambed Alteration Agreement
- Regional Water Quality Control Board (RWQCB) Clean Water Act (CWA) Section 401 Water Quality Certification
- U.S. Army Corps of Engineers (USACE) CWA Section 404 Nationwide Permit
- U.S. Fish and Wildlife Service (USFWS) Informal Section 7 Consultation
- City of Carlsbad
    - Local Coastal Development Permit
    - Habitat Management Plan Permit
    - Hillside Development Permit
    - Special Use Permit – Federal Emergency Management Agency (FEMA) Flood Zone A
    - Special Use Permit – El Camino Real Corridor
    - Determination of project exemption from open space boundary adjustment requirements pursuant to Open Space, Conservation, and Recreation Element Policy 4-P.6

- HMP minor amendment to adjust the hardline preserve boundary with findings made in accordance with Municipal Code Sections 21.210.040 and 21.210.080
- Other implementing actions and approvals including but not limited to right of way acquisition, a right of way permit, authorization to bid and award contracts, and acceptance of project improvements.

- CALIFORNIA NATIVE AMERICAN TRIBES CONSULTATION.
- Have California Native American Tribes traditionally and culturally affiliated with the project area requested consultation pursuant to public resources code section 21080.3.1?

☒ Yes **☐ No**

a. If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

☒ Yes **☐ No**

12. PREVIOUS ENVIRONMENTAL DOCUMENTATION: N/A

13. SUMMARY OF ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The summary of environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is a "Potentially Significant Impact," or "Less Than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐ **Aesthetics**	☐ **Greenhouse Gas Emissions**	☐ **Public Services**
☐ **Agriculture & Forestry Resources**	☐ **Hazards/Hazardous Materials**	☐ **Recreation**
☐ **Air Quality**	☐ **Hydrology/Water Quality**	☐ **Transportation**
☒ **Biological Resources**	☐ **Land Use & Planning**	☒ **Tribal Cultural Resources**
☒ **Cultural Resources**	☐ **Mineral Resources**	☐ **Utilities/Service Systems**
☐ **Energy**	☐ **Noise**	☐ **Wildfire**
☒ **Geology/Soils**	☐ **Population & Housing**	☒ **Mandatory Findings of Significance**

14. PREPARATION: The Initial Study for the subject project was prepared by:



Michael Anguiano, Senior Project Manager, AECOM — 10/2/2025 Date

15. DETERMINATION: *(to be completed by Lead Agency)*

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described herein have been added to the proposed project. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact(s)" on the environment, but at least one potentially significant impact 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described herein. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project. Therefore, nothing further is required.

16. ENVIRONMENTAL DETERMINATION: The Initial Study for this proposed project has been reviewed and the environmental determination, indicated above, is hereby approved.

Eric Lardy, City Planner Date

17. APPLICANT CONCURRENCE WITH MITIGATION MEASURES: This is to certify that I have reviewed the mitigation measures in the Initial Study and concur with the addition of these measures to the proposed project.

Brandon Miles 10/08/2025

Signature Date

Brandon Miles, Associate Engineer

EVALUATION OF ENVIRONMENTAL IMPACTS:

1. A brief explanation is required for answers, except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. Answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.

4. "Less than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration (CEQA Implementation Guidelines Section 15063[c][3][D]). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. The explanation of each issue should identify:

    a. The significance criteria or threshold, if applicable, used to evaluate each question; and

    b. The mitigation measure identified, if applicable, to reduce the impact to less than significant.

9. Tribal consultation, if requested as provided in Public Resources Code Section 21080.3.1, must begin prior to release of a negative declaration, mitigated negative declaration, or environmental impact report for a project. Information provided through tribal consultation may inform the lead agency's assessment as to whether tribal cultural resources are present, and the significance of potential impacts to such resources. Prior to beginning consultation, lead agencies may request information from the Native American Heritage Commission regarding its Sacred Lands File, per Public Resources Code sections 5097.9 and 5097.94, as well as the California Historical Resources Information System administered by the California Office of Historic Preservation.

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Appendix D: Cultural Letter Report
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Appendix F: Vehicle Miles Traveled Analysis
Appendix G: Noise Table
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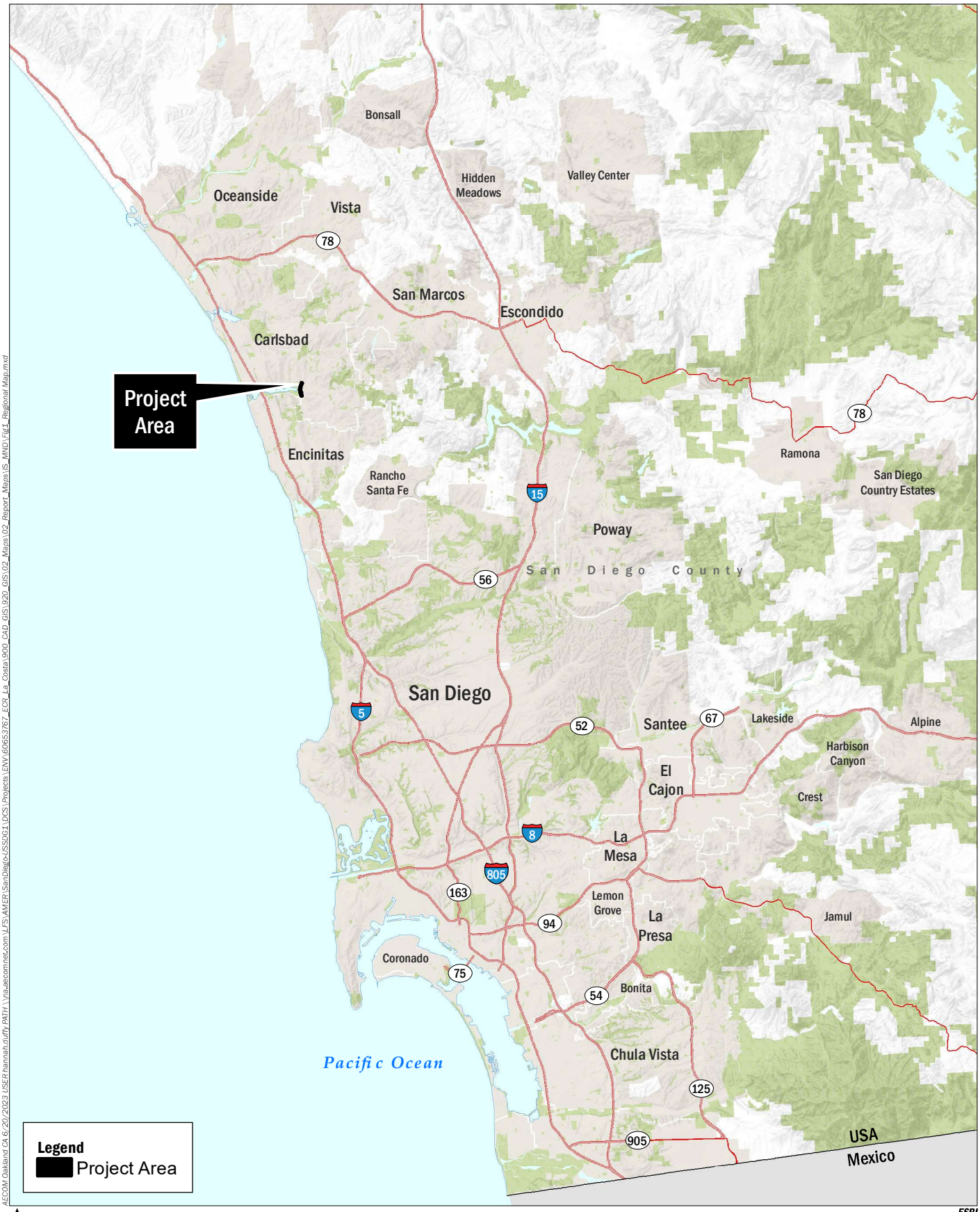

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City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 1
REGIONAL MAP



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Feet

Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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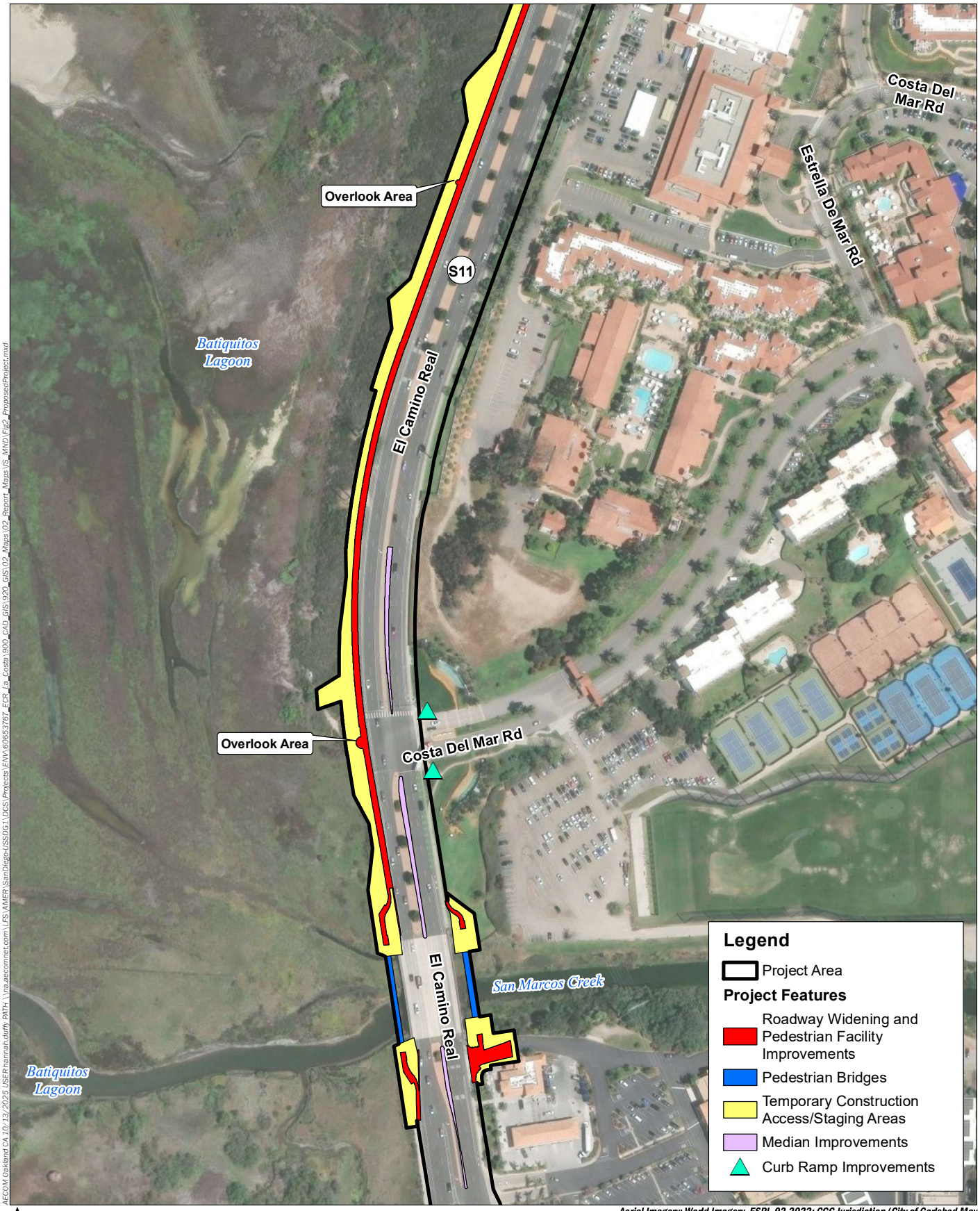
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2A - PROPOSED PROJECT



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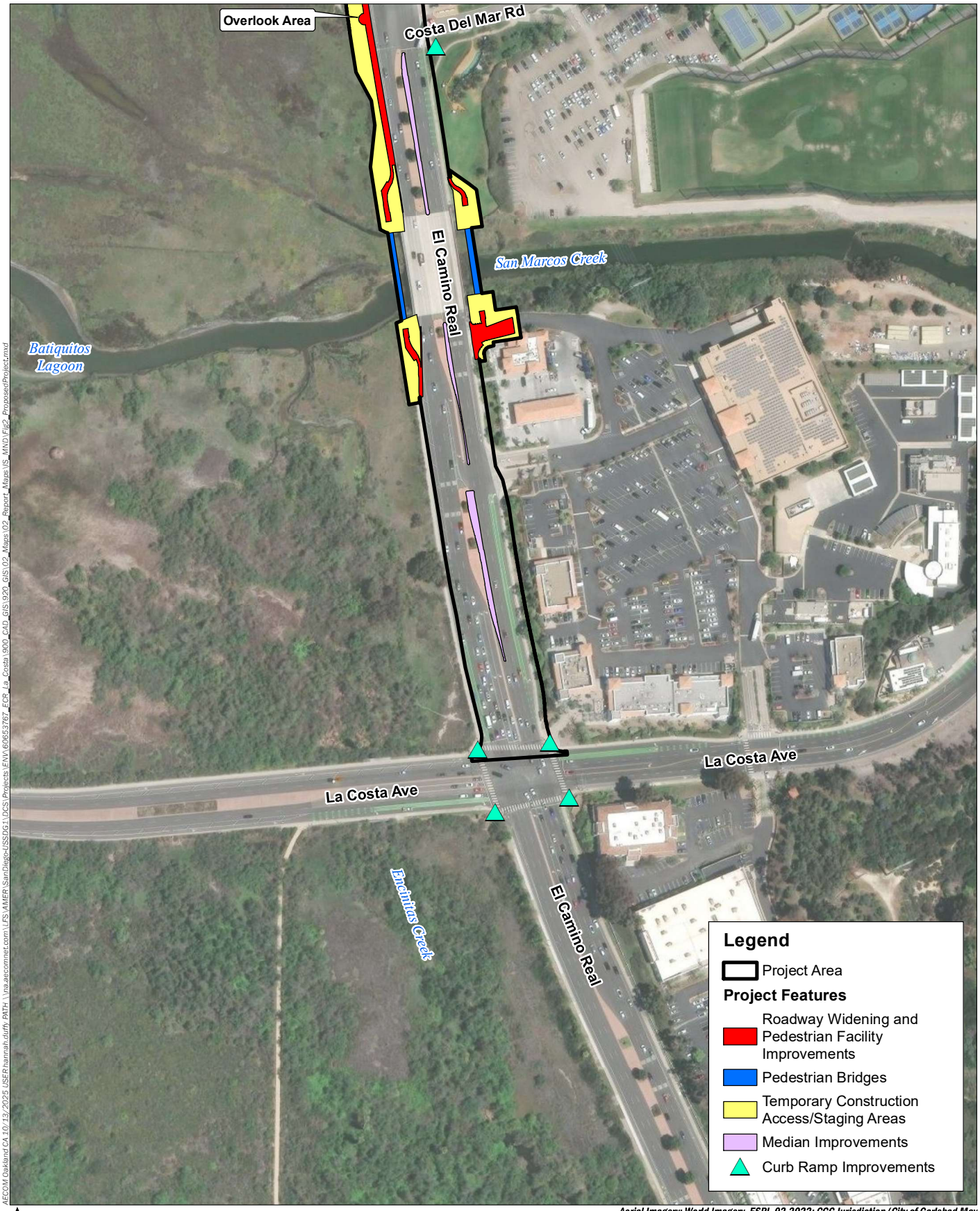
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2B - PROPOSED PROJECT



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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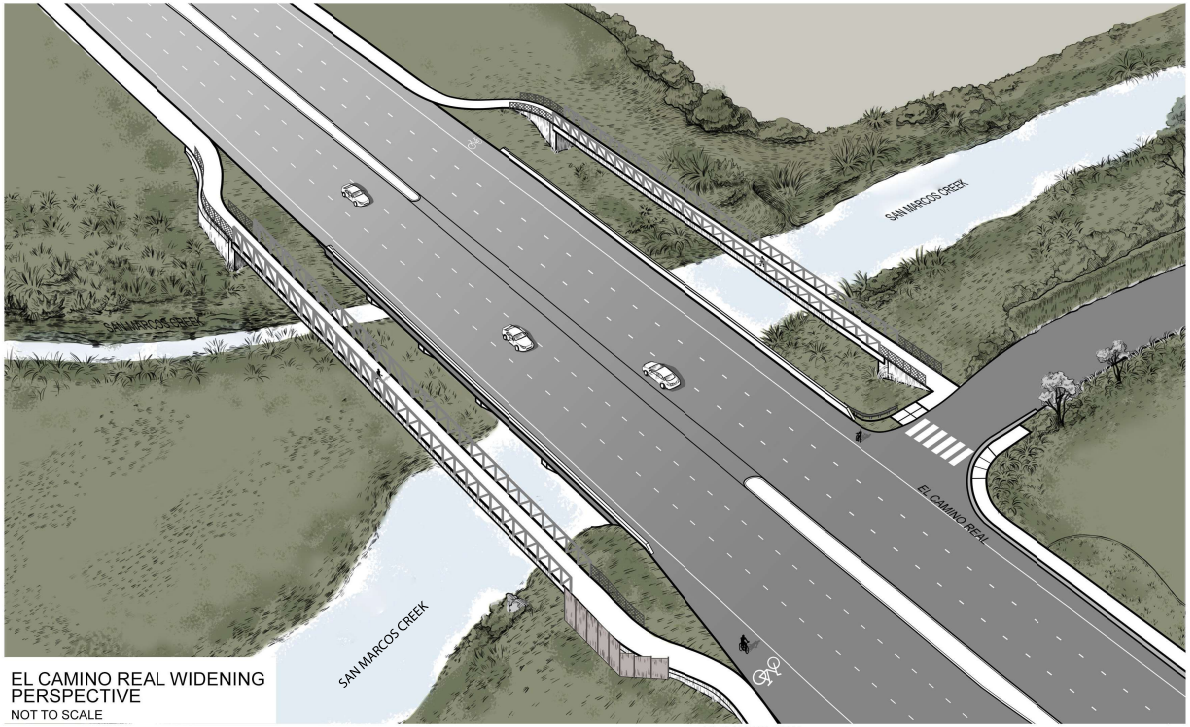
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2C - PROPOSED PROJECT



EL CAMINO REAL WIDENING
PERSPECTIVE
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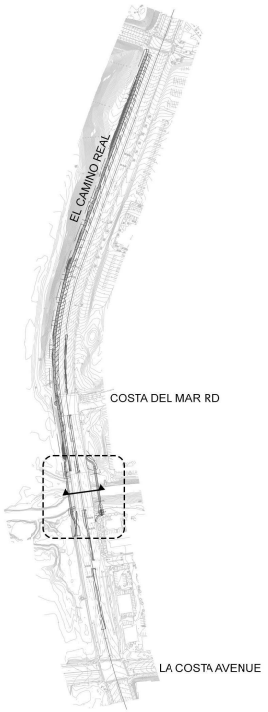

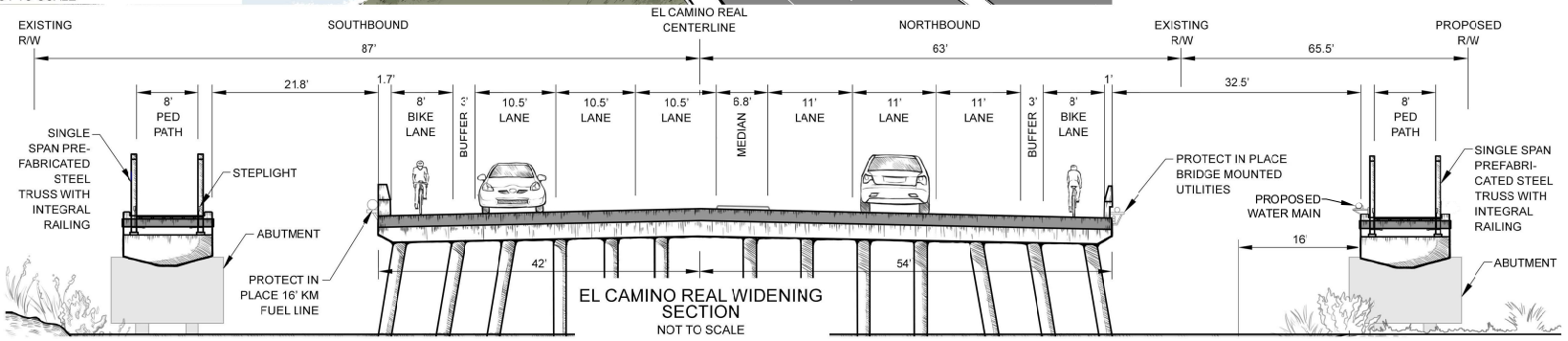

EL CAMINO REAL WIDENING
SECTION
NOT TO SCALE

General Plan Figure

Not To Scale

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El Camino Real Widening
ARENAL ROAD TO LA COSTA AVENUE
PROJECT NO. 6051

FIGURE 3

Proposed Pedestrian Bridge Concept Plan

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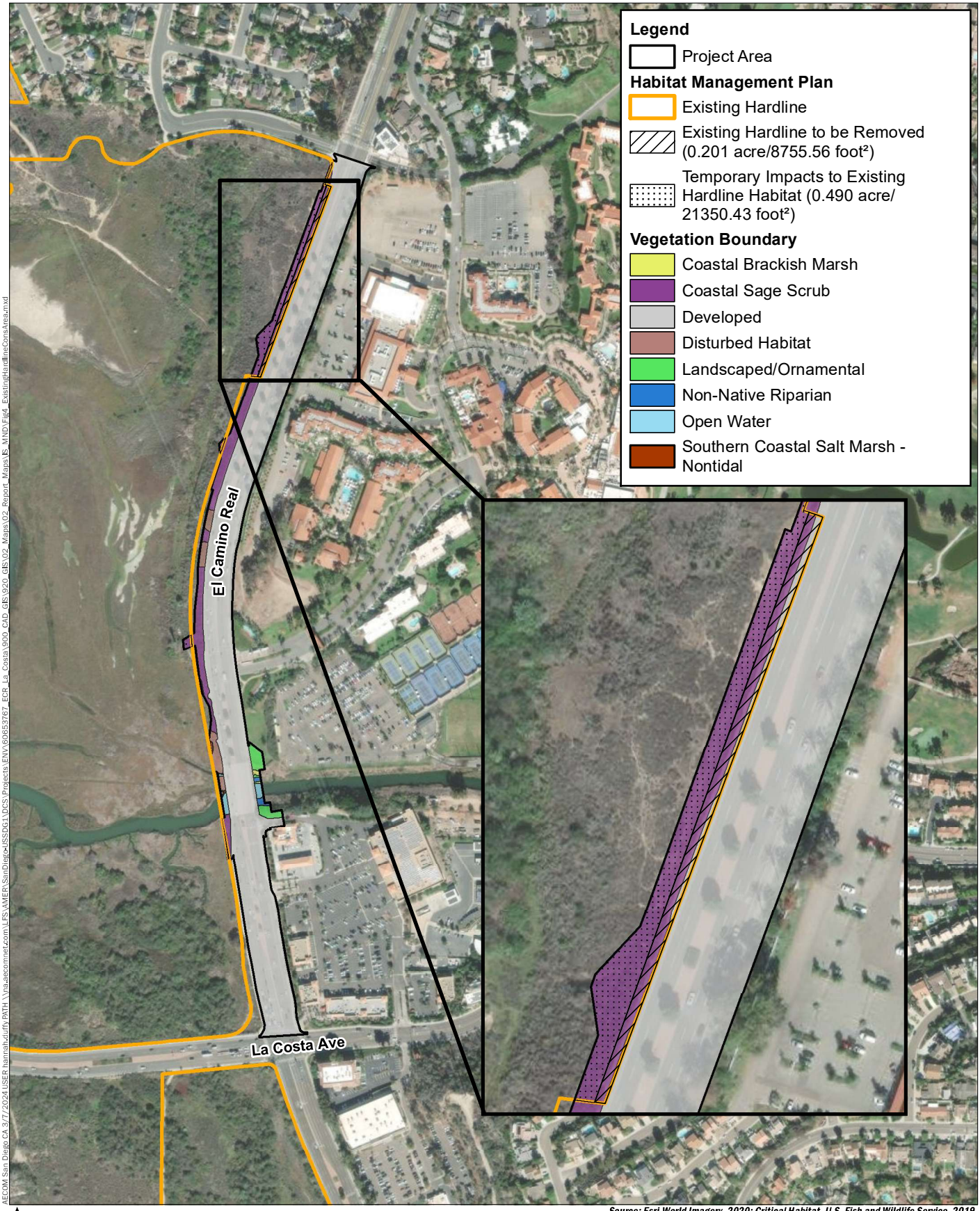

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Source: Esri,World Imagery, 2020; Critical Habitat, U.S. Fish and Wildlife Service, 2019.

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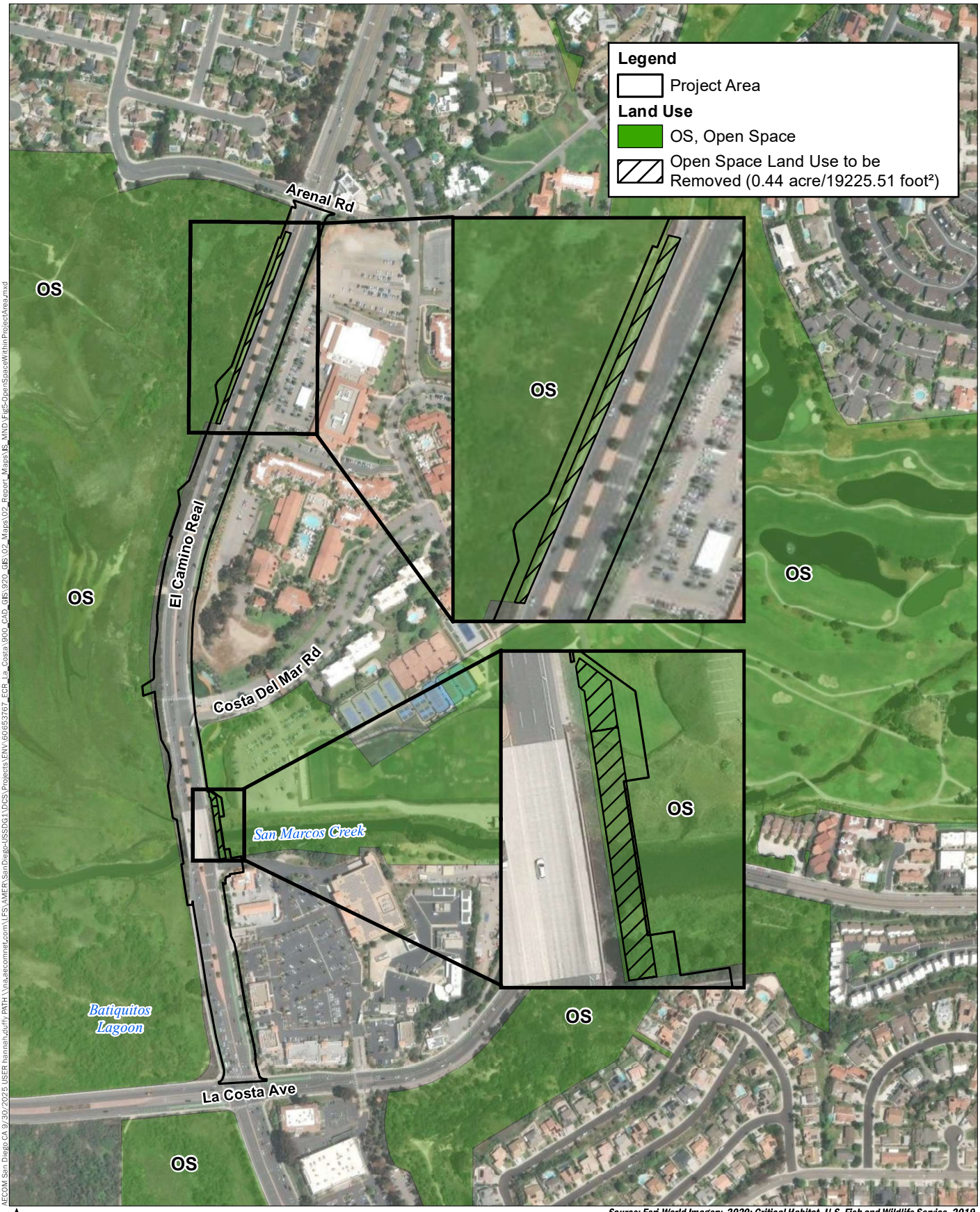
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 4 - EXISTING HARDLINE CONSERVATION AREA



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Source: Esri,World Imagery, 2020; Critical Habitat, U.S. Fish and Wildlife Service, 2019.

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El Camino Real Widening

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FIGURE 5 - OPEN SPACE WITHIN PROJECT SITE

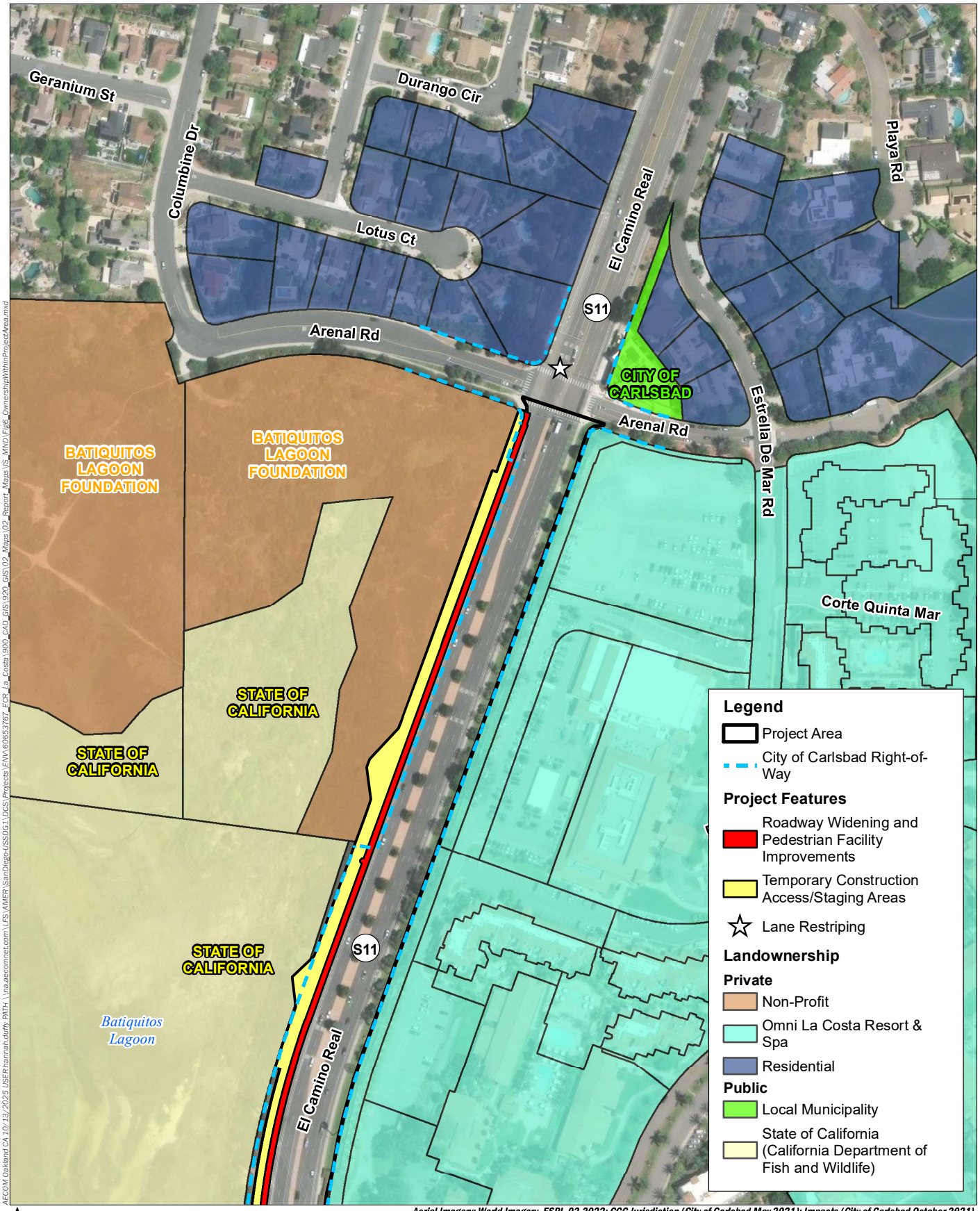

FIGURE 6A - OWNERSHIP WITHIN PROJECT AREA

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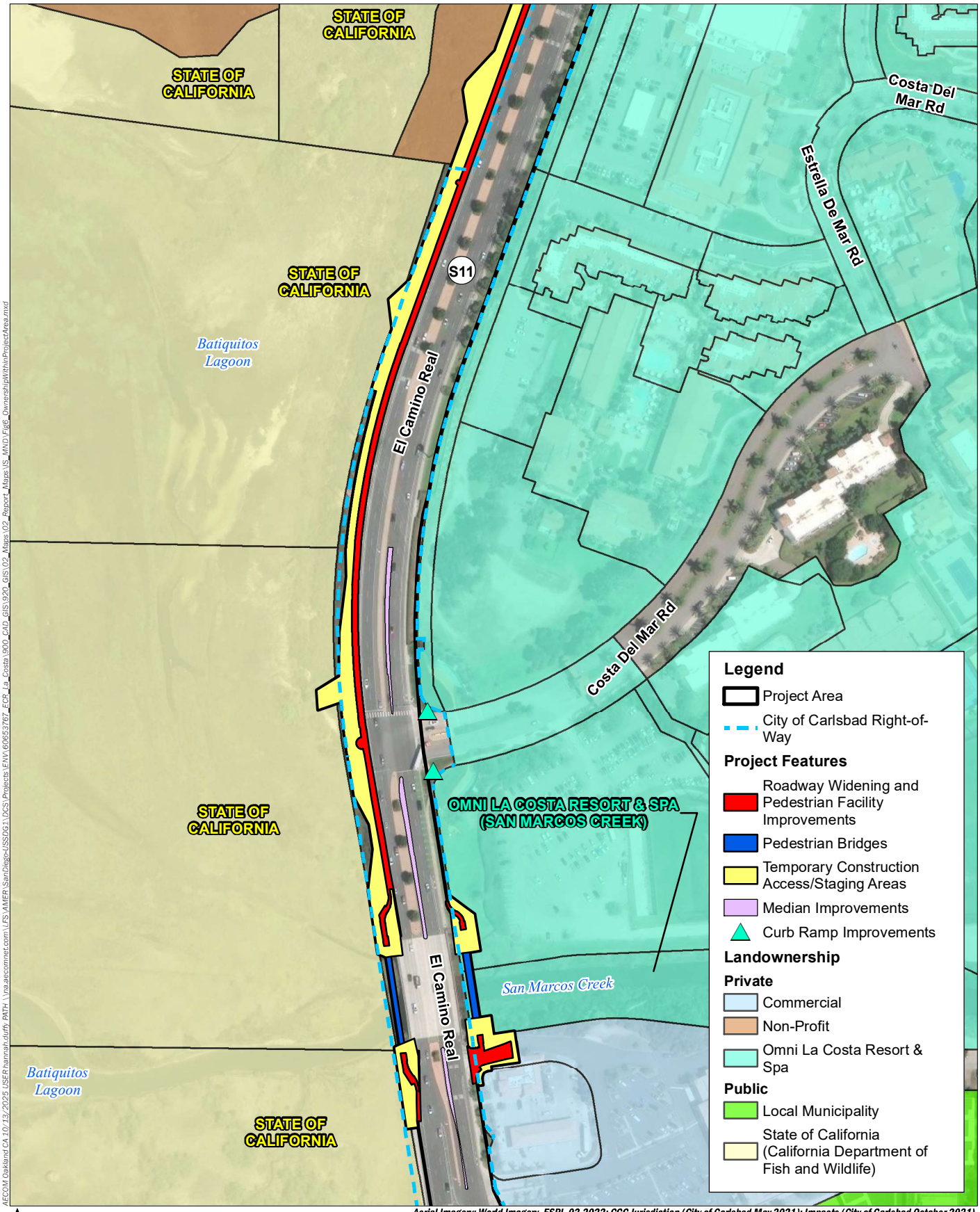

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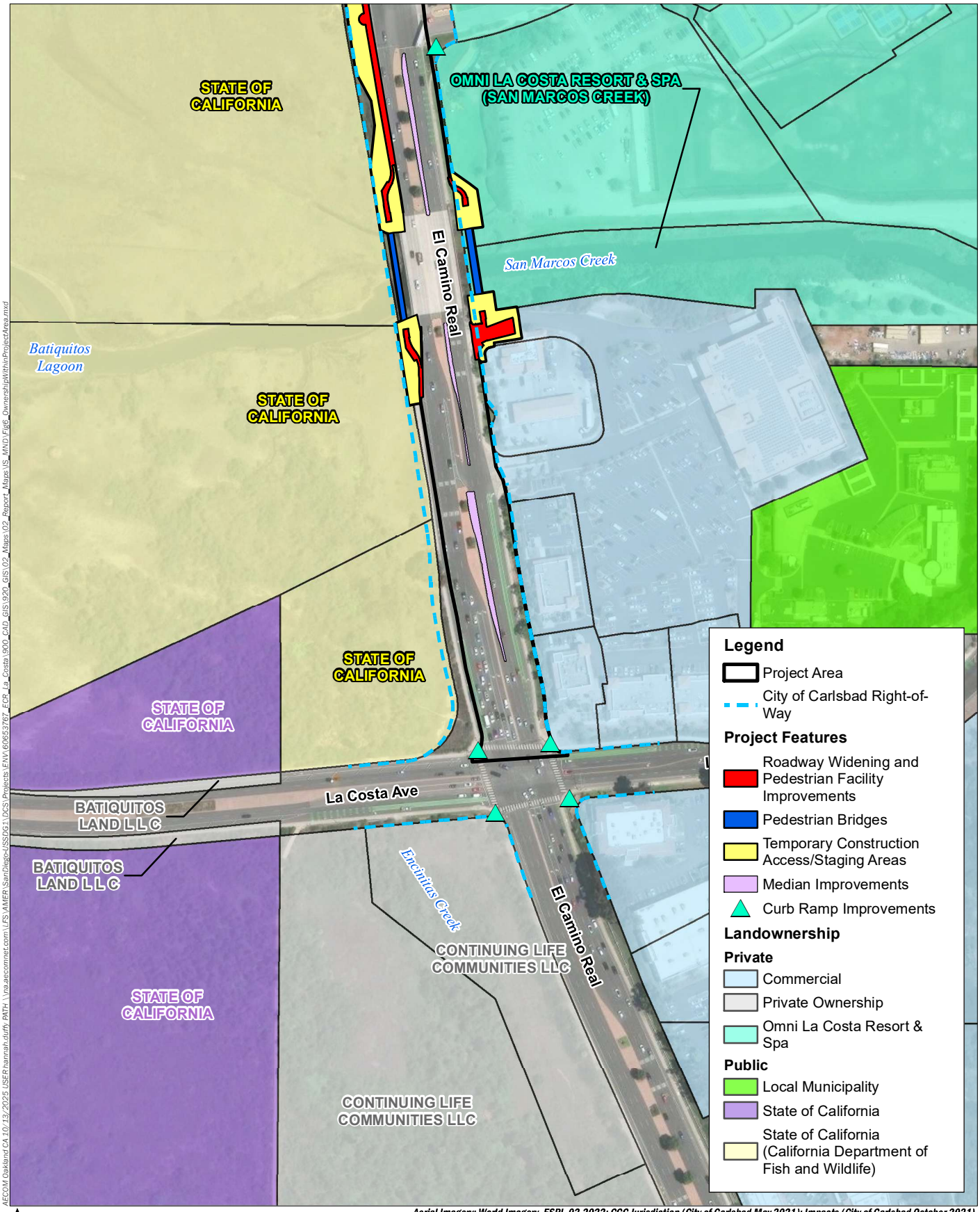
FIGURE 6B - OWNERSHIP WITHIN PROJECT AREA



Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

AECOM Oakland CA 10/13/2025 USER:hannah.duffy PATH: \\na.aecomnet.com\LFS\AMER\SanDiego-USSD\G1\DCS\Projects\ENV\60653767_EOR_La_Costa\900_CAD_GIS\920_GIS\02_Maps\02_Report_Maps\IS_MND\Fig6_OwnershipWithinProjectArea.mxd

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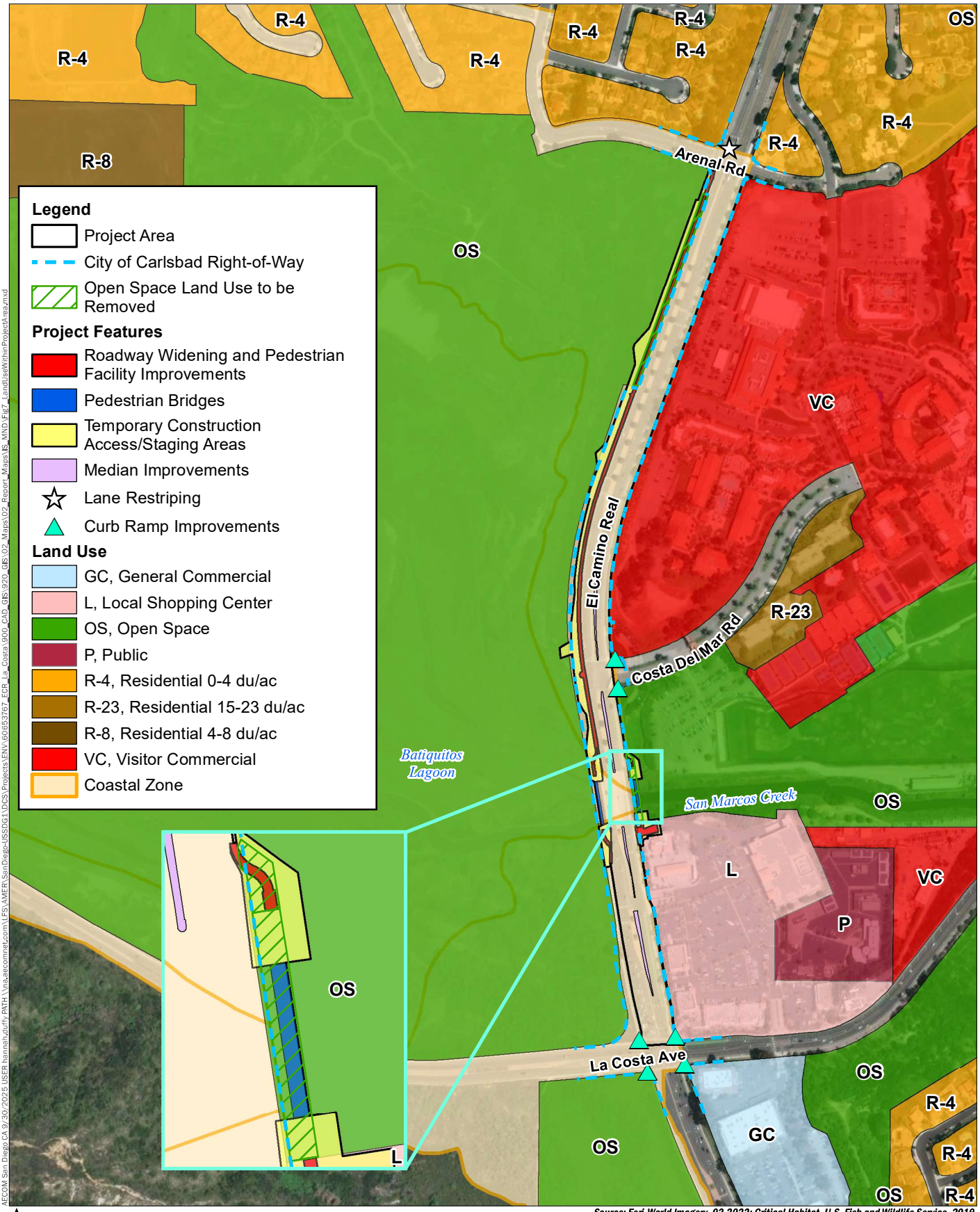
FIGURE 6C - OWNERSHIP WITHIN PROJECT AREA



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ARENAL ROAD TO LA COSTA AVENUE

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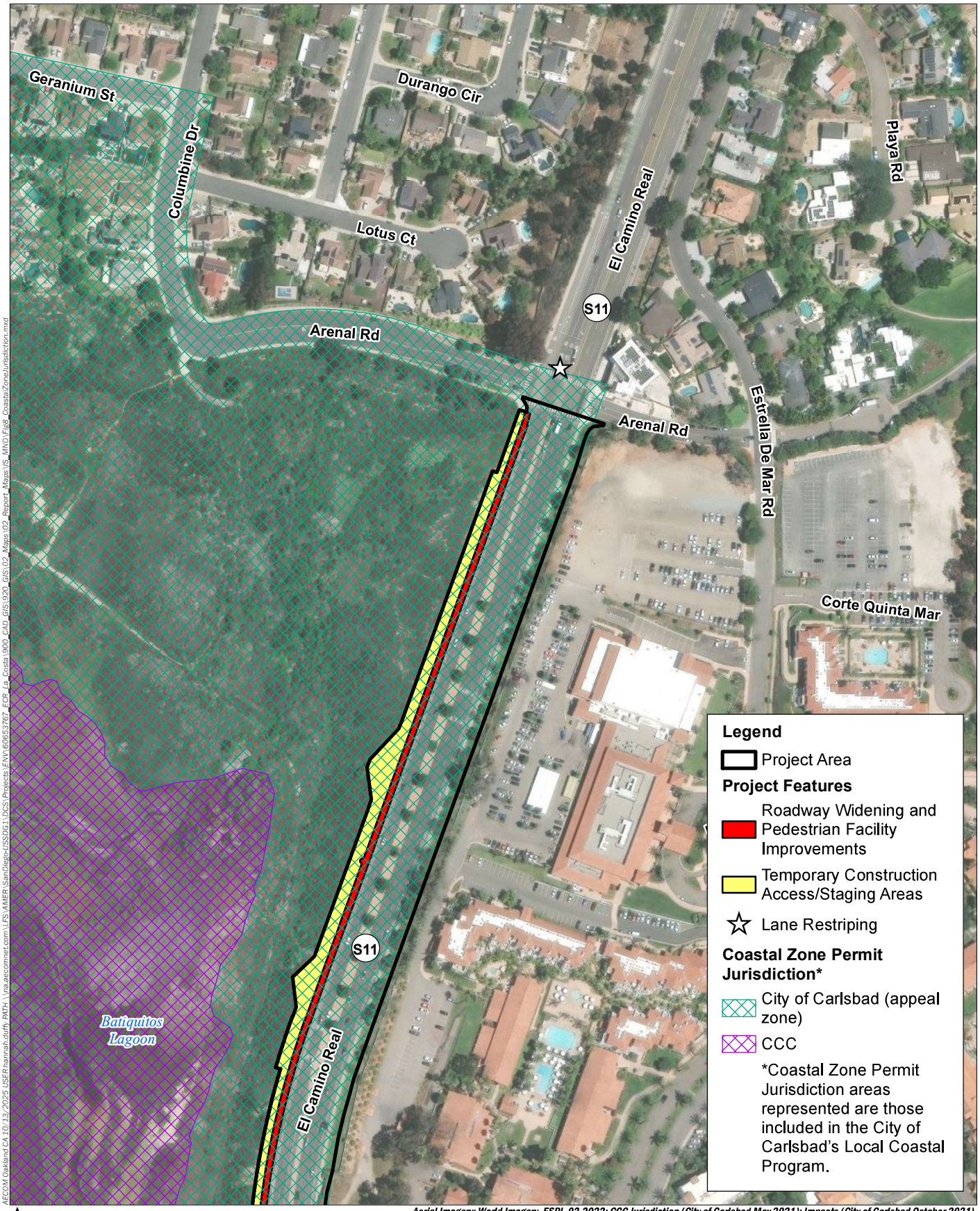
FIGURE 7 - LAND USE WITHIN PROJECT AREA



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

FIGURE 8A - COASTAL ZONE JURISDICTION

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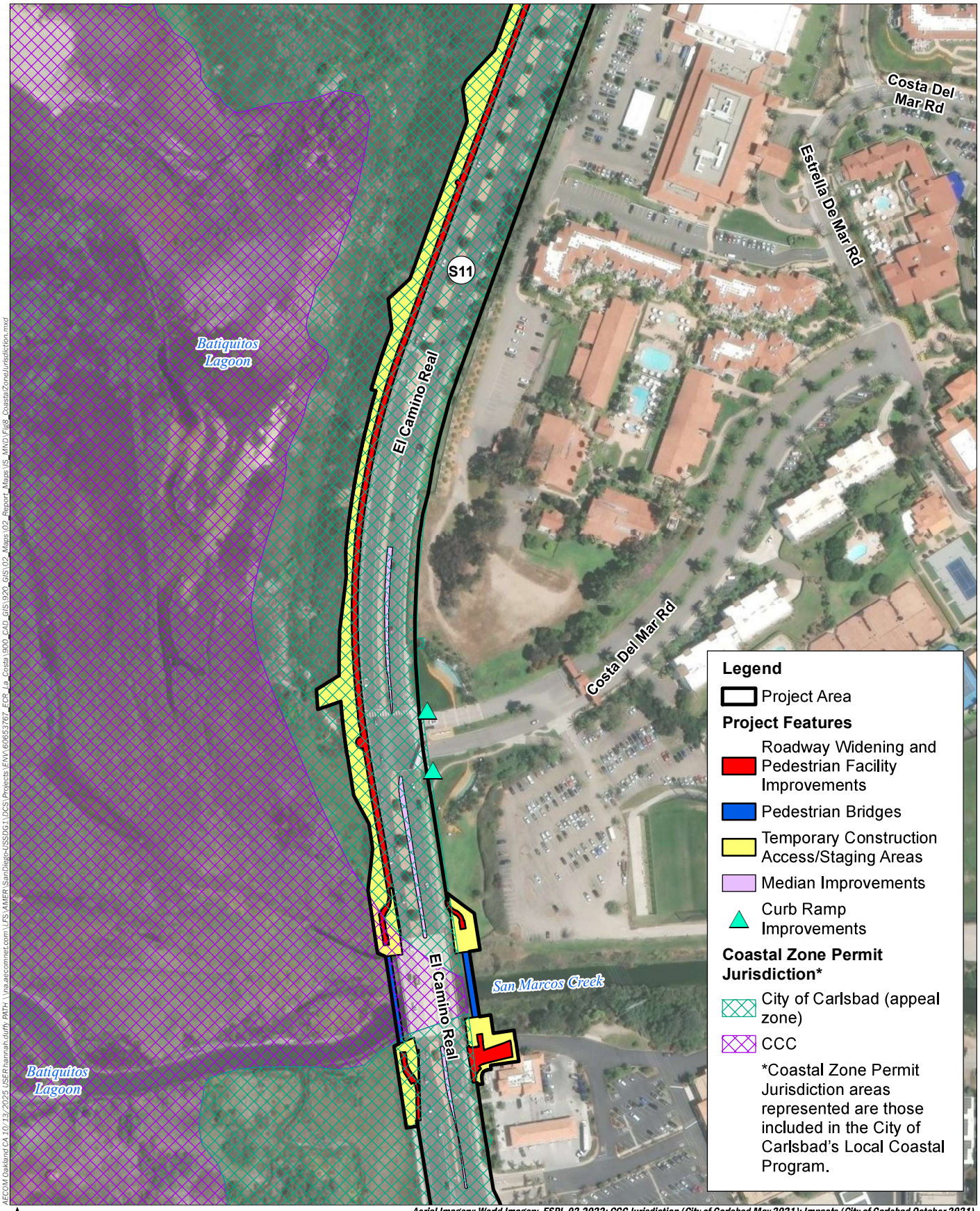
El Camino Real Widening
ARENAL ROAD TO LA COSTA AVENUE
PROJECT NO. 6051



Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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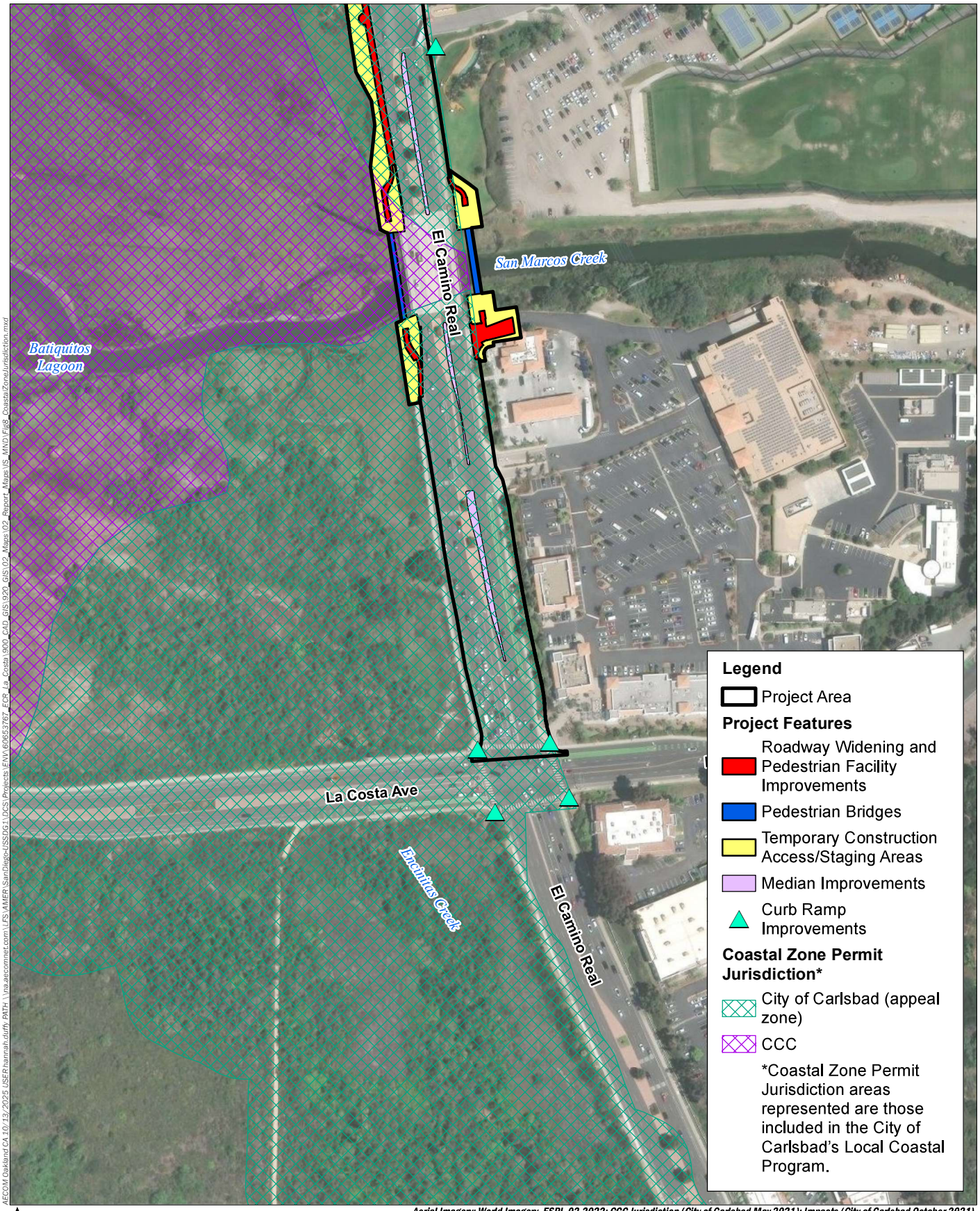
FIGURE 8B - COASTAL ZONE JURISDICTION



AECOM Oakland CA 10/13/2025 USER:hannah.duffy PATH: \\na.aecomnet.com\LFS\AMER\SanDiego-USSDG1\DCS\Projects\ENV\60653767_EOR_La_Costa\900_CAD_GIS\920_GIS\02_Maps\02_Report_Maps\IS_MND\Fig8_CoastalZoneJurisdiction.mxd

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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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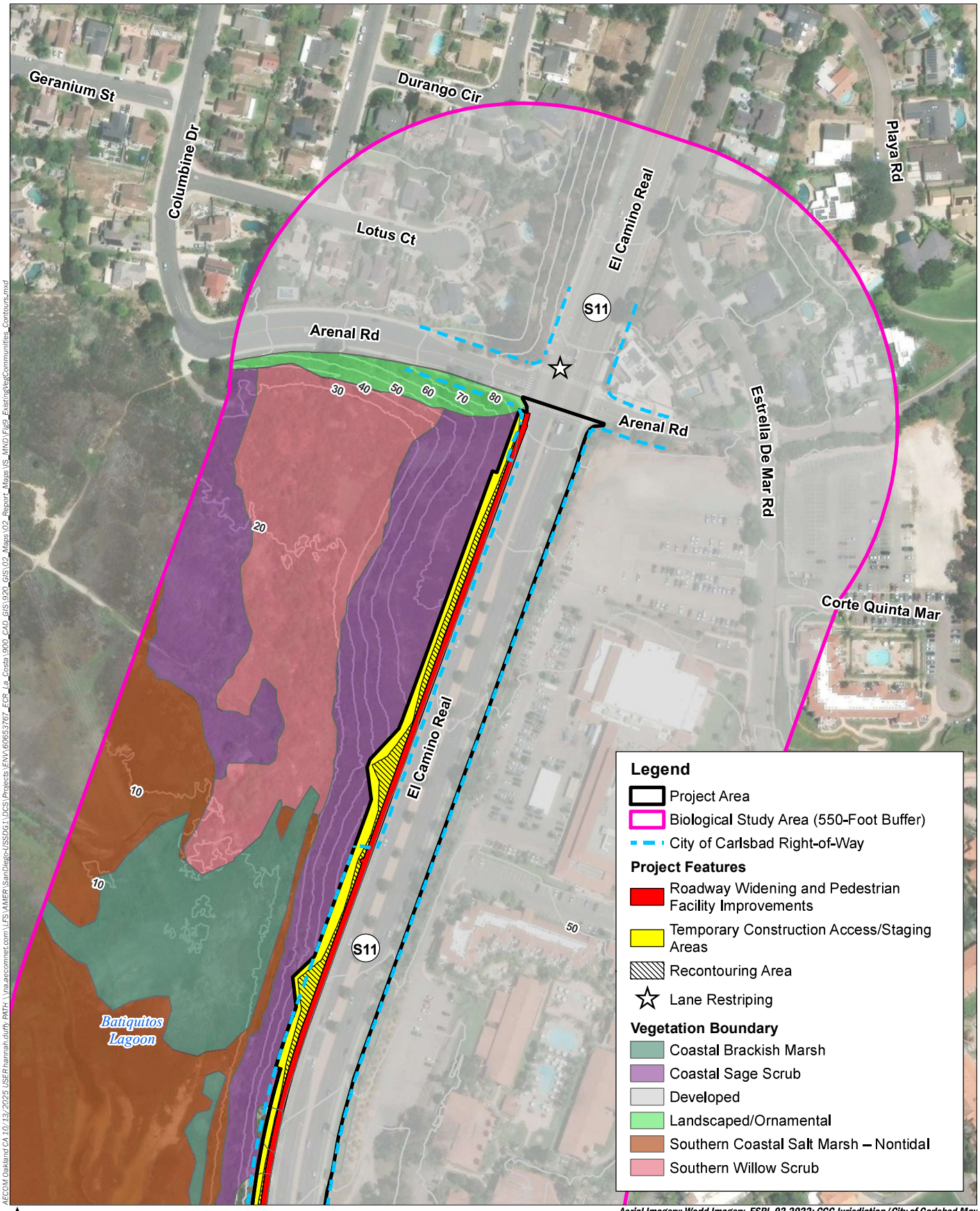
FIGURE 8C - COASTAL ZONE JURISDICTION



Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

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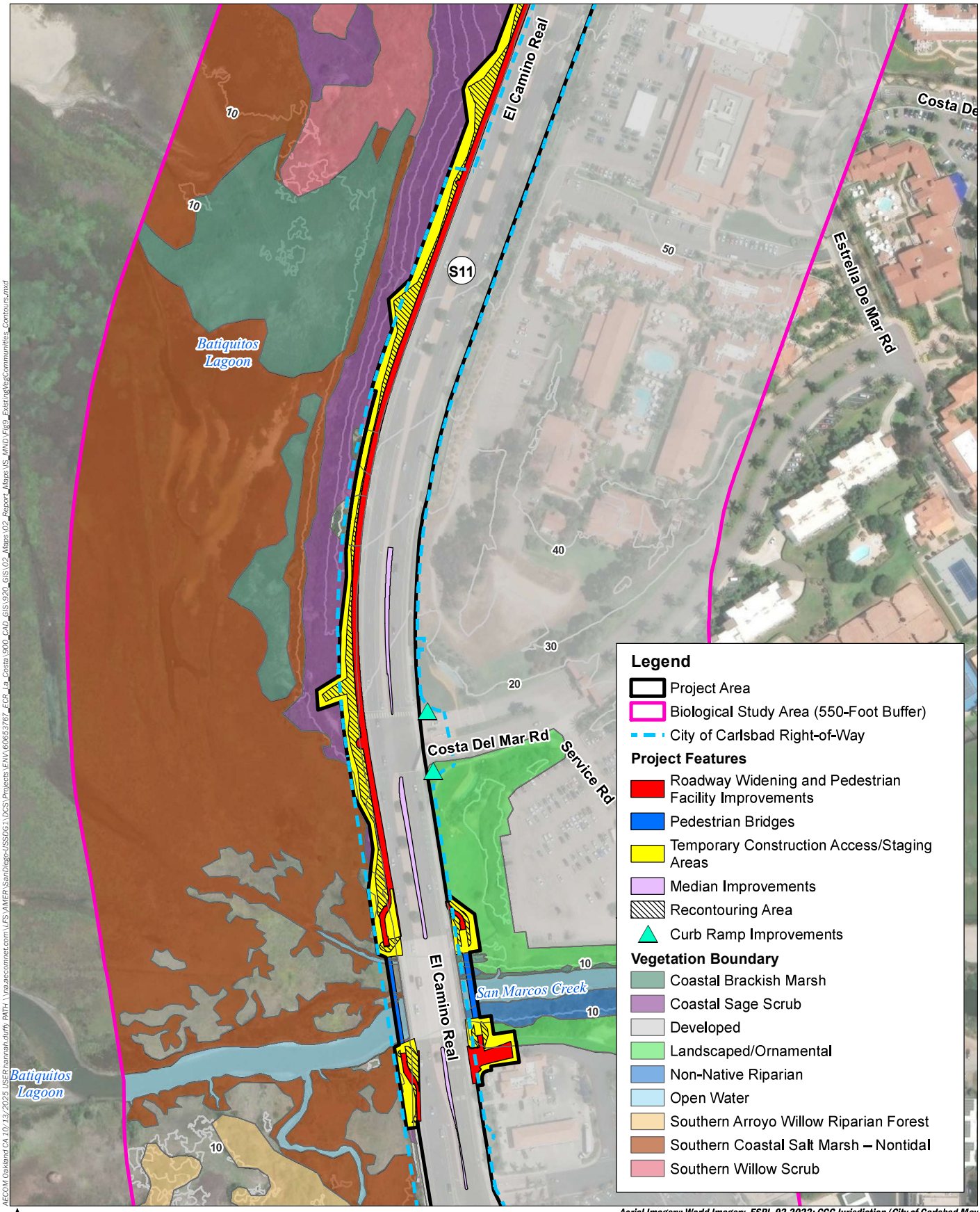
FIGURE 9A - EXISTING VEGETATION COMMUNITIES



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

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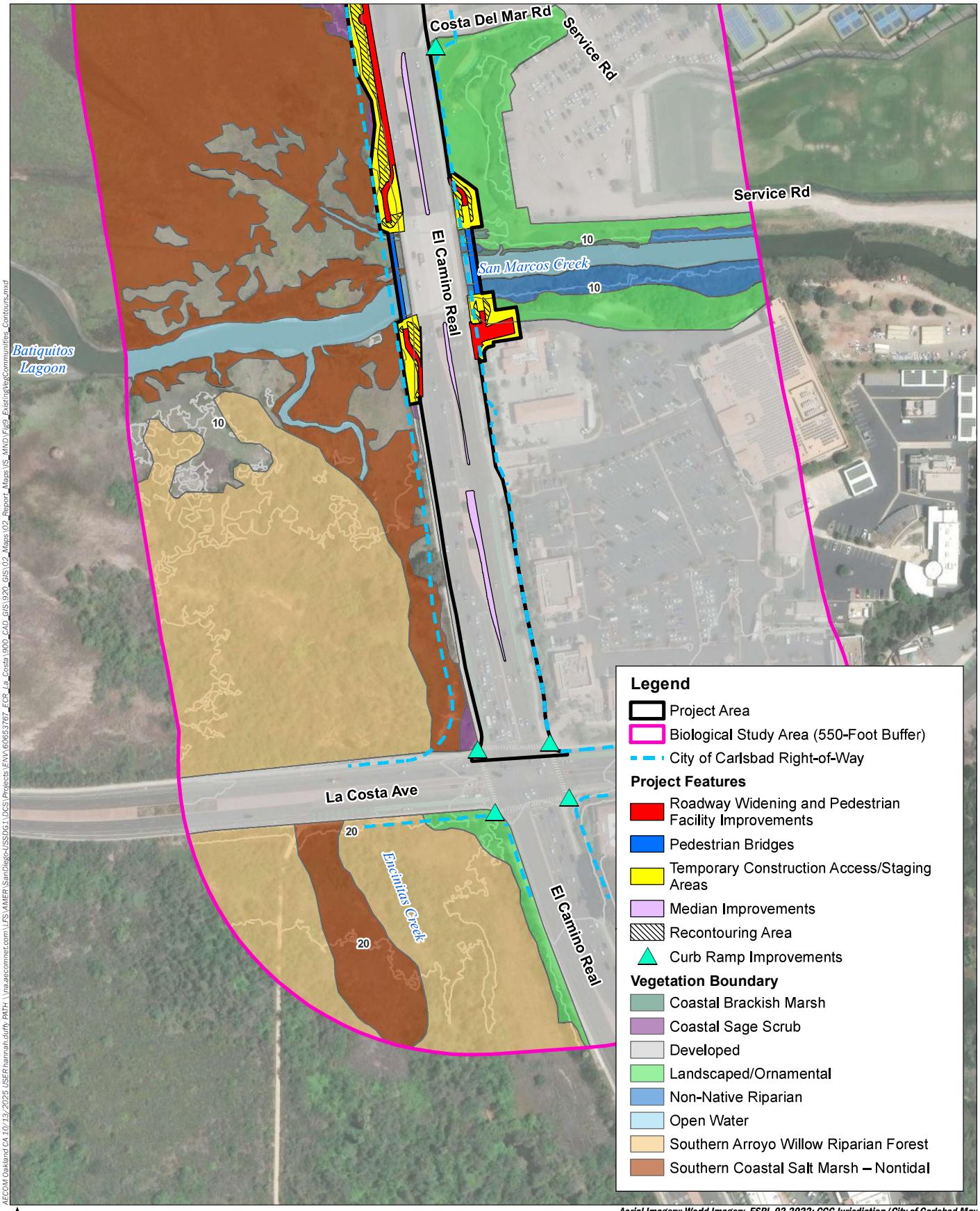
FIGURE 9B - EXISTING VEGETATION COMMUNITIES



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Feet

Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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City of Carlsbad

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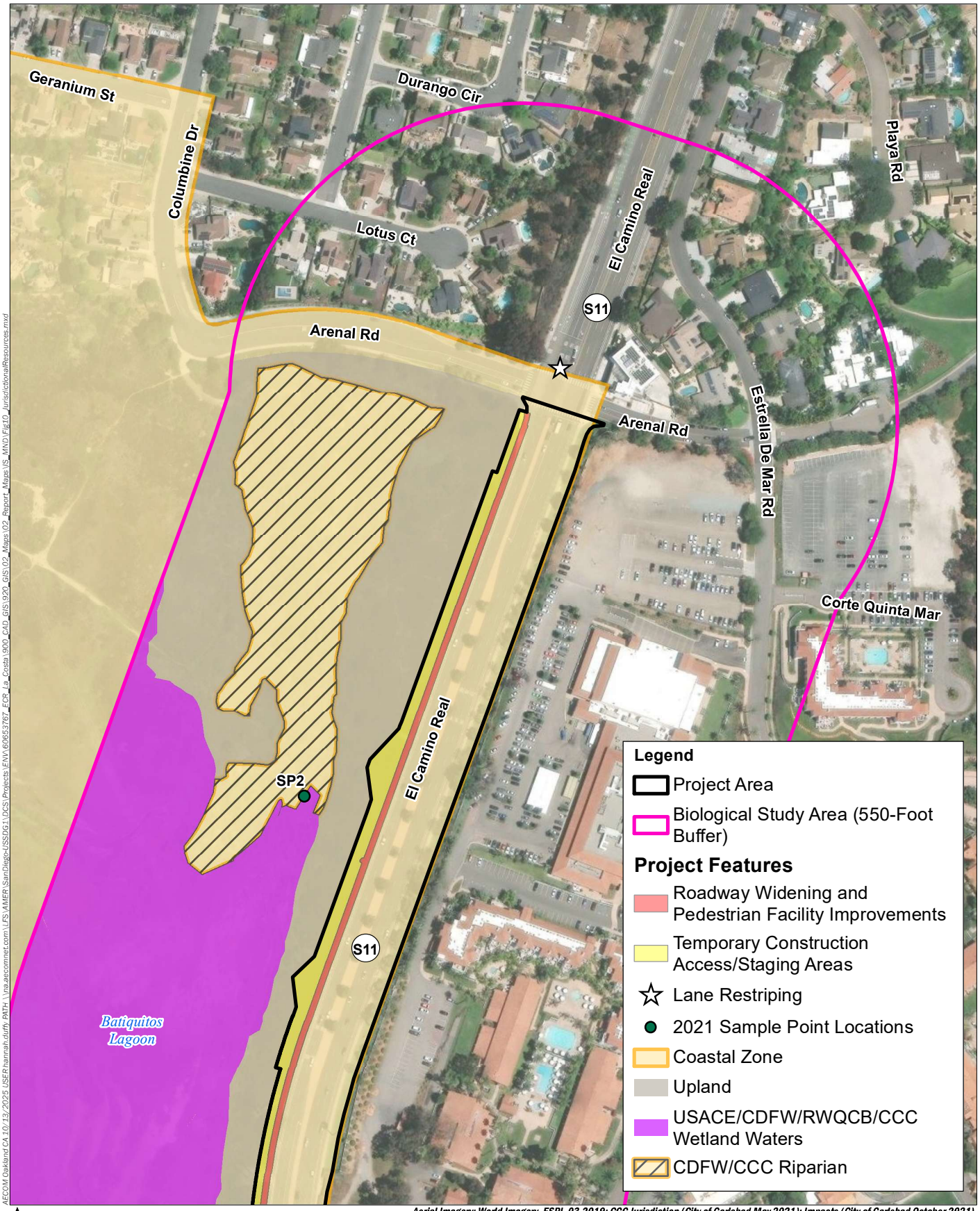
FIGURE 9C - EXISTING VEGETATION COMMUNITIES



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Aerial Imagery: World Imagery, ESRI, 03-2019; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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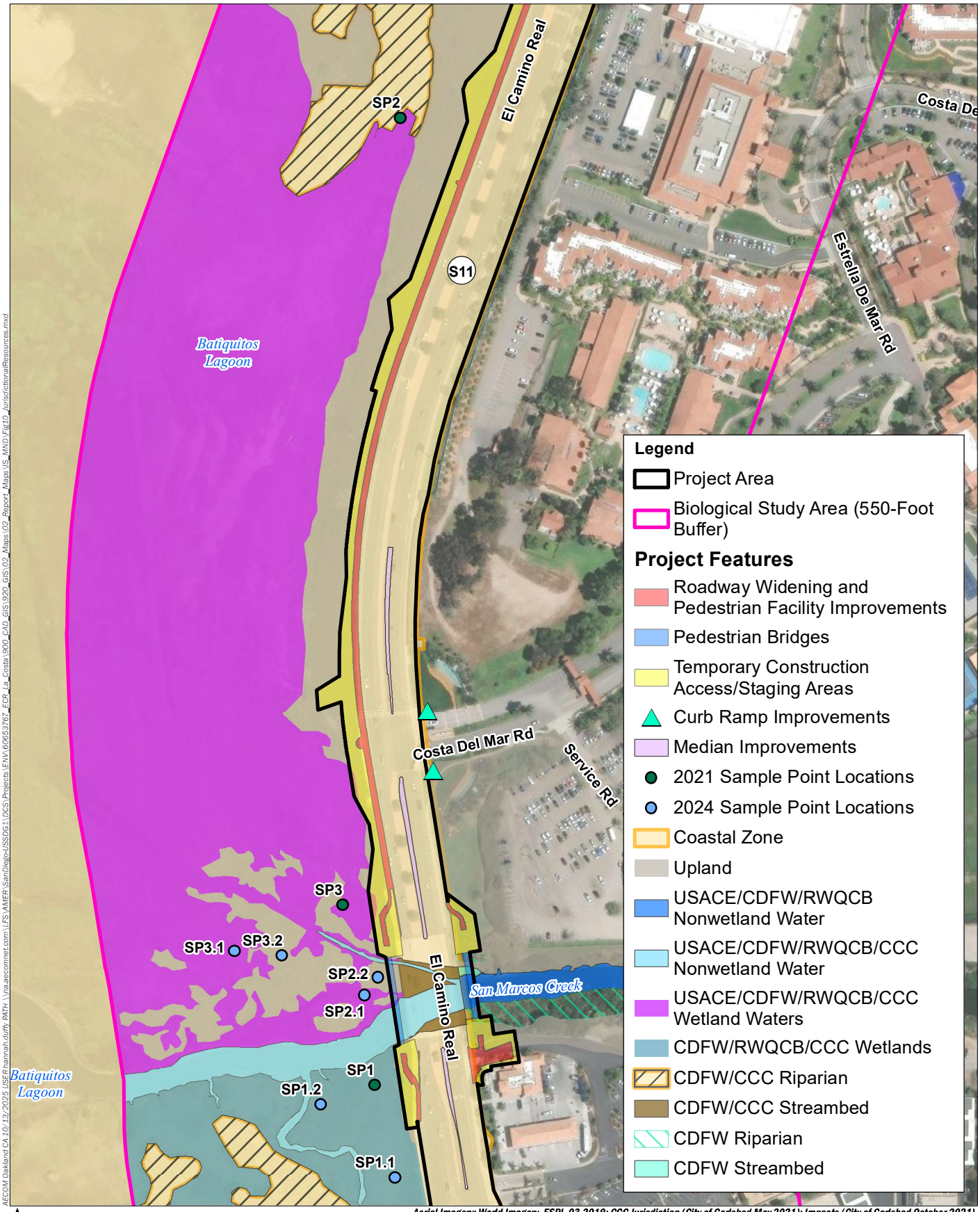
PROJECT NO. 6051

FIGURE 10A - JURISDICTIONAL RESOURCES



Aerial Imagery: World Imagery, ESRI, 03-2019; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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El Camino Real Widening

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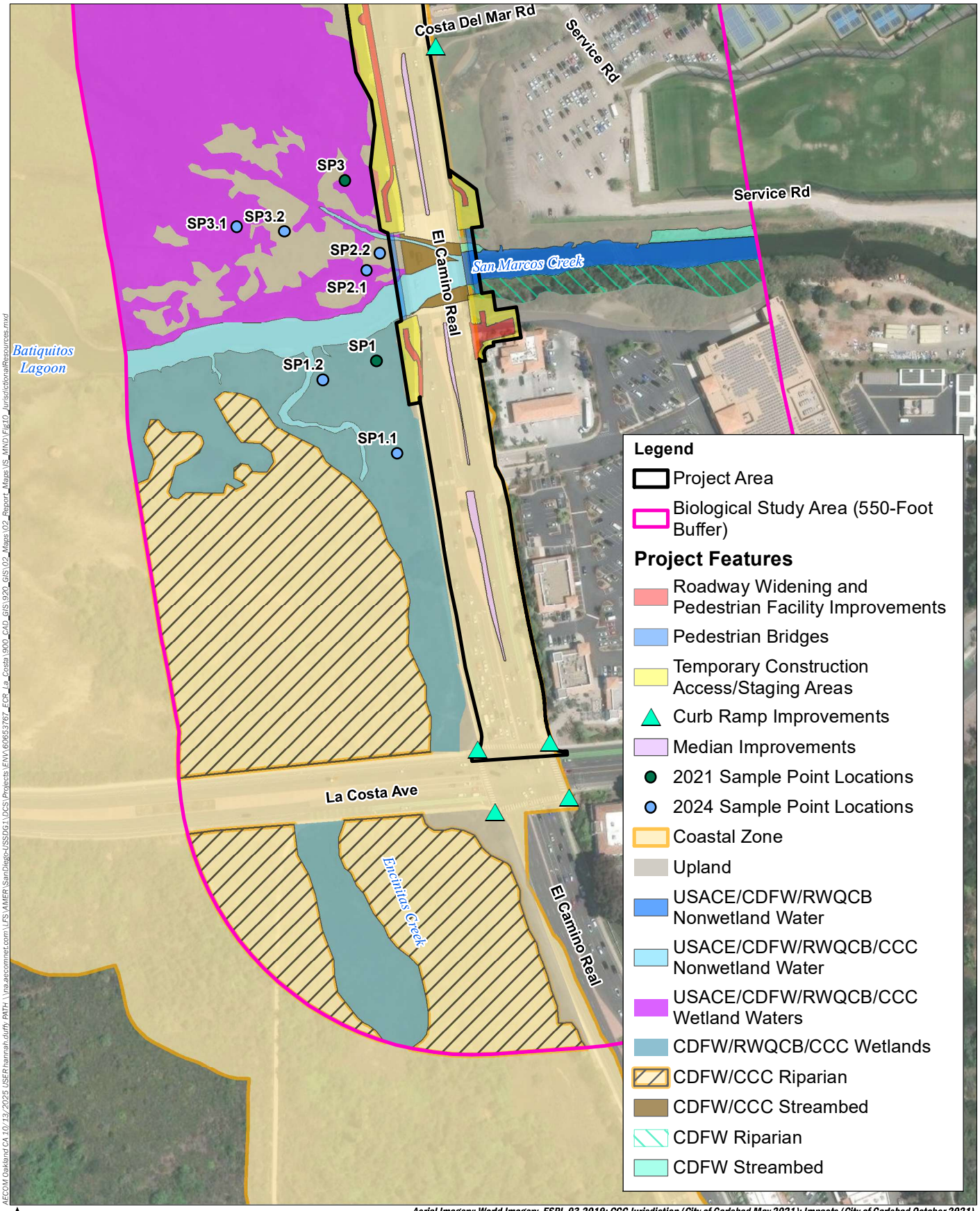
PROJECT NO. 6051

FIGURE 10B - JURISDICTIONAL RESOURCES



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Aerial Imagery: World Imagery, ESRI, 03-2019; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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Feet

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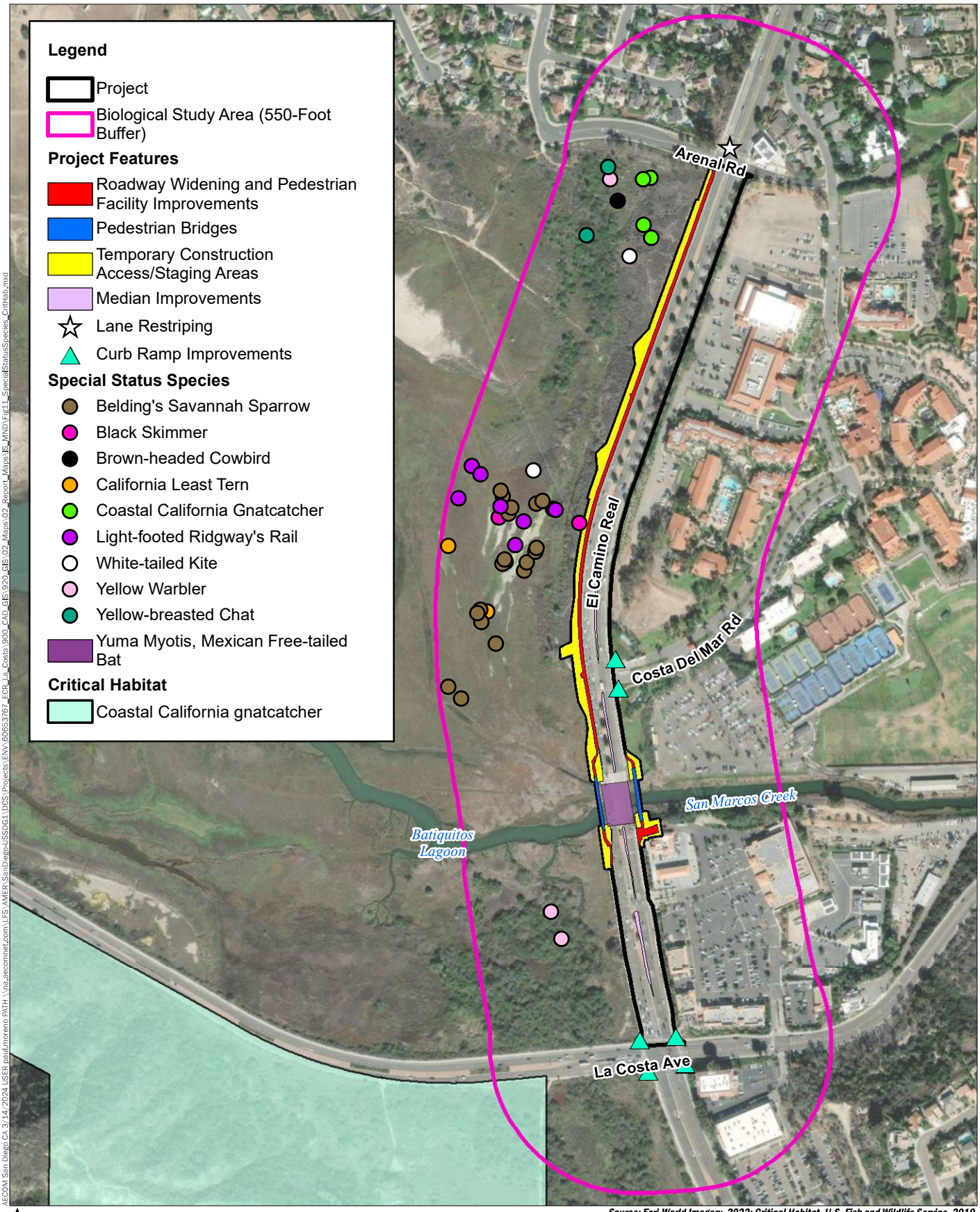
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 10C - JURISDICTIONAL RESOURCES



Source: Esri,World Imagery, 2022; Critical Habitat, U.S. Fish and Wildlife Service, 2019.

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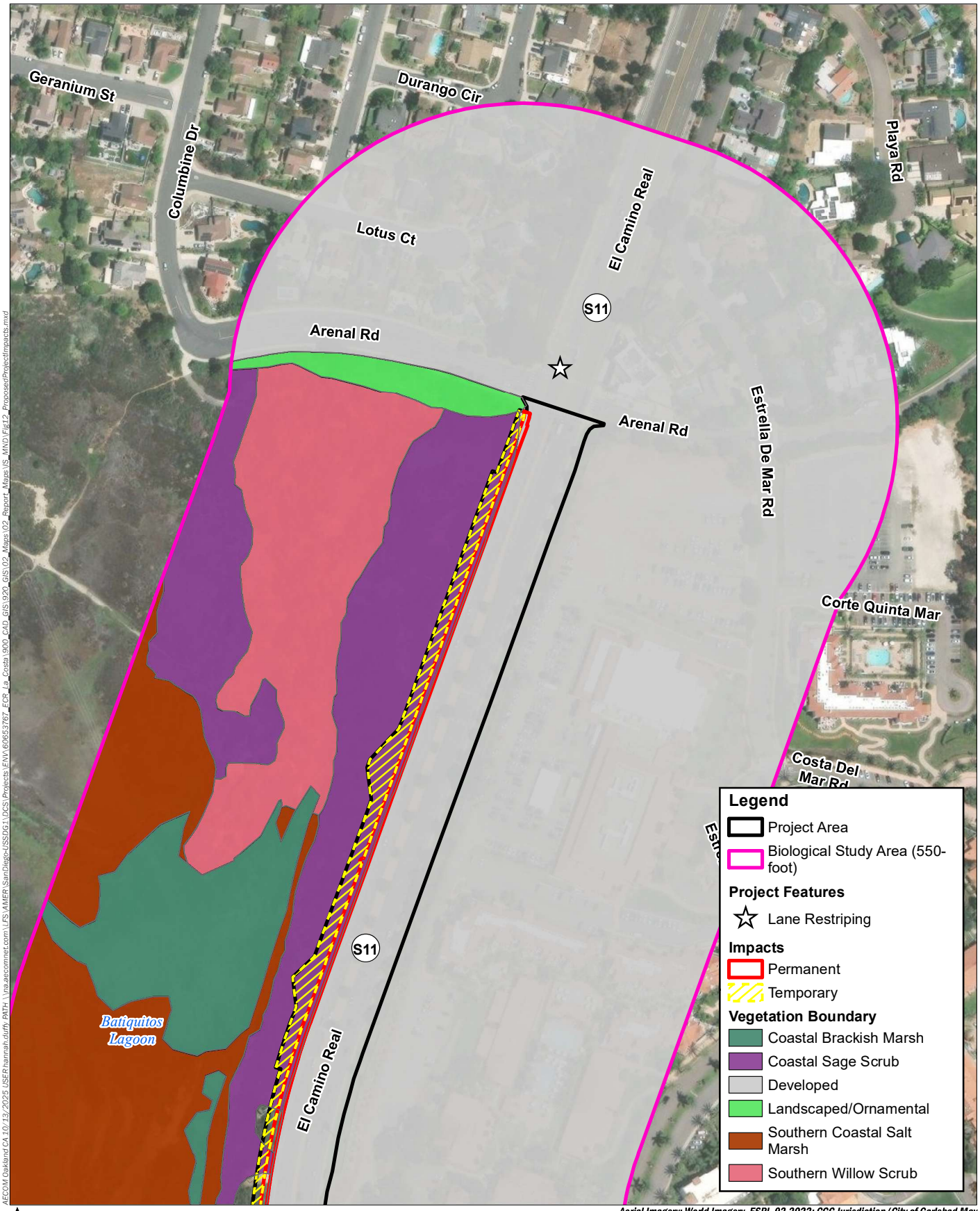
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

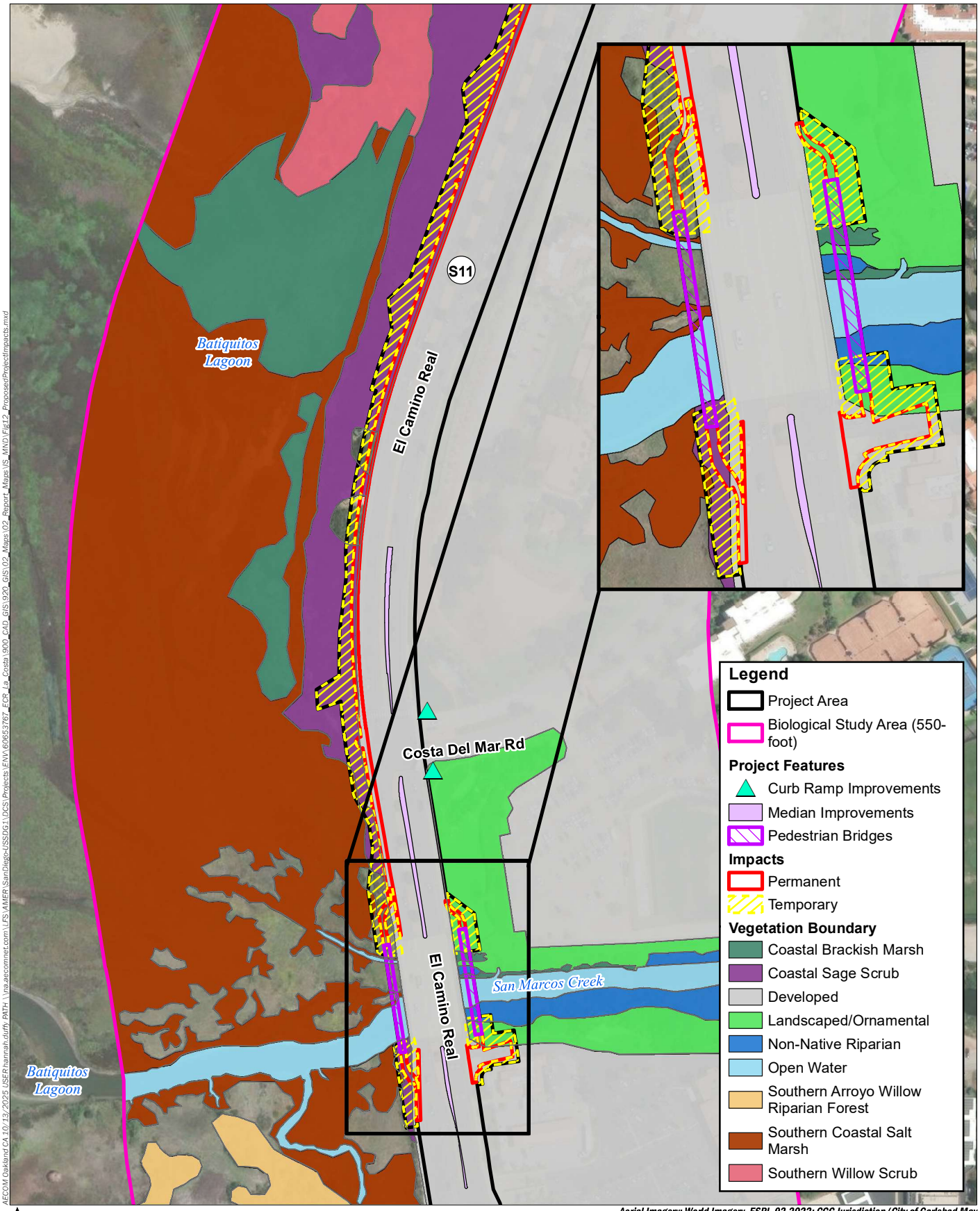
FIGURE 11 - SPECIAL-STATUS SPECIES OCCURRENCES AND CRITICAL HABITAT



Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

FIGURE 12A - PROPOSED PROJECT IMPACTS

AECOM
City of Carlsbad
El Camino Real Widening
ARENAL ROAD TO LA COSTA AVENUE
PROJECT NO. 6051



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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ARENAL ROAD TO LA COSTA AVENUE

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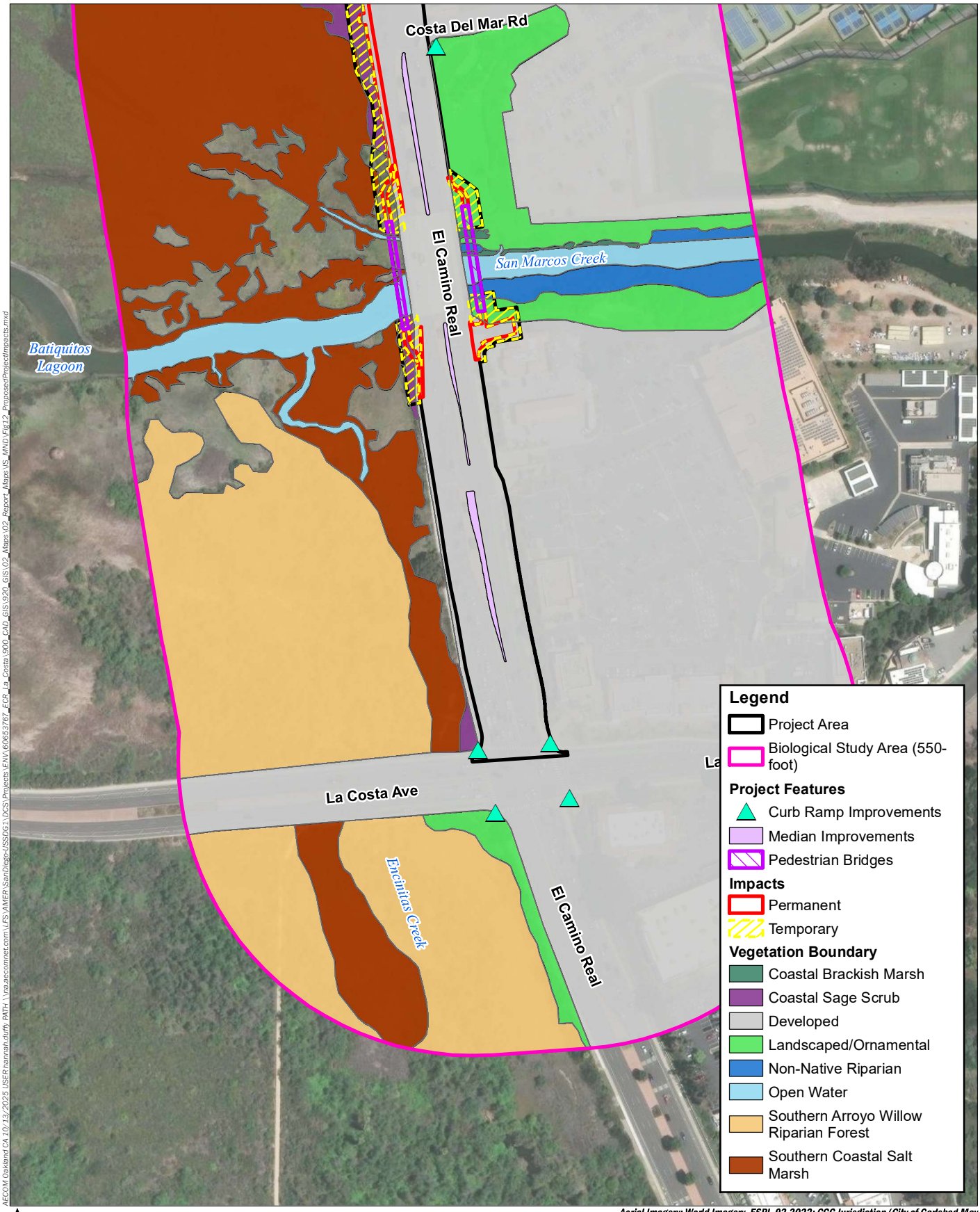
FIGURE 12B - PROPOSED PROJECT IMPACTS



AECOM Oakland CA 10/13/2025 USER hannah.duffy PATH: \\na.aecomnet.com\LFS\AMER\SanDiego-USSD\G1\DCS\Projects\ENV\60653767_EOR_La_Costa\900_CAD_GIS\920_GIS\02_Maps\02_Report_Maps\IS_MND\Fig12_ProposedProjectImpacts.mxd

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Feet

Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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FIGURE 12C - PROPOSED PROJECT IMPACTS

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I. AESTHETICS **Except as provided in Public Resources Code Section 21099, would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light and glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

REGULATORY SETTING

City of Carlsbad General Plan

General Plan policies relevant to the aesthetics of the proposed project include the Land Use and Community Design Element, the Mobility Element, and an Open Space, Conservation, and Recreation Element. These elements include aesthetic-related policies and goals including but not limited to the following:

- The Land Use and Community Design Element includes policies for optimal development patterns and directs the future development of the city. Goal 2-G.16 seeks to enhance the city's character and image as a desirable residential, beach, and open space oriented community.
- The Mobility Element goals and policies seek to enhance all modes of transportation within the city. Goal 3-G.6 of the Mobility Element is to protect and enhance the visual, environmental, and historical characteristics of Carlsbad through sensitive planning and design of scenic transportaton corridors. Policy 3.P-23 of the Mobility Element is to maintain the city's scenic transportation corridors as identified in the Carlsbad Scenic Corridor Guidelines.
- The Open Space, Conservation, and Recreation Element Policy 4-P.36 assures that, where feasible, developments near or adjacent to bodies of water provide open space with public access to, and views of, the water.

City of Carlsbad Community Forest Management Plan

The City of Carlsbad Community Forest Management Plan is used as a framework for long-term forest planning. To help achieve this, the city's Parks & Recreation Department has the goal of planting two street trees, from an approved street tree species list, for every one street tree removed.

California Coastal Act/Coastal Zone

The proposed project site is within the Coastal Zone as designated by the CCC, with the state lands subject to the CCA of 1976. The CCA of 1976 tasked the agency with protection of coastal resources through the issuance of CDPs. Under the CCA, local governments are encouraged to adopt LCPs, which consist of a Land Use Plan with goals and regulatory policies as well as a set of Implementing Ordinances. Development in the Coastal Zone may not commence until a CDP has been issued by the CCC or a local government that has a CCC-certified LCP. The City of Carlsbad has an adopted LCP, as described further below (City of Carlsbad 2019a), and proposed project activities would be located in both the approved City of Carlsbad LCP jurisdiction as well as jurisdictional areas retained by the CCC. Actions proposed within the Coastal Zone must be consistent with Chapter 3 of the CCA. The CCA (Public Resources Code Section 30000 et seq.) authorizes the state of California to regulate development within the State Coastal Zone. Although scenic resources are not specifically mentioned, Public Resources Code Section 30001.5 calls to "protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources."

City of Carlsbad Local Coastal Program

The City of Carlsbad LCP regulates development in the state-designated Coastal Zone in portions of the city boundary. The City of Carlsbad LCP consists of six geographic segments: the Agua Hedionda Lagoon LCP segment composed of approximately 1,100 acres; the Carlsbad Mello I segment with approximately 2,000 acres; the Carlsbad Mello II segment with approximately 5,250 acres; the West Batiquitos Lagoon/Sammis Properties segment with approximately 200 acres; the East Batiquitos Lagoon/Hunt Properties segment with approximately 1,000 acres; and the Village-Barrio segment with approximately 150 acres. The proposed project is located in the Mello II segment (the Batiquitos Lagoon Foundation parcel and adjacent right-of-way are within this segment) and East Batiquitos/Hunt Properties segment (remaining portion of the proposed project in this segment). The City of Carlsbad LCP implements the CCA at a local level by addressing land use, zoning ordinances, and zoning district maps in sensitive coastal resource areas by providing implementing actions, provisions, and policies required within the Coastal Zone.

Developed in conformance with the Coastal Act, the City of Carlsbad LCP outlines policies to "Protect, maintain, and where feasible, enhance and restore the overall quality of the Coastal Zone environment and its natural and man-made resources." The specific policy related to Visual/Land Resources includes the implementation of the Scenic Preservation Overlay Zone, and the preservation of natural vegetation on steep slopes. Within the LCP, the Land Use-Mello II Shoreline Access Policy 7-13, "Visual Access," states,

"Visual access over more than 80% of the Carlsbad coastline is unobstructed because of public ownership. No future public improvements which would obstruct this visual access shall be permitted." Mello II Policy 8-1, Site Development Review, indicates the city's Scenic Preservation Overlay Zone (see Carlsbad Municipal Code discussion below) should be applied throughout the city's Coastal Zone "where necessary to assure the maintenance of existing views and panoramas." The policy further states, "sites considered for development should undergo individual review to determine if the proposed development will obstruct views or otherwise damage the visual beauty of the area. The Planning Commission should enforce appropriate height limitations and see-through construction, as well as minimize any alterations to topography."

Within the LCP, the Land Use-East Batiquitos/Hunt Properties segment, which is east of Interstate 5 and generally includes the Batiquitos Lagoon and its north shore, as well as Green Valley, the Land Use Policy Category 6, "Scenic and Visual Qualities," states that the viewshed to and from the lagoon shoreline are important resources, and that visual quality components to be considered are setbacks, preservation of slope areas, preservation of lagoon and riparian habitats, enhancement of the lagoon environment, and controlled grading. Category 6 also discusses provisions to address scenic and visual character, including but not limited to La Costa Avenue being established as a scenic corridor pursuant to the City of Carlsbad General Plan Scenic Highway Element and the preservation of existing and healthy vegetation.

City of Carlsbad Scenic Corridor Guidelines

The city's Scenic Corridor Guidelines, adopted by City Council on March 7, 1989, identify scenic corridors in Carlsbad and suggest ways to preserve and enhance their character. The scenic corridors designated are primarily major streets, such as El Camino Real and Carlsbad Boulevard, but they also include the railroad corridor. The guidelines are referenced by Mobility Element Policy 3-P.23: "Maintain the city's scenic transportation corridors as identified in the Carlsbad Scenic Corridor Guidelines." The guidelines indicate the El Camino Real Corridor Development Standards, discussed below, should be consulted when developing along this major street.

El Camino Real Corridor Development Standards

The El Camino Real Corridor Development Standards (Carlsbad City Council Resolution No.7642; City of Carlsbad 1984) seek to maintain and enhance the appearance of the El Camino Real roadway area. These standards reflect the existence of certain identified characteristics that the city considers worthy of preservation, and are intended to further the goals of the Land Use and Community Design Element and Mobility Element of the city's General Plan. Standards for the area within the right-of-way reflect an intention to provide an easily identifiable homogenous corridor. Design guidelines include elements such as emphasis on retaining the natural topography adjacent to the roadway, minimal cut or fill, grading that does not create more "visible" development around the roadway, and minimal intersections and access points along the corridor.

Carlsbad Municipal Code

The CMC is a collection of city laws that have been adopted by the City Council. The CMC includes an official Zoning Map that establishes the appropiate zone boundraries as applicable. CMC Section 21.40 designates guidelines for development with a scenic preservation overlay zone, which aim to preserve or enhance outstanding scenic views and qualities of a scenic corridor (CMC Section 21.40). However, the overlay zone has not been applied to any area of the city.

IMPACT ANALYSIS

a) Have a substantial adverse effect on a scenic vista?

Less than Significant Impact: A scenic vista is generally defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. A substantial adverse effect to a scenic vista is one that degrades the view from a designated viewing location. A substantial adverse effect to scenic vistas could occur if the proposed project were to introduce physical features that obstruct an identified public scenic vista, impair scenic views from other properties, or has a substantial change to the natural landscape.

The Pacific Ocean is among the city's principal visual features, along with the city's three lagoons, open space areas, and scenic corridors, which are also distinctive aspects of the city's visual character (City of Carlsbad 2015a). Of these features, Batiquitos Lagoon and adjacent open space areas are visible from the proposed project site. The City of Carlsbad's LCP also considers Batiquitos Lagoon as part of the coastal viewshed (City of Carlsbad 2019a).

Pedestrian views east of El Camino Real are characterized by a mix of adjacent commercial development, residential, and local shopping centers. Sidewalk facilities are currently provided along the northbound lane, allowing pedestrian access for viewing of the site, except at the bridge that spans over San Marcos Creek. West of El Camino Real, pedestrians experience adjacent views characterized by vegetated open space separated by the blue water of San Marcos Creek connecting to Batiquitos Lagoon and the Pacific Ocean. The vegetation appears dense, and varies in height (tall, brown exposed trunks as compared to low- and mid-height vegetation) and color (shades of green and brown). Currently, the ability for pedestrians to experience these western views is limited due to a lack of formal sidewalks along the southbound lane.

The existing views to Batiquitos Lagoon and the Pacific Ocean, west of the proposed project site, would remain visible with implementation of the proposed project. The proposed project would improve the scenic vista by installing two new overlooks, allowing southbound pedestrians to view Batiquitos Lagoon from designated public viewing areas. The northernmost overlook would be a widened pathway connected to the improved sidewalk. At the southernmost overlook, a pathway and seatwall would be installed. Between the pedestrian improvements and the roadway widening, a planter would be installed with low-lying native plants that would not obstruct the coastal viewshed and would aid in the visual transition from the roadway to the lagoon. Seven trees would be removed as part of the roadway

realignment; however, they would be replaced at a 2:1 ratio as outlined in the Community Forest Management Plan (City of Carlsbad 2019b) and would not result in a substantial change to trees visible along the current roadway. The 14 new trees would be planted within the reconstructed median at the Arenal Road intersection and within the existing median north of Costa Del Mar Road or as determined by the City of Carlsbad Parks & Recreation Department.

Prefabricated pedestrian bridges would be installed on the western and eastern sides of the bridge, adjacent to the existing bridge structure, and graded pathways would be constructed to provide connection to the sidewalk areas. Pedestrian bridges are not anticipated to substantially alter the scenic vista, because placement of the bridges would be in line with the existing similar railing from the current bridge structure. Additionally, the pedestrian bridges would provide an enhanced opportunity for the public to experience the coastal viewshed in a safe manner along the roadway. The view for drivers on El Camino Real would be minimally impacted by the pedestrian bridges. While the trusses and rails associated with the pedestrian bridges would extend above the height of the roadway railings, creating a minor obstruction in a motorists' view, the approximate 200-foot bridge length is short, drivers travel at higher speeds than pedestrians, and drivers are focusing on the roadway. The bridge would not include any screens or netting to block views. Although the proposed project would involve construction of new pedestrian and roadway facilities, the character of the new hardscape would be compatible with existing infrastructure and landscaping at the proposed project site.

The construction phase (i.e., site preparation, staging, grading, roadway construction, demobilization) would represent a temporary change in visual quality to the coastal viewshed. The temporary presence of construction equipment and activities along a busy roadway would not create a substantial visual conflict. Construction and associated staging areas would occupy a relatively small portion of the proposed project site and overall visual environment; once construction is complete, the scenic quality would return to conditions similar to the current visual environment. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista, and a **Less than Significant Impact** would occur.

b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact: The State Scenic Highway Program was established to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to state highways. State highways may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. A scenic highway is designated under the State Scenic Highway Program when a local jurisdiction adopts a scenic corridor protection program. El Camino Real is not a designated State Scenic Highway (Caltrans 2022), and there are no designated or eligible State Scenic Highways within the vicinity of the project area. The area surrounding the project does not support rock outcroppings or historic buildings, thus the proposed project would not impact any such resources. There would be **No**

Impact to scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway, would result from implementation of the proposed project.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact: With the exception of the open and natural space associated with the Batiquitos Lagoon, the area surrounding the proposed project site is generally urbanized with a mix of commercial and residential uses and associated infrastructure. As stated above, the widening of El Camino Real and pedestrian/bicycle improvements would not affect the current visual quality compared to existing conditions, and would not conflict with applicable land use regulations governing scenic quality. The road widening would not substantially change the path or route of the existing roadway, and the way in which it is visible within the overall viewshed, streetscape and landscape improvements, and proposed architectural treatments would be compatible with existing aesthetics at the proposed project site. Overall, the roadway segment would remain consistent with the current visual character after implementation of the proposed project. Pedestrian improvements would occur adjacent to the existing roadway alignment, and pedestrian bridges would not substantially alter the viewshed. Therefore, the proposed project would not affect the current scenic views or qualities along El Camino Real Scenic Corridor. The proposed pedestrian improvements would enhance the ability for pedestrians to experience public views along the scenic corridor.

The proposed project would also be consistent with El Camino Real Corridor Development Standards because the natural topography adjacent to the roadway would be maintained, and proposed features such as landscaping, sidewalks, and additional lighting would follow the development standards guidelines. The proposed project would not detract from the existing identified visual characteristics of the El Camino Real Scenic Corridor. Landscaping associated with the project would be as designated for El Camino Real in the Arterial Streetscape Themes section of the city's Landscape Guidelines Manual. The El Camino Real Corridor Development Standards describe one style of lighting for the entire corridor, which should be readily attainable, serviceable, and compatible with various structural styles, and the spacing should be variable depending on adjacent land uses and sub area. The proposed project would install five new light posts with lighting that matches the existing mission bell light posts along El Camino Real. Because the proposed improvements would adhere to the El Camino Real Corridor Development Standards, the proposed project would result in enhanced visual consistency with other segments of the El Camino Real roadway corridor.

In accordance with the El Camino Real Corridor Development Standards' design concept, the proposed project would maintain an easily identifiable homogenous corridor. The proposed project includes two viewing areas that would provide additional viewing opportunities of the Batiquitos Lagoon and maintain the roadways characteristic expansive views. The additional lane and added pedestrian facilities along the corridor would be similar in appearance and structure to the existing facilities. Proposed architectural

treatments would also be compatible with existing aesthetics, and include a rock face texture, which would preserve the existing design theme (Old California/Hispanic) described in these standards.

During project construction, visual resources may be temporarily interrupted by the use of construction equipment along the roadway, but these interruptions would be short-term and localized. Overall, the proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, and would not conflict with land use regulations, applicable zoning, and other regulations governing scenic quality. For these reasons, impacts on the existing visual character or quality of public views would be **Less than Significant**.

d) Create a new source of substantial light and glare, which would adversely affect day or nighttime views in the area?

Less than Significant Impact: The proposed project would result in the installation of step lighting at the bottom of vertical railings on the pedestrian bridges, as well as solar powered illumination at the bus stop location, for safety purposes. In addition, five new streetlights would be installed along the roadway alignment to match the existing mission bell lights along El Camino Real. Although these lights would be considered a new permanent source of nighttime light, they would not substantially increase light sources as compared to the surrounding area, are typical for a large urban roadway, and would not adversely affect day or nighttime views. Lights would be pointed downward and shielded away from Batiquitos Lagoon, further reducing substantial additional light or glare (see **Section IV**, Biological Resources **BIO-9**).

Construction activities would temporarily introduce equipment and vehicles to the proposed project site; however, work would primarily take place during daylight hours, and nighttime construction lighting would be temporary, in focused areas, and required primarily during set-up and take-down of traffic control. If construction lights are used to construct the proposed project, they would be pointed away from Batiquitos Lagoon and shielded during construction. The proposed project would not result in substantial additional light or glare that would adversely affect day or nighttime views in the proposed project area; therefore, the proposed project would result in a **Less than Significant Impact** to day or nighttime views in the area.

FINDINGS

The proposed project would have a **Less than Significant Impact** to aesthetic resources.

MITIGATION MEASURES

The proposed project would have a **Less Than Significant Impact** related to aesthetic resources; therefore, no mitigation measures would be required.

II. **AGRICULTURAL AND FORESTRY RESOURCES*** **Would the project:**	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), or timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒

* In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model-1997 prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. There are no lands present in Carlsbad that meet the state's definition of forest land (Public Resources Code section 12220(g)), timberland (Public Resources Code section 4526), or production (Government Code 51104(g)). Therefore, questions related to forestry resources would have no impact.

II. AGRICULTURAL AND FORESTRY RESOURCE

IMPACT ANALYSIS

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact: The proposed project site is designated as "urban and built-up" land within the Farmland Monitoring and Mapping Program maps (San Diego County 2018). No conversion of lands designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland would occur as a result of the proposed project. Therefore, **No Impact** would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact: The proposed project site is not zoned for agriculture use, nor is it located on lands subject to Williamson Act contracts (City of Carlsbad 2021a). Therefore, the proposed project would not conflict with the existing agricultural zoning or a Williamson Act contract, and **No Impact** would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), or timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact: The proposed project site is not zoned as forest land or timberland. Therefore, **No Impact** would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact: The proposed project site does not contain forest land. Therefore, **No Impact** would occur.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

No Impact: As noted above, the proposed project site is not currently used for agriculture and does not contain forest land. Therefore, **No Impact** would occur.

FINDINGS

The proposed project would have **No Impact** to agriculture and forest resources.

MITIGATION MEASURES

The proposed project would have no impact related to agricultural and forestry resources; therefore, no mitigation measures would be required.

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

* Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the determinations in this section.

III. AIR QUALITY

REGULATORY SETTING

The determination of whether a region's air quality is healthful or unhealthful is made by comparing contaminant levels in ambient air samples to the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). The California Air Resources Board (CARB) and U.S. Environmental Protection Agency (EPA) designate areas as attainment, non-attainment, or unclassifiable for the state and national ambient air quality standards. An "attainment" designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A "non-attainment" designation indicates that the area does not meet the standard. In some cases, the CARB or EPA is not able to determine an area's status after evaluating the available information, and those areas are designated "unclassifiable."

The San Diego Air Basin (SDAB) is designated as an attainment area for criteria pollutants under the NAAQS with the exception of the ozone (8-Hour) standard, which is designated as a non-attainment area, and particulate matter 10 microns in diameter or less (PM_{10}), which is listed as an unclassifiable designation. The SDAB is currently designated as a non-attainment area for ozone and particulate matter, PM_{10} and particulate matter 2.5 microns in diameter or less ($PM_{2.5}$), under the CAAQS. It is designated as attainment under CAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and sulfates.

Table 1 shows the SDAB designations for criteria pollutants:

Table 1. NAAQS and CAAQS Attainment Status for SDAB

Criteria Pollutant	Federal Designation (NAAQS)	State Designation (CAAQS)
Ozone (8-Hour)	Non-attainment	Non-attainment
Ozone (1-Hour)	Attainment[2]	Non-attainment
Carbon Monoxide	Attainment	Attainment
PM_{10}	Unclassifiable[2]	Non-attainment
$PM_{2.5}$	Attainment	Non-attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassifiable[2]
Visibility	No Federal Standard	Unclassifiable[2]

[1] *The federal 1-hour standard of 12 parts per hundred million (pphm) was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.*
[2] *At the time of designation, if the available data do not support a designation of attainment or non-attainment, the area is designated as unclassifiable.*
SOURCE: SDAPCD 2021 (https://www.sdapcd.org/content/sdc/apcd/en/air-quality-planning/attainment-status.html).

San Diego County Air Pollution Control District Rules and Regulations

The thresholds listed in **Table 2** represent screening level thresholds that can be used for CEQA purposes to evaluate whether project-related emissions could cause a significant impact on air quality. The thresholds are based on San Diego County Air Pollution Control District's (SDAPCD's) Rule 20.2 and were also used as thresholds of significance for air quality in the City of Carlsbad General Plan Update EIR, adopted in September 2015.

As stated above, the SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. SDAPCD rules and regulations that would be applicable to the proposed project include, but are not limited to, SDAPCD Regulation IV, Prohibitions: Rule 50 (Visible Emissions); Rule 51 (Nuisance); Rule 55 (Fugitive Dust); Rule 67.0 (Architectural Coatings).

Table 2. SDAPCD Air Quality Significance Thresholds[1]

Pollutant	Emissions (Pounds per Day)
Respirable Particulate Matter (PM_{10})	100
Fine Particulate Matter ($PM_{2.5}$)	55
Oxides of Nitrogen (NO_X)	250
Oxides of Sulfur (SO_X)	250
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	137[2]

[1] *The SDAPCD screening level thresholds were developed for stationary sources; however, per the County of San Diego air quality guidelines, for (California Environmental Quality Act) CEQA purposes, these trigger levels may be used to demonstrate that a project's emissions would not result in a significant impact to regional air quality and impede attainment of air quality standards for the region (County of San Diego 2007). Because regional air quality standards have been established for these criteria pollutants to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution, these trigger levels can also be used to assess project emissions and inform the project's impacts to regional air quality and health risks under CEQA. These thresholds are also consistent with the air quality significance thresholds used in the City of Carlsbad General Plan Update EIR (September 2015).*

[2] As the SDAPCD screening level thresholds in Rule 20.2 do not include a threshold for VOC emissions, consistent with County guidance, the VOC threshold is based on the significance thresholds recommended by the Monterey Bay Unified Air Pollution Control District for the North Central Coast Air Basin, which has similar federal and state attainment status as the SDAB for ozone.

AFFECTED ENVIRONMENT

The proposed project is within the SDAB. The SDAB includes jurisdictions within San Diego County. Air quality regulation in the SDAB is administered by SDAPCD.

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the U.S. EPA and the CARB as being of concern, both on a nationwide and statewide level: ozone[1]; CO; NO_2; SO_2; lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM_{10}; and $PM_{2.5}$. Because the air quality standards for these air pollutants are regulated using human and environment health-based criteria, they are commonly referred to as criteria air pollutants.

IMPACT ANALYSIS

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact: The periodic violations of NAAQS and CAAQS in the SDAB, particularly for ozone in inland foothill areas, require that a plan be developed outlining the pollution controls that will be undertaken to improve air quality. In San Diego County, this attainment planning process is embodied

[1] Ozone is not emitted directly into the air, but is formed through a series of reactions involving volatile organic compounds (VOCs) and oxides of nitrogen (NO_X) in the presence of sunlight. VOCs and NO_X are referred to as "ozone precursors." Because ozone is not directly emitted, air quality regulations focus on reducing the ozone precursors, VOCs and NO_X.

in the Regional Air Quality Strategy (RAQS) developed by the SDAPCD with regional growth projections provided by San Diego Association of Governments (SANDAG). The RAQS outlines the SDAPCD's plans and regulatory control measures designed to attain state air quality standards for ozone. The RAQS, which was adopted by the SDAPCD in 1992, is updated on a triennial basis with the most recent revision prepared in December 2022.

The SDAPCD also develops plans to form the State Implementation Plan (SIP), which is required under the Federal Clean Air Act for pollutants designated as being in non-attainment. The SIP relies on the same information from SANDAG to develop emission inventories and emission control strategies that are included in the attainment plan for the air basin. In October 2020, the SDAPCD approved the Attainment Plan for San Diego County, demonstrating how the region will further reduce air pollutant emissions to attain the NAAQS for ozone. The Attainment Plan was approved by CARB in November 2020, and submitted by CARB on January 8, 2021, for EPA's consideration as a revision to the SIP for attaining the ozone standards.

The proposed project relates to the SIP and/or RAQS through the land use and growth assumptions that are incorporated into the air quality planning document. These growth assumptions are based on the city's and the county's general plan. The proposed project would involve construction activities, which are short-term and temporary. Emissions from construction projects in the SDAB, including construction of the proposed project, are accounted for in the RAQS for attainment planning because existing and future emissions inventories are based on CARB's California Emissions Projection Analysis Model emissions inventory and grown according to forecast population and employment growth in regional plans. This includes SANDAG's San Diego Forward: 2021 Regional Plan, which anticipates a 12 percent increase in population and a 25 percent increase in employment between 2016 and 2050[2]. The proposed project would also be consistent with the goals of the General Plan by enhancing pedestrian and bicycle facilities. The proposed project would also result in improved transit access via the improved access to the bus stop through continental crosswalks and continuous sidewalks. Therefore, the proposed project would be consistent with Transportation Control Measures: Bicycle Facilities (TCM 5.2.5) and Transit Improvement and Expansion Program (TCM 5.2.1) included within the 2022 RAQS strategies to expand bicycle facilities and improve access to transit (SDAPCD 2022). Further, the proposed project is listed in the 2021 SANDAG Regional Transportation Improvement Program (MPO ID: CB31) and is also consistent with various mobility actions, including the Complete Corridors vision included in the SANDAG Regional Transportation Plan 5 Big Moves, which encourages reducing congestion on roadways, prioritizing active transportation, such as implementing bicycle and pedestrian infrastructure improvements, and creating a network of convenient and reliable transit services. Proposed project implementation would not conflict with or

[2] SANDAG is in the process of developing the 2025 Regional Plan. The Draft 2025 Regional Plan may include an updated forecast in population and employment growth. The Draft 2025 Regional Plan is anticipated be circulated for public review in summerSummer 2025

obstruct implementation of the applicable air quality plan. Therefore, the proposed project would result in a **Less than Significant Impact.**

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

Less than Significant Impact: By its very nature, air pollution is largely a cumulative impact. The non-attainment status of regional pollutants is a result of past and present development within the SDAB, and this regional impact is cumulative rather than attributable to one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects.

Construction

Site preparation and roadway construction would involve excavation, grading, bridge and sidewalk construction, and paving roadway surfaces. Construction emissions are described as "short-term" or temporary; however, they have the potential to represent a significant impact with respect to regional and localized air quality. Construction activities would temporarily generate emissions of volatile organic compounds (VOCs), nitrogen oxides NO_X, CO, sulfur oxides (SO_X), PM_{10}, and $PM_{2.5}$. VOCs, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. PM_{10}, and $PM_{2.5}$ emissions are also associated with fugitive dust emissions from site preparation and grading activities. Fugitive PM emissions vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and the miles traveled by construction vehicles on- and off-site. Earth-moving and material-handling operations would be the primary sources of fugitive PM dust emissions from construction activities.

Construction is anticipated to begin in 2026 and continue approximately 9 months. The proposed project's construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod allows the user to enter project-specific construction information, such as project schedule[3], types and quantities of construction equipment, and number and length of off-site motor vehicle trips. As summarized in **Table 3**, criteria air pollutant emissions during construction of the proposed project would be below the SDAPCD screening level thresholds. Additional modeling details and assumptions are provided in Appendix B. Therefore, construction-related emissions are not anticipated to result in a cumulatively considerable net increase of criteria pollutant for which the project region is in non-attainment.

[3] The analysis conservatively assumed a construction start date of October 2022. Because construction is anticipated to begin in 2026, the emission estimates presented in Table 3 are conservative because as construction occurs in later years, exhaust-related emissions are anticipated to result in lower levels of emissions. Therefore, actual emissions from the construction activities in 2026 may be lower than what was quantified due to advancements in engine technology, retrofits, and equipment fleet turnover as stricter regulatory standards take effect.

Table 3. Construction-Related Maximum Daily Emissions

Pollutant	Maximum Daily Emissions (Pounds per Day)	SDAPCD Threshold (Pounds per Day)	Exceeds Threshold?
Respirable Particulate Matter (PM_{10})	2.53	100	No
Fine Particulate Matter ($PM_{2.5}$)	1.53	55	No
Nitrogen Oxides (NO_X)	29.65	250	No
Sulfur Oxides (SO_X)	0.10	250	No
Carbon Monoxide (CO)	31.83	550	No
Volatile Organic Compounds (VOC)	8.39	137	No

Operations

Following construction, the proposed project is not anticipated to result in a substantial increase in traffic volumes, and would encourage alternative transportation modes such as walking, bicycling, and use of transit. Periodic maintenance activities would be relatively minor, mainly focused on repairs, and would remain similar to existing conditions. As described above, the proposed project would enhance the mobility for users (i.e., vehicles, pedestrians, and bikes, transit users) along this portion of El Camino Real consistent with the Mobility Element outlined in the city's General Plan. Currently, the southbound lanes taper from three lanes north of Arenal Road to two lanes from Arenal Road to La Costa Avenue, and open to three lanes again approaching La Costa Avenue. This lane reduction creates a bottleneck that increases travel times and causes traffic congestion, thereby increasing idling emissions from vehicles. As detailed in the El Camino Real Widening Transportation Impact Analysis Report, traffic operating conditions, such as level of service and delay, improve or stay the same under existing and future conditions at study area intersections and roadway segments (STC Traffic, Inc. 2022). Therefore, the proposed project would reduce traffic congestion and result in fewer idling emissions from vehicles than existing conditions.

As detailed in the VMT Analysis (Appendix F), the proposed project is not a vehicular trip generator and would not result in a net increase in vehicle miles traveled (VMT) (STC Traffic, Inc. 2023). Regarding VMT analysis methodology, CEQA Section 15064.3 states, "If existing models or methods are not available to estimate the VMT traveled for the particular project being considered, a lead agency may analyze the project's VMT qualitatively." Based on research completed by STC Traffic, Inc., available methodologies for quantitatively calculating VMT were deemed inappropriate for small scale transportation projects such as the proposed project, and it was determined the city has the authority to consider a qualitative assessment of VMT for the proposed project. The qualitative assessment completed as part of the VMT Analysis (Appendix F) considered whether the small section of roadway widening for one direction of travel would "induce" VMT. Induced VMT is the propensity to encourage new trips to be made that would not have existed otherwise. Although the proposed project would widen a segment of El Camino Real, this widening would occur on a relatively short segment, which is known as "spot widening" (approximately 0.6 mile). This "spot widening" is not anticipated to result in substantial induced

automobile or truck use or increase of the attractiveness of the roadway, because the widened area along El Camino Real would match the existing three southbound lanes north of Arenal Road and south of La Costa Avenue. Additionally, because no parallel Mobility Element roadways are in proximity to the proposed project corridor, it is highly unlikely that drivers would divert from their current routes to use the proposed small segment of the new travel lane. Therefore, the proposed project is unlikely to release additional capacity on other routes.

Furthermore, the proposed project provides substantial enhancements and connectivity for pedestrians and bicyclists to key destinations and stops. Therefore, although the proposed project would widen a section of the roadway that would improve traffic operating conditions and facilitation of travel by automobile or truck mode, the proposed improvements to pedestrian and bicycle facilities (e.g., buffered bike lanes, sidewalk) would also encourage travel by these active transportation modes (STC Traffic, Inc. 2022). In addition, the decreased congestion would likely facilitate travel by transit. Consequently, it is very likely that such improvements would result in an increase in the number of people who choose to walk, bike, or use transit as an alternative to driving, thereby inducing alternative modes of travel. There would be no detrimental effect on operation in the study area and the proposed project would provide a benefit for vehicles, transit, bicycles, and pedestrians (STC Traffic, Inc. 2022).

Therefore, as noted in the VMT Analysis (Appendix F), the proposed project is anticipated to have a net reduction in VMT, which would also result in a net reduction of the associated criteria air pollutant emissions.

Given the extent of the capacity-enhancing proposed project improvements (approximately 0.6 mile of new travel lane for one direction of travel) compared to corridor-wide multi-modal improvements (i.e., improvements to travel for vehicles, transit, bicycles, and pedestrians), lack of parallel travel routes, and improved access to transit and key destinations for pedestrians and bicyclists, implementation of the proposed project is not anticipated to increase VMT. Because the proposed project would not substantially increase vehicle trips in the proposed project study area and would instead encourage alternative forms of transportation such as bicycle, walking, or the use of transit, emissions associated with operation of the proposed project are anticipated to remain similar to existing conditions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase in criteria pollutant for which the region is in non-attainment, and would result in a **Less than Significant Impact.**

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact: Construction of the proposed project would result in emissions of criteria air pollutants and toxic air contaminants (TACs). Sensitive receptors include residences, schools, hospitals, playgrounds, childcare centers, athletic facilities, long-term healthcare facilities, rehabilitation centers, convalescent centers, retirement homes, and other facilities that may house individuals who are more susceptible to health effects due to exposure to an air contaminant than the population at large. The nearest sensitive receptors to the proposed project site include the single-family residences on both sides

of El Camino Real (north of Arenal Road) and the adjacent residential units to the east of El Camino Real, within the Omni La Costa Resort & Spa.

As shown in **Table 3**, construction-related activities would result in emissions of criteria air pollutants, but at levels that would not exceed the SDAPCD screening level thresholds. These screening level thresholds were developed to identify an emission increase that would not cause a violation of the NAAQS anywhere that does not already exceed such a standard or anywhere the standard is already being exceeded, nor prevent or interfere with the attainment or maintenance of NAAQS. As described previously, because the NAAQS and CAAQS have been established for these criteria pollutants to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution, these trigger levels can also be used to assess project emissions and inform the proposed project's impacts to regional air quality and health risks under CEQA. As such, the construction-related criteria air pollutant emissions associated with the proposed project would not expose sensitive receptors to substantial pollutant concentrations.

In addition to criteria air pollutants, construction of the proposed project would also generate TAC emissions, specifically diesel particulate matter (diesel PM), associated with heavy-duty construction equipment operations. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments that determine the health risks associated with exposure of receptors to TAC emissions should be based on a 30-year exposure period (OEHHA 2015). However, health risk assessments should be limited to the period/duration of emissions-generating activity. The duration for construction would last approximately 9 months and would cease following completion of the proposed project. Therefore, the total exposure period would be less than 3 percent of the required exposure period for health risk assessments. In addition, proposed roadway improvements would be largely completed in segments along the existing road. Therefore, emissions would occur intermittently throughout the construction period and would not occur as a constant plume of emissions from the proposed project site. Furthermore, CARB has adopted Airborne Toxic Control Measures (ATCMs) to reduce emissions from mobile sources. CARB has adopted an ATCM that limits the idling of diesel-fueled commercial motor vehicles. The rule applies to motor vehicles with gross vehicular weight ratings greater than 10,000 pounds that are licensed for on-road use and restricts vehicles from idling for more than 5 minutes with exceptions for idling that may be necessary in the operation of the vehicle. California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than 5 minutes and requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet's usage and emissions. Based on the anticipated construction schedule, dispersive nature of diesel PM emissions, and compliance with CARB ATCMs, construction would not expose sensitive receptors to substantial TAC concentrations.

As discussed previously, there are no anticipated traffic volume increases associated with operation of the proposed project. As such, implementation of the proposed project would not result in the generation of additional truck trips or increase the vehicle hours traveled by diesel trucks or other sources of TAC emissions. Therefore, the proposed project would not result in an increase in TAC emissions beyond

existing conditions that would expose sensitive receptors to substantial pollutant concentrations, and would result in a **Less than Significant Impact.**

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact: The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause physical harm, they still can be unpleasant, leading to distress and generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose individuals to objectionable odors are deemed to have a significant impact. Typical facilities that generate emissions, such as those leading to odors, include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities.

During construction activities, construction equipment exhaust, application of asphalt, and traffic coating activities may temporarily generate emissions, such as those leading to odors. The proposed project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Because the purpose of the proposed project is to implement improvements to an existing roadway, operation of the proposed project would not add new odor sources. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people and would result in a **Less than Significant Impact**.

FINDINGS

The proposed project would have a **Less than Significant Impact** to air quality.

MITIGATION MEASURES

The proposed project would have a less than significant impact related to air quality; therefore, no mitigation measures would be required.

IV. BIOLOGICAL RESOURCES **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian, aquatic or wetland habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

IV. BIOLOGICAL RESOURCES

REGULATORY SETTING

This section describes the federal, state, and local plans, policies, and laws that are relevant to biological resources within the Biological Study Area (BSA).

Federal Regulations

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) provides protections for species endangered or threatened with extinction. FESA prohibits the "take" of endangered or threatened wildlife species. Take is defined

to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 Code of Federal Regulations [CFR] Section 17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR Section 17.3). Actions that result in take can result in civil or criminal penalties. See Section 3.3.1 for a discussion of the regional planning effort under the Multiple Habitat Conservation Program (MHCP) that addresses federally endangered and threatened species in the city's HMP. Projects that are implemented consistent with the measures to reduce threats to species survival outlined in the MHCP and HMP would be allowed to "take" listed species with the city's authorization and approval.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S. Code §§ 703–712) prohibits pursuing, hunting, killing, capturing, possessing, purchasing, bartering for, or transporting native migratory birds or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. The migratory bird species protected by the MBTA are published in 50 CFR 10.13. The MBTA does not discriminate between live or dead birds and grants full protection to any bird parts, including feathers, eggs, and nests, of the birds that are included on the published list. USFWS has statutory authority and responsibility for enforcing the MBTA. Under the MBTA, the proposed project would need to comply with the measures that would avoid or minimize effects on nesting migratory birds included on the published list.

Clean Water Act

Section 404 of the CWA requires that project proponents obtain a permit from USACE before performing any activity that involves any discharge of dredged or fill material into waters of the U.S., including wetlands. Per 2023 definitions, Waters of the U.S. include (1) traditional navigable waters, territorial seas, and interstate waters; (2) impoundments of waters of the U.S.; (3) tributaries to any of these waters that are relatively permanent; (4) wetlands that are adjacent to any of these waters; and (5) intrastate lakes and ponds that are relatively permanent, standing, or continuously flowing bodies of water with a surface connection to other waters of the U.S. (33 CFR 328.3[a]).

For coastal waters, the limit of navigable waters under USACE jurisdiction is considered the high tide line. Many surface waters and wetlands in California meet the criteria for waters of the U.S. In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB to indicate that a project would not violate California water quality standards. If proposed development of the proposed project would result in unavoidable impacts to waters of the U.S., a 404 permit (likely NWP 14-Linear Transportation Projects) may be required.

Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of pollutant into waters of the U.S. The EPA has delegated administration of the NPDES program to the State Water Resources Control Board (SWRCB) and nine RWQCBs. The SWRCB and RWQCBs also regulate other waste discharges to land in California through the issuance of waste discharge requirements (WDRs) under authority of the Porter-Cologne Water Quality Act.

Rivers and Harbors Act

Much of the lagoon area experiences tidal action, which meets the definition of Navigable Waters (e.g., Rivers and Harbors Act Section 10 Waters [33 CFR 329.4]). The portion of the lagoon within the BSA is above the high tide line and some areas lack consistent wetland hydrology indicating nontidal conditions. Proposed work in or over navigable waters of the U.S., e.g., the proposed pedestrian bridges over Section 10 waters, would require authorization under the Rivers and Harbors Act. Because NWP 14 authorizes activities under CWA Section 404 (described above) and Rivers and Harbors Act Section 10, Rivers and Harbors Act evaluation can be assessed by USACE through the NWP process.

State Regulations

California Environmental Quality Act

CEQA (Public Resources Code Section 15000 et seq.) requires identification of significant environmental effects of proposed projects (including impacts on biological resources) and avoidance (where feasible) or mitigation of the significant effects. CEQA applies to “projects” proposed to be undertaken or requiring approval by state and/or local governmental agencies. “Projects” are activities that have potential to have a physical impact on the environment.

California Endangered Species Act

The California Endangered Species Act (CESA) (Section 2050 et seq.) prohibits the “take” (defined as “to hunt, pursue, catch, capture, or kill”) of state-listed species except as otherwise provided in state law. CESA is administered by CDFW and is similar to FESA. State lead agencies are required to consult with CDFW to ensure that their authorized actions are not likely to jeopardize the continued existence of any state-listed species or result in the degradation of occupied habitat.

Under Section 2081, CDFW authorizes “take” of state-listed endangered, threatened, or candidate species through incidental take permits or memoranda of understanding if (1) the take is incidental to otherwise lawful activities; (2) impacts of the take are minimized and fully mitigated; (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question; and (4) the applicant ensures suitable funding to implement the measures required by CDFW.

California Fish and Game Code Sections 1900 et seq.

California Fish and Game Code (CFGC) Section 1900 et seq. is known as the Native Plant Protection Act of 1977, designates California rare, threatened, and endangered plant species. The purpose of this act is to preserve, protect, and enhance endangered or rare native plants of California. Many species and subspecies of native plants in California are in danger of extinction because their habitats are threatened with destruction, drastic modification, or severe curtailment as a result of exploitation by commercial or other means or due to disease or other factors. Title 14 California Code of Regulations (CCR), Section 670.2 lists the subspecies and varieties of California native plants that are endangered, threatened (as defined by CFGC Section 2067), or rare (as defined by CFGC Section 1901).

California Fish and Game Code Section 3503

CFGC Section 3503 protects California migratory birds by making it unlawful to take or possess migratory non-game bird (or part of such bird) as designated in the federal MBTA.

California Fish and Game Code Sections 3511, 4700, 5050, and 5515

CFGC Sections 3511, 4700, 5050, and 5515 specifically prohibit the take of wildlife species that are classified as "fully protected" in California, even if other CFGC sections provide for incidental take of the species.

California Fish and Game Code Section 1600 et seq.

Pursuant to Sections 1600 et seq. of the CFGC, CDFW regulates activities of an applicant's project that would substantially alter the flow, bed, channel, or bank of streams or lakes, unless certain conditions outlined by CDFW are met by the applicant. The limits of CDFW jurisdiction are defined in CFGC Sections 1600 et seq. as the "bed, channel, or bank of any river, stream, or lake designated by CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit." However, in practice, CDFW usually extends its jurisdictional limit and assertion to the top of a bank of a stream, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider. Similarly, where freshwater streams flow into the ocean, CDFW usually extends its jurisdictional limit and assertion over the lagoon habitat.

Porter-Cologne Water Quality Act

See **Section X**, Hydrology and Water Quality, for a description of the Porter-Cologne Water Quality 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 not subject to regulations under federal law are considered waters of the state and regulated accordingly.

California Coastal Act/Coastal Zone

The proposed project site is within the Coastal Zone as designated by the CCC, with the state lands subject to the CCA of 1976. The CCA of 1976 tasked the agency with protection of coastal resources through the issuance of CDPs. Under the CCA, local governments are encouraged to adopt LCPs, which consist of a Land Use Plan with goals and regulatory policies and a set of Implementing Ordinances. Development within the Coastal Zone may not commence until a CDP has been issued by the CCC or a local government that has a CCC-certified LCP. The City of Carlsbad has an adopted LCP, as described further below (City of Carlsbad 1996), and the proposed project activities would be located within both the approved City of Carlsbad LCP jurisdiction and jurisdictional areas retained by the CCC. Actions proposed within the Coastal Zone must be consistent with Chapter 3 of the CCA. The CCA (Public Resources Code §§ 30000 et seq.) authorizes the State of California to regulate development in the State Coastal Zone. Although scenic resources are not specifically mentioned, Public Resources Code Section 30001.5 calls to "protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources."

Local Regulations

City of Carlsbad Habitat Management Plan

The HMP, adopted by Carlsbad City Council in November 2004, is the city's subarea plan under the MHCP. The MHCP is a subregional, multi-jurisdictional conservation plan under the California Natural Community Conservation Program (NCCP) designed to create, manage and monitor habitat and species in northwestern San Diego County. The State of California passed the NCCP Act in 1991, which called for a program that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. As mandated by the NCCP Act, the city prepared the HMP to fulfill the MHCP requirements. The HMP also serves as a Habitat Conservation Plan under Section 10(a)(1)B of the FESA.

The city's HMP is intended to act as a framework for conserving and managing land uses and implementing protective measures to preserve the city's diversity of natural habitats and rare and unique biological resources, while also allowing for development and economic growth as outlined in the city's General Plan. The city's HMP establishes preserve boundaries, which include Existing Hardline (areas already conserved), Proposed Hardline (future preserve areas on undeveloped properties for which the boundary has been pre-delineated), and Standard Areas (areas targeted for future preserves on undeveloped properties that must follow specific standards when delineating the preserve boundary). For the HMP to act as a formal regulatory tool, the city coordinated with wildlife agencies including CDFW and USFWS to execute the Implementing Agreement regarding potential impacts to wildlife species and habitat within the agencies' jurisdiction. As described above, the HMP constitutes a Habitat Conservation Plan, pursuant to Section 10(a)(1)B of FESA and NCCP Plan pursuant to Section 2835 of the CESA as part of the NCCP Program. The city has been issued a Section 10(a) Permit by USFWS and an NCCP Permit by CDFW, which allows Incidental Take of species covered by the HMP for city-approved projects in accordance with the

Implementing Agreement. The HMP program consequently streamlines the permitting process in exchange for a citywide mitigation program for HMP covered species and their habitats.

City of Carlsbad Local Coastal Program

The City of Carlsbad LCP regulates development within the state-designated Coastal Zone in portions of the city boundary. The City of Carlsbad LCP consists of six geographic segments: the Agua Hedionda Lagoon LCP segment composed of approximately 1,100 acres; the Carlsbad Mello I segment with approximately 2,000 acres; the Carlsbad Mello II segment with approximately 5,250 acres; the West Batiquitos Lagoon/Sammis Properties segment with approximately 200 acres; the East Batiquitos Lagoon/Hunt Properties segment with approximately 1,000 acres; and the Village-Barrio segment with approximately 150 acres. The city's LCP implements the CCA at a local level by addressing land use, zoning ordinances, and zoning district maps in sensitive coastal resource areas by providing implementing actions, provisions, and policies required in the Coastal Zone.

The proposed project area is within the Mello II and East Batiquitos Lagoon/Hunt Properties segments of the city's approved LCP and within CCC-retained jurisdiction. Applicable to the segment of the LCP, the Batiquitos Lagoon Special Treatment Overlay limits the alteration of wetlands in Batiquitos Lagoon to minor incidental public facilities, restorative measures, and nature studies [Policy II-4.B.3(1)]. This policy also states that alteration of the wetlands must be approved by the city and the CCC.

Carlsbad California Municipal Code: Protection of Trees

The proposed project would involve removal of seven landscape trees. Carlsbad California Municipal Code 11.12.080, Protection of Trees, states that no person shall remove, trim, prune, cut, or injure any tree, shrub, or plant growing in the street, median, sidewalk, or other public city right-of-way. Section E prohibits construction of concrete, asphalt, brick, or other fill material or placement of any building materials likely to cause injury to a tree near any tree, shrub, or plant growing in the street, sidewalk, median, or other public right-of way. Section 11.12.090 requires a permit from the city manager for any tree removal or maintenance. A city arborist must inspect the property and recommend approval or denial of an application before permit issuance.

AFFECTED ENVIRONMENT

This section summarizes results from the Biological Technical Report (BTR; Appendix C), including a Jurisdictional Delineation Report, prepared for the proposed project. A BSA (see **Figure 9A-C**) of approximately 120 acres for the proposed project was established, including a 550-foot survey radius surrounding the proposed project area. The BSA includes portions of Batiquitos Lagoon to the west with primarily development to the north, east, and south. Field surveys conducted for the proposed project area in 2021 included a reconnaissance survey to map vegetation and assess potential for special-status species to occur in the BSA and a formal delineation of jurisdictional waters and wetlands. A vegetation and jurisdictional mapping refinement field survey occurred in 2024. Protocol wildlife surveys for Belding's

savannah sparrow (*Passerculus sandwichensis beldingi*), coastal California gnatcatcher (*Polioptila californica californica*), and light-footed Ridgway's rail (*Rallus obsoletus levipes*) were conducted in 2021.

The BSA consists of developed landscape but also supports sensitive vegetation and aquatic cover types (see **Figures 9A-C and 10A-C**). Jurisdictional "waters of the U.S." and "waters of the State" occur in Batiquitos Lagoon and San Marcos Creek. Batiquitos Lagoon supports listed and non-listed species such as Belding's savannah sparrow, coastal California gnatcatcher, and light-footed Ridgway's rail, all of which were detected during protocol surveys. Two sensitive bat species were identified roosting under the bridge that spans San Marcos Creek (see **Figure 11**). Existing hardline conservation areas as identified in the city's HMP are on the western side of the BSA and overlap with Batiquitos Lagoon (**Figure 4**). Details describing the biological conditions of the BSA are included in the discussion below.

Biological Conditions

Vegetation communities in the BSA were identified during biological surveys and were classified in accordance with the city's HMP, based on *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). The BSA consists of various vegetation communities and cover types, as shown in **Table 4** and **Figure 9A-C**.

Table 4 lists the vegetation communities and their acreages in the BSA. Because the proposed project would require a boundary adjustment to the existing hardline conservation area, as described in **Section XI**, Land Use and Planning (see **Table 4**), **Table 4** includes acreages of each vegetation community within and outside of the existing hardline conservation area.

Wetlands

Coastal Brackish Marsh

Coastal brackish marsh is a wetland plant community dominated by perennial, emergent, herbaceous monocots to 2 meters tall. Cover is often complete and dense. Coastal brackish marshes are similar to coastal salt marshes (52100) and to freshwater marshes (52400), with some plants characteristic of each. These communities are similar to coastal salt marshes, but brackish from freshwater input. Salinity may vary considerably and may increase at high tide or during seasons of low freshwater runoff or both. Coastal brackish marsh is located on the western edge of the BSA in Batiquitos Lagoon, across from the Omni La Costa Resort entrance in a remnant secondary channel of San Marcos Creek. Coastal brackish marsh in the BSA is characterized by areas of brackish water ringed with salt pannes, alkali bulrush (*Bolboschoenus maritimus*), Pacific pickleweed (*Salicornia pacifica*), and salty Susan (*Jaumea carnosa*), as well as assorted species of bulrush (*Schoenoplectus* sp.) and rush (*Juncus* sp.).

Table 4. Vegetation Communities Inside vs. Outside Hardline Preserve in the BSA

Vegetation Community/ Land Cover Type	Total Within BSA (acres) [1,2]	Project Area Occurring Within Existing Hardline Preserve Area (acres)[2]	Project Area Occurring Outside Existing Hardline Preserve Area (acres)[2]	Total within Project Area (acres)[2]
Riparian and Wetlands	*38.004*	*0.002*	*0.150*	*0.152*
Coastal brackish marsh	3.476	0.000	0.016	0.016
Southern arroyo willow riparian forest	10.245	0.000	0.000	0.000
Southern coastal salt marsh	17.72	0.002	0.033	0.034
Southern willow scrub	4.470	0.000	0.000	0.000
Open water	1.418	0.000	0.071	0.071
Nonnative riparian	0.674	0.000	0.031	0.031
Uplands	*7.886*	*0.670*	*0.913*	*1.583*
Coastal sage scrub	7.886	0.670	0.913	1.583
Other Cover Types	*74.466*	*0.080*	*9.441*	*9.520*
Disturbed	3.122	0.001	0.237	0.237
Developed	67.868	0.079	9.026	9.105
Landscaped/Ornamental	3.476	0.000	0.178	0.178
Total	**120.356**	**0.751**	**10.504**	**11.256**

[1]Includes the project area and buffer.
[2]Totals may not sum due to rounding after summations.

Southern Coastal Salt Marsh

Southern coastal salt marsh occurs in bays, lagoons, and estuaries along the coast from about Point Conception to the Mexican border. This community is similar to other coastal salt marshes but has a longer growing season and a greater abundance of suffrutescent species in the higher, drier sites. Southern coastal salt marsh comprises the majority of the acreage of natural vegetation communities found in the BSA. It is ubiquitous throughout the portion of the BSA west of El Camino Real. Southern coastal salt marsh is characterized by the presence of halophytic species, including alkali heath (*Frankenia salina*), salt grass (*Distichlis spicata*), Pacific pickleweed, and salty Susan. In several locations along the road that receive increased freshwater runoff from the surrounding urban areas, pockets of freshwater marsh species occur, including cattails (*Typha* spp.), several species of bulrush (*Schoenoplectus* sp.), and southwestern spiny rush (*Juncus acutus*). Areas of salt marsh closer to San Marcos Creek where regular freshwater flushing occurs tend to be weedier, with black mustard (*Brassica nigra*) densely intermingled with the native salt marsh species. The majority of the Southern Coastal Salt Marsh found in the BSA is non-tidal because the elevations exceed 7.5 feet Mean Lower Low Water. To apply different datums for surveying or coastal management, the various data must be reduced to Mean Lower Low Water, which is the reference datum for predictions, benchmark publication and nautical charting (NOAA 2024). King tides, which are typically the highest tide of the year, can reach up to 7.5 feet in elevation.

Southern Willow Scrub (63320)

Southern willow scrub is composed of dense, broadleafed, winter-deciduous riparian thickets dominated by several *Salix* species, with scattered emergent Fremont's cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). Most stands are too dense to allow much understory development. Southern willow scrub is usually found in association with loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. This early seral type requires repeated flooding to prevent succession to southern cottonwood–sycamore riparian forest (61330). Characteristic species of this community type include arrowweed (*Pluchea sericea*), Fremont's cottonwood, and several willow species (*Salix gooddingii, S. hindsiana, S. lasiolepis, S. leucodendroides, S. laevigata*, and *S. lasiandra*). Southern willow scrub was formerly extensive along the major rivers and arroyos of coastal southern California, but is now much reduced by urban expansion, flood control, and channel "improvements." In the BSA, southern willow scrub is found in the northern part of the BSA in a low-lying portion of land between two areas of coastal sage scrub. The southern willow scrub is dominated by arroyo willow (*Salix lasiolepis*) and mule-fat (*Baccharis salicifolia*) with nonnative species such as tamarisk (*Tamarix* sp.), Mexican fan palm (*Washingtonia robusta*), and ngaio (*Myoporum* sp.) also present.

Southern Arroyo Willow Riparian Forest

Southern willow riparian forest is winter-deciduous riparian forest dominated by moderately tall broadleafed trees and arroyo willow, with closed, or nearly closed canopies. Understories usually are shrubby willows. Southern willow riparian forest is found on the southwestern portion of the BSA where Encinitas Creek joins San Marcos Creek. It is characterized by dense stands of arroyo willow in both the canopy and shrub strata. Other species present include nonnative trees (*Washingtonia robusta*, *Tamarix* sp., and *Acacia* sp.) and western sycamore in the canopy and shrub strata, as well as invasive ornamental species like pampas grass (*Cortaderia jubata*).

Nonnative Riparian

Nonnative riparian communities are densely vegetated riparian thickets dominated by nonnative, invasive species including fennel (*Foeniculum vulgare*), tamarisk (*Tamarix* sp.), and black mustard. This designation is applied where nonnative, invasive species account for greater than 50 percent of the total vegetative cover within a mapping unit. Nonnative riparian habitat is found along the banks of San Marcos Creek to the east of El Camino Real and consists of a variety of nonnative tree, shrub, and herbaceous species.

Open Water

Open water is generally unvegetated on a relatively permanent basis. Variable water lines inhibit the growth of vegetation, although some weedy species of grasses may grow along the outer edges of the wash. Vegetation may exist here but is usually less than 10 percent total cover. Open water is found along the channel of San Marcos Creek from the channelized section in the east, to where it empties into Batiquitos Lagoon in the west. It is unvegetated, and subject to tidal influences.

Uplands

Diegan Coastal Sage Scrub, Coastal Form

Diegan coastal sage scrub is characterized by low, soft-woody subshrubs (to 1 meter high) that are facultatively drought-deciduous and most active in winter and early spring. Diegan coastal sage scrub in the BSA occurs along the side of roads and slopes down to where the land flattens out into coastal salt marsh; it also occurs in the northern side of the site at the higher elevations of Batiquitos Lagoon. The coastal sage scrub on-site is dominated by California sage brush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and spreading goldenbush (*Isocoma menziesii*), with occasional lemonade berry (*Rhus integrifolia*), black sage (*Salvia mellifera*), California encelia (*Encelia californica*), chaparral broom (*Baccharis pilularis*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Much of the sagebrush community present in the BSA appears to have mainly been created during the installation of the raised roadways; a small portion in the northwestern corner appears to be naturally occurring.

Other Cover Types

Developed/Landscape/Ornamental

Developed areas do not support biological resources. Developed land occurs throughout the eastern half of the BSA. This land cover consists of existing roads, commercial development, and residential housing. The residences and roadsides include some ornamental vegetation, including various nonnative trees, shrubs, and turf.

Disturbed Habitat

Disturbed habitats are areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association but continue to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of nonnative plant species such as ornamentals or ruderal exotic species that take advantage of disturbance or shows signs of past or present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal. Characteristic species typically include invasive, nonnative forb species, such as thistles (*Centaurea*, *Carduus*, and *Cynara* spp.), Russian thistle (*Salsola tragus*), mustards (*Brassica* spp. and *Hirschfeldia* spp.), wild radish (*Raphanus* spp.), iceplant (*Carpobrotus edulis*), and fennel (*Foeniculum vulgare*). Within the BSA, several areas were mapped as disturbed habitat; they occur to the north and south of San Marcos Creek under the El Camino Real bridge and primarily consist of mustard, wild radish, iceplant, and other nonnative grasses.

Jurisdictional Waters and Wetlands

Approximately 39.765 acres of aquatic resources in the BSA were delineated, consisting of approximately 19.908 acres of dual waters of the U.S. and State, and an additional 19.857 acres of waters of the State. **Table 5** and **Figure 10** illustrate jurisdictional resources in the BSA.

Table 5. Summary of Jurisdictional Waters of the U.S. and State Occurring in the BSA

Aquatic Resource Type	Habitat Type	Regulatory Authority	Total within Project Area (acres)[1]	Total within BSA (acres)[1]
Jurisdictional Waters of the U.S. and Waters of the State[2]				
Non-wetland Waters – Open Water	Open Water	USACE, CDFW, RWQCB, and CCC	0.202	1.019
Non-wetland Waters – Open Water	Open Water	USACE, CDFW, and RWQCB	0.036	0.607
Wetland Waters – Non-tidal Waters	Coastal Brackish Marsh, Southern Coastal Saltmarsh	USACE, CDFW, RWQCB, CCC	0.029	18.282
		Subtotal Jurisdictional Waters of the U.S/State	*0.268*	*19.908*
Jurisdictional Waters of the State, Exclusively				
Wetlands – Non-tidal Waters	Southern Coastal Saltmarsh, Disturbed	CDFW, RWQCB, CCC	0.005	4.294
Riparian	Southern Arroyo Willow Riparian Forest, Southern Willow Scrub	CDFW, CCC	0.000	14.716
Riparian	Coastal Brackish Marsh, Nonnative Riparian	CDFW	0.033	0.587
Streambed	Disturbed/Bare Ground	CDFW, CCC	0.152	0.152
Streambed	Disturbed	CDFW	0.009	0.107
		Subtotal Jurisdictional Waters of the State	*0.200*	*19.857*
		Grand Total Jurisdictional Waters	**0.468**	**39.765**

[1] Totals may not sum due to rounding after summation. Total includes area underneath the existing bridge.
[2] Jurisdictional Waters of the U.S. include jurisdictional waters of the State and are under the purview of CCC, CDFW, RWQCB, and USACE.

Sensitive Species

Special-status species with potential to occur in the BSA are discussed in the plant and wildlife sections below. **Figure 11** shows the locations of detected sensitive species.

Special-Status Plant Species

Three federally listed species, two of which are state-listed, have known populations within 1 mile of the BSA: Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*), Encinitas baccharis (*Baccharis vanessae*), and thread-leaved brodiaea (*Brodiaea filifolia*); however, all were determined to have low potential to occur due to the lack of suitable habitat and soils in the BSA.

Of the potentially occurring species, no federally or state-listed plant species were observed in the BSA. Two species, Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) and estuary seablite (*Suaeda esteroa*), were determined to have high and moderate potential to occur in the BSA, respectively. Both of these species are listed as California Rare Plant Rank (CRPR) 1B.2 species. The Del Mar Mesa sand-aster (*Corethrogyne filaginifolia* var. *linifolia*) was determined to have a moderate potential to occur in the BSA. This species is a CRPR 1B.1 ranked species and an HMP covered species. No non-listed, special-status plant species were detected during the habitat assessment. Other non-listed special-status plant species not detected, but with low potential to occur in the BSA, are detailed in Appendix C of the BTR.

Special-Status Wildlife Species

The BSA is partially within the Batiquitos Lagoon Hardline Preserve boundary. Several wildlife species are known to use suitable wetland and coastal sage scrub habitat in the BSA adjacent to the project site. The following paragraphs discuss special-status wildlife species detected during protocol surveys or that have moderate to high potential to occur in the BSA.

Listed Species

Four federally and/or state-listed species were detected during surveys conducted for the proposed project. Two additional species have a moderate potential to occur in the BSA. These species are discussed below.

Belding's savannah sparrow was detected in the BSA during surveys. The Belding's savannah sparrow is state endangered and is covered by the city's HMP. Belding's savannah sparrow is a year-round resident in San Diego County. The preferred habitat of the species is pickleweed-dominated coastal salt marsh associations. Suitable habitat occurs in the southern coastal salt marsh in Batiquitos Lagoon. This species is known to use Batiquitos Lagoon for nesting and foraging (AECOM 2021a) and has high potential to occur in the BSA. Up to five Belding's savannah sparrow individuals were detected in the BSA during protocol surveys. The observations were concentrated in the pickleweed, salt grass, and tidal mudflats west of El Camino Real, north of San Marcos Creek. Appendix C of the BTR (Appendix C) details the results for each of the five protocol surveys.

Coastal California gnatcatcher was detected in the BSA during protocol surveys. The coastal California gnatcatcher is federally threatened, CDFW species of special concern, and is covered by the city's HMP. Coastal California gnatcatcher is a year-round resident in San Diego County that nests and forages in coastal sage scrub habitat. This species prefers habitat composed of coastal sage scrub dominated by

California sagebrush and flat-topped buckwheat, which are the primary plants used by coastal California gnatcatcher when foraging for insects (RECON 1987; ERCE 1990). The species inhabits coastal sage scrub vegetation along the coastal slope in San Diego County. Suitable coastal sage scrub is present in the BSA south of Arenal Road and west of El Camino Real, where individuals were detected during the protocol surveys. Details of the protocol surveys conducted for the proposed project are included in Appendix D of the BTR (Appendix C).

Light-footed Ridgway's rail was detected in the BSA during protocol surveys. The light-footed Ridgway's rail is federally endangered, state endangered, CDFW fully protected, and is covered by the city's HMP. Light-footed Ridgway's rail is a year-round resident in San Diego County and can be heard calling in the morning and evening, although it is rarely seen. The species prefers coastal salt marshes in southern California where vegetation is dominated by cordgrass and pickleweed. It can also be found in brackish and freshwater marshes with cattails and bulrushes. Light-footed Ridgway's rail forage in higher marsh vegetation and along tidal creeks and at the interface between vegetation and adjacent mudflats. The light-footed Ridgway's rail is a reclusive species and will nest in and use relatively small patches of its preferred habitat when isolated from external anthropogenic disturbances (Zembal et al. 2011; Zembal and Hoffman 2012). Suitable habitat occurs in the southern coastal salt marsh in Batiquitos Lagoon. This species is known to use Batiquitos Lagoon for nesting and foraging (AECOM 2021b), and was detected west of El Camino Real, north of San Marcos Creek. Details of the protocol survey results can be found in Appendix D of the BTR (Appendix C).

Least Bell's vireo (*Vireo bellii pusillus*) was not detected during surveys and has a moderate potential to occur in the BSA. The least Bell's vireo is federally and state endangered and is covered by the city's HMP. Least Bell's vireo is a migratory bird that nests in riparian habitats. This species prefers to nest within willow-dominated woodlands adjacent to a stream or river. Least Bell's vireo forage in woodland or scrub habitat as well as upland vegetation occurring adjacent to riparian corridors (SDMMP 2010). This species could potentially occupy the Southern Arroyo Willow Riparian Forest in the southwest portion of the BSA, near Batiquitos Lagoon and San Marcos Creek. Focused protocol surveys were not conducted in the BSA due to lack of suitable breeding habitat in the project area, and the large distance between the suitable breeding habitat and the project area. This species was not observed incidentally during other sensitive species surveys conducted during the least Bells' vireo breeding season.

The California least tern (*Sterna antillarum browni*) was detected in the BSA during surveys. The California least tern is federally and state endangered, CDFW fully protected, and is covered by the city's HMP. California least tern is a migratory bird that is common in the summer months in San Diego County. It nests on undisturbed stretches of beach and forages on aquatic and marine organisms in open water. This species is known to use Batiquitos Lagoon for nesting and foraging (AECOM 2021b). California least tern are known to nest on the nesting island adjacent to the BSA (Batiquitos Lagoon Foundation 2005). California least tern were incidentally observed during protocol surveys for Belding's savannah sparrow, coastal California gnatcatcher, and light-footed Ridgway's rail.

The western snowy plover (*Charadrius nivosus nivosus)* was not detected during surveys and has a moderate potential to occur in the BSA. The western snowy plover is a federally threatened, CDFW species of special concern, and is covered by the city's HMP. Western snowy plover is a shore bird that nests on beaches, dunes, and salt flats in San Diego County. Outside the breeding season, this species is more widespread but not common along the county's coast. This species is known to use Batiquitos Lagoon for nesting and foraging (USFWS 2007). A nesting island where western snowy plover are known to nest occurs to the west of the BSA. Therefore, there is moderate potential for this species to be present in the BSA, flying over or potentially foraging within it.

Non-listed Special-Status Species

The following non-listed special-status wildlife species have been detected in or have a high or moderate potential of occurring in the BSA.

The yellow-breasted chat (*Icteria virens*) was detected in the BSA during surveys. The yellow-breasted chat is a CDFW Species of Special Concern. In San Diego County, nest building typically occurs in May and fledging is completed by August. In San Diego County, this species occurs in the coastal lowlands and is strongly concentrated in the northwestern portion of the county (i.e., Santa Margarita River and San Luis Rey River). Yellow-breasted chat were detected in the upland habitat near the northern end of the BSA during focused protocol surveys for Belding's savannah sparrow in 2021 (see **Figure 11**).

The yellow warbler (*Setophaga petechia brewsteri*) was detected in the BSA during surveys. The yellow warbler is a CDFW Species of Special Concern. The yellow warbler breeds from northern Alaska and Canada southward to the middle of the United States, and in the western United States southward into Mexico. This warbler winters in Mexico, and Central and South America. Nest building may occur as early as April in San Diego County, with fledglings reaching independence by August. This species occurs most commonly in riparian woodlands dominated by willows. Yellow warbler were found in the upland habitat near the northern end of the BSA during focused protocol surveys for Belding's savannah sparrow and light-footed Ridgway's rail in 2021 (see **Figure 11**).

The white-tailed kite (*Elanus leucurus)* was detected in the BSA during surveys. The white-tailed kite is a CDFW fully protected species. The white-tailed kite inhabits grasslands, open woodlands, riparian woodlands, marshes, and cultivated fields. This species nests in riparian woodland, oaks, and sycamores, and forages in open grassy areas as a year-round resident. White-tailed kite were detected west of El Camino Real during protocol surveys for Belding's savannah sparrow and light-footed Ridgway's rail in 2021 (see **Figure 11**).

The black skimmer (*Rynchops niger)* was detected in the BSA during surveys. The black skimmer is a CDFW species of special concern. The species was detected in the BSA during surveys. Black skimmer inhabit coastal waters, including bays, estuaries, lagoons, and mudflats in migration and winter. They are also found in quiet waters of rivers and lakes. Black skimmer were detected west of El Camino Real during protocol surveys for Belding's savannah sparrow and light-footed Ridgway's rail in 2021 (see **Figure 11**).

Reptiles and Amphibians

No special-status reptile or amphibian species are considered to have high potential to occur in the BSA. One species, orange-throated whiptail (*Aspidocelis hyperthra*), is considered to have moderate potential to occur in the BSA. The orange-throated whiptail is CDFW fully protected and is covered by the city's HMP. This species is found in a variety of habitats, including coastal sage scrub, and requires areas with friable soil.

Mammals

Three special-status mammal species known from the region have potential to occur in the BSA. Of these three species, two of the species were detected in the BSA during 2021 bat surveys (see Appendix E of the BTR; **Figure 11**), the Yuma myotis (*Myotis yumanensis*) and Mexican free-tailed bat (*Tadarida brasiliensis*). The species were observed in a large maternity colony under the El Camino Real bridge that spans San Marcos Creek.

Yuma myotis and Mexican free-tailed bat were found roosting in nearly all of the bridge seams on both sides of San Marcos Creek (see Appendix E). Yuma myotis and Mexican free-tailed bat are both Western Bat Working Group Low Priority–ranked species. Yuma myotis is found in a wide variety of upland and lowland habitats, including riparian, desert scrub, moist woodlands, and forests, usually near open water. Warm-season roosts are in caves, cliff crevices, bridges, buildings, tunnels, and cavities and nooks in large live trees near water. Winter roosts include some of these same situations, but in general are poorly known. Large nursery colonies may form in buildings, caves, and mine tunnels, and under bridges. Mexican free-tailed bat prefer to roost in caves, but can also be found in attics, under bridges, or in abandoned buildings. They often choose to roost near water, because the water is habitat for insects they eat.

The third mammal species, the northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), has moderate potential to occur in the BSA. This species is a CDFW special species of concern. The northwestern San Diego mouse is found in coastal sage scrub habitat.

Critical Habitat

The FESA authorizes USFWS to designate critical habitat for threatened and endangered species. Critical habitat refers to specific geographic areas that contain features essential to the conservation of threatened and endangered species. As seen in **Figure 11**, a small portion of critical habitat for coastal California gnatcatcher occurs in the southwestern part of the BSA, south of La Costa Avenue and outside the proposed project limits.

Wildlife Movement Corridors and Habitat Fragmentation

Impacts to wildlife movement corridors and pathways through habitat fragmentation can be detrimental to populations of species that rely on these areas for seasonal migration (usually one direction per season), interpopulation movement (long-term genetic exchange), and daily movement corridors within

an animal's territory (small travel pathways). Small travel pathways facilitate movement for daily home range activities such as foraging or escape from predators; however, they also provide connection between outlying populations and larger movement corridors, permitting an increase in gene flow between populations. Larger linkages between habitat types can extend for miles between primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub, the movement between wildlife populations is facilitated through habitat linkages; i.e., migration corridors and movement corridors.

The BSA is partially in Batiquitos Lagoon, identified as Core #8 and Linkage Focus Planning Area (FPA) in the city's HMP. The HMP designates these core areas as wildlife movement corridors, and Batiquitos Lagoon itself functions as a wildlife corridor for many wetland and upland species.

IMPACT ANALYSIS

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant with Mitigation Incorporated: The following is a discussion on special-status plant and animal species that were determined to have a moderate to high potential of occurring in the proposed project area and/or were detected on site.

Special-Status Plants Species

Permanent Impacts

Of the special status plant species with potential to occur in the BSA, only estuary seablite (CRPR 1B.2), has a high potential to occur in the project area. There are no permanent impacts to wetland vegetation communities that support this species.

Indirect impacts to estuary seablite habitat could result from potential edge effects resulting from improved sidewalks and overlook areas adjacent to Batiquitos Lagoon. These pathways could provide opportunities for individuals to trample species' habitat. However, current informal pathways exist between vegetation in Batiquitos Lagoon and the roadway. These pathways were created by repeated traversing, which has inhibited plant growth. Therefore, the formal sidewalk facilities provided with the proposed project would direct pedestrians to designated walkways, avoiding species' habitat and thereby minimizing potential edge effects.

Temporary Impacts

Of the special status plant species with potential to occur in the BSA, only estuary seablite (CRPR 1B.2), has a high potential to occur in the project area. Temporary direct impacts to estuary seablite may occur during vegetation clearing/trimming, recontouring, or establishing temporary workspace within the project area. Recontoured areas are considered temporary in nature and would be restored at a 1:1 ratio in-place post-construction through revegetation (**BIO-5**). In accordance with HMP Table 11 and HMP coastal zone standards (HMP Section D.7), the city will conduct onsite restoration and enhancement to mitigate impacts to sensitive wetland habitat, and will be included in the Habitat Mitigation and Monitoring Plan (HMMP) (Appendix I) consistent with the Multiple Habitat Conservation Program, Appendix C (Revegetation Guidelines), and Volume III; Habitat Management Plan for Natural Communities in the City of Carlsbad (City of Carlsbad 2004, pp. F-8 to F-11); and the Components of a Native Habitat Restoration Plan (City of Carlsbad 2022c) (**BIO-5**). The HMMP will include this species as part of the plant palette(s) in the temporary restoration areas where appropriate.

Indirect impacts to estuary seablite may occur from construction, including fugitive dust, increased human presence in the area with potential for trampling, and soil compaction. Construction activities also have potential to introduce exotic plants to adjacent habitat by carrying seeds from outside sources on vehicles, people, and equipment. These indirect impacts would be temporary in nature and would cease when construction is completed. Measures **BIO-2** and **BIO-3** would avoid and minimize indirect impacts from construction to estuary seablite.

Special-Status Wildlife Species

Permanent Impacts

A BTR was prepared for the proposed project which is provided as Appendix C. As detailed in the report, four listed avian species (Belding's savannah sparrow, coastal California gnatcatcher, light-footed Ridgway's rail, and California least tern) and four non-listed special-status avian species (yellow-breasted chat, yellow warbler, white-tailed kite, and black skimmer) were detected in the BSA. Construction activities associated with the proposed project would have the potential to cause direct impacts to these special-status wildlife species. Direct impacts would occur if nests are not avoided during vegetation removal, grading occurs within occupied habitat, or nests are abandoned as a direct result of nearby construction activities. To reduce the potential for impacts to sensitive species occupying habitat that would be disturbed by construction of the proposed project, clearing and grubbing of vegetation will occur outside of the nesting season (March 1 through September 15) (**BIO-7**). This measure would reduce the potential for active nests in the construction area that could be impacted by construction activities. In addition, a biological monitor would provide preconstruction training to construction crews and provide oversight to ensure the implementation of the avoidance, minimization, and mitigation measures (**BIO-2**).

Although permanent impacts to habitat would occur immediately adjacent to the roadway and existing areas of development, the habitat loss is considered potentially significant to sensitive species with the

potential to occur in the area. The city would mitigate for permanent impacts to sensitive habitat at the appropriate ratio as identified in **Table 6** to ensure the preservation of habitat and vegetation communities that support sensitive species (**BIO-4 and BIO-5**).

Additionally, permanent indirect impacts could result from lighting installed as part of the proposed project. Permanent lighting proposed will be limited to that required for safety and would be directed away from the lagoon (**BIO-9**); therefore, permanent indirect impacts from a new light source would not occur. With implementation of measures **BIO-2**, **BIO-4**, **BIO-5**, **BIO-7**, and **BIO-9**, permanent indirect impacts to special-status species from the proposed project would be **Less than Significant with Mitigation Incorporated**.

Temporary Impacts

Construction of the proposed project would also cause direct temporary impacts due to encroachment into habitat (shown in **Figure 12A-C**) for temporary work areas. These temporary impacts would occur primarily on the western side of El Camino Real within the previously manufactured slope created during the construction of El Camino Real. These temporary areas will be delineated and utilized for construction staging and/or access areas and restored at the completion of the proposed project. Implementation of the standard measures stated in the city's Guidelines for Biological Studies will ensure the staging and access occurs within the project footprint (**BIO-2g-h).**

During construction, the proposed project could also have the potential to temporarily cause indirect impacts to special-status wildlife species due to construction light, noise, dust, and traffic. Temporary elevated ambient noise levels due to construction activity would have potential to disturb wildlife species and cause habitat avoidance or disrupt behaviors, especially if near an active nest. Bird species that could be affected during the breeding season include Belding's savannah sparrow, light-footed Ridgway's rail, least Bell's vireo, yellow-breasted chat, yellow warbler, and coastal California gnatcatcher. To reduce indirect impacts water and wetland habitat., equipment storage, refueling, and staging shall occur at least 100-feet from the waters of the U.S. (**BIO-2i**). To address these potential impacts, breeding bird avoidance measures would be implemented during the nesting season (**BIO-7 and BIO-8**). To reduce indirect impacts from lighting, construction lighting will be pointed downward and eastward, away from Batiquitos Lagoon (**BIO-9**). With implementation of **BIO-2, BIO-7**, **BIO-8**, and **BIO-9**, temporary impacts to special-status species from the proposed project would be **Less than Significant with Mitigation Incorporated**.

Bat Species

As described above and in the BTR, a large maternity roost of two special-status bat species occurs in nearly all of the bridge seams on the existing structure that spans San Marcos Creek. Although the existing bridge would not be substantially altered, the addition of the pedestrian facilities, and general construction noise, light, dust, and presence of humans/machinery have potential to indirectly impact the bat population. To reduce potential significant impacts to the special-status bat population, the constraints listed in measure **BIO-10** would be implemented. These include seasonal restrictions, working

hours, fencing/flagging, lighting, and work buffer constraints. Surface treatments on the existing bridge will be applied to avoid leakage underneath the bridge, and completed when bats are in their lowest numbers (**BIO-10**). Light will not be used under the existing bridge structure, will be limited to safety requirements, and will not disrupt continued roosting of bats underneath the existing bridge (**BIO-10**); therefore, permanent lighting impacts to bats are not anticipated. With implementation of **BIO-10**, temporary impacts to bat species from the proposed project would be **Less than Significant with Mitigation Incorporated**.

With implementation of mitigation measures **BIO-2**, **BIO-4**, **BIO-5**, and **BIO-7** through **BIO-10** listed in the analysis above, impacts to special-status species from the proposed project would be **Less than Significant with Mitigation Incorporated**.

b) Have a substantial adverse effect on any riparian, aquatic or wetland habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant with Mitigation Incorporated:

Direct Impacts

Temporary and permanent direct impacts to sensitive vegetation communities would occur from construction of the roadway widening and pedestrian bridges (shown in **Figure 12A-C**). Wetland and riparian vegetation communities include open water, southern coastal saltmarsh, coastal brackish marsh, nonnative riparian, and limited disturbed habitat. Coastal sage scrub is the only upland vegetation community in the project area. Temporary impacts to vegetation communities would primarily occur on the western side of El Camino Real, where recontouring and temporary equipment access may need to occur in habitat. Recontoured areas are considered temporary in nature and would be restored in place at a 1:1 ratio through revegetation post-construction (**BIO-5**). Permanent impacts would also occur where the roadway is being extended permanently and would be mitigated as described in mitigation measure **BIO-4**. **Table 6** lists the temporary and permanent impacts to vegetation communities. The proposed project would result in 0.407 acre of permanent impacts to coastal sage scrub and 1.212 acres of temporary impacts to sensitive habitat.

The proposed pedestrian bridges would result in 10-foot-wide strips of shading over sensitive vegetation communities. The bridge would range in height of approximately 6 to 12 feet above these vegetation communities depending on topography and the tide. It is expected that sensitive vegetation communities would not be adversely affected by the pedestrian bridge shading due to the narrow width of the bridge, which would allow adequate sunlight for sensitive vegetation communities to persist. Therefore, any impacts from shading are considered negligible, and no mitigation would be required.

Table 6. Permanent and Temporary Impacts to Vegetation Communities and Required Mitigation

Vegetation Community/ Land Cover Type	Permanent Impacts (acres)	Mitigation Ratio – Permanent Impacts	Total Permanent Mitigation Impacts (acres)	Temporary Impacts (acres)[1, 2]
Riparian and Wetlands				
Southern coastal salt marsh – Non-tidal	0.000	4:1	0.000	0.027
Coastal brackish marsh	0.000	4:1	0.000	0.001
Open water	0.000	0:0	0.000	0.000
Nonnative riparian	0.000	3:1	0.000	0.010
Disturbed[3]	0.000	0:0	0.000	0.001
Uplands				
Coastal sage scrub	0.407	2:1	0.814[4]	1.173
Total	**0.407**	**N/A**	**0.814**	**1.212**

[1] Totals may not sum due to rounding after summation.
[2] Temporary impacts will be restored at a 1:1 ratio by revegetating impacted areas in place. Temporary impacts include areas where recontouring will occur.
[3] Disturbed habitat is included within this table only where it is considered to be jurisdictional and will be restored to match adjacent native habitat.
[4] Permanent impacts to coastal sage scrub will be mitigated at a 2:1 and include 1:1 creation or substantial restoration to ensure no net loss.

To mitigate for the direct impacts to vegetation communities as outlined in **Table 6**, mitigation measures **BIO-4** and **BIO-5** would be implemented. In accordance with HMP Table 11 and HMP coastal zone standards (HMP Section D.7), the city will mitigate for permanent impacts to 0.407 acre of coastal sage scrub at a minimum of 2:1 ratio (0.814 acre) and include 1:1 creation or substantial restoration to ensure no net loss. Approximately 0.407 acres of mitigation credits will come from the Sage Hill Mitigation Parcel, located in unincorporated San Diego County, east of Rancho Santa Fe Road. The Sage Hill Mitigation Parcel was established by SANDAG for the advance mitigation of local roadway projects. The no net loss requirement for impacts to coastal sage scrub will be met at the city-owned Crossings Golf Course property, which will include at least 1:1 coastal sage scrub in the form of creation or substantial restoration.

Onsite restoration and enhancement to mitigate impacts to sensitive native habitats will be included in the HMMP (Appendix I) consistent with the Multiple Habitat Conservation Program, Appendix C (Revegetation Guidelines), and Volume III; Habitat Management Plan for Natural Communities in the City of Carlsbad (City of Carlsbad 2004, pp. F-8 to F-11); and the Components of a Native Habitat Restoration Plan (City of Carlsbad 2008) (**BIO-5**). The HMMP will outline restoration species for each habitat type, timelines, success criteria, maintenance, and monitoring protocols. The proposed project will also be required to obtain permits from the USACE, RWQCB, CDFW, and CCC in compliance with the CWA, CFGC 1600, and CCA (**BIO-6**); therefore, preserved acreage of these habitat types would be increased with implementation of the proposed project.

Temporary impacts are defined as construction-related impacts that would be restored once construction is complete. Restoration of temporary significant impacts to upland vegetation communities and wetland habitats is required by mitigation measures **BIO-4** and **BIO-5.** These mitigation measures, which include preparation and implementation of a restoration plan that outlines appropriate species, restoration timelines, success criteria, and maintenance and monitoring protocols, would reduce temporary impacts to less than significant.

As shown in **Figure 11**, a small portion of USFWS designated critical habitat for coastal California gnatcatcher occurs in the southwestern part of the BSA. Although located in the BSA, this area is outside of the impact footprint for the proposed project and would not be impacted by proposed project construction.

With implementation of mitigation measures **BIO-4** through **BIO-6**, direct impacts to riparian, aquatic or wetland habitat, or other sensitive natural communities from the proposed project would be **Less than Significant with Mitigation Incorporated**.

Indirect Impacts

Indirect impacts to vegetation communities could result from potential edge effects resulting from improved sidewalks and overlook areas adjacent to Batiquitos Lagoon. These pathways could provide opportunities for individuals to trample vegetation. However, current informal pathways exist between vegetation in Batiquitos Lagoon and the roadway. These pathways were created by repeated traversing, which has inhibited plant growth. Therefore, the formal sidewalk facilities provided with the proposed project would direct pedestrians to designated walkways, avoiding vegetation communities and thereby minimizing potential edge effects.

During proposed project construction, temporary indirect impacts to vegetation communities may occur, including fugitive dust, increased human presence in the area with potential for trampling, and soil compaction. Construction activities also have potential to introduce exotic plants to adjacent habitat by carrying seeds from outside sources on vehicles, people, and equipment. While these indirect impacts would be temporary in nature and would cease when construction is completed, they could result in a potentially significant impact.

Mitigation measure **BIO-3** would reduce temporary indirect impacts through the containment of vehicles in the roadway to the extent practicable to avoid spreading nonnative invasive species. Mitigation measure **BIO-2** would mitigate the potential for significant indirect impacts during construction through the implementation of the standard measures stated in the City of Carlsbad Guidelines for Biological Studies (2022). Additionally, the proposed project would comply with adjacency standards outlined in the HMP. The adjacency standards address fire management, erosion control, landscaping restrictions, fencing, signs, lighting, and predator and exotic species control. The proposed project would follow fire management directives and adhere to applicable wildfire plans, implement erosion control practices outlined in a Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP),

and ensure construction lighting and pedestrian bridge lighting is directed away from Batiquitos Lagoon. With implementation of these mitigation measures and adherence to adjacency standards, the indirect impacts to sensitive natural communities from the proposed project would be **Less than Significant with Mitigation Incorporated**.

With the incorporation of mitigation measures **BIO-2** through **BIO-5**, the proposed project impacts to riparian, aquatic or wetland habitat, or other sensitive natural communities would be **Less than Significant with Mitigation Incorporated**.

c) Have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant with Mitigation Incorporated: Although the design of the pedestrian bridge is intended to minimize impacts to jurisdictional resources to the greatest extent practicable by expanding the majority of the structure over current wetland areas, including San Marcos Creek, some permanent and temporary direct and indirect impacts would occur because structural and stabilizing elements are necessary in wetland areas.

Direct Impacts

No permanent impacts to jurisdictional resources are expected to occur. Temporary direct impacts to jurisdictional wetlands would occur from construction of the roadway widening and pedestrian bridges. **Table 7** outlines the impacts to jurisdictional resources. The proposed project would temporarily impact 0.039 acre of jurisdictional resources.

Table 7. Temporary Impacts to Jurisdictional Resources

Type of Jurisdictional Waters of the U.S. and State	Regulatory Authority	Temporary Impacts (acres) [1]
Dual Waters of the U.S. and State [2]		
Non-wetland Waters - Open water	USACE, CDFW, RWQCB, and CCC	0.000
Non-wetland Waters - Open water	USACE, CDFW, and RWQCB	0.000
Wetland Waters - Non-tidal Waters	USACE, CDFW, RWQCB, and CCC	0.022
Subtotal Jurisdictional Waters of the U.S./State		*0.022*
Waters of the State		
Wetlands- Non-tidal Waters	CDFW, RWQCB, and CCC	0.005
Streambed	CDFW, CCC	0.001
Riparian	CDFW	0.011
Subtotal Jurisdictional Waters of the State		*0.017*
Grand Total Jurisdictional Waters		**0.039**

[1] Totals may not sum due to rounding after summation. Temporary impacts include areas underneath the bridge shading areas where temporary workspace and/or recontouring would occur.
[2] Dual jurisdictional waters of the U.S. include jurisdictional waters of the state and are under the purview of CDFW, RWQCB, USACE, and CCC (when within the coastal zone).

The city will pursue necessary jurisdictional resources permits (USACE, RWQCB, CDFW, and CCC) and will comply with permit conditions contained therein (**BIO-6**). No permanent impacts to jurisdictional waters are expected to occur as a result of the proposed project. The pedestrian bridges will result in shading areas over open water, coastal salt marsh, coastal brackish marsh, nonnative riparian, and disturbed habitat. The bridges would range in height of approximately 6 to 12 feet above these vegetation communities depending on topography and the tide. It is expected that jurisdictional vegetation communities would not be adversely affected by the pedestrian bridge shading due to the narrow 10-foot width of the bridge, which would allow adequate sunlight for sensitive vegetation communities to persist.

Temporary impacts are construction-related impacts that would be restored once construction is complete. To mitigate temporary significant impacts to jurisdictional resources, wetland temporary impact areas will be revegetated post-construction consistent with a restoration plan that outlines appropriate species, restoration timelines, success criteria, and maintenance and monitoring protocols (**BIO-5**). This mitigation would ensure that wetland areas are successfully restored and would not result in a net loss of wetland resources. Additionally, surface treatments applied to the existing bridge structure would be done in a way to avoid leakage to the underside of the bridge, and is not anticipated to enter San Marcos Creek because the overlay material is anticipated to harden on the bridge deck (**BIO-10**). With implementation of these mitigation measures, direct impacts to state or federally protected wetlands from the proposed project would be **Less than Significant with Mitigation Incorporated**.

Indirect Impacts

The proposed project would include the installation of pedestrian bridge facilities across San Marcos Creek. With the increase in pedestrian traffic overhead, there could be an increase in trash that may degrade habitat. In addition, runoff, sedimentation, and erosion could adversely affect jurisdictional resources. Measures **BIO-2** and **BIO-6** would avoid and minimize indirect impacts to jurisdictional resources. With implementation of these mitigation measures, indirect impacts to state or federally protected wetlands from the proposed project would be **Less than Significant with Mitigation Incorporated**.

With the incorporation of mitigation measures **BIO-2**, **BIO-5**, **BIO-6**, and **BIO-10**, and compliance with required jurisdictional permits, the proposed project would have a **Less than Significant with Mitigation Incorporated** to state or federally protected wetlands.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant with Mitigation Incorporated: Critical habitat linkages are identified in the city's HMP for Natural Communities. The BSA is partially in Batiquitos Lagoon, identified as Core #8 and Linkage FPA in the city's HMP. Batiquitos Lagoon itself functions as a wildlife corridor for many wetland and upland species.

No direct or indirect temporary or permanent impacts to wildlife migratory corridors, linkages, or other habitat connectivity for birds, fish, or small and medium terrestrial wildlife would occur. The proposed project would not reduce habitat connectivity for large terrestrial wildlife as the roadway and bridge structure already exist and the addition of roadway width and pedestrian bridges with supporting abutments would not cause substantial restrictions to wildlife passage. In addition, the proposed project does not propose changes to the existing bridge structure. No loss of habitat connectivity is anticipated because the proposed project would not significantly alter the composition, size, or geographical connectivity of HMP Core #8 (Batiquitos Lagoon).

Restricted airspace both during and post-construction could result in significant impacts to bats successfully accessing the roosting sites underneath the bridge. In addition, the bridge has historically been used as a bat maternity site and there is a potential to impact flightless young during the construction process. However, to reduce this potentially significant impact to the bat colony that exists under the San Marcos Creek bridge, structures will not restrict airspace to roosting bats and movement of the bat colony would be maintained and work shall be conducted outside of the bat maternity season (**BIO**-10). Therefore, the proposed project would have a **Less than Significant with Mitigation Incorporated** to wildlife movement and habitat linkages through the implementation of mitigation measures **BIO-10**.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant with Mitigation Incorporated: A permit will be obtained from the City Manager to ensure compliance with city's tree preservation policy. Through the implementation of the City of Carlsbad's Local Coastal Program, this will ensure the project follows the California Coastal Act.

Carlsbad California Municipal Code: Protection of Trees

The proposed project would involve removal of seven landscape trees within the existing median along El Camino Real. In compliance with Carlsbad California Municipal Code 11.12.090, appropriate tree removal permits will be obtained (City of Carlsbad 2025). The trees to be removed are landscaped, non-native trees and will be removed following the parameters set forth within code 11.12.090. The seven trees would be replaced at a 2:1 ratio as outlined in the Community Forest Management Plan and would not result in a substantial change to trees located along the current roadway. The 14 new trees would be planted within the reconstructed median at the Arenal Road intersection and within the existing median north of Costa Del Mar Road or as determined by the City of Carlsbad Park and Recreation Department.

City of Carlsbad Local Coastal Program

The LCP considers the proposed project in the Mello II and East Batiquitos Lagoon/Hunt Properties Segments. As such, specific ESHA standards apply to these segments. **Table 8** analyzes the proposed

project's consistency with applicable goals and policies in the city's LCP. Policies that overlap with requirements of the HMP have been analyzed in above.

With the incorporation of mitigation measures **BIO-1 through BIO-10**, the proposed project would not conflict with local policies or ordinances protecting biological resources, or with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan, and impacts would be **Less than Significant with Mitigation Incorporated.**

Table 8. Project Consistency with Applicable LCP Policies

Applicable LCP Policies	Segment	Project Consistency Analysis
Environmentally Sensitive Habitat Areas Policy 3-1.2: Pursuant to Section 30240 of the California Coastal Act, environmentally sensitive habitat areas, as defined in Section 30107.5 of the Coastal Act, shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.	Mello II	**Consistent:** The proposed project would impact habitat types adjacent to the roadway; however, permanent and temporary impacts would be mitigated at required ratios as noted in mitigation measures **BIO-4** and **BIO-5**. In addition, a boundary adjustment would be completed to replace an equal amount of hardline conservation areas as would be impacted by the proposed project (**BIO-1**). A number of mitigation measures would also be implemented during construction to minimize potential impacts to sensitive species located within the adjacent Batiquitos Lagoon (**BIO-3**, and **BIO-7** through **BIO-10**). Pedestrian bridges were incorporated into the proposed project design that span the creek in order to avoid jurisdictional resources. The proposed project includes installation of complete pedestrian facilities on either side of the roadway, creating designated pathways for recreational use thereby minimizing user generated trails and associated edge effect impacts in the right-of-way adjacent to Batiquitos Lagoon.
Coastal Sage Scrub Policy 3-1.3: Coastal Sage Scrub is a resource of particular importance to the ecosystems of the Coastal Zone, due in part to the presence of the coastal California gnatcatcher (Federal Threatened) and other species. Properties containing Coastal Sage Scrub located in the Coastal Zone shall conserve a minimum 67% of the Coastal Sage Scrub and 75% of the gnatcatchers onsite. Conservation of gnatcatchers shall be determined in consultation with the wildlife agencies.	Mello II	**Consistent**: As required by mitigation measure **BIO-4**, coastal sage scrub impacts would be mitigated at a minimum ratio of 2:1. In addition, temporary impacts to upland areas would be revegetated post-construction (**BIO-5**). The proposed project would result in no net loss of coastal sage scrub. Both the USFWS, CCC, and other applicable resource agencies would be involved in the mitigation strategy process and concurrence would be obtained before the mitigation plan is implemented.
Wetlands Policy 3-1.7: Pursuant to California Public Resources Code Section 30121 and Title 14, California Code of Regulations Section 13577(b), 'wetland' means lands within the Coastal Zone, which may be	Mello II	**Consistent**: Wetlands in the BSA have been identified on **Figure 10A-C** and **Table 4** with detailed descriptions of habitat types included in the Affected Environment discussion in **Section IV, Biological Resources**.

Applicable LCP Policies	Segment	Project Consistency Analysis
covered periodically, or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens. Wetland shall include land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. A preponderance of hydric soils or a preponderance of wetland indicator species shall be considered presumptive evidence of wetland conditions. Wetlands in the Coastal Zone shall be delineated following the definitions and boundary descriptions in Section 13577 of the California Code of Regulations. Pursuant to California Public Resources Code Section 30233, no impacts to wetlands shall be allowed in the Coastal Zone except as provided in that Section.		Jurisdictional resources are shown on **Figure 10A-C** and acreages detailed further in **Table 5**. Temporary impacts to wetland habitats would be revegetated in place, as required by mitigation measure **BIO-4**. These areas would function similarly to preconstruction conditions and would not result in a loss of jurisdictional resources.
Wetlands Mitigation Requirements Policy 3-1.8: If impacts to a wetland are allowed consistent with Policy 7-6 above, mitigation shall be provided at a ratio of 3:1 for riparian impacts and 4:1 for saltwater or freshwater wetland or marsh impacts.	Mello II	**Consistent**: No mitigation is required as no permanent impacts to wetlands are expected to occur. Temporary impacts would be revegetated post-construction, as required by mitigation measure **BIO-4** and **BIO-5**.
No Net Loss of Habitat Policy 3-1.9: There shall be no net loss of Coastal Sage Scrub, Maritime Succulent Scrub, Southern Maritime Chaparral, Southern Mixed Chaparral, Native Grassland, and Oak Woodland within the Coastal Zone of Carlsbad. Mitigation for impacts to any of these habitat types, when permitted, shall include a creation component that achieves the no net loss standard. Substantial restoration of highly	Mello II	**Consistent**: As required by mitigation measure **BIO-4**, coastal sage scrub impacts would be mitigated at a minimum ratio of 2:1 in the Coastal Zone. In addition, temporary impacts to upland areas would be revegetated post-construction (**BIO-5**). Therefore, the proposed project would align with this no net loss of habitat policy. Both the USFWS, CCC, and other applicable resource agencies would be involved in the mitigation strategy process and

Applicable LCP Policies	Segment	Project Consistency Analysis
degraded areas (where effective functions of the habitat type have been lost) may be substituted for creation subject to the consultation and concurrence of the U.S. Fish and Wildlife Service and the California Department of Fish and Game (wildlife agencies). The Coastal Commission shall be notified and provided an opportunity to comment upon proposed substitutions of substantial restoration for the required creation component. Development shall be consistent with Policy 7-1 of this subsection, unless proposed impacts are specifically identified in the HMP; these impacts shall be located to minimize impacts to Coastal Sage Scrub and maximize protection of the coastal California gnatcatcher and its habitat.		concurrence would be obtained before the mitigation plan is implemented.
Upland Habitat Mitigation Requirements Policy 3-1.10: Where impacts to the habitats stated in 7-1 are allowed, mitigation shall be provided as follows: a) The no net loss standard shall be satisfied as stated in 7-8. Typically, this will consist of creation of the habitat type being impacted (or substantial restoration where allowed) at a ratio of at least 1:1 as provided in the HMP. b) Onsite preservation is not eligible for mitigation credit in the Coastal Zone. Onsite or off-site open space preserve areas may be utilized to satisfy required mitigation for habitat impacts associated with development if the preserve areas are disturbed and suitable for restoration or enhancement, or they are devoid of habitat value and therefore suitable for the 1:1 mitigation component requiring creation or substantial restoration of new habitat. Substantial restoration is restoration that has the effect of qualitatively changing habitat type and may meet the creation requirement if it restores habitat type that was historically present but has suffered habitat	Mello II	**Consistent**: As stated above, the proposed project would be consistent with Policy 7-8 which includes no net loss of coastal sage scrub habitat and a required mitigation ratio of 2:1 for coastal sage scrub (**BIO-4**). The proposed project mitigation strategies for upland habitats includes offsite locations that meet the requirements as outlined in items b), e), and f) of Policy 7-9. A more detailed description of the mitigation strategy for the proposed project is included in the BTR (Appendix C).

Applicable LCP Policies	Segment	Project Consistency Analysis
conversion or such extreme degradation that most of the present dominant species are not part of the original vegetation. Substantial restoration contrasts with enhancement activities, which include weeding, or planting within vegetation that retains its historical character, and restoration of disturbed areas to increase the value of existing habitat which may meet other mitigation requirements pursuant to the HMP. c) Impacts to Coastal Sage Scrub shall be mitigated at an overall ratio of 2:1, with the creation component satisfying half of the total obligation. The remainder of the mitigation obligation shall be satisfied pursuant to the provisions of the HMP. d) Impacts to Southern Maritime Chaparral or Maritime Succulent Scrub shall be mitigated at an overall ratio of 3:1, with the creation component satisfying one-third of the total obligation. The remainder of the mitigation obligation shall be satisfied pursuant to the provisions of the HMP. e) Impacts to Southern Mixed Chaparral, Native Grassland, and Oak Woodland shall be mitigated respectively at ratios of 1:1, 3:1, and 3:1, with the creation component satisfying the obligation or one-third of the total obligation. The remainder of the mitigation obligation shall be satisfied pursuant to the provisions of the HMP. f) Mitigation for impacts within the coastal zone should be provided within the coastal zone, if possible, particularly the 1:1 creation component, in order to have no net loss of habitat within the coastal zone. Mitigation measures on land outside the Coastal Zone may be acceptable if such mitigation would clearly result in higher levels of habitat protection and value and/or would provide significantly greater mitigation		

Applicable LCP Policies	Segment	Project Consistency Analysis
ratios, and the mitigation area is part of the HMP. Land area inside and outside the coastal zone which serves as mitigation for habitat impacts in the coastal zone shall be permanently retired from development potential and secured as part of the HMP preserve management plan as a condition of development approval. g) Habitat mitigation requirements other than the creation or substantial restoration component may be partially or wholly fulfilled by acquisition of existing like habitat and/or retirement of development credits on existing like habitat with permanent preservation as part of the HMP preserve management plan. h) All mitigation areas, onsite and offsite, shall be secured with a conservation easement in favor of the wildlife agencies. In addition, a preserve management plan shall be prepared for the mitigation areas, to the satisfaction of the city, the wildlife agencies, and the Coastal Commission. Phase 1 of the preserve management plan shall be incorporated into the Implementation Program of the LCP through an LCP amendment within one year of Commission certification of the HMP as part of the certified LCP. Phase 2 of the preserve management plan shall be incorporated into the Implementation Program in the same manner within three years of Commission certification of the HMP as part of the certified LCP. The preserve management plan shall ensure adequate funding to protect the preserve as open space and to maintain the biological values of the mitigation areas in perpetuity. Management provisions and funding for mitigation required to address habitat impacts shall be in place prior to the impacts for which the mitigation is required. At a minimum, monitoring reports shall be		

Applicable LCP Policies	Segment	Project Consistency Analysis
required as a condition of development approval after the first and third year of habitat mitigation efforts. i) If any conflict should arise between the provisions of the HMP and the policies of the LCP, the LCP shall take precedence.		
Highly Constrained Properties Policy 3-1.11: There are properties in the Coastal Zone that are entirely or almost entirely constrained by ESHA. In these cases, one of the following additional standards shall apply: • If more than 80% of the property by area is covered with ESHA at least 75% of the property shall be conserved, OR • If the city, with the concurrences of the wildlife agencies and the Coastal Commission through an LCP amendment, approves a hardline preserve boundary for any of these properties as part of the HMP, then the amount of onsite preservation as identified in the hardline boundary shall apply.	Mello II	**Consistent**: The majority of the project area is not ESHA where a small portion of permanent impacts would occur within the hardline preserve boundary. To implement the proposed project, a hardline preserve area boundary adjustment must be completed to support widening of the roadway and pedestrian improvements on the western side of El Camino Real. A boundary adjustment would be completed, as required by mitigation measure **BIO-1**, and would add hardline preserve areas in equal value.
Invasive Plants Policy 3-1.13: The use of invasive plant species in the landscaping for developments such as those identified in Table 12 of the HMP shall be prohibited.	Mello II	**Consistent:** The proposed project would involve landscape improvements that match existing medians on El Camino Real. The introduction of invasive species through the restoration and/or landscaping process shall not occur through the implementation of **BIO-5**.
Batiquitos Lagoon Policy 3-3: Development shall be clustered to preserve sensitive habitat areas and maintain the maximum amount of permanent open space feasible. At a minimum, the following policies shall regulate development in areas adjacent to the lagoon: a) A minimum setback of 100 feet from the wetland shall be required, with the wetland area determined as described in Policy 3-2, Buena Vista Lagoon on	Mello II	**Consistent:** The existing roadway has already been placed directly adjacent to Batiquitos Lagoon and the proposed project is not creating a new adjacency location. The proposed project would facilitate public access through the addition of the bike lane which would add walking and biking paths with viewing areas along the lagoon. The proposed project would not involve land divisions or residential development. Trees proposed for removal would be replaced at a 2:1 ratio as required.

Applicable LCP Policies	Segment	Project Consistency Analysis
Page 56. b) At least two-thirds (2/3) of any permitted development shall be clustered on the half of the property furthest away from the lagoon at the base of the bluff. c) Existing mature trees shall be preserved. d) An offer to dedicate land for public recreation use, in favor of the City of Carlsbad or State Coastal Conservancy and irrevocable for a term of 21 years, shall be required as a condition of development. The required land dedication shall be of a size adequate to accommodate public use facilities including some picnic tables and public parking and shall include a public access trail parallel to the lagoon shore of at least 15 feet in width with unobstructed views to the lagoon. e) To facilitate provision of public use areas and preservation of environmentally sensitive lands, and to maintain the outstanding visual resources in the area surrounding the lagoon, an additional density credit of one dwelling unit per acre of developed land shall be provided for each two and one half per cent (2½ %) of total lot area, excluding wetlands, which is maintained in open space and public recreation in excess of fifty per cent (50%) of the total lot area, excluding wetlands. f) Land divisions shall only be permitted on parcels bordering the lagoon pursuant to a single planned development permit over the entire original parcel. The base residential density shall be a maximum of 12 dwelling units per gross acre, excluding wetlands, subject to increase as provided in Policy 3-3 e) above.		

Applicable LCP Policies	Segment	Project Consistency Analysis
Grading and Landscaping Requirements Policy 3-4: In summary, the policy provides requirements to control urban runoff flow rates and velocities, urban pollutants, erosion and sedimentation.	Mello II	**Consistent:** Through implementation of **BIO-2**, appropriate measures will be implemented to control erosion and runoff, install appropriate Best Management Practices, and prevent pollutant runoff. The HMMP will require that temporary areas on the project shall be landscaped prior to October 1 of each year through the implementation of **BIO-05**.
Removal of Natural Vegetation Policy 4-4: When earth changes are required and natural vegetation is removed, the area and duration of exposure shall be kept at a minimum.	Mello II	**Consistent:** Through implementation of **BIO-4** and **BIO-5**, temporary impacts to wetland and upland vegetation communities would be revegetated post-construction.
Environmentally Sensitive Habitats Policy 3 1) Batiquitos Lagoon Special Treatment Overlay - The wetlands as defined and determined by CDFW and USFWS shall be constrained from development. Pursuant to Section 30233(C) (Public Resources Code) any alteration of the wetlands shall be limited to minor incidental public facilities, restorative measures, and nature studies. Furthermore, any alteration of the wetlands must be approved by the City of Carlsbad and the Coastal Commission. The latter because it will retain Coastal Development Permit jurisdiction. In addition, any wetland alteration will require federal approval through an USACE permit. 2) Wetlands Buffer - The lagoon Special Treatment Overlay shall include a buffer area outside the wetlands boundary as mapped by CDFG and FWS. The buffer shall be of sufficient width (minimum 100 feet unless approved by the Coastal Commission or its successor as part of a Coastal Development Permit) so as to provide a transition habitat as well as provide a protective area to reduce possible disruptive impacts to the lagoon's wildlife and habitats. No development shall occur within the wetlands buffer except	East Batiquitos Lagoon/Hunt Properties Segment	**Consistent:** Through implementation of **BIO-6**, the proposed project would pursue necessary permits and approval with USACE, CDFW, RWQCB, and the Coastal Commission and will comply with permit conditions. The project would not permanently impact waters or wetlands under jurisdiction of the aforementioned agencies. Temporary impacts would be restored to existing conditions. The Green Valley Riparian Corridor is located outside the project area south of the intersection of La Costa Road and El Camino and encompasses a portion of the BSA; no permanent or temporary impacts shall take place within the Green Valley Riparian Corridor.

Applicable LCP Policies	Segment	Project Consistency Analysis
for the lateral public access trail described in Policy A1C above. 3) Green Valley Riparian Corridor - The riparian corridor (approximately 40 acres) shall be constrained from all development. In addition, a 50-foot-wide buffer area shall be preserved in open space upland of the boundaries of the riparian corridor. Unless otherwise specified herein, development within the buffer area shall be limited to the construction of a pedestrian path with fencing and other improvements deemed necessary to protect the riparian habitat in the upper (upland) half of the buffer area. Any alteration of the riparian corridor shall be limited to the following and shall require Carlsbad approval, a Coastal Development Permit, Stream Alteration Agreement, and USACE permit: a) Access – A maximum of two (2) crossings shall be permitted to provide access to the developable portions of Green Valley. The access crossings shall be designed to minimize adverse impacts to the habitat value of the riparian corridor and shall be mitigated by the creation of and maintenance of new riparian habitat at a ratio of 3 square feet of new riparian area for each 1 square foot of disturbance associated with construction of the accessways. All mitigation required shall be located onsite and contiguous with the existing riparian corridor. b) Flood and sediment control projects - shall be allowed adjacent to the riparian corridor provided such projects do not involve any removal of riparian habitat or diversion of non-flood water flows upon which the habitat is dependent provided there are no less environmentally damaging feasible alternatives and/or public		

Applicable LCP Policies	Segment	Project Consistency Analysis
health, safety, and welfare or protection of the lagoon is found to be a mutually exclusive higher priority. 4) Steep Slopes - Slopes 40% or greater shall be constrained from development. Slopes 25% to 40% may be constrained from development. (See Grading and Erosion Control below.) 5) The above environmentally sensitive areas shall be protected from any significant disruptive impacts through fee dedication of the wetlands and recordation of open space easements over the lagoon buffer and riparian corridor and recordation of open space deed restrictions over the riparian corridor buffer and constrained steep slopes. For the wetlands of Batiquitos Lagoon and the upland 100 foot wide buffer area and designated steep slope areas constrained from development north of the lagoon, recordation of such open space easements and recordation of open space deed restrictions shall be required as conditions of approval of the Pacific Rim Master Plan. For the environmentally sensitive areas of Green Valley, recordation of an open space easement over the riparian corridor and recordations of open space deed restrictions over the riparian buffer area and steep slope areas constrained from development shall be required as conditions of development at the time of review of the required Master Plan for the area under the coastal development permit process.		

Applicable LCP Policies	Segment	Project Consistency Analysis
Landscaping Policy 5 In order to guard against introduction of any species which are inherently noxious to or incompatible with adjacent lagoon habitat, drought tolerant plants and native vegetation shall be used in areas of proximity to the wetland, to the maximum extent feasible. Landscaping adjacent to structures should provide an effective screen of urban development	East Batiquitos Lagoon/Hunt Properties Segment	The project planting legend includes Diegan Coastal Sage Scrub, Southern Coastal Sage Scrub, Southern Coastal Salt Marsh, riparian, and Coastal Brackish Marsh plant palettes. Because the project complies with Habitat Management Plan Adjacency Standards, which include landscaping restrictions, it will not introduce nonnative and invasive plant species. Further, through BIO-5, the introduction of invasive species to the site would be minimized during construction.

Less than Significant with Mitigation Incorporated: *The proposed project's consistency with the city's HMP and LCP is discussed below. These are the primary local biological policies that applies to the biological resources in the BSA.*

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

City of Carlsbad Habitat Management Plan

All projects in the City of Carlsbad must be consistent with the HMP and include measures to avoid, minimize, and mitigate impacts to HMP covered species and sensitive vegetation communities. Because the project is located within the coastal zone, the project must be consistent with the HMP coastal zone standards.

The project is located adjacent to preserved habitat, and therefore, must be consistent with HMP Adjacency Standards that aim to prevent negative effects of urban areas onto preserve habitat and vice versa. The five topics of the Adjacency Standards include: fire management, predator and exotic species control, erosion control, landscaping restrictions, and fencing, signs, and lighting. Fire management and predator control measures are not applicable to the project; however, through the implementation of **BIO-2,** no pollution nor sedimentation to sensitive aquatic resources, nor slope destabilization are expected to occur. Landscaping restrictions shall be successfully implemented through reducing the likelihood of introducing additional invasive weed species (**BIO-3**) to the project vicinity, reducing restoration generated irrigation runoff to the adjacent preserve land, and planting the appropriate local floral species during the restoration process (**BIO-5**). Nighttime lighting shall reduce potential impacts to sensitive biological resources through the implementation of **BIO-9**.

In addition, project impact area occurs within a small portion of HMP Existing Hardline, as shown on **Figure 4**, which is not allowed under the HMP. Therefore, the project will remove this area from the HMP hardline and replace it at the city-owned Crossings Golf course property adjacent to Existing Hardline, through the HMP Minor Amendment process. **Table 9** analyzes the proposed project's consistency with applicable goals and policies in the city's HMP. As analyzed in **Table 9**, the proposed project would be consistent with applicable HMP policies.

Table 9. Project Consistency with Applicable HMP Policies

Applicable Habitat Management Plan Policies	Project Consistency Analysis
A) Least Bell's Vireo Species-Specific Measure: 1) Survey by qualified biologist using approved survey protocol all areas containing suitable habitat. Surveys shall occur prior to any proposed impact as part of the project review process (e.g., CEQA process) both in and outside of the FPA. Surveys shall be conducted when impacts could occur as a result of indirect impacts by placement of the project in or adjacent to occupied habitat or through creation of suitable conditions for brown-headed cowbirds (e.g., agricultural fields, livestock presence, woodland parks, roadsides). 2) Any take both inside and outside of the FPA shall be consistent with the conditions outlined herein. 3) Projects having direct or indirect impacts to least Bell's vireo (LBV) in the HMP shall adhere to the following measures to avoid or reduce impacts: a) The removal of native vegetation and habitat shall be avoided and minimized to the maximum extent practicable. Determination of adequate avoidance and minimization of impacts shall be consistent with Section D-6 of the HMP. Deviations from these guidelines shall require written concurrence of USFWS and California Department of Fish and Game. For temporary impacts, the work site shall be returned to pre-existing contours and revegetated with appropriate native species. All revegetation for temporary and permanent impacts shall occur at the ratios specified in applicable permits (e.g., 404 or 1603). Revegetation specifications shall ensure creation and restoration of riparian woodland	**Consistent:** Although Southern Arroyo Willow Riparian Forest, located in southern area of the BSA, has the potential to support least Bell's vireo, this habitat type would not be removed as a result of the proposed project but construction would be conducted adjacent to the area. With implementation of Mitigation Measure **BIO-07**, a survey would be conducted within 500 feet of the construction footprint in order to document presence/absence for the species directly prior to construction activities occurring during the breeding season. If active nest are found, a nest buffer would be established to avoid construction-related noise impacts to the nest. If nest buffers cannot be attained, other noise barriers or delay of work may be required by the biological monitor until the nest is no longer active (**BIO-8**).

Applicable Habitat Management Plan Policies	Project Consistency Analysis
vegetation in the project area to similar quality of the LBV habitat found in adjacent suitable habitat. All revegetation plans shall be prepared and implemented consistent with Section F-2A of the HMP (Habitat Restoration and Revegetation) and shall require written concurrence of USFWS and California Department of Fish and Game (CDFG). If written objections are not provided by the wildlife agencies within 30 days of receipt of written request for concurrence by the local jurisdiction, then the deviation may proceed as approved by the local agency. The wildlife agencies shall provide written comments specifying wildlife agency concerns. b) Projects shall be carried out consistent with the – Standard Best Management Practices, provided at the end of this section. c) Projects shall to the maximum extent practicable avoid impacts during the breeding season of the LBV (generally March 15 – September 15). Projects that cannot be conducted without placing equipment or personnel in or adjacent to sensitive habitats shall be timed to ensure that habitat is removed prior to the initiation of the breeding season (generally before March 15). d) Construction noise levels at the riparian canopy edge shall be kept below 60 A-weighted decibel (dBA) Leq (Measured as Equivalent Sound Level) from 5 a.m. to 11 a.m. during the peak nesting period of March 15 to July 15. For the balance of the day/season, the noise levels shall not exceed 60 decibels, averaged over a one-hour period on a dBA (i.e., 1 hour Leq/dBA). Noise	

Applicable Habitat Management Plan Policies	Project Consistency Analysis
levels shall be monitored and monitoring reports shall be provided to the jurisdictional city, USFWS, and CDFG. Noise levels in excess of this threshold shall require written concurrence from USFWS and CDFG and may require additional minimization/mitigation measures. e) Brown-headed cowbirds and other exotic species which prey upon LBV shall be removed from the site. For new developments adjacent to preserve areas that create conditions attractive to brown-headed cowbirds, jurisdictions shall require monitoring and control of cowbirds. f) Biological buffers of at least 100 feet shall be maintained adjacent to occupied LBV habitat, measured from the outer edge of riparian vegetation. Within this 100-foot buffer, no new development shall be allowed, and the area shall be managed for natural biological values as part of the preserve system. Buffers less than 100 feet shall require written concurrence of the USFWS and CDFG within 30 days of receipt of written request for concurrence by the local jurisdiction. 4) LBV populations in the FPA shall be managed consistent with Conservation Goals of the Species Evaluation for this species (HMP Appendix C). Projects shall include measures to provide appropriate successional habitat, cowbird control, and protection against detrimental edge effects. Projects that impact LBV populations outside the FPA shall be required to ensure sufficient management to maintain these populations. 5) Suitable unoccupied habitat preserved in the FPA shall be managed to maintain or mimic effects of natural fluvial	

Applicable Habitat Management Plan Policies	Project Consistency Analysis
processes (e.g., periodic substrate scouring and deposition). 6) Natural riparian connections with upstream riparian habitat shall be maintained to ensure linkage to suitable occupied and unoccupied habitat in the County Multiple Species Conservation Plan North Segment and City of San Diego Multiple Species Conservation Plan Subarea Plan.	
HMP Measures for Belding's Savannah Sparrow: • Manage conserved areas to minimize edge effects, control invasive nonnative plants, maintain saltmarsh hydrology and water quality, protect saltmarsh habitat from physical disturbances, and control predators. • Where opportunities arise, restore and enhance habitat in preserve areas. • Habitat adjacent to the lagoons will be preserved to the maximum extent possible.	**Consistent:** The proposed project would limit pedestrian access adjacent to the lagoon via designated pathways and viewing areas, thereby minimizing potential edge effects as a result of proposed project implementation. Through implementation of **BIO-3**, an introduction of invasive species to the site would be minimized. In addition, temporary impacts to Belding's savannah sparrow habitat would be restored as required by **BIO-4** and **BIO-5**. Mitigation measures **BIO-7** through **BIO-9** would minimize disturbances to Belding's savannah sparrow during construction.
HMP Measures for California Least Tern: • Manage preserved areas to minimize edge effects, control nonnative plants, maintain hydrology and water quality, protect habitats from physical disturbances, control predators, and maintain vegetation to provide optimal conditions for breeding. • Where opportunities arise, restore and enhance habitat in preserved areas and preserve habitat adjacent to the lagoon.	**Consistent:** Similar to the discussion included above for Belding's savannah sparrow, mitigation measures **BIO-3** and **BIO-7** through **BIO-9** would minimize temporary direct and indirect impacts to California Least Tern habitat during construction. As stated in the discussion above, designated pathways and walkways to improve pedestrian facilities would minimize potential edge effects by providing continuous walkways for use which are not currently present on the west side of the roadway.
Coastal California Gnatcatcher Measure: • Manage preserve areas to minimize edge effects, control cowbirds and predators, prevent livestock overgrazing, and restrict human disturbance. • Prepare and implement a fire management program for preserve areas as part of the detailed management plan.	**Consistent:** As stated previously, pathways provided by the proposed project would help to curb potential edge effects and mitigation measures **BIO-3**, and **BIO-7** through **BIO-9** would minimize temporary impacts to coastal California gnatcatcher species during construction. In addition, mitigation measures **BIO-4**, and **BIO-5** would replace an equal amount of coastal sage scrub habitat within the hardline

Applicable Habitat Management Plan Policies	Project Consistency Analysis
• Where opportunities arise, enhance and restore coastal sage scrub within preserve areas, with priority given to creation of Gnatcatcher breeding opportunities within constrained linkages. • No clearing of occupied habitat may occur between March 1 and August 15.	conservation area or would mitigate at required ratios. The project would not increase fire risk and would follow goals and policies of the Police, Fire, and Emergency Services section of the Public Safety Element of the General Plan.
HMP Measures for Light-footed Ridgway's Rail: • Manage preserve areas to control nonnative plants, maintain hydrology and water quality, control predators, and restrict physical disturbances. • Where opportunities arise, restore and enhance habitat in preserved areas. • Restrict human activity near nesting habitat during the breeding season (April 1 through August 31).	**Consistent**: Through implementation of mitigation measures **BIO-3** and **BIO-7** through **BIO-9**, minimization of invasive species and potential temporary impacts during construction to the light-footed Ridgway's rail would be achieved. Temporary impact areas would be revegetated post-construction, as outlined in mitigation measure **BIO-4** and **BIO-5.**
HMP Measures for Yellow-breasted Chat: • Manage preserve areas to minimize activities that would degrade riparian habitats, restrict livestock overgrazing and the alteration or clearing of riparian vegetation, control exotic invasive vegetation, control cowbirds and predators, and maintain hydrology and water quality in riparian habitats. • Restrict human activities in occupied habitat during the breeding season. • Where appropriate, restore or enhance riparian habitat suitable for this and other sensitive species.	**Consistent**: As stated above, the proposed project would minimize the introduction of invasive species and would implement a series of measures aimed at minimizing impacts to nesting species during the breeding season through mitigation measures **BIO-3** and **BIO-7** through **BIO-9**. Yellow-breasted Chat have been observed within the study buffer; however, suitable nesting habitat is located outside of the limits of disturbance for the proposed project. Therefore, suitable nesting habitat would not be directly impacted as a result of the proposed project.
Upland Habitat Mitigation Requirements Policy 7-9: Where impacts to the habitats stated in 7-1 are allowed, mitigation shall be provided as follows: a) The no net loss standard shall be satisfied as stated in 7-8. Typically this will consist of creation of the habitat type being impacted (or substantial restoration where allowed) at a ratio of at least 1:1 as provided in the HMP.	**Consistent:** Through implementation of **BIO-6**, the proposed project would pursue necessary permits and approval with USACE, CDFW, RWQCB, and the Coastal Commission and will comply with permit conditions. The project would not permanently impact waters or wetlands under jurisdiction of the aforementioned agencies. Temporary impacts would be restored to existing conditions.

Applicable Habitat Management Plan Policies	Project Consistency Analysis
b) Onsite preservation is not eligible for mitigation credit in the coastal zone. Onsite or off-site open space preserve areas may be utilized to satisfy required mitigation for habitat impacts associated with development if the preserve areas are disturbed and suitable for restoration or enhancement, or they are devoid of habitat value and therefore suitable for the 1:1 mitigation component requiring creation or substantial restoration of new habitat. Substantial restoration is restoration that has the effect of qualitatively changing habitat type and may meet the creation requirement if it restores habitat type that was historically present, but has suffered habitat conversion or such extreme degradation that most of the present dominant species are not part of the original vegetation. Substantial restoration contrasts with enhancement activities, which include weeding, or planting within vegetation that retains its historical character, and restoration of disturbed areas to increase the value of existing habitat which may meet other mitigation requirements pursuant to the HMP. c) Impacts to Coastal Sage Scrub shall be mitigated at an overall ratio of 2:1, with the creation component satisfying half of the total obligation. The remainder of the mitigation obligation shall be satisfied pursuant to the provisions of the HMP. d) Impacts to Southern Maritime Chaparral or Maritime Succulent Scrub shall be mitigated at an overall ratio of 3:1, with the creation component satisfying one-third of the total obligation. The remainder of the mitigation obligation shall be satisfied pursuant to the provisions of the HMP. e) Impacts to Southern Mixed Chaparral, Native Grassland, and Oak Woodland shall be mitigated respectively at ratios of 1:1, 3:1, and 3:1, with the creation component satisfying the obligation or one-third of the total obligation. The remainder of	

Applicable Habitat Management Plan Policies	Project Consistency Analysis
the mitigation obligation shall be satisfied pursuant to the provisions of the HMP. f) Mitigation for impacts within the coastal zone should be provided within the coastal zone if possible, particularly the 1:1 creation component, in order to have no net loss of habitat within the coastal zone. Mitigation measures on land outside the Coastal Zone may be acceptable if such mitigation would clearly result in higher levels of habitat protection and value and/or would provide significantly greater mitigation ratios, and the mitigation area is part of the HMP. Land area inside and outside the coastal zone which serves as mitigation for habitat impacts in the coastal zone shall be permanently retired from development potential and secured as part of the HMP preserve management plan as a condition of development approval. g) Habitat mitigation requirements other than the creation or substantial restoration component may be partially or wholly fulfilled by acquisition of existing like habitat and/or retirement of development credits on existing like habitat with permanent preservation as part of the HMP preserve management plan. h) All mitigation areas, onsite and offsite, shall be secured with a conservation easement in favor of the wildlife agencies. In addition, a preserve management plan shall be prepared for the mitigation areas, to the satisfaction of the City, the wildlife agencies, and the Coastal Commission. Phase 1 of the preserve management plan shall be incorporated into the Implementation Program of the LCP through an LCP amendment within one year of Commission certification of the HMP as part of the certified LCP. Phase 2 of the preserve management plan shall be incorporated into the Implementation Program in the same manner within three	

Applicable Habitat Management Plan Policies	Project Consistency Analysis
years of Commission certification of the HMP as part of the certified LCP. The preserve management plan shall ensure adequate funding to protect the preserve as open space and to maintain the biological values of the mitigation areas in perpetuity. Management provisions and funding for mitigation required to address habitat impacts shall be in place prior to the impacts for which the mitigation is required. At a minimum, monitoring reports shall be required as a condition of development approval after the first and third year of habitat mitigation efforts. i) If any conflict should arise between the provisions of the HMP and the policies of the LCP, the LCP shall take precedence.	

Hardline Conservation Area Boundary Adjustment

As discussed above, the project will extend the city's ROW in a 0.201-acre area that overlaps with Existing Hardline, which is owned and maintained by the Batiquitos Lagoon Foundation. Adding ROW would result in a permanent impact. Permanent impacts are not allowed within an Existing Hardline (Figure 4). Therefore, to accommodate the project, this area will be removed from the HMP hardline and replaced elsewhere in the city to ensure no net loss of HMP hardline in the city. In accordance with CMC Section 21.210.080 A.1., minor changes to the HMP hardline boundary that do not reduce the acreage or quality of the habitat are processed as an HMP Minor Amendment pursuant to the required Equivalency Findings. The proposed project would permanently remove 0.201 acre of HMP hardline (consisting of 0.182 acre of coastal sage scrub and 0.019 acre of developed land cover) within the project area and replace it with at least 0.201 acre of coastal sage scrub on city-owned Crossings Golf Course property (**BIO-1**). As required by the HMP, the replacement HMP hardline will be located adjacent to Existing HMP hardline (city-owned Crossings Golf Course property) and placed under long-term management.

With the incorporation of mitigation measure **BIO-1** through BIO-5 and BIO-7 through BIO-9, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Plan, or other approved local, regional, or state habitat conservation plan and impacts would be **Less than Significant with Mitigation Incorporated.**

FINDINGS

The proposed project would have a **Less than Significant with Mitigation Incorporated** to biological resources.

MITIGATION MEASURES

Hardline Preserve:

BIO-1: Prior to issuance of a grading permit or the commencement of construction, whichever first occurs, and to accommodate the project footprint and increase to the city's ROW, the city will process a Habitat Management Plan hardline boundary adjustment (Minor Amendment to the Habitat Management Plan) per Carlsbad Municipal Code Section 21.210.080 A.1. A total of 0.201 acre will be removed from the Habitat Management Plan hardline preserve area along the western edge of the project boundary on land currently owned by the Batiquitos Lagoon Foundation and replaced with at least 0.201 acre of Habitat Management Plan hardline preserve on the city-owned Crossings Golf Course property adjacent to Existing Hardline. The adjustment will result in equal or more than equal acres in the hardline preserve area consisting of vegetation communities of equal or better biological value. To formally amend the Habitat Management Plan hardline boundary, the city shall process a Habitat Management Plan Minor Amendment by providing written notice of the Equivalency Findings to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. Unless the agencies object within 30 days of notification, the change shall be considered automatically approved. If objections are raised, the

city shall meet with the agencies to resolve the objection and written approval of the change from the agencies shall be required.

General Biological Resources:

BIO-2: The potential for significant indirect impacts during construction shall be mitigated through implementation of the standard measures stated in the city's Guidelines for Biological Studies (2022), as revised below.

a) A qualified biologist shall conduct a training session for project personnel before project activities. At a minimum, the training shall include a description of the target species of concern and its habitats; the general provisions of the federal and state Endangered Species Acts and the Habitat Management Plan; the need to adhere to the provisions of the act and the Habitat Management Plan; the penalties associated with violating the provisions of the act; and the general measures that are being implemented to conserve the target species of concern as they relate to the project, access routes, and project site boundaries within which the project activities must be accomplished.

b) The footprint of disturbance shall be specified in the construction plans. Before construction, the project's limits of disturbance shall be delineated with orange fencing, and in areas potentially subject to project-related runoff, silt fencing will be used to delineate the impact footprint consistent with the project's Stormwater Pollution Prevention Plan. All fencing shall be reviewed by the project biologist before the initiation of the work. All fencing shall be maintained until the completion of project construction activities, at which time all fencing will be removed. Construction personnel and associates shall be instructed that their activities, vehicles, equipment, and construction materials are restricted to the project footprint, designated staging areas, and routes of travel. If any impacts occur beyond the approved impact footprint, work in the immediate vicinity shall cease until the disturbance limit breach has been addressed to the satisfaction of the City of Carlsbad and the resource agencies.

c) A water pollution and erosion control plan shall be developed that describes sediment and hazardous materials control, fueling and equipment management practices, and other factors deemed necessary by reviewing agencies. Erosion control measures shall be monitored on a regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures shall be implemented in the event that the erosion control strategies are inadequate. Sediment/erosion control measures shall be continued at the project site until such time as the revegetation efforts are successful at soil stabilization.

d) The qualified project biologist shall review grading plans (e.g., the access routes and staging areas) and monitor construction activities throughout the duration of the grading/ground disturbance associated with the project to ensure that all practicable measures are being

employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint.

e) Construction monitoring reports that summarize how the project is in compliance with applicable conditions shall be completed and provided to the city. The project biologist shall halt work activity if necessary and confer with city staff to ensure the proper implementation of species and habitat protection measures.

f) Any habitat that is impacted that is not in the identified project footprint shall be disclosed immediately to the city, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and California Coastal Commission and shall be compensated at a ratio to be negotiated with the agencies.

g) Construction access to and from the site shall be located along existing access routes or disturbed areas to the greatest extent possible. All access routes outside of existing roads or construction areas shall be clearly marked.

h) Construction employees shall limit activities and storage of vehicles, equipment, and construction materials to the fenced project footprint.

i) Equipment storage, fueling, and staging areas shall be located on disturbed upland sites at least 100 feet from waters of the U.S. and with minimal risk of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project-related spills of hazardous materials shall be reported to the city and shall be cleaned up immediately, and contaminated soils shall be moved to approved disposal areas.

j) Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.

k) Fugitive dust shall be avoided and minimized through watering and other appropriate measures.

Vegetation Communities/Habitat:

BIO-3: To avoid spreading nonnative invasive species, construction vehicles will be contained within the delineated work limits, and avoid staging, turning around, or driving in habitat in Batiquitos Lagoon as restricted by delineated work limits.

BIO-4: Impacts to sensitive habitats shall be mitigated based on habitat and impact type in accordance with Habitat Management Plan Table 11 and Habitat Management Plan coastal zone standards (Habitat Management Plan Section D.7), as shown in the table below. Temporary impacts to sensitive habitats shall be revegetated in place at a 1:1 ratio after construction is complete.

Permanent and Temporary Impacts to Vegetation Communities and Required Mitigation

Vegetation Community/ Land Cover Type	Permanent Impacts (acres)	Mitigation Ratio – Permanent Impacts	Total Permanent Mitigation Impacts (acres)	Temporary Impacts (acres)[1, 2]
Riparian and Wetlands				
Southern coastal salt marsh – Non-tidal	0.000	4:1	0.000	0.027
Coastal brackish marsh	0.000	4:1	0.000	0.001
Open water	0.000	0:0	0.000	0.000
Nonnative riparian	0.000	3:1	0.000	0.010
Disturbed[3]	0.000	0:0	0.000	0.001
Uplands				
Coastal sage scrub	0.407	2:1	0.814[4]	1.173
Total	**0.407**	**N/A**	**0.814**	**1.212**

[1] Totals may not sum due to rounding after summation.
[2] Temporary impacts will be restored at a 1:1 ratio by revegetating impacted areas in place. Temporary impacts include areas where recontouring will occur.
[3] Disturbed habitat is included within this table only where it is considered to be jurisdictional and will be restored to match adjacent native habitat.
[4] Permanent impacts to coastal sage scrub will be mitigated at a 2:1 ratio and include 1:1 creation or substantial restoration to ensure no net loss.

Permanent coastal sage scrub habitat impacts will be mitigated through the use of Tier II upland (i.e., coastal sage scrub) mitigation credits at the Sage Hill Mitigation Parcel, located in unincorporated San Diego County, east of Rancho Santa Fe Road. The Sage Hill Mitigation Parcel was established by San Diego Association of Governments as part of an advance mitigation program for local streets and road projects pursuant to a Memorandum of Understanding between San Diego Association of Governments, Caltrans and the Wildlife Agencies, and a Conservation Credit Agreement, executed November 25, 2014. The no net loss requirement for impacts to coastal sage scrub will be met at the city-owned Crossings Golf Course property, which will include at least 1:1 coastal sage scrub in the form of creation or substantial restoration.

BIO-5: On-site and off-site creation, substantial restoration, restoration, and enhancement to mitigate impacts to sensitive native habitats will be included within the Habitat Mitigation and Monitoring Plan, a restoration plan that will outline restoration species for each habitat type, as described under BIO-4, timelines, success criteria, maintenance and monitoring protocols. The restoration plan will be consistent with the Multiple Habitat Conservation Program, Appendix C (Revegetation Guidelines), and Volume III; Habitat Management Plan for Natural Communities in the City of Carlsbad (City of Carlsbad 2004, pp. F-8 to F-11); and the Components of a Conceptual Mitigation/Restoration Plan (City of Carlsbad 2008). The HMMP will be reviewed/approved by the city, California Department of Fish and Wildlife, California Coastal Commission, and other applicable agencies before proposed project initiation.

Jurisdictional Resources Measures:

BIO-6: Due to impacts to jurisdictional resources, the proposed project will obtain permits from U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife, and California Coastal Commission in compliance with the Clean Water Act, California Fish and Game Code 1600, and the California Coastal Act. Impacts to jurisdictional resources will be mitigated through implementation of Mitigation Measures BIO-4 and BIO-5.

Special-Status Species:

BIO-7: To avoid impacts to listed avian species (coastal California gnatcatcher, least Bell's vireo, Belding's savannah sparrow, light-footed Ridgway's rail, California least tern, western snowy plover), and non-listed special-status avian species (yellow-breasted chat, yellow warbler, white-tailed kite, and black skimmer), the following measures will apply:

- Project implementation should occur outside of the bird nesting season, if feasible (February 15 through September 15).
- To avoid impacts to coastal California gnatcatcher, clearing and grubbing of coastal sage scrub shall not be conducted from March 1 through August 15, per the conditions of coverage for this species.
- If vegetation disturbance or construction outside of the nesting season is not feasible, a qualified biologist shall perform a preconstruction nesting bird survey within the proposed construction area plus a 500-foot buffer no more than 72 hours before vegetation disturbance or construction is initiated during the nesting season. The area will be resurveyed if the planned activities do not occur within 72 hours of the nesting bird survey.
- If active nests are found, then the qualified biologist shall establish an adequate protective buffer around the nest in which vegetation removal and construction activities are prohibited until the nest is no longer active (i.e., all nestlings have successfully fledged). A nest buffer of 300-500 feet will be established around the nest of listed species and raptors, and the buffer width for other species will be determined by the Project Biologist based on species biology. The size of the nest buffers may be adjusted by a qualified biologist in coordination with the city based on the species, and type, intensity, and duration of the planned construction activities.

BIO-8: If a nest buffer is not sufficient to avoid and minimize impacts to the nest, noise barriers (e.g., walls, blankets, or other noise attenuation measures) may be required, or the contractor may delay work near the nest until the nest is no longer active.

BIO-9: To avoid impacts to special-status avian species, construction lighting will be shielded and pointed downward and away from Batiquitos Lagoon on the west side and from San Marcos Creek on the east side. Lighting of the pedestrian bridges will be limited to that required for safety and be directed away from the lagoon.

BIO-10: To avoid and minimize impacts to bats, the following measures will apply:

- A biological monitor shall provide contractor education specific to bats.
- Surface treatments on the existing bridge structure shall be completed between December 1 and January 31, when the bat population is at its lowest numbers. Surface treatments shall be applied to avoid leakage through to the seams to the underside of the bridge.
- Pedestrian bridge construction shall be timed to occur in the winter (between October 15 and March 15) to the maximum extent practicable, when roosts are in their lowest numbers.
- No construction activities shall occur within 50 feet of the existing bridge between June 1 and September 1, which is bat pupping season.
- Construction personnel shall not be present under the colony, especially during the evening exodus.
- Lights shall not be used under the existing bridge structure. Lighting of the pedestrian bridges shall be limited to that required for safety and shall not deter continued roosting under the existing bridge.
- Vehicles and equipment with internal combustion engines shall not be operated under the existing bridge structure, unless otherwise directed by the on-site biological monitor.
- During roadway construction activities, where possible, the contractor shall follow recommended noise buffers in the table below. If noise buffers cannot be maintained, noise attenuation measures shall be recommended by the monitoring biologist and implemented by the contractor. For construction activities in the immediate vicinity of the existing bridge where buffer distances cannot be maintained (e.g., pedestrian bridge construction), noise attenuation measures shall be applied in a way so as not to substantially restrict airspace access (e.g., placed around stationary equipment only, limited to active work areas) and be removed promptly when work is complete.
- Work shall be planned in a way that does not to restrict bat airspace access to the existing bridge structure (e.g., no blankets, walls, or other barriers shall be placed between the existing bridge and pedestrian bridges

Recommended Disturbance Buffer Zones for Day and Night Roosts [1]

Bat Species	Construction Trucks and Heavy Mobile Equipment[2]	Drilling, Trenching, and Small Stationary Equipment[2]	Stationary Diesel/Gasoline Exhaust Sources >2 minutes[2]
Yuma myotis, Mexican free-tailed bat	**90**	**150**	**250**

[1] Distance (in feet) between activity/equipment and roosts
[2] See Technical Guidance for Assessment and Mitigation of the Effects of Traffic Noise and Road Construction Noise on Bats (Caltrans 2016) for detailed discussions of noise impacts to bats at transportation projects and specific decibel levels of low frequency values for construction trucks and heavy equipment.

V. CULTURAL RESOURCES **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

V. CULTURAL RESOURCES

REGULATORY SETTING

Cultural resources consist of sites, buildings, structures, objects, and districts or other places of human activity that are considered significant to a community, culture, or ethnic group. These resources may be historic or prehistoric in age, or a combination of both.

Cultural Resources Defined By CEQA

Under CEQA, the lead agency must determine if a project may have a significant effect on an archaeological resource (Public Resources Code [PRC] Section 21083.2(a)). Resources that are historically significant are those that meet one or more of the evaluation criteria for the California Register of Historical Resources (CRHR) or that are included in a local register of historical resources as defined in PRC Section 5020.1 (CEQA Guidelines Section 15064.5). Evaluation criteria for the CRHR are provided in PRC Section 5024.1 and CCR Title 14, Section 4852, as detailed below. The CRHR criteria are modeled after the National Historic Preservation Act National Register of Historic Places (NRHP) criteria. Cultural resources that are eligible for the NRHP are automatically considered eligible for the CRHR. CEQA also applies to archaeological resources that do not meet the criteria of a historical resource but do meet the definition of a unique archaeological resource in PRC Section 21083.2, described below.

The criteria used to evaluate resources that may be affected by the proposed project are those provided by CEQA. A cultural resource is considered “historically significant” under CEQA if the resource meets the criteria for listing in the CRHR. These criteria define an “important” archaeological resource as one that:

1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage; or
2. Is associated with the lives of persons important in our past; or

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possess high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Unevaluated resources are considered potentially eligible for listing in the CRHR and are treated as eligible for the purposes of impact/effect analysis. CEQA also applies to archaeological resources that do not meet the criteria of a historical resource but do meet the definition of a unique archaeological resource in PRC Section 21083.2, as follows:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

1. Contains information needed to answer important scientific research questions and a demonstrable public interest in that information
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person

Under CEQA, a project may have a significant effect on the environment if the project could result in a substantial adverse change in the significance of a historical resource, meaning the physical demolition, destruction, relocation, or alteration of the resource would be materially impaired. This would include action that would demolish or adversely alter the physical characteristics of a historical resource that convey its historic significance and qualify it for inclusion in the CRHR or in a local register or survey that meets the requirements of PRC Sections 5020.1(l) and 5024.1(g). CEQA and the CEQA Guidelines also recommend provisions be made for the accidental discovery of archaeological sites, historical resources, or Native American human remains during construction (PRC Section 21083.2(i) CCR Section 15064.5[d and f]).

Carlsbad Tribal, Cultural, and Paleontological Resource Guidelines

The city's Tribal, Cultural, and Paleontological Guidelines (City of Carlsbad 2017) standardize the management and conservation of these resources within the city's limits. These guidelines consolidate various updates to reflect recent changes to state law and city policy. In addition, the guidelines standardize required information for cultural reports, establish roles for Native American tribes, outline standard mitigation measures and conditions of approval, and include accountability during the compliance process (ECORP Consulting, Inc. 2023). As required by these guidelines, the Cultural Letter Report (Appendix D) was prepared in compliance with the cultural resources procedures.

AFFECTED ENVIRONMENT

This section summarizes results of the Cultural Letter Report (Appendix D) prepared for the proposed project. An Area of Potential Effects (APE) was established as the area of direct and indirect effects. It ranges from 100 to 130 feet wide from the existing roadway and extends approximately 0.65 miles between La Costa Avenue and Arenal Road. The APE includes the proposed staging/access, construction, and vegetation removal areas. To identify potential cultural resources in the APE, a records search using files maintained at the California Historical Resources Information System South Coastal Information Center was conducted. Additionally, a contact program with Native American tribes and a pedestrian ground surface survey was completed.

A review of the records search results identified 57 previously recorded cultural resources within a 0.5-mile radius of the proposed project site. Of the previously recorded resources, 51 are prehistoric, two are historic-age, two have both prehistoric and historic-age components, and two are of unknown age. Within the APE, two cultural resources have been previously recorded and are prehistoric sites that include midden, groundstone, and lithic tools (Warren 1959a,b). The California Department of Transportation (Caltrans) Historical Bridges and Tunnels Inventory was also reviewed, and it was determined that the bridge that spans San Marcos Creek is listed as not eligible for the NRHP. It should be noted that El Camino Real is designated as California Historical Landmark #784. Within the APE, the northern portion of the proposed project site at Arenal Road aligns with the historical alignment of El Camino Real from at least 1893, while the southern portion of the proposed project area at La Costa Avenue aligns with the historical alignment of El Camino Real from at least 1942.

A Native American contact program was conducted by AECOM that included a review of the Sacred Lands File (SLF) maintained by the California Native American Heritage Commission (NAHC) and a request for information from a list of contacts provided by the NAHC. On March 25, 2021, NAHC responded that the SLF search was negative. The NAHC also identified 27 Native American representatives that are culturally affiliated with the proposed project area. On April 27, 2021, letters were sent to these representatives, notifying them of the proposed project and soliciting input regarding traditional cultural places or sites that may be affected by the proposed project. The results of the contact program are included in the Cultural Letter Report (Appendix D).

A pedestrian survey was conducted on April 27, 2021, within the APE, by an archaeologist and a Luiseño Native American monitor from the San Luis Rey Band of Mission Indians. Although most of the APE is paved, areas where ground was exposed were thoroughly examined. Visibility on the eastern side of the roadway was poor, with most of this area obscured by landscaping and nonnative ornamental vegetation. Limited areas of exposed soil on the eastern side of El Camino Real were examined, and no cultural material was identified. Visibility on the western side of the roadway was fair to good, revealing that most of the roadway shoulder has been heavily disturbed from previous construction of El Camino Real. Weathered fragments of shell were observed but were in a disturbed portion of the road shoulder. The previously recorded sites within the APE were not observed during the pedestrian survey.

IMPACT ANALYSIS

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Less than Significant with Mitigation Incorporated: A records search for previous surveys and previously recorded resources within the APE and a 0.5-mile radius was obtained from the South Coastal Information Center during preparation of the Cultural Letter Report (Appendix D). The records search indicated that two archaeological resources were previously recorded within the APE. Both sites were recorded in 1959, and neither could be observed during the pedestrian survey. The eastern side of the roadway is predominantly landscaped areas that have been disturbed with construction of the roadway and other surrounding land uses. On the west side of El Camino Real, the shoulder consists primarily of previously disturbed contoured soils to support the existing roadway. While resources were not observed during pedestrian surveys and much of the proposed project area is hardscaped from previous construction as described further in Appendix D, there is a high level of sensitivity for buried cultural resources in the APE. With excavation into subsurface areas, it is possible that unknown cultural resources may be encountered during construction, resulting in a potentially significant impact. With the implementation of mitigation measure **CR-1** detailed below and, if Native American resources are discovered, mitigation measures **TCR-1 and TCR-2** discussed in **Section XVIII**, Tribal Cultural Resources, potential impacts from the proposed project would be **Less than Significant with Mitigation Incorporated**.

El Camino Real is a California Historical Landmark as identified in the Cultural Letter Report (Appendix D) prepared for the proposed project. Its character-defining feature is its alignment (location), as it lacks setting, design, materials, workmanship, feeling, and association within the proposed project area for its period of significance used when evaluating a resource for listing in the NRHP. For El Camino Real, its periods of significance occurred during the Spanish and Mexican eras when missions were established in California (1769–1833) and in the early 1900s when the route gained popularity due to increased use of automobiles. The proposed project would leave the alignment of the roadway intact and would result in a **Less than Significant Impact**.

b) Cause a substantial adverse change in the significance of an archeological resource pursuant to §15064.5?

Less than Significant with Mitigation Incorporated: As stated above, the South Coastal Information Center records search disclosed 57 cultural resources within the 0.5-mile record search boundary, and two resources were recorded within the APE but were not relocated during pedestrian surveys conducted in 2021. The city also consulted with the NAHC to review the SLF for Native American cultural resources that might be affected by the proposed project, and none were identified within the APE. However, due to the potential for buried cultural resources within the proposed project area, it is possible that unknown archaeological resources may be encountered during construction. With the implementation of mitigation measure **CR-1** detailed below (consistent with Standard Treatment 9 and Standard Treatment 5 of the city's 2017 guidelines) and, if Native American tribal cultural resources are discovered or anticipated,

mitigation measures **TCR-1** and **TCR-2** discussed in **Section XVIII**, Tribal Cultural Resources, potential impacts from the proposed project would be a **Less than Significant with Mitigation Incorporated**.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant with Mitigation Incorporated: The majority of the proposed project site has been modified to accommodate the existing roadway; however, given the potential for buried archaeological resources, there is a possibility that unmarked burials may be unearthed during construction. This impact is considered potentially significant. Implementation of mitigation measures **CR-1, TCR-1, and TCR-2** detailed below, addressing the discovery of potential archaeological material and potential human remains, would reduce this impact to a **Less than Significant with Mitigation Incorporated**.

FINDINGS

The proposed project would have a **Less than Significant with Mitigation Incorporated** related to cultural resources.

MITIGATION MEASURES

The following measures for Cultural Resources (**CR-1**), in addition to measures **TCR-1** and **TCR-2** for Tribal Monitoring within **Section XVIII**, Tribal Cultural Resources, will be implemented for impacts related to cultural resources consistent with the Carlsbad Tribal, Cultural, and Paleontological Guidelines (2017).

CR-1: An archaeological sensitivity training program will be developed in consultation with the TCA Tribe retained to monitor and delivered by a qualified professional archaeologist prior to the beginning of ground-disturbing work for construction crews working within the project area. The cultural awareness and sensitivity training shall provide notification procedures if potential archaeological material is discovered, procedures for coordination between construction and monitoring personnel, and information about other situations that may arise if cultural resources, including human remains, are discovered during construction. This training and communication protocol shall be communicated to all new construction personnel prior to construction crews beginning ground-disturbing work on the project, and on a poster that is placed in a visible location inside the construction job trailer.

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

VI. ENERGY

IMPACT ANALYSIS

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?

Less than Significant Impact: Energy efficiency is a possible indicator of environmental impacts. The actual adverse physical environmental effects of energy use and the efficiency of energy use are detailed throughout this Initial Study in the environmental topic-specific sections. For example, the use of energy associated with fuel consumption leads to criteria air pollutants and greenhouse gas (GHG) emissions, the impacts of which are addressed in Section III, "Air Quality," and Section VIII, "Greenhouse Gas Emissions," respectively. There is no physical environmental effect associated with energy use that is not addressed in the environmental topic-specific sections of this Initial Study.

Energy consumption during construction of the proposed project would involve energy used by construction equipment, haul trucks, and workers' commute vehicles. Heavy-construction equipment and haul trucks would primarily use diesel fuel, while work trucks (pickups) and personal vehicles used for commuting would primarily be gasoline-fueled. Based on the anticipated off-road equipment usage, haul truck trips, and worker trips, it is estimated that the total energy demand would be approximately 39,435 gallons of diesel and 1,581 gallons of gasoline. Additional calculation details and assumptions are provided in Appendix B. Based on the anticipated phasing of the proposed project, anticipated equipment and construction work staff, temporary nature of construction, and project type, the proposed project would not include unusual characteristics that would necessitate the use of construction equipment that is less energy-efficient than at comparable construction sites.

In addition, contractors are required, in accordance with the CARB ATCM for Diesel-Fueled Commercial Motor Vehicle Idling, to minimize idling time of construction equipment by shutting equipment off when not in use or reducing the time of idling to 5 minutes. These required practices limit wasteful and

unnecessary energy consumption. Therefore, it is expected that fuel consumption associated with construction of the proposed project would not be inefficient, wasteful, or unnecessary.

Following construction, the proposed project would provide multi-modal improvements for the corridor which include pedestrian and bicycle facilities and would provide connectivity for pedestrians between Arenal Road and La Costa Avenue, which currently does not exist. These improvements would promote pedestrian and bicycle movement and transit use. As described in Appendix F, the proposed project is anticipated to result in a net reduction in VMT because the proposed project would facilitate more efficient transportation (reducing traffic congestion, improving travel time and traffic flow) as well as encourage active transportation (bike, walk, or transit). A reduction in VMT would result in a direct reduction in the associated vehicle fuel and energy consumption. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation. Furthermore, energy usage from lighting included on the pedestrian bridges, bus stop and additional street lighting installed as a result of the proposed project would be minimal as energy efficient LED lighting would be used. Therefore, a **Less than Significant Impact** would occur.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact: The proposed project is not using land that was otherwise slated for renewable energy production and does not otherwise conflict with any state or local renewable energy plans. Therefore, this proposed project's construction would not obstruct any state or local plans for renewable energy and would conform with state and local plans for energy efficiency. Furthermore, the proposed project would promote the City of Carlsbad's Climate Action Plan (CAP) recommendations for increased connectivity through bikeway system and pedestrian improvements (see Section VIII, "Greenhouse Gas Emissions," for additional details). Increased active transportation would result in a reduction in VMT through the proposed project area, which would facilitate more efficient transportation and reduce vehicle fuel consumption. Therefore, the proposed project would not conflict with or obstruct state or local plans for renewable energy or energy efficiency and would result in **No Impact**.

FINDINGS

The proposed project would have a **Less than Significant Impact** to energy.

MITIGATION MEASURES

The proposed project would have a less than significant impact related to energy; therefore, no mitigation measures would be required.

VII. GEOLOGY AND SOILS **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d) Be located on expansive soils, as defined in Section 1803.5.3 of the California Building Code (2016), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

VII. GEOLOGY AND SOILS

REGULATORY SETTING

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

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures.

IMPACT ANALYSIS

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. Strong seismic ground shaking? Seismic-related ground failure, including liquefaction? Landslides?

Less than Significant Impact: There are no active faults that run directly through Carlsbad (California Department of Conservation 2021). Additionally, the California Geologic Survey does not include the City of Carlsbad on its list of cities affected by Alquist-Priolo Earthquake Fault Zones. The nearest fault to the city is the Newport-Inglewood-Rose Canyon Fault, which runs offshore of the western edge of the city (approximately 5 miles) and is considered active. The proposed project would not change or modify the structural engineering that provides seismic safety for the existing bridge. Pedestrian bridge structures would adhere to engineering standards/codes that dictate design standards by reviewing entities to ensure standards are met. While the proximity of active faults suggests the potential for moderate to severe ground shaking to exist during a major earthquake, the proposed project would not result in the exposure of people or property to fault ruptures or seismic ground shaking beyond the conditions that currently exist throughout the region.

Although unlikely, seismic activity associated with the Newport-Inglewood-Rose Canyon Fault may lead to liquefaction. These conditions exist currently, and implementation of the proposed project would not affect these processes. Exposure of people to seismic ground failure, including liquefaction, may occur at the proposed project site but would not increase beyond existing conditions.

As stated previously, the proposed project does not outline the development and extraction of unconsolidated recent sediment and would not affect geologic processes; therefore, people or buildings would not be exposed to landslides beyond the conditions that currently exist at the proposed project site.

The proposed project would not expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death involving rupture of a known fault, strong seismic ground shaking, seismic-related ground failure, or landslides. Therefore, a **Less than Significant Impact** would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact: Potential impacts to soils would be minimized through soil stabilization measures covered within the required SWPPP or WPCP, which would include Best Management Practices (BMPs) to minimize scour and impacts on surface drainage patterns and existing drainage systems. The BMPs contained in the SWPPP or WPCP would be developed and implemented by the contractor in compliance with existing regulations; implementation of those appropriately designed BMPs, such as riprap, other erosion control products, and/or vegetated material, would reduce erosion or scour

potential by protecting the susceptible soil. With construction of the proposed project, gradual slopes would be designed and cleared staging/access areas would be revegetated as erosion control measures. Erosion control practices outlined in a SWPPP or WPCP that would be implemented and approved with the proposed project would further reduce impacts to erosion of soil. Therefore, the proposed project would not result in substantial erosion or the loss of topsoil and would have a **Less than Significant Impact**.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

No Impact: The proposed project is not located on soil that is known to be unstable or would become unstable as a result of the proposed project and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. The proposed project would not modify soil conditions or increase geologic soil hazards. Therefore, **No Impact** would occur.

d) Be located on expansive soils, as defined in Section 1803.5.3 of the California Building Code (2016), creating substantial direct or indirect risks to life or property?

No Impact: Expansive soils are clay-based soils that tend to expand (increase in volume) as they absorb water and shrink (lessen in volume) as water is drawn away. Soils within the lagoon are, by nature, saturated soils. As such, expansion would not occur within these soils. Grading and excavation implemented with the proposed project would not increase the risk from expansive soils. Additionally, construction of the pedestrian bridge abutments would occur in saturated soils, and this project component would not be susceptible to risks associated with expansive soils. Therefore, **No Impact** would occur.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact: The proposed project would include construction of biofiltration stormwater facilities and would not require the use of septic systems or alternative wastewater disposal systems. Therefore, the proposed project would have **No Impact** due to soils incapable of adequately supporting septic systems or alternative wastewater disposal systems.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant with Mitigation Incorporated: Due to the relationship between fossils and geologic formations in which they can occur, the geology of an area provides a reasonable basis for predicting the potential for the presence of paleontological resources. The city's Tribal, Cultural, and Paleontological Guidelines define the project site as paralic estuarine deposits from the late Holocene period (Qpe) along with landslide deposits from the early Pleistocene and Holocene periods (Qls) (City of Carlsbad 2017). Based on the grain size and depositional history, most of these units have low to moderate fossil potential (City of Carlsbad 2019a). In addition, due to previous disturbances in the proposed project area (e.g., El

Camino Real), this further reduces the potential that an intact and unique geologic feature is present within the proposed project site. However, it is possible that undiscovered fossils may be unearthed during construction. If fossils are present in the proposed project site, they could be damaged by earthwork (e.g., excavation, grading) during construction activities, resulting in a potentially significant impact. Implementation of mitigation measures **GEO-1** and **GEO-2** would reduce potential impacts to unique paleontological resources to a **Less than Significant with Mitigation Incorporated**.

FINDINGS

The proposed project would have a **Less than Significant with Mitigation Incorporated** related to geology and soils.

MITIGATION MEASURES

GEO-1: A Paleontological Mitigation and Monitoring Plan in accordance with the Carlsbad Tribal, Cultural, and Paleontological Resources Guidelines (2017) would be prepared prior to the issuance of a grading permit or commencement of construction, whichever first occurs. The Paleontological Mitigation and Monitoring Plan shall address the following information, as applicable and appropriate:

a. The level of monitoring (spot checks, part time or full time), protocols and authorization for work stoppages, and safety procedures
b. The need for Contractor Awareness Training for all earth-moving personnel for any projects where a monitor will not be present full time
c. A research design listing the research questions and the data requirements for those questions
d. The level and type of assistance from the contractor needed by the paleontologist to take bulk samples and place them into a safe area for processing
e. The methods for fossil collection, fossil preparation, fossil identification, stratigraphic profiles, and curation
f. The types of progress reports that will be provided to the city (weekly or monthly)
g. The schedule for reporting
h. A recommendation for the updating of the paleontology sensitivity model, which takes into consideration the presence or absence of paleontological resources, the amount of ground disturbance, and the potential for future discoveries
i. The identity of the financially-responsible party

GEO-2: The city shall retain a professional paleontologist for the project prior to the issuance of grading permits or commencement of ground disturbing activities, whichever occurs first. The task of the paleontologist shall be to monitor ground disturbance within the project site for the unearthing of previously unknown paleontological resources. Selection of the paleontologist shall be subject to the approval of the city, and no grading activities shall occur within the project site until the paleontologist has been approved by the city. The paleontologist shall be responsible for maintaining daily field notes

and a photographic record and for reporting all finds to the city in a timely manner. The paleontologist shall be equipped to record and salvage paleontological resources that may be unearthed during grading activities. The paleontologist shall be empowered to temporarily halt or divert grading equipment to allow recording and removal of the unearthed resources.

In the event that potential paleontological resources are discovered during ground-disturbing activities, work shall stop in that area and within 30 feet of the find until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Specimens shall be curated into a professional, accredited museum repository with permanent retrievable storage such as the San Diego Natural History Museum. A report of findings, with an appended itemized inventory of specimens, shall be prepared and shall signify completion of the mitigation.

The paleontologist shall retain the option to reduce monitoring, with concurrence from the city, if it is determined that the sediments were previously disturbed. Monitoring may also be reduced with concurrence from the city if potentially fossiliferous units are not present or, if present, are determined to have a low potential to contain fossil resources.

VIII. GREENHOUSE GAS EMISSIONS **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purposes of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

VIII. GREENHOUSE GAS EMISSIONS

REGULATORY SETTING

Global climate change refers to changes in average climatic conditions on the Earth as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone, and certain hydrofluorocarbons (HFCs). These gases, known as GHGs, allow solar radiation (sunlight) into the Earth's atmosphere but prevent radiative heat from escaping, therefore warming the Earth's atmosphere. GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and contribute to what is termed "global warming," the trend of warming of the Earth's climate from anthropogenic activities. Global climate change impacts are by nature cumulative; direct impacts cannot be evaluated because the impacts themselves are global rather than localized impacts.

California Health and Safety Code Section 38505(g) defines GHGs to include the following compounds: CO_2, CH_4, N_2O, ozone, chlorofluorocarbons, HFCs, perfluorocarbons, and sulfur hexafluoride. As individual GHGs have varying heat-trapping properties and atmospheric lifetimes, GHG emissions are converted to carbon dioxide equivalent (CO_2e) units for comparison. The CO_2e is a consistent methodology for comparing GHG emissions because it normalizes various GHG emissions to a consistent measure. The most common GHGs related to the project construction and operational activities are those primarily related to fuel combustion: CO_2, CH_4, and N_2O.

In September 2015, the City of Carlsbad adopted a CAP that outlines actions that the city will undertake to achieve its proportional share of state GHG emissions reductions (City of Carlsbad 2015b). The CAP, revised in May 2020, is a plan for the reduction of GHG emissions in accordance with CEQA Guidelines Section 15183.5. On November 12, 2024, a CAP Update was approved outlining the City's plan to reduce GHG emissions over the next 20 years. The CAP update is designed to meet state targets to reduce GHG emissions by two key dates: by 2035, half of what they were in 2016; and by 2045, 85 percent lower than they were in 2016. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's

incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.

In March 2019, the City Council adopted several ordinances aimed at reducing GHG emissions in new construction and alterations to existing buildings. Projects requiring building permits will be subject to these ordinances, which address the following:

- Energy efficiency (Ord. No. CS-347)
- Solar photovoltaic systems (Ord. No. CS-347)
- Water heating systems using renewable energy (Ord. Nos. CS-347 and CS-348)
- Electric vehicle charging (Ord. No. CS-349)
- Transportation demand management (Ord. No. CS-350)

The CAP established a screening threshold of 900 $MTCO_2e$ per year for new development projects to determine if a project would need to demonstrate consistency with the CAP through the Consistency Checklist and/or a self-developed GHG emissions reduction program (Self-Developed Program Approach). Projects that are projected to emit fewer than 900 $MTCO_2e$ annually would not make a considerable contribution to the cumulative impact of climate change and, therefore, do not need to demonstrate consistency with the CAP. Regardless of this screening threshold, projects requiring building permits are subject to the above-referenced CAP ordinances.

The city's CAP Update contains a baseline inventory of GHG emissions for the 2016 year covering all emissions generating activities in Carlsbad (natural gas, electricity, solid waste, water treatment/delivery, wastewater treatment, transportation [on-road], and other vehicles/equipment). The city's CAP Update includes business-as-usual GHG emissions forecasts for 2035 and 2045. The business-as-usual scenario provides an emissions trajectory that shows how the implementation of federal, state, and local actions may affect future GHG emissions after accounting for expected growth in the city.

The CAP Update also establishes GHG reduction targets to determine the level of effort needed for GHG reduction measures and actions. The CAP Update targets were developed to align with the statewide GHG reduction targets established by Senate Bill (SB) 32 and Assembly Bill (AB) 1279. As described above, the city aims to reduce emissions to: 50 percent below 2016 levels by 2035 (aligned with and extrapolated from SB 32), and 85 percent below 2016 levels by 2045 (aligned with AB 1279). Based upon the business-as-usual forecasts, the city's reduction targets require GHG emissions to be reduced to 490,000 $MTCO_2e$ in 2035, and to 147,000 $MTCO_2e$ in 2045. The CAP Update includes 25 measures to reduce GHG emissions, grouped into six categories or "strategies." These measures align the city with the State of California's targets while also addressing the specific needs of the Carlsbad community, including low-income and historically disadvantaged communities. These categories include: energy, water and wastewater, waste diversion, transportation, off-road equipment, and carbon sequestration. To track CAP Update progress, the city will collect data to measure the success of the GHG reduction measures and report this information annually, along with any GHG inventory updates.

IMPACT ANALYSIS

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact: As explained above, the analysis of GHG emissions recognizes that the impact GHG emissions have on global climate change does not depend on the source or location, but rather, the global climate change effects of GHG emissions are cumulative in nature.

Heavy-duty off-road equipment, materials transport, and worker commutes during construction of the proposed project would result in exhaust-related GHG emissions. Total proposed project construction emissions were estimated using the methodology discussed earlier under **Section III**, Air Quality. The total estimated construction-related emissions would be approximately 418 $MTCO_2e$. Additional modeling details and assumptions are provided in Appendix B. As such, construction-related emissions would be less than the screening threshold of 900 $MTCO_2e$ established by the CAP.

As detailed in the Transportation Impact Analysis Report (STC Traffic, Inc. 2022), the proposed project would improve current and future traffic operating conditions by improving traffic flow and reducing traffic congestion in the study area. In addition, the proposed project would also improve pedestrian accessibility and connectivity through project elements such as a new complete sidewalk on the southbound side and two new pedestrian bridges on either side of the existing bridge. The proposed project improvements also include installing a buffered bike lane along this stretch of the roadway, which improves conditions for bicyclists. Transit service in the proposed project area would benefit from the removal of the southbound bottleneck, a new southbound travel lane, and new continental crosswalks as well as continuous sidewalks for improved access to the bus stop, which would have solar powered illumination, a bench, and a trash receptacle. As detailed in the VMT Analysis (Appendix F), the proposed project would not result in a net increase in VMT. While the proposed project would widen a segment of El Camino Real, this widening would only occur on a relatively short segment, which is known as “spot widening” (approximately 0.6 miles). This “spot widening” identified for this section of the roadway is not anticipated to result in substantial induced automobile use or increase of the attractiveness of the roadway, as the widened area would match the existing three southbound lanes north of Arenal Road and south of La Costa Avenue. Therefore, although the proposed project would widen a section of the roadway, which would result in improved traffic operating conditions and facilitation of travel by automobile, the proposed project improvements to pedestrian and bicycle facilities would encourage travel by these active transportation modes and the decreased congestion would also benefit bus transit that uses this roadway segment. As noted in the VMT Analysis (Appendix F), the proposed project is anticipated to have no appreciable effect on VMT and the associated GHG emissions. The proposed project would not substantially increase vehicle trips in the proposed project study area and would instead encourage alternative forms of transportation such as bicycle, walking, or the use of transit. The proposed project area is anticipated to remain similar to existing conditions post-construction. Implementation of the proposed project would also reduce travel time and improve level of service conditions in the study area. Vehicles in congested traffic, with queuing and stop-and-go conditions, produce higher GHG

emissions per mile of travel, so systems operations improvements that reduce or eliminate these conditions can reduce GHG emissions (Caltrans 2020). Therefore, the proposed project would not generate GHG emissions, either directly or indirectly, that may have cumulatively considerable impact on the environment and would result in a **Less than Significant Impact**.

b) Conflict with an applicable plan, policy or regulation adopted for the purposes of reducing the emissions of greenhouse gases?

No Impact: As stated above, the City of Carlsbad adopted a CAP in 2015 that was amended in 2020, and updated in 2024, to be consistent with statewide GHG reductions goals established by AB 32, SB 32, and AB 1279. The CAP outlines actions that the city will undertake to achieve its proportional share of state GHG emissions reductions. The CAP demonstrates that, with implementation of applicable General Plan goals and policies, coupled with state and federal actions, and execution of CAP measures and actions, the city will reduce GHG emissions in alignment with state goals established by AB 32, SB 32, and AB 1279 and maintain a trajectory to meet its proportional share of the 2050 state target identified in Executive Order S-3-05.

As described in the response above, the proposed project's construction-related GHG emissions would be below the CAP's screening threshold of 900 $MTCO_2e$; therefore, the proposed project's construction GHG emissions would not be a considerable contribution to the cumulative impact of climate change. In addition, the design features of a buffered bicycle lane, new sidewalk, and pedestrian bridges are consistent with the city's CAP and General Plan policies in the following categories: Bikeway System Improvements, Pedestrian Improvements and Increased Connectivity, and Transportation Improvements. Specifically, the city's General Plan and CAP highlight the location along El Camino Real and La Costa Avenue as a significant concentration of high pedestrian improvements needs. General Plan Policy 3-P.6 also encourages the utilization of transportation demand management strategies and non-automotive enhancements (bicycle, pedestrian, transit, train, trails, and connectivity), as long-term transportation solutions and traffic mitigation measures to carry out the Carlsbad Community Vision. Similarly, Policy 3-P.13 calls for considering innovative design and program solutions to improve the mobility, efficiency, connectivity, and safety of the transportation system. Furthermore, the proposed project is consistent with the city's CAP Update Measure T-4: Bikeway System Improvements and Measure T-5: Pedestrian System Improvements which includes actions to improve the city's bikeway and pedestrian systems. The proposed project is also consistent with the city's Sustainable Mobility Plan (City of Carlsbad 2021b), which calls for increasing transportation options and improving connectivity to make it easier for users to use transit, walkways, and bikeways for short, routine trips through the city, and with those trips, reduce vehicular congestion, improve safety, and reduce emissions consistent with the city's CAP.

The proposed project's elements, including the pedestrian sidewalk, pedestrian bridges, and a buffered bicycle lane, are consistent with CARB's Climate Change Scoping Plan strategies and VMT reduction goals (CARB 2022) and mobility actions included within the SANDAG Regional Transportation Plan as identified in **Section III**, Air Quality. As the proposed project is intended to improve current and future traffic operations, reducing traffic congestion and the associated vehicle idling GHG emissions, operational

emissions are anticipated to be lower with the proposed project. In addition, the proposed project improvements to pedestrian and bicycle facilities would encourage travel by these active transportation modes and the decreased congestion would also benefit bus transit that uses this segment; therefore, no increase in VMT or GHG emissions would occur. The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing GHG emissions and would result in **No Impact.**

FINDINGS

The proposed project would have a **Less than Significant Impact** related to GHG emissions.

MITIGATION MEASURES

The proposed project would have a less than significant impact to GHG emissions; therefore, no mitigation measures would be required.

IX. HAZARDS AND HAZARDOUS MATERIALS **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

IX. HAZARDS AND HAZARDOUS MATERIALS

REGULATORY SETTING

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include specific statutes governing hazardous waste and a variety of laws regulating air and water quality, human health, and land use. Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment.

AFFECTED ENVIRONMENT

The proposed project site is not listed as a hazardous materials site on State of California Hazardous Waste and Substances lists compiled pursuant to Government Code Section 65962.5, and no known sites are located in the immediate vicinity of the proposed project area (DTSC 2022).

IMPACT ANALYSIS

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact: The proposed project would use standard construction equipment that requires hazardous materials for fueling and maintenance such as diesel fuels, lubricants, solvents, and other typical construction-related materials. As required by law (Health and Safety Code, Division 20, Chapter 6.95, Article 2, Section 25500-25520), storage, handling, emission, and disposal of hazardous materials associated with construction activities would be in full compliance with local, state, and federal regulations, which provide requirements to ensure proper and appropriate actions specific to minimizing hazardous materials risk. Therefore, potential risk associated with the transport, use, or disposal of hazardous materials or location near a hazardous material site would be minimized through adherence with regulatory requirements, and impacts would be **Less than Significant**.

b) Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact: Potentially hazardous materials identified adjacent to the proposed project site include fuel, gas, and water lines. On the west side of El Camino Real, Kinder Morgan operates a 10-inch and 16-inch fuel line. The 16-inch fuel line is aligned close to the roadway with the 10-inch fuel line west of it. In addition, a 30-inch natural gas transmission line operated by San Diego Gas and Electric runs parallel to the existing roadway. On the east side of El Camino Real, Carlsbad Municipal Water District operates a 12-inch potable water main line. This line runs parallel to El Camino Real and is located underground within San Marcos Creek. In addition, an 8-inch recycled water line is mounted to the east side of the existing bridge. The 12-inch potable water main line would be abandoned on the east side of El Camino Real and a new potable water line would be installed on the east pedestrian bridge as a part of the proposed project. The replacement of this water main line would not alter the existing capacity serving the surrounding community. Other utility lines would remain in place and would be protected in place during construction.

The utility and water lines running parallel to the proposed project could represent a significant environmental impact if impacted during construction. Ground-disturbing activities that would occur near these lines include construction of the pedestrian bridges, roadway widening and sidewalk improvements, and embankment contouring and filling. The Kinder Morgan fuel lines run near the median from just north of the existing bridge towards Arenal Road. Landscaping and streetscape improvements occurring along

the median would be in vicinity of these lines. Preliminary potholing to locate the utility and water lines has been conducted to ensure the proposed project improvements would not impact these lines.

Use of hazardous materials would be limited to standard materials associated with typical construction equipment and operations. Transport, use, or disposal of hazardous material would be in compliance with local, state, and federal regulations as discussed above. Equipment fuel and substances would be used on-site during construction activities, but not in excessive quantities that would create a significant hazard to the public or environment. Equipment storage, refueling, and staging shall occur at least 100-feet from the waters of the U.S. (**BIO-2i**). A Traffic Control Plan will be prepared and will be submitted by the construction contractor for review and approval by the city as part of the right-of-way permit and prior to project construction. This plan will include details related to where staging will occur and would be required to adhere to the 100-foot distance from waters of the U.S. In addition, as previously described, the contractor would be responsible for the preparation of a SWPPP, which would include Spill Prevention and Control Plan with the primary goal to prevent or reduce the discharge of pollutants into drainage systems or watercourses from leaks and spills. The Spill Prevention and Control Plan would include information on the nature of hazardous materials that would be used on-site. The Spill Prevention and Control Plan would also include information regarding proper handling of hazardous materials, and clean-up procedures in the event of an accidental release. As detailed under threshold a) in Section X, Hydrology, adherence to a site-specific SWPPP or WPCP would minimize impacts to receiving waters (such as San Marcos Creek or Batiquitos Lagoon) during construction and would include BMPs such as requiring that vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants remain outside of sensitive habitats, and equipment washing, as applicable, would occur where the water cannot flow into sensitive habitat communities.

While not anticipated, if soil contaminated by hazardous waste is discovered during construction, proper hazardous waste handling and emergency procedures under 40 CFR Part 262 and Division 4.5 of CCR Title 22 would be followed.

Therefore, with mandatory adherence to regulatory requirements related to the safe and proper handling of hazardous materials and the measures outlined in the SWPPP or WPCP that will be prepared for the proposed project, hazards to the public or environment through accidental conditions involving the release of hazardous materials into the environment would be **Less than Significant**.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant Impact: The nearest school, Coastal Hebrew School, is located within approximately one-quarter mile of the proposed project site. However, as discussed above, impacts related to potential handling or emissions of hazardous materials would be **Less than Significant Impact** with implementation of local, state, and federal regulations pertaining to hazardous materials within one-quarter mile of an existing school or proposed school.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or environment?

No Impact: As mentioned above, the proposed project site is not listed as a hazardous material site on the State of California Hazardous Waste and Substances list compiled pursuant to Government Code Section 65962.5, and no known sites are located in the vicinity of the proposed project area (DTSC 2022). Therefore, **No Impact** would occur.

e) For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Less than Significant Impact: The proposed project is located in the Airport Influence Area for the Airport Land Use Compatibility Plan – McClellan Palomar Airport. An Airport Influence Area is where current or future airport-related noise, overflight, safety, or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses. A portion of the proposed project is in Review Area 2 of the Airport Influence Area, which consists of locations beyond Review Area 1 but within the airspace protection and/or overflight notifications areas. Review Area 2 has limits on the heights of structures, particularly in areas of high terrain.

The project is not located within 2 miles of a public airport and is not in an airport safety zone or noise exposure area. The proposed project is not of the nature to cause a safety hazard related to aircraft operations, as noted for Review Area 2 of the Airport Land Use Compatibility Plan – McClellan Palomar Airport, as there are no tall elements, tall construction equipment such as cranes, reflective materials, or other project features that could create hazardous conditions or affect existing flight patterns. Impacts related to excessive noise are considered No Impact, as discussed under threshold **c)** in **Section XIII**, Noise. Therefore, a **Less than Significant Impact** would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact: The City is a participant in the Unified Disaster Council (UDC) San Diego Operational Area Emergency Operations Plan 2022 which contains evacuation routes resulting from a variety of emergencies, and as noted in the Public Safety Element of the City's General Plan, El Camino Real is a designated evacuation route (City of Carlsbad 2024b). The proposed project, however, would not create substantial traffic or traffic congestion during construction. Construction equipment activities, storage and laydown areas, and worker parking would not occur on local roadways or block streets. Any temporary lane closures would be for a short period of time and would be implemented in accordance with recommendations provided in the California Temporary Traffic Control Handbook to ensure that emergency access would be maintained all times. A Traffic Control Plan has been prepared and will be

submitted by the construction contractor for review and approval by the city as part of the right-of-way permit and prior to project construction.

Considering the proposed project is intended to accommodate and relieve future congestion, the proposed project would improve future traffic conditions for emergency response or emergency evacuation.

Therefore, the proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan, and impacts would result in a **Less than Significant Impact**.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less than Significant Impact: The southern end of the proposed project site is located within "Moderate," "High," and "Very High,"" fire hazard severity zones, as designated by the California Department of Forestry and Fire Protection (CAL FIRE; CAL FIRE 2025). However, the proposed project does not include a proposed change in land use, the development of new habitable structures, or modifications to landscaping that would increase fire risk. The widening of El Camino Real roadway would benefit mobility and evacuation capabilities for the surrounding area. The proposed project components would comply with the Goals and Policies of the City of Carlsbad General Plan's Public Safety Element, Section 6.11 (City of Carlsbad 2024b). The policies include consistency with the City's Growth Management Plan, consideration of site constraints and emergency service delivery capabilities and response times, enforcement of Uniform Building and Fire codes, and compliance with the City's Landscape Manual (City of Carlsbad 2016), a broad document that provides applicants with all landscape-related policies and requirements related to sustainability, water conservation, planting, irrigation, the streetscape program, fire protection, and erosion control/slope revegetation. The Landscape Manual includes conformance with California Fire and Building Codes, as adopted by the City of Carlsbad, and provides that maintenance access be provided to all fire protection areas.

Additional impact analysis related to wildland fires is provided under Section XX, Wildfire. Impacts related to Wildfires were found to be less than significant.

With adherence to these policies, the proposed project would not exacerbate wildfire risks; therefore, a **Less than Significant Impact** would result.

FINDINGS

The proposed project would have a **Less than Significant Impact** related to hazards and hazardous materials.

MITIGATION MEASURES

The proposed project would have less than significant impact to hazards and hazardous materials; therefore, no mitigation measures would be required.

X. HYDROLOGY AND WATER QUALITY **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with ground water recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:				
i. Result in substantial erosion or siltation on- or offsite;	☐	☐	☒	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. Impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

X. HYDROLOGY AND WATER QUALITY

REGULATORY SETTING

Clean Water Act

Section 404 of the CWA requires that project proponents obtain a permit from USACE before performing activity that involves discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters of the U.S., interstate waters, other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to these waters that are relatively permanent, and wetlands that meet these criteria or that are adjacent to these waters or their tributaries (33 CFR 328.3[a]). For coastal waters, the limit of navigable waters under USACE

jurisdiction is considered the high tide line. Many surface waters and wetlands in California meet the criteria for waters of the U.S.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB, indicating that a project would not violate California water quality standards.

Along with CWA Section 401, CWA Section 402 establishes the NPDES permit for the discharge of pollutant into waters of the U.S. The EPA has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCBs also regulate other waste discharges to land within California through the issuance of WDRs under authority of the Porter-Cologne Water Quality Act.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the State. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by WDRs and may be required even when the discharge is already permitted or exempt under the CWA.

Construction General Permit

A Construction General Permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the Construction General Permit. To obtain coverage under the Construction General Permit, development of a SWPPP or WPCP is required. A SWPPP or WPCP includes a wide range of BMPs, such as implementation of sediment, erosion, and pollution prevention control measures, to be executed by the contractor throughout construction.

Local Regulations

The City of Carlsbad Municipal Code Chapter 21.110, Floodplain Management Regulations, promotes public health, safety, and welfare, and minimize losses due to flood conditions. These regulations include provisions for restricting or prohibiting uses which are dangerous due to water or erosions hazards, requiring flood vulnerable uses to be protected against flood damage at initial construction, controlling the alteration of floodplains and stream channels to accommodate floodwaters, controlling development that may increase flood damage, and preventing the construction of flood barriers that will unnaturally divert floodwaters or increase flood hazards. Regulations apply to areas of special flood hazards, areas of

flood-related erosion hazards, areas of mudslide hazards, and areas identified by the city subject to a 1-percent-annual-chance-flood within the jurisdiction of the city.

The San Diego RWQCB adopted Municipal Storm Water Permit Order No. R9-2013-0001, NPDES No. CA50109266 (Permit), on May 8, 2013, to control waste discharges in urban runoff from the Municipal Separate Storm Sewer Systems (MS4s), also known as storm drain system, draining the watersheds in the San Diego County, the incorporated cities of San Diego County and the San Diego Unified Port District, collectively known as Co-permittees.

The Permit requires Responsible Agencies or Co-permittees, in each of the region's Watershed Management Areas, to develop Water Quality Improvement Plans (WQIPs). Through the WQIP, highest priority water quality conditions within the Watershed Management Area are identified and strategies are implemented through the Co-permittees' Jurisdictional Runoff Management Programs (JRMPs) to progress toward improvements in water quality. The WQIPs contain an adaptive planning and management process and a public participation component. The Permit and the WQIP process allow Co-permittees to focus JRMPs on particular areas or water quality issues of concern.

The purpose of the City of Carlsbad JRMP is to implement strategies that effectively prohibit non-storm water discharges to the MS4 and reduce the discharge of pollutants in storm water to the maximum extent practicable. This implementation involves improving existing programs and developing new programs intended to minimize or eliminate the effects of jurisdictional runoff from the city on receiving water bodies. Improving the quality of the discharge from the MS4 may have beneficial effects on the local receiving water bodies.

AFFECTED ENVIRONMENT

While the majority of the proposed project site primarily consists of impermeable surfaces and urban landscaping, surface hydrology features are adjacent to the proposed project site as described below.

Carlsbad is located within the Carlsbad Hydrologic Unit, or Carlsbad Watershed Management Area, which is approximately 210 square miles. This hydrologic unit also encompasses the nearby cities of San Marcos and Encinitas. Within the proposed project area, San Marcos Creek flows from the east to west into the Batiquitos Lagoon and subsequently the Pacific Ocean. In the mid-1990s, a lagoon restoration and enhancement project was implemented to allow for connection between the lagoon and ocean to be restored, as is the current condition today.

According to FEMA, the proposed project is located partially within a potential flood hazard area (City of Carlsbad 2015a). FEMA has identified the southern portion of El Camino Real, roughly from Costa Del Mar Road to La Costa Avenue as a high-risk area within a 100-year flood zone.

IMPACT ANALYSIS

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant Impact: Permanent impacts to water quality standards or WDRs would not result with implementation of the proposed project. Biofiltration stormwater facilities would be constructed as part of the proposed project that would not impede or redirect flood flows. These facilities would minimize pollutants from upstream runoff from entering receiving water bodies (e.g., Batiquitos Lagoon). In addition, the proposed project does not include uses that would require the need for ground water nor would it alter existing ground water resources or recharge pathways. Furthermore, as discussed in **Section IV**, Biological Resources, policies and regulations applicable to impacts on waters of the U.S. and waters of the state, such as the CWA, would be adhered to through implementation of mitigation measure **BIO-6**. Temporary impacts to vegetation would be revegetated through implementation of mitigation measures **BIO-4** and **BIO-5**, thereby reducing potential erosion impacts.

Temporary construction activities could lead to indirect effects to receiving water due to construction site soil disturbance and stormwater runoff. The proposed project would comply with applicable federal, state, and city water quality and stormwater regulations to implement BMPs to avoid and/or minimize potential water quality impacts to the greatest extent practicable. The city would be responsible for ensuring the proposed project would be constructed in compliance with the Construction General Permit. Specifically, the Construction General Permit would address erosion control through the preparation and implementation of the SWPPP or WPCP. Implementation and approval of a site-specific SWPPP or WPCP that would identify effective BMPs to protect regional water quality would be prepared and adhered to. For example, vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants would remain outside of sensitive habitats, and equipment washing, as applicable, would occur where the water cannot flow into sensitive habitat communities. The following BMPs would also be incorporated into the SWPPP or WPCP, as applicable: existing vegetation would be protected in place where feasible to provide an effective form of erosion and sediment control; soil exposure would be minimized through the use of temporary BMPs, groundcover, and stabilization measures; and the contractor would conduct periodic maintenance of erosion and sediment control measures. Compliance with applicable regulatory requirements, preparation and adherence to a site-specific SWPPP or WPCP, and implementation of BMPs would minimize impacts to receiving waters during construction. Therefore, the proposed project would not violate water quality standards or water discharge requirements or otherwise substantially degrade surface or groundwater quality and impacts would be **Less than Significant**.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact: The proposed project would not result in direct or indirect changes or uses that would utilize groundwater supplies. The minor increase in impervious surface area that would result with

implementation of the proposed project would not be of the magnitude to interfere with groundwater recharge. Therefore, **No Impact** would occur related to depletion of groundwater supplies or interference with groundwater recharge.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would: Result in substantial erosion or siltation on- or offsite; Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite, Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or Impede or redirect flood flows?

Less than Significant Impact: As noted above, construction activities may result in erosion or siltation from soil disturbance and stormwater runoff. Adherence to a site-specific SWPPP or WPCP would minimize these potential impacts to less than significant. With implementation, the proposed project would have a less than significant effect on the existing drainage patterns, as biofiltration systems would not substantially alter current drainage, and erosion or siltation on- or off-site is not anticipated to occur. Therefore, the proposed project would also be consistent with the city's Floodplain Management Regulations.

While the proposed project would increase impervious surfaces as a result of roadway widening and pedestrian bridge improvements spanning San Marcos Creek, it would not result in a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. The proposed project would include biofiltration stormwater facilities that would not impede or redirect flows in a manner that would cause flooding. The floodplain boundaries and velocities would remain unchanged upstream and downstream of the proposed project. In addition, biofiltration systems would also minimize sources of polluted runoff from the roadway. During storm events, as described in the Floodplain Analysis (Appendix E), the proposed project would not increase water surface elevations within San Marcos Creek or Batiquitos Lagoon and would not change flood potential to the surrounding area.

The proposed project would not substantially increase runoff water or exceed the capacity of existing or planned storm water drainage systems. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area, and a **Less than Significant** Impact would result.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less than Significant Impact: According to FEMA, a portion of the proposed project is located within a FEMA 1-percent-annual-chance flood zone, an area of potential flooding hazard. The majority of the proposed project area located on the west side of El Camino Real in the vicinity of Batiquitos Lagoon is in a designated Tsunami Hazard Area, and a small portion of the proposed project area in the Tsunami Hazard Area is also located in the Tsunami Design Zone. Tsunami Hazard Areas identify exposure to tsunami hazards to help inform coastal evacuation planning. Development of essential/critical and larger

structures within the Tsunami Design Zone must meet California Building Code (CBC) design standards (City of Carlsbad 2023a). The proposed project would comply with all CBC design standards related to tsunami hazards, and does not include or accommodate the storage or other use of hazardous pollutants outside of construction activities that could be subject to release during inundation. Therefore, the proposed project would not risk release of pollutants due to project inundation.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than Significant Impact: Construction of the proposed project would adhere to regulatory requirements that would minimize water quality impacts. Implementation of the proposed project would not substantially impact existing drainage patterns and would not contribute pollutants or sediments into existing receiving waters with implementation of the required site-specific SWPPP or WPCP. The proposed project would not drain groundwater resources nor would it substantially prohibit groundwater recharge. Therefore, impacts associated with erosion or siltation on- or offsite would be less than significant. Therefore, a **Less than Significant Impact** would result.

FINDINGS

The proposed project would have **Less than Significant Impact** related to hydrology and water quality.

MITIGATION MEASURES

The proposed project would have a less than significant impact to hydrology and water quality; therefore, no mitigation measures would be required.

XI. LAND USE AND PLANNING **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

XI. LAND USE AND PLANNING

REGULATORY SETTING

City of Carlsbad General Plan Land Use and Community Design Element

The City of Carlsbad General Plan Land Use and Community Design Element directs the location, form, and character of future development in Carlsbad. It seeks to ensure that land use planning reflects the community's evolution and changing demographics, conserves the natural environment, and promotes synergies between land uses to promote walking, biking, and sustainable lifestyles.

City of Carlsbad General Plan Open Space, Conservation, and Recreation Element

The City of Carlsbad General Plan Open Space, Conservation, and Recreation Element addresses open space for resource conservation and recreation, as well as environmental quality topics such as air and water quality. Goals and policies included in this element provide direction to modify existing programs or establish new ones and seek to preserve and enhance Carlsbad's natural and recreational resources.

City of Carlsbad Zoning Ordinance

Carlsbad Municipal Code Title 21 Zoning Ordinance implements the city's General Plan by regulating the distribution and intensity of land uses. Regulations establish standards for minimum lot size; building height and setback limits; fence heights; parking; and other development parameters within each land use.

City of Carlsbad Scenic Corridor Guidelines

The city's Scenic Corridor Guidelines, adopted by City Council on March 7, 1989, identify scenic corridors in Carlsbad and suggest ways to preserve and enhance their character. The scenic corridors designated are primarily major streets, such as El Camino Real and Carlsbad Boulevard, but they also include the railroad corridor. The guidelines are referenced by Mobility Element Policy 3-P.23: "Maintain the city's scenic transportation corridors as identified in the Carlsbad Scenic Corridor Guidelines." The guidelines

indicate the El Camino Real Corridor Guidelines, discussed below, should be consulted when developing along this major street.

El Camino Real Corridor Development Standards

The El Camino Real Corridor Development Standards (Carlsbad City Council Resolution No.7642) seek to maintain and enhance the appearance of the El Camino Real roadway area. These standards reflect the existence of certain identified characteristics which the city considers worthy of preservation and are intended to further the goals of the Land Use and Community Design Element and Mobility Element of the city's General Plan. Standards for the area within the right-of-way reflect an intention to provide an easily identifiable homogenous corridor. Design guidelines include elements such as emphasis on retaining the natural topography adjacent to the roadway, minimal cut or fill, grading that does not create more "visible" development around the roadway, and minimal intersections and access points along the corridor.

California Coastal Act/Coastal Zone

The proposed project site is within the Coastal Zone as designated by the CCC, with the state lands subject to the CCA of 1976. The CCA of 1976 tasked the agency with protection of coastal resources through the issuance of CDPs. Under the CCA, local governments are encouraged to adopt LCPs, which consist of a Land Use Plan with goals and regulatory policies as well as a set of Implementing Ordinances. Development within the Coastal Zone may not commence until a CDP has been issued by the CCC or a local government that has a CCC-certified LCP. The City of Carlsbad has an adopted LCP, as described further below (City of Carlsbad 2019a), and proposed project activities would be located within both the approved City of Carlsbad LCP jurisdiction as well as jurisdictional areas retained by the CCC. Actions proposed within the Coastal Zone must be consistent with Chapter 3 of the CCA.

City of Carlsbad Local Coastal Program

The City of Carlsbad LCP regulates development within the state-designated Coastal Zone within portions of the city boundary. The City of Carlsbad LCP consists of six geographic segments: the Agua Hedionda Lagoon LCP segment composed of approximately 1,100 acres; the Carlsbad Mello I segment with approximately 2,000 acres; the Carlsbad Mello II segment with approximately 5,250 acres; the West Batiquitos Lagoon/Sammis Properties segment with approximately 200 acres; the East Batiquitos Lagoon/Hunt Properties segment with approximately 1,000 acres; and the Village-Barrio segment with approximately 150 acres. The city's LCP implements the CCA at a local level by addressing land use, zoning ordinances, and zoning district maps within sensitive coastal resource areas by providing implementing actions, provisions, and policies required within the Coastal Zone.

City of Carlsbad Habitat Management Plan

The State of California passed the California NCCP Act in 1991, which called for a program that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity.

The city's HMP serves to fulfill the Multi-Habitat Conservation Plan for the city, as mandated by the NCCP Act of 1991. The city's HMP establishes preserve boundaries, which include existing and proposed "hardline conservation areas" that have already been conserved or are proposed to be conserved. The HMP serves as the NCCP for the issuance of an Incidental Take Permit for "covered" species. The HMP identifies certain species as covered that are adequately conserved within habitat preserves.

California Department of Fish and Wildlife Ecological Reserve

CFGC Sections 1580-1587 define ecological reserves as land or land and water areas designated to be preserved in a natural condition, or which are provided some level of protection by CDFW, for the benefit of the general public to observe natural resources and for scientific study or research (CDFW 2021a). As defined by Section 1745 of the CFGC, on an individual basis, hunting, fishing, wildlife viewing, wildlife photography, conservation education, and fish and wildlife research are considered priority uses compatible with CDFW-managed lands including ecological reserves.

Growth Management Program

The principle behind the city's Growth Management Program, created in 1986, is to ensure that new development and growth does not outpace the performance standards established for public facilities such as circulation facilities, libraries, parks, open space, and water and sewer services.

Implementation of the Growth Management Program is in part accomplished by 25 Local Facilities Management Zones, each addressing public facility planning in a different part of the city. The proposed project is in Local Facility Management Zones 6 and 19.

Master Plans

The proposed project is located, or partially located, within three Master Plans: the La Costa Resort and Spa Master Plan, the Aviara Master Plan, and the La Costa Master Plan. These applicable Master Plans are further described below:

Aviara Master Plan

The Aviara Master Plan constitutes the zoning for the formerly named Pacific Rim Country Club and Resort (now Aviara Resort, Golf Club and Spa and surrounding residential neighborhoods) consistent with the City of Carlsbad General Plan. The Community Design Element of the Aviara Master Plan establishes basic design guidelines for the planning areas of the Plan. The element includes resource preservation requirements, including compliance with the grading, erosion control, and resource preservation policies of the LCP, the Local Facilities Management Plan and the City's Planned Community Zone and Hillside Development Ordinance, Chapters 21.38 and 21.95 of the Carlsbad Municipal Code. The Aviara Master Plan requires the preservation of the lagoon shoreline and the existing tree groves and vegetation to the extent feasible.

The Master Plan does not allow grading between October 1 and April 1, and includes the use of runoff and erosion control measures prior to grading. Landscape treatments should present a visually cohesive experience.

La Costa Resort and Spa Master Plan

The La Costa Resort and Spa Master Plan provides the organization and framework of the land uses within the La Costa Resort and Spa plan area and includes design guidelines and development criteria within its boundary. The proposed project partially lies within Master Plan Planning Area 7, which is zoned P-C and includes the remaining land and buildings of the resort and golf course area not located in the other planning areas. The La Costa Resort and Spa Master Plan community design standards provide architectural and landscape architectural guidelines and standards within the planning area. The Landscape Architectural Guidelines and Standards state that Planning Area 7 is subject to the El Camino Real Corridor Standards. In the portion of Planning Area 7 subject to the standards, the area is defined as a fully improved landscape buffer to the San Marcos Creek Parking Lot. Applicable zoning and development standards are as follows:

- All setbacks shall be landscaped. Manufactured slopes of this Planning Area shall be landscaped to be consistent with the intent of the landscape theme of the Resort and will be maintained by the resort operator.
- Views to and from the golf course and lagoon should be maximized for continued renovations within.
- Retaining wall conditions, if over 6' in height and exposed to an exterior view, will be mitigated with plant pockets or structural systems that allow for “planting” the wall.
- Project Wall standards are intended to apply to all situations where such walls are visible from public streets, public use areas, common areas within the project and other semipublic areas.

La Costa Master Plan

The La Costa Master Plan provides the basis for decision-making by the city on future land uses for the community of La Costa. The Master Plan requires the maximization of open space, including preservation of riparian habitats and floodplains, areas with significant numbers of rare plant species, areas with archaeological or historic areas, and areas with unstable soil. Development in areas of 25 percent or greater slopes 15 feet or more shall be designed to maximize hillside integrity.

The public facilities and phasing requirements represent public facilities and services required to support development in the areas subject to the Master Plan, and have been superseded by the City of Carlsbad Growth Management Program and Local Facilities Management Program for Zones 6, 10, 11, and 12.

AFFECTED ENVIRONMENT

El Camino Real and La Costa Avenue are the major roadways within the vicinity of the proposed project. Arenal Road is a neighborhood/local street. City hardline preserve area is located within and adjacent to the western boundary of the proposed project area (see **Figure 4**). The city owns the majority of lands (as right-of-way) within the proposed project site with the Batiquitos Lagoon Ecological Reserve (hardline preserve) owned and managed by CDFW (see **Figure 6A-C**). In addition, the parcel adjacent to the proposed project site directly south of Arenal Road is also hardline preserve and privately owned by the Batiquitos Lagoon Foundation (see **Figure 4**). Additionally, there are privately owned lands east of El Camino Real located in the vicinity of the pedestrian bridge (see Figures 6C and 7). Designated land use within the proposed project site according to the City of Carlsbad Land Use Map (City of Carlsbad 2015a) includes open space areas and a local shopping center (see **Figure 7**).

The following provides the guidelines and policies that are most appliable to the proposed project from those planning documents identified in the Regulatory Setting.

General Plan Land Use and Community Design Element

The following goals and policies from the city's General Plan Land Use and Community Design Element are applicable to the analysis in this document.

> **General Plan Land Use Policy 2-P.1.** *Maintain consistency between the General Plan and Title 21 of the Carlsbad Municipal Code (Zoning Ordinance and Map)*
>
> **General Plan Land Use Policy 2-P.2.** *When uncertainty exists regarding the precise boundary of the various land use designations identified on the Land Use Map, such boundaries shall be interpreted as follows:*
>
> - *Where boundaries appear to follow the centerline of a street or highway, ownership boundary lines, or topographic features such as valleys, ridgelines, or top/bottom of bluffs/slopes then the boundaries shall be interpreted to follow the lines/features they appear to follow.*
> - *Where boundaries appear to reflect environmental and resource management considerations, boundaries shall be interpreted in a manner which is consistent with the considerations that the boundary reflects.*
>
> **General Plan Land Use Policy 2-P.4.** *Update the city's LCP to be consistent with the General Plan. Work with the California Coastal Commission to gain permitting authority for all areas of the city in the Coastal Zone.*
>
> **General Plan Land Use Policy 2-P.40.** *Establish development standards that will preserve natural features and characteristics, especially those within coastal, hillside and natural habitat areas.*
>
> **General Plan Land Use Policy 2-P.42.** *Ensure that development on hillsides, where permitted pursuant to the hillside development regulations of the Zoning Ordinance, is designed to preserve and/or enhance the visual quality of the pre-existing topography.*

General Plan Land Use Policy 2-P.48. *Enhance walkability on a citywide scale by installing benches and transit shelters and adding landscaping, wayfinding signage, public art, and pedestrian-scaled lighting. Consider ways to improve rail and freeway overpass/underpass areas, with lighting, sidewalk improvements and public art.*

General Plan Goal 2-G.18. *Ensure that new development fosters a sense of community and is designed with the focus on residents, including children, the disabled and the elderly, by providing: safe, pedestrian-friendly, tree-lined streets; walkways to common destinations such as schools, bikeways, trails, parks and stores; homes that exhibit visual diversity, pedestrian-scale and prominence to the street; central gathering places; and recreation amenities for a variety of age groups.*

General Plan Open Space, Conservation, and Recreation Element

The following policies from the city's General Plan Open Space, Conservation, and Recreation Element are applicable to the analysis in this document.

General Plan Open Space, Conservation, and Recreation Policy 4-P.1. *Maintain an integrated open space classification system that accommodates conservation, resource production, recreation, and aesthetic needs.*

General Plan Open Space, Conservation, and Recreation Policy 4-P.4. *Provide public access to open space areas where consistent with applicable access restrictions per the Habitat Management Plan, easements, deeds, etc. When natural open lands are privately held, acquire or negotiate for public access if the land could be used for unprogrammed recreational uses. Public access shall not be provided where sensitive resources may be threatened or damaged, where public health and safety may be compromised or where access would interfere with the managed production of resources, such as agriculture.*

General Plan Open Space, Conservation, and Recreation Policy 4-P.6. *Require that adjustment of the boundaries of any open space area shown on the Land Use Map be allowed only if all of the following criteria are met:*

- *The proposed open space area is equal to or greater than the area depicted on the Land Use Map; and*
- *The proposed open space area is of environmental quality equal to or greater than that depicted on the Land Use Map; and*
- *The proposed open space area is contiguous or within close proximity to open space shown on the Land Use Map.*

The City Council may also adjust the boundary of any open space area shown on the Land Use Map if it finds that the adjustment is necessary to mitigate a sensitive environmental area that is impacted by development, provided the open space boundary modification preserves open space at a 2 to 1 ratio (proposed acreage to existing acreage) and is within close proximity to the original area of open space.

Additionally, the City Council may exempt public rights-of-way from the open space boundary adjustment requirements. However, environmental analysis shall be performed for all proposed public right-of-way improvements, and if determined that there are significant adverse impacts to the value of the open space system, those impacts shall be mitigated.

The adjustment of open space boundaries shall not result in the exchange of environmentally constrained lands that are designated open space on the Land Use Map for lands that are not environmentally constrained.

General Plan Open Space, Conservation, and Recreation Policy 4-P.9. *Maintain and implement the city's HMP, including the requirement that all development projects comply with the HMP and related documents. Require assessments of biological resources prior to approval of any development on sites with sensitive habitat, as depicted in Figure 4-3.*

General Plan Open Space, Conservation, and Recreation Policy 4-P.14. *Assure that development or grading on hillsides (if allowed) relates to the slope of the land in order to preserve the integrity and appearance of natural hillsides and other landforms wherever possible.*

General Plan Open Space, Conservation, and Recreation Policy 4-P.16. *Coordinate the implementation and planning of the city's Habitat Management Plan with the North County Multi-Species Habitat Conservation Plan.*

General Plan Open Space, Conservation, and Recreation Policy 4-P.19. *Require a city permit for any grading, grubbing, or clearing of vegetation in undeveloped areas, with appropriate penalties for violations.*

General Plan Open Space, Conservation, and Recreation Policy 4-P.36. *Assure that, where feasible, developments near or adjacent to bodies of water provide open space that has public access to and views of the water.*

General Plan Open Space, Conservation, and Recreation Policy 4-P.57. *Work with the stakeholders in the community and region, such as but not limited to the San Diego Regional Water Quality Control Board (RWQCB), California Fish and Wildlife, US Fish and Wildlife, Coastal Commission, Army Corps of Engineers, Environmental Protection Agency, neighboring cities, counties, businesses, residents, and non-profit groups, to comply with applicable federal, state and local regulations related to water quality in our region, consistent with the city's current NPDES Municipal Storm Water Permit issued by the RWQCB or other related regulations. Prepare and implement any applicable plans such as a Water Quality Improvement Plan, Integrated Regional Water Management Plan, Load Reduction Plan or others as needed to comply with applicable regulations.*

Zoning Ordinance

The following regulations and requirements from the city's Zoning Code Title 21 are applicable to the analysis in this document.

Chapter 21.95 *Hillside Development Regulations:* This section discusses hillside development regulations that aim to implement the goals and policies of the land use and open

space/conservation elements of the Carlsbad General Plan, assure hillside conditions are incorporated into the planning process, preserve and/or enhance qualities of hillsides through project design, and assure that the alteration of hillsides is done in an environmentally sensitive manner. A minor hillside development permit or hillside development permit may be required per the regulations set forth in this chapter.

Chapter 21.110 *Floodplain Management Regulations*: This section discusses floodplain management regulations to promote health, safety, and welfare and minimize losses due to flood conditions. Section 21.110.130 addresses special use permits that are required before development or construction begins within any area of special flood hazards, areas of flood-related erosion hazards or areas of mudslide hazards.

Chapter 21.210 *Habitat Preservation and Management Requirements:* This section discusses habitat preservation and management requirements that aim to implement the goals and objectives of the land use and open space/conservation elements of the Carlsbad General Plan, implement applicable habitat management plans (e.g., North County MHCP, NCCP, and the city's habitat management plan), and preserve the diversity of natural habitats while protecting rare and unique biological resources within those habitats. Additionally, this chapter provides a process for permitting limited and incidental impacts occurring in natural habitat areas and allows for minor amendments from the habitat preservation and conservation standards. Section 070 addresses minor HMP and HMP permits. A minor HMP permit or HMP permit may be required for any development project which directly or indirectly impacts natural habitat in accordance with procedures set forth in this chapter.

El Camino Real Corridor Development Standards

The El Camino Real Corridor Development Standards establish five different segments of the roadway. The proposed project site falls within Area 5 which spans from Cassia Road to Olivenhain Road (3.8 miles). This portion of the road contains the most diverse land uses and expansive views. Development standards for Area 5, include maintaining the Old California/Hispanic design theme, sidewalks to be determined by staff at the time of adjacent development, no cut or fill exceeding 10 feet from original grade, and right-of-way boundary requirements.

California Coastal Act/Coastal Zone and City of Carlsbad LCP

As part of the Coastal Zone, the proposed project site has both CCC-retained and city LCP jurisdictions (see **Figure 8A-C**). The city's jurisdictional area in the proposed project area is an appeal zone, meaning the city's action to approve a CDP can be appealed to the CCC. Within the city's LCP, the proposed project site is within the Mello II and East Batiquitos Lagoon/Hunt Property segments.

City of Carlsbad Habitat Management Plan

The proposed project site would encroach into existing hardline conservation areas to the west (see **Figure 4**). Existing hardlines are areas that have already been conserved for their wildlife value due to previous actions. Examples include on-site open space required to be set aside as mitigation for project impacts from previous actions (City of Carlsbad 2004). The existing hardline conservation area located adjacent to the proposed project site encompasses Batiquitos Lagoon and the property bound by Arenal Road to the north and El Camino Real to the east.

Batiquitos Lagoon Ecological Reserve

The proposed project would encroach into the Batiquitos Lagoon Ecological Reserve along the western boundary of the project area (**see Figure 6A-C**). The land is owned and managed by CDFW and is composed of native habitats such as open water/subtidal, intertidal mudflats, southern coastal salt marsh, coastal brackish marsh, transitional zones, and southern arroyo willow riparian forest. The reserve is also a part of the city HMP hardline preserve. While past land uses in the area include ranching, Batiquitos Lagoon Ecological Reserve was designated by CDFW in 1983 to preserve, protect, and maintain coastal wetland habitat and associated species that this area supports (CDFW 2021b). Permitted recreational opportunities within the Batiquitos Lagoon Ecological Reserve include wildlife viewing, hiking, and fishing (west of Interstate 5). Additional visitor use regulations within areas designated as Ecological Reserves are described further in CCR Title 14, Section 630.

IMPACT ANALYSIS

a) Physically divide an established community?

No Impact: The proposed project would not divide an established community nor would it substantially change the land use around the proposed project site as El Camino Real is an existing roadway providing north/south connectivity through the community. The proposed project would require right-of-way acquisition to accommodate the roadway widening and sidewalk improvements, as well as the pedestrian bridge structure on the east side of El Camino Real; however, these new right-of-way acquisitions would be adjacent and parallel to the existing roadway and match the ultimate right-of-way to the north and south of the roadway widening and would not create a new division through the community. Additionally, the proposed project would serve to enhance transportation, including pedestrian traffic, and provide continued and enhanced connectivity throughout the roadway corridor, maintaining the existing value, character, and connectivity of the area. Therefore, the proposed project would not physically divide an established community and **No Impact** would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact: Various planning documents, policies, and regulations apply to the proposed project as detailed in the Affected Environment section above. **Table 10** and **Table 11** below analyze the

proposed project's consistency with those relevant planning documents and the potential for an environmental impact to result due to conflict.

Table 10. Consistency with Applicable Land Use Regulations, Plans, or Programs

Applicable Regulation, Law, Plan, or Program[1]	Project Consistency
General Plan	**Consistent:** The proposed project has been designed to be consistent with the goals and policies of the **General Plan Land Use and Community Design Element, Mobility Element,** and **Open Space, Conservation, and Recreation Element.** The proposed project components include the development of pedestrian and bicycle facilities along El Camino Real, viewing areas for viewing of Batiquitos Lagoon, and street lighting and landscaping improvements. The proposed project would be developed according to the applicable regulation and plan requirements detailed in this table, such as the LCP and Title 21, which are discussed within and consistent with the General Plan goals and policies. To accommodate the proposed project footprint, a total of 0.44 acres of open space land use would be converted to City right-of-way. In accordance with **Policy 4-P.6** of the **Open Space, Conservation, and Recreation Element,** the proposed project would potentially qualify for an open space boundary adjustment exemption per City Council discretion as it proposes improvements to the public-right-of-way and would mitigate significant impacts (see detailed discussion in **Section IV**, Biological Resources). If the City Council approves the boundary modification, the 0.44 acres of open space would be converted to City right-of-way from Open Space Categories 1 and 3 in Local Facilities Management Zone 6 and reported on the next Annual Open Space Report after project initiation. Consistent with Policy 4-P.1, the city maintains an integrated open space classification system consisting of four different open space categories: Open Space for Preservation of Natural Resources (Category 1); Open Space for Managed Production of Resources (Category 2); Open Space for Outdoor Recreation (Category 3); and Open Space for Aesthetic, Cultural and Educational Purposes (Category 4). Annually, the city tracks changes to each of these categories and reports publicly any acreage gains and losses by Growth Management Plan Local Facilities Management Zone. The proposed project is in Local Facility Management Zones 6 and 19. As discussed in mitigation measure BIO-1, the proposed project would remove 0.201 acre of habitat within a hardline preserve area, requiring an HMP Minor Amendment to replace in equal value (i.e., quality of habitat) the lost acreage. The removal would occur entirely with Zone 6, where right-of-way acquisition is needed on the west side of El Camino Real on the property currently owned by the Batiquitos Lagoon Foundation. Replacement would occur at the city-owned Crossings Golf Course property in areas set aside as open space but not presently designated as hardline preserve. Upon final determination of the location of the replacement acreage at the golf course, it will be necessary to adjust as needed the different categories of open space in Local Facility Management Zones 6 (proposed project) and 5 and 8 (The Crossings Golf Course); any adjustments will be identified in the city's annual reporting of changes to the open space categories. Adjustments would not reduce the amount of open space acreage in the city but instead how that acreage is divided among the four different categories.

Applicable Regulation, Law, Plan, or Program[1]	Project Consistency
CMC Title 21 Zoning Ordinance	**Consistent:** The proposed project would grade and construct on top of slopes and would require consistency with the requirements set forth in **Chapter 21.95** of the CMC regarding hillside development. A Hillside Development Permit is required when a development (grading, erecting, or constructing on a hillside area) is proposed on any slope which has a gradient of 15 percent or greater and a slope height of greater than 15 feet. Portions of the manufactured slope created during the construction of El Camino Real along the street's west side achieve these height and gradient minimums. A hillside development permit would be obtained for construction of the proposed project, and Hillside Development and Design Standards– Coastal Zone Hillside Development Regulations would be adhered to. The project complies with the grading volume requirements and no modifications to hillside standards are sought. Additionally, the proposed project would be consistent with **Chapter 21.110.** The floodplain management regulations of Title 21 apply to the proposed project because the southern portion of the proposed project site lies within a 100-year flood zone. Per the Floodplain Analysis (Appendix E), the proposed project bridge decks would be located above the 100-year water surface elevation and would be designed to not create water surface elevation increases. The proposed pedestrian bridges would span the entire width of the watercourse and would not alter or relocate the existing watercourse. The floodplain boundaries and velocities would also remain unchanged upstream and downstream of the proposed project site. The proposed project, as designed, would produce no increase in the water surface elevation for the 100-year storm. Therefore, the proposed project would be consistent with the findings required for development within a floodplain per Chapter 21.110 and a floodplain-special use permit would be obtained by the proposed project, as required. Furthermore, the proposed project would directly impact natural habitat and require consistency with **Chapter 21.210**, habitat preservation and management requirements. A habitat management permit would be obtained by the proposed project, as required.
City of Carlsbad Scenic Corridor Guidelines	**Consistent**: The guidelines indicate the El Camino Real Corridor Development Standards should be consulted when developing along El Camino Real. Consistency with the standards is discussed below.
El Camino Corridor Development Standards	**Consistent:** In accordance with the El Camino Corridor design concept, the proposed project would maintain an easily identifiable homogenous corridor and would not detract from the existing identified characteristics of Area 5 of the corridor standards. The proposed project includes two viewing areas that would provide additional viewing opportunities of the Batiquitos Lagoon and maintain the roadways characteristic expansive views. The additional lane and added pedestrian facilities along the corridor would be similar in appearance and structure to the existing facilities. Proposed architectural treatments would also be compatible with existing aesthetics, and include a rock face texture, which would preserve the existing design theme (Old California/Hispanic) described in these standards. Fill slopes would not exceed 10-feet from the original grade. The proposed project would not conflict with grading, building height, median, or other requirements in the El Camino Corridor Development Standards.

Applicable Regulation, Law, Plan, or Program[1]	Project Consistency
California Coastal Act	**Consistent:** In accordance with Section 30233 (a)(6) of the CCA, proposed project activities are regulated and implemented by the CCC with retained jurisdiction authority over applicable portions of the proposed project site (see **Figure 8A-C**). A CDP from the CCC would be obtained by the proposed project, as required. See **Table 13** for consistency discussion specific to Chapter 3 of the CCA.
City of Carlsbad Local Coastal Program	**Consistent:** Within the city's LCP, the proposed project site is located within the Mello II and East Batiquitos Lagoon/Hunt Properties segments. The proposed project site is designated as open space. The proposed project would not change current use or function or result in incompatibilities with surrounding land use and would improve public access in the Coastal Zone as well as public viewing opportunities of the open space resources adjacent to the proposed project. Project impacts to habitat would be mitigated and there would no permanent impacts to wetlands and no net loss of habitat in the Coastal Zone. Therefore, the proposed project would comply with policies outlined in the Mello II and East Batiquitos Lagoon/Hunt Property segments of the LCP and a CDP from the city and from the CCC would be obtained by the proposed project, as required.
Growth Management Program/Local Facilities Management Plans	**Consistent:** The principle behind the city's Growth Management Program, created in 1986, is to ensure that new development and growth does not outpace the performance standards established for public facilities such as circulation facilities, libraries, parks, open space, and water and sewer services. Implementation of the Growth Management Program is in part accomplished by 25 Local Facilities Management Zones, each addressing public facility planning in a different part of the city. The proposed project is in Local Facility Management Zones 6 and 19. Generally, the performance standards established for each zone do not apply to the proposed project as it would not generate demand on public facilities, such as libraries, sewer and water, and parks and schools. The proposed project will improve circulation for all modes of travel, consistent with the Circulation performance standard. Though the proposed project would remove land designated open space on the west side of El Camino Real in Local Facilities Management Zone 6, the zone is not subject to the Open Space performance standard. As the proposed project does not reduce or increase land designated open space in Zone 19, it complies with the standard in that zone. Furthermore, Zones 5 and 8, which include the city-owned Crossings Golf Course property and areas that could be used to make up for the hardline conservation boundary adjustment in Zone 6, also are not subject to the Open Space performance standard.
City of Carlsbad Habitat Management Plan	**Consistent:** The proposed project would result in temporary and permanent impacts to areas currently located within the hardline preserve area designated by the HMP, including Batiquitos Lagoon Ecological Reserve. Temporary impacts to the hardline preserve area would result from disturbance in sensitive areas for embankment support, construction access, etc. and would cease post-construction. While some ground disturbance and vegetation clearing may occur, it would be in a manner that would not preclude restoration of these areas to pre-existing conditions once construction is complete. Temporary impacts to vegetation within the existing hardline conservation area during construction would be implemented consistent with the HMP, as applicable, and would be restored to preconstruction conditions after implementation of the proposed

Applicable Regulation, Law, Plan, or Program[1]	Project Consistency
	project per mitigation measures **BIO-4** and **BIO-5** as discussed further in **Section IV**, Biological Resources. A hardline preserve area boundary adjustment would not be required for temporary impacts. Permanent removal of acreages within the existing hardline preserve area boundary must be replaced with vegetation communities of equal or better biological value to result in a no net loss of hardline preserve area. Replacement of the 0.201 acres removed as a result of the proposed project (**Figure 4**) would occur through a boundary line adjustment to incorporate 0.201 acres of land currently located within the city-owned Crossings Golf Course property into the hardline preserve area. This adjustment would be considered a minor amendment to the HMP through an Equivalency Finding (see detailed discussion in **Section IV**, Biological Resources).
La Costa Master Plan	**Consistent:** The proposed project site is designated as open space. The proposed project would not change current use or function or result in incompatibilities with surrounding land use. The project would adhere to the constraints of the Plan, including lighting requirements, and street lighting that conserves energy would be used. Maximum spacing of streetlights would be used, consistent with city standards and the approval of the city engineer. The Plan states that grading permit issuance is dependent upon construction timing (all construction shall occur in normal daytime working hours) and protections of the Batiquitos Lagoon Ecological Reserve. Grading should be limited to minimum areas, vegetation clearing should be no more than 2 weeks prior to grading, and all grading would be done in accordance with the Master Plan requirements, the Carlsbad Grading Ordinance, and Carlsbad Municipal Code. The proposed project would comply with these requirements. The proposed project would comply with the physical design standards for noise attenuation and would minimize the effects of noise generation to recreational areas and open space (see Section XIII Noise). The project would comply with the Fire Suppression Standards. The project would comply with the Plan requirements that all arterial streets within the Plan provide on street bikeways, and pedestrian trails within open space corridors.
La Costa Resort and Spa Master Plan	**Consistent:** The project would adhere to the architectural and landscape architectural guidelines and standards within the Master Plan planning area. The proposed project is in Planning Area 7, and the Landscape Architectural Guidelines and Standards state that Planning Area 7 is subject to the El Camino Real Corridor Standards (see consistency discussion earlier in this table). The project would landscape to be consistent with the intent of the landscape and design theme of the master plan and corridor standards, maximize views to and from the golf course and lagoon (two new viewing areas), and adhere to the retaining wall standards and conditions (rock face treatment) and project wall standards.

Applicable Regulation, Law, Plan, or Program[1]	Project Consistency
Aviara Master Plan	**Consistent:** The proposed project would be consistent with the Aviara Master Plan, as it would comply with the grading policies (the Master Plan does not allow grading between October 1 and April 1) and would include the usage of runoff and erosion control measures prior to grading. As required in the Master Plan, landscape treatments would present a visually cohesive experience. The proposed project would comply with the Master Plan, as it would comply with the resource preservation policies of the LCP, the Local Facilities Management Plan, and the city's Planned Community Zone and Hillside Development Ordinance, Chapters 21.38 and 21.95, of the Carlsbad Municipal Code.

[1] See Affected Environment section for details of appliable plans and policies from each planning document.

Table 11. California Coastal Act Chapter 3 Policy Consistency Summary Table

California Coastal Act	Proposed Project
ARTICLE 2 **PUBLIC ACCESS** Article 2 focuses on public access to the coast and the provision and maintenance of public access availability and opportunities.	Implementation of the proposed project would not restrict public access to the coast. Instead, it would likely increase the safety in access routes to coastal resources, such as Batiquitos Lagoon and nearby beaches with a continuous pedestrian connection through the area.
ARTICLE 3 **RECREATION** Article 3 provides protections for coastal recreation and lands that provide coastal recreation opportunities.	The proposed project does not include elements that would modify coastal recreational opportunities or access to coastal recreation opportunities in a way that would deter access or use of coastal resources. Coastal recreational resources are not located in the immediate area of the proposed project. The proposed project would provide a more connected multi-modal system, thereby increasing the efficiency of access routes that lead to existing coastal recreational resources located west of the proposed project site. The scenic overlooks provided by the proposed project would increase and enhance the public's passive recreational opportunities to view and observe the coastal resources associated with the Batiquitos Lagoon.
ARTICLE 4 **MARINE ENVIRONMENT** Article 4 outlines policies related to the protection of the marine environment, such as biological productivity and protection of water quality in waters, streams, and wetlands; filling or dredging; movement of sediment; and flood control.	As detailed in **Section IV**, Biological Resources, the proposed project would impact jurisdictional resources. However, impacts would be mitigated through implementation of mitigation measures **BIO-4** through **BIO-6** and would not result in a loss of jurisdictional resources. As detailed in **Section X**, Hydrology and Water Quality, implementation of BMPs through a required SWPPP or WPCP would manage potential water quality impacts during construction. Additionally, flood control and movement of sediment are not anticipated to alter with implementation of the proposed project.

California Coastal Act	Proposed Project
ARTICLE 5 **LAND RESOURCES** Article 5 specifically addresses environmentally sensitive habitat areas and the protection of such resources, including agricultural, archaeological, or paleontological resources.	The proposed project would not conflict with CCA Article 5 policies. The continuation of protection of sensitive resources would not be negatively altered or restricted in accordance with CCA requirements. As mentioned in **Table 10** above, the proposed project would complete a boundary adjustment for permanent impacts to the existing hardline conservation area. Through an Equivalency Finding as outlined in the HMP, this adjustment would be considered a minor amendment. Minor changes to HMP maps to show actual, precise boundaries of conserved habitat, and which do not reduce the acreage or quality of the habitat, are treated as automatic amendments under an Equivalency Finding (see detailed discussion in **Section IV**, Biological Resources). Impacted acreages within existing hardline conservation areas would be replaced in equal value, therefore, the proposed project would not reduce the acreage or quality of the habitat and would provide for the continued protection of environmentally sensitive habitat. While temporary construction activities may impact environmentally sensitive habitat adjacent to the proposed project site, BMPs as outlined in the HMP would be implemented to address these impacts. Additionally, they would occur on the fringe of the existing hardline conservation area, immediately adjacent to the existing right-of-way, and would not extend into Batiquitos Lagoon. In addition, permanent impacts or right-of-way acquisition into the Batiquitos Lagoon Ecological Reserve are not anticipated. Temporary impacts may occur to regrade supporting embankments to the roadway widening; however, per mitigation measures **BIO-4** and **BIO-5**, these areas would be revegetated and would function similar to preconstruction conditions, therefore resulting in a less than significant impact as discussed further in **Section IV**, Biological Resources. As detailed **in Section II**, Agricultural and Forestry Resources, agricultural and forest resources do not exist within the proposed project site and, therefore, would not be impacted by the proposed project. **Section V**, Cultural Resources, and **Section VII**, Geology and Soils, identified potentially significant impacts to archaeological and paleontological resources, respectively, during construction activities; however, implementation of required mitigation measures would reduce potential impacts to these resources to less than significant with mitigation incorporated.
ARTICLE 6 **DEVELOPMENT** Article 6 (Section 30251) addresses the protection of scenic resources, public access, and coastal development.	The proposed project would not create a substantial change in visual character to the scenic resources as described in **Section I**, Aesthetics. As detailed in **Section XVI**, Recreation, the proposed project would not modify public access to the coast in a way that would deter access or use of coastal resources. Instead, it would provide a more continuous, safer network of connected multi-modal means of transportation to accessing coastal resources. Further, the scenic overlooks provided by the proposed project would increase and enhance the public's passive recreational opportunities to view and observe the coastal resources associated with the Batiquitos Lagoon As described in the topic-specific sections throughout this document, the proposed project would not create adverse impacts related to issues such as geologic risk, air pollution, or energy consumption.

California Coastal Act	Proposed Project
ARTICLE 7 **INDUSTRIAL DEVELOPMENT** Article 7 focuses on the location of coastal-dependent industrial uses.	Many of the policies contained in Article 7 do not apply to the proposed project as there would be no development of industrial facilities. The proposed project would not influence industrial development in the area.

While some temporary impacts would result from actions necessary to implement the proposed project, roadway improvements would not conflict with land use regulations or policies in a manner that would result in substantial adverse environmental effects. The proposed project would remain consistent with applicable objectives, goals, and policies of relevant planning documents. Therefore, impacts related to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect would result in a **Less than Significant Impact**.

FINDINGS

The proposed project would have a **Less than Significant Impact** related to land use and planning.

MITIGATION MEASURES

The proposed project would have a less than significant impact to land use and planning; therefore, no mitigation measures would be required.

XII. MINERAL RESOURCES **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

XII. MINERAL RESOURCES

AFFECTED ENVIRONMENT

According to the City of Carlsbad General Plan, no mineral resources of economic value to the region and the residents of the state have been identified in Carlsbad. Carlsbad has not been delineated as a locally important mineral recovery site.

IMPACT ANALYSIS

a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State? and b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact: Carlsbad is devoid of known mineral resources of economic value to the region and the residents of California. Mineral resources within Carlsbad are no longer being utilized and extracted as exploitable natural resources. Therefore, the proposed project would have **No Impact** to mineral resources.

FINDINGS

The proposed project would have **No Impact** related to mineral resources.

MITIGATION MEASURES

The proposed project would have no impact to mineral resources; therefore, no mitigation measures would be required.

XIII. NOISE Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

XIII. NOISE

REGULATORY SETTING

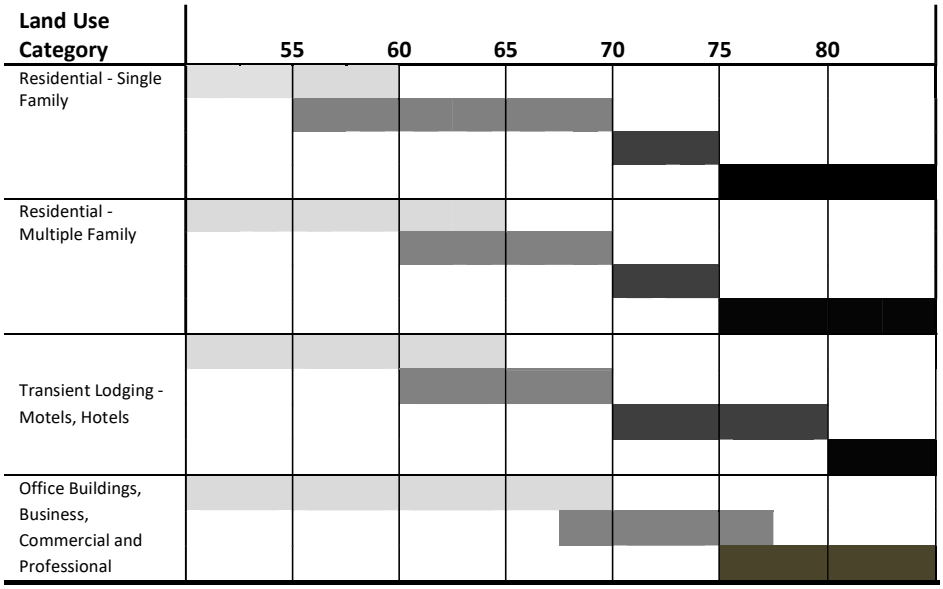
City of Carlsbad General Plan Noise Element

The city's General Plan Noise Element outlines goals and policies regarding land use and noise compatibility. The following policies are applicable to the analysis presented in this document.

> **General Plan Policy 5-P.1 Acceptability of Use Location**. *Use the noise and land use compatibility matrix (Table 5-1) and Future Noise Contours map (Figure 5-3) as criteria to determine acceptability of a land use, including the improvement/construction of streets, railroads, freeways and highways. Do not permit new noise-sensitive uses—including schools, hospitals, places of worship, and homes—where noise levels are "normally unacceptable" or higher, if alternative locations are available for the uses in the city.*

The existing and planned noise sensitive land use categories surrounding the immediate proposed project area include the following: single family residential, multiple family residential, open space, local shopping center, visitor commercial, and public (see **Figure 7**). A truncated version of Table 5-1 of the Noise Element, "Land Use Compatibility For Community Noise Environments," is provided for the applicable land use categories in **Table 12**.

Table 102. Pertinent Land Use Compatibility Noise Thresholds



Compatibility Definitions:

	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable: New Construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.
	Normally Unacceptable: New Construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Clearly Unacceptable: New construction or development clearly should not be undertaken.

Source: City of Carlsbad General Plan Noise Element, Table 5-1

General Plan Policy 5-P.10 *Consider noise impacts in the design of road systems and give special consideration to noise sensitive areas; to the greatest extent possible, the design of roads should minimize roadway noise to levels acceptable to surrounding areas.*

General Plan Policy 5-P.11 *Review traffic flow systems and, wherever possible, synchronize signalization and/or implement other traffic flow improvements to avoid traffic stops and starts, and adjust traffic flow to achieve noise levels acceptable to surrounding areas.*

The Noise Element also defines subjective responses to increases in noise level as follows:

- 1 decibel (dB) Change – Cannot be perceived except under special conditions
- 3 dB Change – Considered a just-noticeable difference
- 5 dB Change – The initial level where community response would be expected
- 10 dB Change - Subjectively heard as an approximate doubling in loudness

For purposes of this assessment, a 3 dB increase in noise is considered the significance threshold for a permanent increase in noise level exposure. In general, a 3 dB increase in noise level is barely perceptible by the human ear (Caltrans 2013).

City of Carlsbad Municipal Code – Chapter 8.48 Noise

Chapter 8.48 of the CMC regulates the times and days where construction equipment may operate or construction activities can be performed (e.g., demolition, erection, alteration, or repair of buildings and structures, or grading or excavation of land) (City of Carlsbad 2022a). The CMC allows construction to occur between the hours of 7 a.m. and 6 p.m. Monday through Friday and between 8 a.m. and 6 p.m. on Saturdays and prohibits construction on Sundays and federal holidays. Exceptions would be determined by the city's building official, engineer, or other official designated by the city.

City of Carlsbad Noise Guidelines Manual

The City of Carlsbad Noise Guidelines Manual (Noise Guidelines) provides guidance for analyzing, assessing, and mitigating noise impacts as they relate to the General Plan and the CMC (City of Carlsbad 2013). Although some thresholds provided in the document are outdated and inconsistent with the more-current General Plan, the Noise Guidelines provide guidance for the scenarios requiring detailed acoustical studies and report preparation, assessment and recommendation of mitigation, and best practices for future development and construction.

AFFECTED ENVIRONMENT

Noise-sensitive receptors in the proposed project area include single-family residential homes to the east and west of El Camino Real north of Arenal Road, the City of Carlsbad Fire Station No. 2 at the northwest corner of El Camino Real and Arenal Road, and the hotel rooms associated with the Omni La Costa Resort east of El Camino Real and between Costa Del Mar Road and Arenal Road.

The city's General Plan Noise Element maps the existing noise contours at the proposed project site as 70+ dBA Community Noise Equivalent Level (CNEL) immediately adjacent to El Camino Real. From there, contours move from 65 to 70 dBA CNEL to 60 to 65 dBA CNEL at surrounding areas.

Noise impacts related to protected animal species and their habitats are discussed in **Section IV**, Biological Resources.

IMPACT ANALYSIS

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?

Less than Significant Impact (Operations and Construction):

Permanent Increase in Ambient Noise Levels (Operational Noise)

The proposed widening of southbound El Camino Real would be achieved through two methods of roadway improvements. North of Arenal Road, lanes would be restriped to accommodate three southbound lanes through the proposed project site. This approach would spread southbound traffic slightly westward toward the residential land uses to the northwest and the lagoon to the west. As southbound El Camino Real approaches and passes Costa Del Mar Road, the third lane would be constructed through the narrowing of the existing median from a width of approximately 18 feet to a width of approximately 7 feet. This narrowing would occur on the west side of the median only. This approach would spread southbound traffic slightly eastward toward the commercial parking lots and would subsequently shift traffic away from the lagoon to the west.

A screening level traffic noise prediction model was created using the Federal Highway Administration's Traffic Noise Model version 2.5 to quantify the change in traffic noise caused by the implementation of the proposed project at key noise-sensitive areas. Using peak-hour traffic volumes and truck mix classifications provided in the Transportation Impact Analysis Report (STC Traffic, Inc. 2022), a future no-project and a future with-project prediction model were designed assuming a flat model space. Using the noise modeling predictions, **Table 13** quantifies the total change in anticipated traffic noise levels at each of the key noise-sensitive areas.

Table 13 suggests that future traffic noise levels resulting from operation of the proposed project would vary by -0.6 dBA to +0.7 dBA. A difference in noise level of less than a decibel is imperceptible to the human ear; therefore, operational noise from future traffic flows along the project corridor would be indetectable. In addition, future traffic noise levels would be below the 3 dBA increase identified as the significance threshold for a permanent increase in noise level exposure. Therefore, the proposed project would not generate a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies, and a **Less than Significant Impact** would occur.

Table 13. Summary of Traffic Noise Prediction Results

Noise-Sensitive Land Use and Area Description	Range of Traffic Noise Level Changes with Proposed Project
Residential Receptors **Northwest of intersection of Arenal Road and El Camino Real**	-0.1 to +0.4 dBA
Fire Department / Residential Receptors **Northeast of intersection of Arenal Road and El Camino Real**	0 dBA
Lagoon - North Receptors **Approximately halfway down the straight stretch of El Camino Real, 100 to 500 feet into the lagoon.**	+0.1 to +0.7 dBA
Hotel Villa Receptors **Northeast of intersection of Costa Del Mar Road and El Camino Real**	-0.1 dBA
Lagoon – Central / Curve Receptors **Adjacent to curve of El Camino Real, 100 to 500 feet into the lagoon**	0 to +0.7 dBA
Lagoon – South / Bridge Receptors **Adjacent to the bridge that spans San Marcos Creek, 100 to 500 feet into the lagoon**	-0.6 to +0.3 dBA

Temporary Increase in Ambient Noise Levels (Construction Noise)

As mentioned above, the CMC limits construction noise to between 7 a.m. and 6 p.m. Monday through Friday and between 8 a.m. and 6 p.m. on Saturdays, and it prohibits construction on Sundays and federal holidays. Construction of the proposed project would occur within the allowed daytime construction noise hours as outlined by the CMC. During construction of the proposed project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Noise sensitive receptors, such as residential homes north of Arenal Road and along Costa Del Mar Road in the Omni La Costa Resort area, the city's Fire Station No. 2, and guests associated with the Omni La Costa Resort would be subject to temporary construction noise. Construction equipment noise levels were derived from reference maximum (instantaneous) construction equipment sound levels and subsequently calculated into hourly average sound levels at the closest receptor distance (160 feet) for community noise impact assessment (Appendix G). The resulting construction equipment sound levels would range from 60 to 73 dBA depending on the type of equipment and activities being performed. Predicted noise level contours in the General Plan Noise Element indicate that homes along El Camino Real are already

exposed to transportation noise levels in excess of 70 dBA[4]. Assuming existing receptors are exposed to daily ambient noise levels between 70 and 75 dBA, the sum of the ambient noise (70 to 75 dBA) with project construction noise (60 to 73 dBA) could result in temporary increases in ambient noise between 0-5 dBA, which would be perceptible but not qualify as a substantial increase to ambient noise levels for temporary daytime noise source. Noise levels from engines would be less when the equipment is moving from one location to another without working, or when the equipment is idling. Additionally, standard construction practices, such as including appropriate mufflers and housing of exposed engines, as applicable, would be included in the proposed project. Construction noise would be short-term and intermittent and would not be a substantial increase above current ambient noise levels. Therefore, impacts would be **Less than Significant**.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact: Site preparation and construction would involve demolition, excavation, grading, constructing new sidewalks, paving roadway surfaces, and construction of pedestrian bridges including supporting abutments. These temporary construction activities are anticipated to create some groundborne vibration; however, they would be short-term and intermittent and would occur over approximately 100 feet from a vibration-sensitive receptor. Therefore, the proposed project would not generate excessive groundborne vibration or groundborne noise levels and would have a **Less than Significant Impact**.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact: The proposed project is within the plan area of the McClellan-Palomar Airport Land Use Compatibility Plan. All areas of the project fall outside of the predicted aviation noise contours in the Compatibility Policy: Noise figure. As a result, those on-site during project construction would not be subjected to excessive aviation noise levels and the project would also introduce any noise-sensitive uses within non-compatible areas. Therefore, there would be **No Impact** to exposing people residing or working in the project area to excessive aviation noise levels.

FINDINGS

The proposed project would have a **Less than Significant Impact** related to noise.

[4] The transportation sound level contours from the General Plan Noise Element use the CNEL descriptor. Assuming typical daily traffic flows, these values are commonly considered representative (+/- 1 dB) of peak-hour traffic noise levels during the daytime period. Therefore, this analysis assumes that the CNEL value is representative of the typical peak-hour average sound levels (Leq) for the area, allowing for direct comparison to predicted construction noise levels (also in Leq).

MITIGATION MEASURES

The proposed project would have a less than significant impact to noise; therefore, no mitigation measures would be required.

XIV. POPULATION AND HOUSING **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Induce substantial unplanned population growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

XIV. POPULATION AND HOUSING

IMPACT ANALYSIS

a) Induce substantial unplanned population growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact: There is no planned development along El Camino Real as part of the proposed project, and although the proposed project would widen a segment of El Camino Real, this widening would occur on a relatively short segment, which is known as "spot widening" (approximately 0.6 mile). As previously described, this "spot widening" is not anticipated to result in substantial induced automobile or truck use or an increase of the attractiveness of the roadway and would not induce development in the area. The proposed project would not induce population growth in the area, either directly or indirectly; therefore, the proposed project would have **No Impact** related to population growth.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact: The proposed project would not displace existing housing or necessitate the construction of replacement housing. The proposed project would have **No Impact** related to displacement of housing or people.

FINDINGS

The proposed project would have **No Impact** related to population and housing**.**

MITIGATION MEASURES

The proposed project would have no impact to population and housing; therefore, no mitigation measures would be required.

XV. PUBLIC SERVICES **Would the project** result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, a need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services**:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

XV. PUBLIC SERVICES

AFFECTED ENVIRONMENT

The nearest fire station, City of Carlsbad Fire Station 2, is located on the corner of El Camino Real and Arenal Road. The Carlsbad Police Department is approximately 3.5 miles north of the proposed project site. The nearest school, Coastal Hebrew School, is within approximately 0.25 miles of the proposed project site on La Costa Avenue and El Camino Real. There is no park near the proposed project site; however, Batiquitos Lagoon to the west includes recreational use trails.

IMPACT ANALYSIS

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, a need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: Fire protection? Police Protection? Schools? Parks? Other public facilities?

No Impact: As the roadway improvements associated with the proposed project include an additional southbound lane, construction of a new sidewalk and pedestrian bridges, and improvements for bicycle traffic, the proposed project would not result in the need for new or physically altered governmental facilities. The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan as traffic would be accommodated during construction to allow movement

through the area. The typical construction activities associated with implementation of the proposed project are not of the nature to necessitate police services. In addition, the proposed project would not cause an increase in student enrollment, create a need for additional school services, affect the use of parks in the area, nor result in the need for new park facilities. As the proposed project is intended to accommodate and relieve future congestion, it would improve future traffic conditions for emergency response or emergency evacuation. Therefore, the proposed project would not cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection, police protection, schools, parks, and other public facilities, and **No Impact** would result.

FINDINGS

The proposed project would have **No Impact** related to public services.

MITIGATION MEASURES

The proposed project would have no impact to public services; therefore, no mitigation measures would be required.

XVI. RECREATION	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

XVI. RECREATION

AFFECTED ENVIRONMENT

As stated previously, there is no local or regionally designated park near the proposed project site. While Batiquitos Lagoon, which includes recreational opportunities (e.g., trails, bird watching areas), is located to the west of the proposed project site, El Camino Real does not provide direct access to designated trails within the lagoon complex. The Batiquitos Lagoon Foundation has plans for a future trail, the Batiquitos Lagoon Boardwalk/South Trail, which would connect with the proposed Project's pedestrian facility improvements just north of Costa Del Mar Rd. and the proposed overlook. The proposed Project would not preclude or restrict this future trail project or limit recreation in the area.

IMPACT ANALYSIS

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact: Mobility improvements along the widened roadway would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Roadway improvements, particularly those for pedestrians and bicyclists through the improved connection along El Camino Real between Arenal Road and La Costa Avenue, would provide a continuous connection through the area and generally enhance accessibility to coastal areas more efficiently and safely with the proposed project. It is anticipated the improved roadway connection would increase safety of multi-modal transportation by implementing a "spot widening" in the existing roadway. This "spot widening" would occur where pedestrian access and safety is currently compromised, but the widening would not increase or provide new access to nearby recreational areas such that physical deterioration would occur or be accelerated. The proposed project would not increase the population near the proposed project site by introducing

new housing or employment opportunities that would result in increased use or physical deterioration of recreational facilities. Therefore, a **Less than Significant Impact** would result.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Less than Significant Impact: The proposed project would involve construction of two overlooks that would provide viewing opportunities to Batiquitos Lagoon. Overlooks may be used for passive recreational activities such as bird watching, wildlife observation, and photography. While construction of these new recreational facilities would impact existing vegetation communities due to encroachment into adjacent habitat, the implemented mitigation measures would provide no net loss of habitat, as described in **Section IV**, Biological Resources, because temporarily impacted habitat would be restored at completion and permanent impacts would be mitigated. Therefore, a **Less than Significant Impact** would occur.

FINDINGS

The proposed project would have a **Less than Significant Impact** related to recreation.

MITIGATION MEASURES

The proposed project would have a less than significant impact to recreation; therefore, no mitigation measures would be required.

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

XVII. TRANSPORTATION

REGULATORY SETTING

General Plan Mobility Element

The General Plan Mobility Element promotes a livable streets strategy for mobility within the city. The objective of this strategy is to create a "multi-modal" street network that balances the mobility needs of pedestrians, bicyclists, transit users, and vehicles. For each street in the city, the General Plan Mobility Element identifies the travel modes for which service levels should be maintained per the multi-modal level of service standard.

Vehicle Miles Traveled Analysis Guidelines

The VMT Analysis Guidelines provide direction regarding the methodologies and thresholds to be used for VMT analysis in the City of Carlsbad (City of Carlsbad 2023). The guidelines generally follow state guidance provided in the Office of Planning and Research's (OPR's) Technical Advisory but add detail specific to the San Diego region and the City of Carlsbad. As recommended in OPR's Technical Advisory, the City of Carlsbad has decided to use VMT as the performance measure for transportation projects.

Carlsbad Sustainable Mobility Plan

The city adopted the Sustainable Mobility Plan in January of 2021, which presents a comprehensive look at current active travel and transit conditions by combining 12 mobility planning documents. These documents include the city's Trails Master Plan, Bicycle Master Plan, Pedestrian Master Plan, and Active Transportation Strategy. This comprehensive plan describes the existing citywide transportation network and considers a future network that incorporates various forms of mobility improvements**.** It aims to help

improve transportation-related safety, reduce greenhouse emissions, increase travel choices, and implement the city's General Plan Mobility Element. Improvements to bicycle, pedestrian, transit, rail, and walking networks are analyzed.

AFFECTED ENVIRONMENT

Existing Street Network

The following is a description of the major roadways in the vicinity of the proposed project.

- *El Camino Real:* El Camino Real is classified as an Arterial Street in the Mobility Element. It runs in the north-south direction and alternates between two and three lanes with left-turn pockets. A raised center median runs along the roadway except where it stops for the bridge segment over San Marcos Creek, which has a painted center median. The speed limit is 55 miles per hour, and Class II bicycle lanes are provided. Curbside parking is not permitted along any portion of El Camino Real.
- *Arenal Road:* Arenal Road is classified as a Local/Neighborhood Street in the Mobility Element and runs in the east-west direction from its intersection with El Camino Real. It has one lane in each direction and a painted center median. Arenal Road east of El Camino Real serves as an entry point to the Omni La Costa Resort & Spa. No curbside parking is permitted along any portion of Arenal Road in the proposed project vicinity.
- *La Costa Avenue:* In the Mobility Element, La Costa Avenue is classified as an Arterial Street on the western side of El Camino Real and a Neighborhood Connector Street on the eastern side of El Camino Real. East of El Camino Real, La Costa Avenue is currently constructed as a two-lane divided roadway with a combination of raised and painted center median with left-turn pockets provided at full access driveways and Class II bicycle lanes, the result of a "road-diet" process implemented by the city following the Mobility Element's livable streets vision. The Arterial portion of the roadway has a speed limit of 55 miles per hour, and the Neighborhood Connector portion of the roadway has a speed limit of 35 miles per hour. No curbside parking is permitted on any portion of La Costa Avenue in the proposed project vicinity.

Existing Transit Facilities

Multiple bus stops for North County Transit District Routes 309 and 609 are within the proposed project site or within a 0.5-mile walking distance of the proposed project site. The second closest bus route, Route 304, is located over 1 mile from the proposed project.

Route 309 provides a regular all-week service from Oceanside to Encinitas via El Camino Real, and Route 609 provides a regular weekday-only service from Encinitas to Sage Creek High School. Route 609 operates when Sage Creek High School is open for in-person learning and is subject to change based on bell times. All bus stops near the proposed project site service both routes. The El Camino Real & Costa Del Mar Road bus stop is located within the proposed project site, while the El Camino Real & La Costa

Avenue and El Camino Real & La Costa Towne Center bus stops are located within 0.5 miles of the proposed project.

Existing Bicycle Facilities

The following is a description of the bicycle facilities that occur along the three major roadways in the proposed project vicinity.

- *El Camino Real:* Class II buffered bicycle lanes are provided in both directions of El Camino Real in the proposed project vicinity.
- *Arenal Road:* No bicycle facilities are provided along Arenal Road in the proposed project vicinity.
- *La Costa Avenue:* Class II bicycle lanes are provided in both directions of La Costa Avenue in the proposed project vicinity.

Existing Pedestrian Facilities

The following is a description of the pedestrian facilities that occur within the proposed project vicinity.

- *El Camino Real:* A sidewalk is provided along the northbound direction of El Camino Real except for the bridge segment over San Marcos Creek. El Camino Real, in both directions, features no pedestrian facilities over the bridge. Segmented sidewalks are provided in the southbound direction of the roadway including near La Costa Avenue and the intersection of Costa Del Mar Road.
- *Arenal Road:* Sidewalks along Arenal Road are provided in both directions on the western side of El Camino Real. No sidewalks are provided on the eastern side of El Camino Real.
- *La Costa Avenue:* Sidewalks are provided in both directions of the roadway in the proposed project vicinity. The sidewalk in the eastbound direction on the east side of El Camino Real spans from the El Camino Real intersection to the Bank of America parking lot entrance to the east. The sidewalk in the eastbound direction on the west side of El Camino Real spans from the La Costa Green Trailhead to the El Camino Real intersection. Sidewalks in the westbound direction continue along La Costa Avenue westward.

IMPACT ANALYSIS

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

***Less than Significant Impact*:** Consistency with city plans and policies, specifically the General Plan Mobility Element and Sustainable Mobility Plan, will be analyzed in order to assess the proposed project's environmental impacts.

The construction of a third southbound lane, an improved buffered bike lane, and complete pedestrian facilities would provide connectivity to multi-modal transportation means between Arenal Road and La Costa Avenue. The proposed project would be an improvement over the current roadway, especially because it establishes complete pedestrian facilities along this portion of El Camino Real. Because the proposed project improves pedestrian and bicycle facilities, which in turn promotes multi-modal transportation means along this segment of roadway, the proposed project would be consistent with the goals and objectives of the city's Sustainable Mobility Plan. Similarly, the proposed project would be consistent with the city's General Plan Mobility Element as improvements for pedestrians, bicyclists, and vehicles are addressed in the design of the proposed project. The proposed project also addresses a "spot-widening" in the roadway and would likely minimize delays along this section of roadway, which could encourage transit use for routes that service the area (e.g., North County Transit District Route 309).

Temporary impacts to existing facilities are not anticipated during construction, as the roadway would remain open to accommodate traffic. Any potential delays would be considered temporary and short-term during construction activities. Alternate pedestrian, bicycle, and transit routes would be provided, as necessary, and would not be required once construction ceases.

Therefore, the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Impacts would be **Less than Significant**.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less than Significant Impact*:* Pursuant to SB 743 and CEQA Guidelines Section 15064.3 subdivision (b), VMT is the program for measuring and addressing circulation system facilities under CEQA. CEQA Guidelines Section 15064.3 provides specific considerations for evaluating a project's transportation impacts and identifies VMT analysis as the most appropriate measure to address such impacts. Use of qualitative VMT analysis for roadway projects was conducted for the proposed project and is supported by Section 15064.3 of the CEQA Guidelines, which states, "If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc." As detailed in the VMT Analysis, the proposed project would not result in a net increase in VMT (STC Traffic, Inc. 2023). The proposed project involves multi-modal travel improvements for bicyclists, pedestrians, and vehicle traffic. The proposed project would widen a portion of El Camino Real (approximately 0.6 miles) to match three lanes both north of Arenal Road and south of La Costa Avenue. This widening would result in improved traffic conditions because the previously constrained roadway segment would be addressed. Pedestrian and bicycle improvements (i.e., crosswalks, connected sidewalks) associated with the proposed project would encourage these transportation modes and transit opportunities. The North County Transit District's Route 309, which provides service along El Camino Real, could benefit from improved transit services, better connectivity for non-vehicle modes of transportation, and decreased congestion times. Given the extent of the capacity-enhancing improvements (approximately 0.6 miles of new travel lane for one

direction of travel) compared to multi-modal improvements (corridor-wide) and improved access to transit and key destinations for pedestrians and bicyclists, implementation of the proposed project is not anticipated to have an appreciable effect on VMT. Therefore, the proposed project would not conflict or be inconsistent with Section 15064.3(b)(2), which specifically regards transportation projects, and is considered to have a **Less than Significant Impact**.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact*:* The proposed project does not include substantial changes to the existing roadway alignment. The existing roadway would be widened along the southbound side of El Camino Real, north of the existing bridge structure, with the current alignment of the road. Temporary impacts to existing facilities would not occur during construction, as the roadway would remain open to accommodate traffic. Potential delays would be considered temporary and short-term during construction activities. Alternate pedestrian, bicycle, and transit routes would be provided, as necessary, and would not be required once construction ceases. Alternate routes would not include substantial changes to the existing roadway alignment or through areas with incompatible uses. These routes have been identified in the Traffic Control Plan.

The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) during construction or project operation; therefore, **No Impact** would occur.

d) Result in inadequate emergency access?

Less than Significant Impact*:* As stated in Section IX, Hazards and Hazardous Materials, and Section XVII Traffic,, the proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant. The proposed project would not impede emergency access to or through the proposed project site. Construction equipment activities, storage and laydown areas, and worker parking would not occur on local roadways or block streets. Any temporary lane closures would be for a short period of time and would be implemented in accordance with recommendations provided in the California Temporary Traffic Control Handbook to ensure that emergency access would be maintained all times. Temporary impacts to existing facilities are not anticipated to occur during construction, as the roadway would remain open to accommodate traffic, including emergency access through the construction area. However, should they be necessary, alternative routes have been identified in a Traffic Control Plan and would include coordination with local emergency service providers to ensure adequate access is maintained and alternate routes are available if needed. The Traffic Control Plan will be prepared and will be submitted by the construction contractor for review and approval by the city as part of the right-of-way permit and prior to project construction.

As the proposed project is intended to accommodate and relieve future congestion, future traffic conditions for emergency response or emergency evacuation would be improved. Therefore, impacts would be **Less than Significant**.

FINDINGS

The proposed project would have a **Less than Significant Impact** related to transportation/traffic.

MITIGATION MEASURES

The proposed project would have less than significant impacts related to transportation/traffic; therefore, no mitigation measures would be required.

XVIII. TRIBAL CULTURAL RESOURCES **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

XVIII. TRIBAL CULTURAL RESOURCES

REGULATORY SETTING

Effective July 1, 2015, CEQA was revised to include early consultation with California Native American tribes and consideration of tribal cultural resources. These changes were enacted through AB 52. By including tribal cultural resources early in the CEQA process, AB 52 intends to ensure that local and tribal governments, public agencies, and project proponents would have information available, early in the project planning process, to identify and address potential adverse impacts to tribal cultural resources. CEQA now establishes that a "project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resources is a project that may have a significant effect on the environment" (PRC Section 21084.2).

To help determine whether a project may have such an adverse effect, the PRC requires a lead agency to consult with a California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. The consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project (PRC Section 21080.3.1). Consultation must consist of the lead agency providing formal notification, in writing, to the tribes that have requested notification or proposed projects within their traditionally and culturally affiliated area. AB 52 stipulates that the NAHC shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated with the proposed project area. If the tribe wishes to engage in consultation on the proposed project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification.

Once the lead agency receives the tribe's request to consult, the lead agency must then begin the consultation process within 30 days. If a lead agency determines that a project may cause a substantial adverse change to tribal cultural resources, the lead agency must consider measures to mitigate that impact. Consultation concludes when (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2). Under existing law, environmental documents must not include information about the locations of an archaeological site or sacred lands or other information that is exempt from public disclosure pursuant to the Public Records Act. Tribal cultural resources are also exempt from disclosure.

The term "tribal cultural resources" refers to sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are:

- Included or determined to be eligible for inclusion in the CRHR;
- Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1; or
- A resource determined by a California lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1.

In accordance with AB 52, the city initiated the tribal consultation process on September 8, 2023. Those tribes that have requested to be listed on the city's notification list for the purposes of AB 52 were notified in writing via certified mail. As part of this process, the city has provided notification to each of these listed tribes of the opportunity to consult with the city regarding the proposed project. The following individuals and tribes were sent email letters:

1. San Luis Rey Band of Mission Indians
2. Rincon Band of Luiseño Indians
3. La Jolla Band of Luiseño Indians
4. Torres Martinez Desert Cahuilla Indian

The Rincon Band of Luiseño Indians ("Rincon Band") and San Luis Rey Band of Mission Indians ("San Luis Rey Band") responded within 30 days and requested consultation.

Consultation with the Rincon Band. As part of the consultation process, the project was presented to the Rincon Band on March 21, 2024, May 2, 2024, December 3, 2024, and March 26, 2025. As part of these meetings, staff gave project presentations and updates and provided plans and studies to the tribe.

On March 17, 2025, staff emailed the cultural resources and tribal cultural resources draft mitigation measures, a map showing the project location and the cultural resources investigation letter report.

On April 14, 2025, the Rincon Band submitted comments in the form of requests for further discussion on specific language in the draft mitigation measures.

On April 30, 2025, city staff and tribal representatives discussed the Rincon Band's requests for additional information. The parties were unable to agree upon mutually acceptable wording. The Rincon Band requested a meeting with the Community Development Director and City Attorney's Office to discuss their concerns further. City staff requested that the Rincon Band submit a document detailing their requested revisions to the draft mitigation measures in advance of that meeting.

On May 20, 2025, the Rincon Band submitted a letter regarding the draft mitigation measures and their broader concerns. The following day, the Rincon Band submitted specific language revisions to the draft measures.

On May 28, 2025, consultation with the Rincon Band was held at which time both parties confirmed the scheduling underway for the meeting requested by the tribe on April 30.

On June 11, 2025, consultation was held with Rincon Band representatives, the City Attorney, the Community Development Director and Planning staff. The parties discussed the language in question and provided additional detail to support their respective positions, although consensus was not achieved at the meeting. After the meeting and with further consideration, the city agreed to certain additional CR/TCR mitigation measure language revisions.

Final consultation between the Rincon Band and city was held June 25, 2025, when the Rincon Band and city staff reviewed a city-drafted letter with the city's responses to the Rincon Band's proposed revisions. In response to city staff questions, the tribal representative provided additional information regarding their rationale and intent for certain revisions. Based on that information, staff made certain additional changes, which are reflected in the draft mitigation measures.

In consideration of the collaborative process undertaken to arrive at an outcome with the maximum amount of consensus feasible between the two positions, the city concluded AB 52 consultation pursuant to Public Resources Code Section 21080.3.2. A letter concluding consultation was mailed and emailed to the Rincon Band on July 24, 2025.

Consultation with the San Luis Rey Band. On December 10, 2024, consultation was held with the San Luis Rey Band. Consultation including a presentation of the project. The same day, city staff emailed the project's cultural resources investigation letter report to the San Luis Rey Band. On March 17, 2025, staff emailed the cultural resources and tribal cultural resources draft mitigation measures, a project map as well as the letter report previously sent. The San Luis Rey Band did not request any changes to the draft mitigation measures as proposed.

On July 24, 2025, the city emailed and mailed a letter to the San Luis Rey Band notifying of revisions to the draft cultural resources and tribal cultural resources draft mitigation measures. These revisions reflect the changes staff made in response to consultation with the Rincon Band. On July 28, 2025, the San Luis Rey Band emailed the city indicating AB-52 consultation was concluded for the project.

AFFECTED ENVIRONMENT

A description of the potential tribal cultural resources and the Native American contact program is included in **Section V**, Cultural Resources.

IMPACT ANALYSIS

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less than Significant with Mitigation Incorporated: A Native American contact program was conducted that included a review of the SLF maintained by the NAHC. The NAHC responded indicating that the results of the SLF search were negative. While the pedestrian survey and map research revealed that the APE has been extensively modified to construct and maintain the roadway, buried utilities, and adjacent developments, with ground-disturbing activities there is a possibility that unmarked tribal cultural resources may be unearthed during construction. This impact would be considered potentially significant. With implementation of mitigation measures **TCR-1** and **TCR-2** detailed below and **CR-1** discussed in **Section V**, Cultural Resources, the proposed project would not cause a substantial adverse change in the significance of a tribal cultural resources and would result in **Less than Significant with Mitigation Incorporated**.

FINDINGS

The proposed project would have **Less than Significant with Mitigation Incorporated** related to tribal cultural resources.

MITIGATION MEASURES

The following measures for Tribal Monitoring, consistent with the Carlsbad Tribal, Cultural, and Paleontological Guidelines (2017), in addition to **CR-1** within **Section V,** Cultural Resources, will be implemented for impacts related to tribal cultural resources.

TCR-1: Tribal Monitoring. Prior to the commencement of ground-disturbing activities, the project developer shall:

a. Retain the services of a qualified archaeologist, defined as one either meeting the Secretary of the Interior's 1997 Professional Qualification Standards for Archeology or working under the supervision of a qualified archaeologist, who shall be on-site during ground-disturbing activities.

In the event cultural material is encountered, the archaeologist is empowered to temporarily divert or halt grading to allow for coordination with the Luiseño Native American monitor, or other Traditionally and Culturally Affiliated Luiseño Tribes ("TCA Tribe"), and to determine the significance of the discovery. The archaeologist shall follow all standard procedures for cultural materials that are not tribal cultural resources.

b. Enter into a Pre-Excavation Agreement, otherwise known as a Tribal Cultural Resources Treatment and Tribal Monitoring Agreement, with a TCA affiliated consulting tribe. This agreement shall meet all standard requirements of the tribe for such agreements, in accordance with applicable laws and regulations, including but not limited to the City of Carlsbad's 2017 Tribal, Cultural and Paleontological Resources Guidelines. This agreement will also contain provisions of a Luiseño Native American monitor and will also contain provisions to address the proper treatment of any Tribal Cultural Resources. The agreement shall outline the roles and powers of the Luiseño Native American monitors and the archaeologist and shall include the following provisions.

   i. A Luiseño Native American monitor shall be present during ground-disturbing activities. Ground-disturbing activities may include, but are not limited to, archaeological studies, clearing, grubbing, trenching, excavation, preparation for other infrastructure, and grading activities.

   ii. Any and all uncovered artifacts of Luiseño Native American cultural importance shall be returned to the San Luis Rey Band of Indians and/or the Most Likely Descendant for later reburial on the project site, if applicable, and shall not be curated, unless ordered to do so by a federal agency or a court of competent jurisdiction.

   iii. The Luiseño Native American monitor shall be present at the project's preconstruction meeting to discuss with grading and excavation contractors excavation schedules and safety issues, as well as to discuss with the archaeologist PI (principal investigator) concerning the proposed archaeologist techniques and/or strategies for the project.

   iv. Luiseño Native American monitors and archaeological monitors shall have joint authority to temporarily divert and/or halt construction activities. If tribal cultural resources are discovered during construction, earth-moving activity within and around the immediate discovery area will be diverted until the Luiseño Native American monitor and the archaeologist can assess the nature and significance of the find.

   v. If a significant tribal cultural resource(s) and/or unique archaeological resource(s) are discovered during ground-disturbing activities for this project, San Luis Rey Band of Mission Indians and other TCA tribes shall be notified and consulted regarding the respectful and dignified treatment of those resources. Pursuant to California PRC Section 21083.2(b), avoidance is the preferred method of preservation for archaeological and tribal cultural

resources. If, however, the applicant is able to demonstrate that avoidance of a significant and/or unique cultural resource is infeasible and a data recovery plan, or other culturally-appropriate mitigation measure, is authorized by the City of Carlsbad as the lead agency, the San Luis Rey Band of Mission Indians and other TCA tribes shall be consulted regarding the drafting and finalization of such recovery plan.

vi. If suspected Native American human remains are encountered, California Health and Safety Code Section 7050.5(b) states that no further disturbance shall occur until the San Diego County Medical Examiner has made the necessary findings as to origin. Further, pursuant to California PRC Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. Suspected Native American remains shall be examined in the field and kept in a secure location at the site. A Luiseño Native American monitor shall be present during the examination of the remains. If the San Diego County Medical Examiner determines the remains to be Native American, the NAHC will be contacted by the Medical Examiner within 24 hours. The NAHC will then immediately notify the "Most Likely Descendant" about the discovery. The Most Likely Descendant shall then make recommendations within 48 hours and engage in consultation concerning treatment of remains as provided in PRC Section 5097.98.

vii. In the event that fill material is imported into the project area, the fill shall be clean of tribal cultural resources and documented as such. Commercial sources of fill material are already permitted as appropriate and will be culturally sterile. If fill material is to be utilized and/or exported from areas within the project site, then that fill material shall be analyzed and confirmed by an archeologist and Luiseño Native American monitor that such fill material does not contain tribal cultural resources.

viii. No testing, invasive or non-invasive, shall be permitted on recovered tribal cultural resources without the written permission of the San Luis Rey Band of Mission Indians and other TCA tribes.

TCR-2: Prior to the completion of project construction, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis, and conclusions of the monitoring program shall be submitted by the Project Archaeologist, along with the Luiseño Native American monitor's notes and comments, to the City of Carlsbad for approval and shall be submitted to the South Coastal Information Center. Said report shall be subject to confidentiality as an exception to the Public Records Act and will not be available for general public distribution.

XIX. UTILITIES AND SERVICE SYSTEMS **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

The proposed project area is served by utility and service systems in San Diego County within the City of Carlsbad, including gas and electrical services from San Diego Gas and Electric. Carlsbad Municipal Water District provides water and wastewater services, and Carlsbad Municipal Water District provides water service to the project area. Carlsbad's wastewater is delivered to the Encina Wastewater Authority. The proposed project would be served by the nearest landfill, Miramar Landfill, for solid waste disposal.

UTILITIES AND SERVICE SYSTEMS

IMPACT ANALYSIS

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects?

Less than Significant Impact: On either side of El Camino Real, a series of gas, electrical, fuel, and water lines exist parallel to the roadway. The proposed project would include the abandonment of a buried 12-inch potable water main line located east of the existing bridge and the installation of a new 12-inch

potable water main line on the proposed eastern pedestrian bridge. The replacement of this water main line would not alter the existing capacity that is used to serve the surrounding community. Some minor adjustments to water valves may occur to accommodate grade changes, but the other utility lines would remain in place. Construction of new or expanded water facilities would not result because population would not increase with proposed project implementation. Roadway improvements, landscaping, and ground disturbance is not anticipated to disturb existing utilities, and the abandoned water line would remain in place. Preliminary potholing to locate existing utilities was conducted in coordination with applicable service providers to avoid and minimize interference to existing resources during construction; therefore, impacts would be **Less than Significant**.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than Significant Impact: Water consumption associated with the proposed project would be minor and primarily required during initial construction activities. The impacts to the local water supply would be minimal due to the short-term nature of construction and limited use of water. Once construction is complete, the proposed project would install irrigation for landscaped areas. A drip irrigation system would be installed and would include efficient, low volume equipment designed to provide enough water to support plant growth, but with minimum water loss due to potential runoff. Temporary irrigation would be established for salt marsh, coastal sage scrub, and riparian areas and would be removed once plants have been established. Local water supply would be sufficient to meet temporary water requirements for implementation of the proposed project. Additionally, there would be minimal post-construction needs for irrigation of landscaped areas which would not limit water supply for foreseeable future development. Therefore, there are sufficient water supplies available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years, and the impact would be **Less than Significant**.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact: As stated above, construction activities would be short-term and would use water typical for necessary construction activities. These activities are limited and would not consume water or generate wastewater in quantities that would exceed the capacity of existing treatment facilities. Once implemented, the proposed project would not generate wastewater or a need for wastewater treatment; therefore, no change would occur in wastewater generation that could affect available treatment capacities. There would be **No Impact**.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

No Impact: The proposed project would be served by the nearest landfill, Miramar Landfill, located approximately 20 miles south of the proposed project site. Miramar Landfill has anticipated capacity to operate through 2030 (City of San Diego 2015). The landfill is governed by San Diego Municipal Code Chapter 6, Article 6: Collection, Transportation, and Disposal of Refuse and Solid Waste. The contractor would arrange for the proper disposal of construction waste in the appropriate facility. Therefore, **No Impact** would occur.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact: The proposed project would comply with federal, state, and local statutes and regulations related to solid waste. CalRecycle regulations pertaining to solid waste are found in Title 14 and Title 27 of CCR and briefly described below:

- Title 14 – Natural Resources. Current CalRecycle regulations pertaining to all other nonhazardous waste management in California;
- Title 27, CCR. Current regulations of CalRecycle and the State Water Resources Control Board pertaining to waste disposal on land.

In addition, the project would adhere to the requirements of the City of Carlsbad Municipal Code, Title 6 – Health and Sanitation, Chapter 6.08 Solid Waste (City of Carlsbad 2024a). There would be **No Impact**.

FINDINGS

The proposed project would have a **Less than Significant Impact** related to utilities and service systems.

MITIGATION MEASURES

The proposed project would have a less than significant impact related to utilities and service systems; therefore, no mitigation measures would be required.

XX. WILDFIRE **If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

XX. WILDFIRE

AFFECTED ENVIRONMENT

According to CAL FIRE, the southern end of the proposed project is located within "Moderate," "High," and "Very High," fire hazard severity zones (CAL FIRE 2025).

IMPACT ANALYSIS

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact: As stated in Section XVII Traffic, the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan as traffic would be accommodated during construction to allow movement through the area. Potential delays would be considered temporary and short-term during construction activities, and would not impair an adopted emergency response plan. Construction equipment activities, storage and laydown areas, and worker parking would not occur on local roadways or block streets. Any temporary lane closures would be for a short period of time and would be implemented in accordance with recommendations provided in the California Temporary Traffic Control Handbook to ensure that emergency access would be maintained all times. Temporary impacts to existing facilities are not anticipated to occur during construction, as the roadway would remain open to accommodate traffic, including emergency access through the

construction area. However, should they be necessary, alternative routes have been identified in a Traffic Control Plan and would include coordination with local emergency service providers to ensure adequate access is maintained and alternate routes are available if needed. The Traffic Control Plan will be prepared and will be submitted by the construction contractor for review and approval by the city as part of the right-of-way permit and prior to project construction.

As the proposed project is intended to accommodate and relieve future congestion, the proposed project would improve future traffic conditions for emergency response or emergency evacuation. Therefore, a **Less than Significant Impact** would occur.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant Impact: The southern end of the project is located within the "Moderate," "High," and "Very High," Fire Hazard Severity Zones, as designated by CAL FIRE and adopted by the City Council on June 17, 2025 (CAL FIRE 2025). The proposed project does not include a proposed change in land use, the development of new habitable structures, or modifications to landscaping that would increase fire risk. The widening of El Camino Real roadway would benefit mobility and evacuation abilities in the area. Additionally, the proposed project components would comply with the Goals and Policies of the City of Carlsbad General Plan's Public Safety Element, Section 6.11. The policies include consistency with the City's Growth Management Plan, consideration of site constraints and emergency service delivery capabilities and response times, enforcement of Uniform Building and Fire codes, and compliance with the City's Landscape Manual. With adherence to these policies, the proposed project would not exacerbate wildfire risks that would expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; therefore, a **Less than Significant Impact** would occur.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact: The proposed project area consists of an existing roadway with bicycle and some pedestrian facilities and would remain a roadway post-implementation with improved multi-modal facilities. Improvements would not result in installation or maintenance of associated infrastructure that may exacerbate fire risk as proposed improvements are not anticipated to be flammable. Therefore, **No Impact** would occur.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less than Significant Impact: As discussed in **Section VII**, Geology and Soils, landslide susceptibility does not occur within or near the proposed project site. In addition, the SWPPP or WPCP would include BMPs

to minimize scour and erosion and impacts to surface drainage patterns and existing drainage systems. At pedestrian bridge abutments, the proposed project is not anticipated to cause drainage changes as abutments would span San Marcos Creek. Overall, improvements would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, the proposed project would have a **Less than Significant Impact**.

FINDINGS

The proposed project would have a **Less than Significant Impact** related to wildfires.

MITIGATION MEASURES

The proposed project would have a less than significant impact to wildfires; therefore, no mitigation measures would be required.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE **Would the project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects, which will cause the substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

IMPACT ANALYSIS

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant with Mitigation Incorporated: As demonstrated in **Sections I** through **XX** above, with the implementation of the required mitigation measures, the proposed project does not have the potential to substantially degrade the quality of the environment. The proposed project would not reduce the habitat of a fish or wildlife population, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of rare or endangered plants or animals. Mitigation measures, as described further in **Section IV**, Biological Resources, would minimize impacts to biological resources. The proposed project is not anticipated to eliminate important examples of the major periods of California history or prehistory, as described in **Sections V**, Cultural Resources, and **XVIII**, Tribal Cultural Resources, as mitigation measures

would minimize impacts to these resources. Impacts associated with the proposed project would be considered **Less than Significant with Mitigation Incorporated.**

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less than Significant Impact: Within the vicinity of the proposed project, there are various recent projects or proposed projects that have been considered in the cumulative analysis as listed below.

- North Coast Corridor Program – Caltrans District 11 proposed improvements to a 27-mile stretch of Interstate 5 in San Diego County. The project begins at La Jolla Village Drive in the city of San Diego and ends at Harbor Boulevard in the city of Oceanside. The project would add two express lanes in each direction on Interstate 5, among other interchange improvements and extensions. Construction is ongoing and is expected to be completed in phases through 2040.
- El Camino Real Roadway, Pedestrian, and Bicycle Improvements near Cannon Road – Construction of pedestrian bridges and widened sidewalks over Agua Hedionda Creek at the Cannon Road and El Camino Real intersection began in April 2021. The second phase involved northbound bicycle lane enhancements. Construction of these enhancements was completed in December of 2022.
- El Camino Real Roadway Improvements Poinsettia Lane and Camino Vida Roble – The existing roadway would be widened between Cinnabar Way and Camino Vida Roble and restriped from Poinsettia Lane through the project site to create a consistent third northbound lane. The project also involves enhanced bike lanes and improved pedestrian facilities, both in terms of connectivity and safety, along the northbound sidewalk. Construction is anticipated to begin in 2026.
- El Camino Real and College Boulevard Intersection Improvements – The recently completed project involved intersection improvements to better accommodate motorists, pedestrians, and bicyclists. Existing curb ramps and crosswalks were updated to meet current ADA standards, and high-visibility crosswalks were installed along with traffic signal timing modifications to improve traffic flow. Modifications and restriping of the roadway allowed for installation of left-turn and right-turn only lanes, three southbound vehicle lanes, and a dedicated bike lane with green paint approaching the intersection.
- El Camino Real Widening from Sunny Creek Road to Jackspar Drive – The existing roadway would widen northbound El Camino Real from Sunny Creek Road to Jackspar Drive in order to add a third vehicle lane. The project would be meet the city's General Plan Mobility Element and Growth Management Plan design standards. Project design is complete, and construction is underway.
- Avenida Encinas Traffic Safety Enhancements – The project provides safety benefits for all modes of transportation as part of the region-wide Coastal Rail Trail. The project is has completed

construction of Segment 2 of the trail along Avenida Encinas from Carlsbad Boulevard to the Poinsettia Coaster Station.

- Avenida Encinas Coastal Rail Trail Improvements project - This proposed project would construct bikeway, pedestrian and street improvements along Avenida Encinas from Palomar Airport Road to the Poinsettia Coaster Station. The project would implement Segment 3 of the Coastal Rail Trail and is currently in the city's permitting process.
- Batiquitos Lagoon Foundation Boardwalk South Trail – The Batiquitos Lagoon Foundation has plans to construct a trail along El Camino Real as part of the I-5 Connector Trail. The I-5 Connector Trail is a Caltrans pedestrian/bicycle path to improve connectivity as part of future improvements. The Boardwalk South Trail would tie into the proposed Project pedestrian facility improvements just north of Costa Del Mar Rd. The project is in the planning and preliminary design phase.

As described above, three of the cumulative projects have been completed and one is currently underway, prior to the implementation of the proposed project. Therefore, the potential for construction-related impacts to overlap in a manner that would cause a considerable cumulative impact is limited. Further, mitigation measures outlined in the analyses above would be implemented during the construction of the proposed project to avoid potential impacts and minimize potential for adding to cumulative effect in combination with other projects.

Air Quality and GHG emissions are considered a cumulative issue as emissions from one individual project are not substantial enough to independently affect global climate. As described in **Sections III**, Air Quality, and **VIII**, Greenhouse Gas Emissions, the temporary emissions generated by the proposed project would not conflict with policies and regulations aimed at reducing air pollutants and GHG emissions, such as the city's CAP. The relatively minor emissions associated with the temporary construction operations to implement the proposed project would not be of the magnitude to influence global climate or considerably add to the cumulative condition.

The proposed project, as described above, a "spot widening" project including multi-modal improvements. The project and the related cumulative projects do not include expansion of the overall corridor and would not create any additional impact opportunities. Although the proposed project would widen a segment of El Camino Real, this widening would occur on a relatively short segment, which is known as "spot widening" (approximately 0.6 mile). This "spot widening" is not anticipated to result in substantial induced automobile or truck use or increase of the attractiveness of the roadway, because the widened area along El Camino Real would match the existing three southbound lanes north of Arenal Road and south of La Costa Avenue. In general, the proposed project as well as the other projects considered in the cumulative analysis are focused on multi-modal travel improvements for bicyclists, pedestrians, and vehicle traffic in terms of connectivity and safety. Once the proposed project is completed these improvements will bring the roadway up to the planned/previously analyzed design and capacity, it would not cumulatively impact other issue areas discussed above as indicated by the findings of Less than Significant with Mitigation Incorporated. Therefore, the proposed project would be **Less than Significant** related to cumulatively considerable impacts.

c) Does the project have environmental effects, which will cause the substantial adverse effects on human beings, either directly or indirectly?

Less than Significant with Mitigation Incorporated: As demonstrated in **Sections I** through **XX** above, the proposed project, as mitigated, would not have environmental effects that would have a substantial adverse effect on human beings, either directly or indirectly. Therefore, impacts are considered **Less than Significant with Mitigation Incorporated.**

MITIGATION MEASURES

The following measures discussed in **Sections I** through **XX**, as applicable, in this document would ensure that mandatory findings of significance under CEQA and cumulative impacts would be less than significant.

- Measures **BIO-1** through **BIO-10**
- Measure **CR-1**
- Measures **GEO-1** through **GEO-2**
- Measures **TCR-1** through **TCR-2**

XXII. LIST OF MITIGATION MEASURES

The following mitigation measures along with BMPs have been incorporated into the proposed project design to minimize impacts to special-status species and natural communities to the greatest extent practicable:

BIO-1: Prior to issuance of a grading permit or the commencement of construction, whichever first occurs, and to accommodate the project footprint and increase to the city's ROW, the city will process a Habitat Management Plan hardline boundary adjustment (Minor Amendment to the Habitat Management Plan) per Carlsbad Municipal Code Section 21.210.080 A.1. A total of 0.201 acre will be removed from the Habitat Management Plan hardline preserve area along the western edge of the project boundary on land currently owned by the Batiquitos Lagoon Foundation and replaced with at least 0.201 acre of Habitat Management Plan hardline preserve on the city-owned Crossings Golf Course property adjacent to Existing Hardline. The adjustment will result in equal or more than equal acres in the hardline preserve area consisting of vegetation communities of equal or better biological value. To formally amend the Habitat Management Plan hardline boundary, the city shall process a Habitat Management Plan Minor Amendment by providing written notice of the Equivalency Findings to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. Unless the agencies object within 30 days of notification, the change shall be considered automatically approved. If objections are raised, the city shall meet with the agencies to resolve the objection and written approval of the change from the agencies shall be required.

GENERAL BIOLOGICAL RESOURCES:

BIO-2: The potential for significant indirect impacts during construction shall be mitigated through implementation of the standard measures stated in the city's Guidelines for Biological Studies (2022), as revised below.

a) A qualified biologist shall conduct a training session for project personnel before project activities. At a minimum, the training shall include a description of the target species of concern and its habitats; the general provisions of the federal and state Endangered Species Acts and the Habitat Management Plan; the need to adhere to the provisions of the act and the Habitat Management Plan; the penalties associated with violating the provisions of the act; and the general measures that are being implemented to conserve the target species of concern as they relate to the project, access routes, and project site boundaries within which the project activities must be accomplished.

b) The footprint of disturbance shall be specified in the construction plans. Before construction, the project's limits of disturbance shall be delineated with orange fencing, and in areas potentially subject to project-related runoff, silt fencing will be used to delineate the impact footprint consistent with the project's Storm Water Pollution Prevention Plan. All fencing shall be reviewed by the project biologist before the initiation of the work. All fencing shall be maintained until the completion of project construction activities, at which time all fencing will be removed. Construction personnel and associates shall be instructed that their activities, vehicles, equipment, and construction materials are restricted to the project footprint, designated staging areas, and routes of travel. If any impacts occur beyond the approved impact footprint, work in the immediate vicinity shall cease until the disturbance limit breach has been addressed to the satisfaction of the City of Carlsbad and the resource agencies.

c) A water pollution and erosion control plan shall be developed that describes sediment and hazardous materials control, fueling and equipment management practices, and other factors deemed necessary by reviewing agencies. Erosion control measures shall be monitored on a regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures shall be implemented in the event that the erosion control strategies are inadequate. Sediment/erosion control measures shall be continued at the project site until such time as the revegetation efforts are successful at soil stabilization.

d) The qualified project biologist shall review grading plans (e.g., the access routes and staging areas) and monitor construction activities throughout the duration of the grading/ground disturbance associated with the project to ensure that all practicable measures are being employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint.

e) Construction monitoring reports that summarize how the project is in compliance with applicable conditions shall be completed and provided to the city. The project biologist shall

halt work activity if necessary and confer with city staff to ensure the proper implementation of species and habitat protection measures.

f) Any habitat that is impacted that is not in the identified project footprint shall be disclosed immediately to the city, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and California Coastal Commission and shall be compensated at a ratio to be negotiated with the agencies.

g) Construction access to and from the site shall be located along existing access routes or disturbed areas to the greatest extent possible. All access routes outside of existing roads or construction areas shall be clearly marked.

h) Construction employees shall limit activities and storage of vehicles, equipment, and construction materials to the fenced project footprint.

i) Equipment storage, fueling, and staging areas shall be located on disturbed upland sites at least 100 feet from waters of the U.S. and with minimal risk of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project-related spills of hazardous materials shall be reported to the city and shall be cleaned up immediately, and contaminated soils shall be moved to approved disposal areas.

j) Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.

k) Fugitive dust shall be avoided and minimized through watering and other appropriate measures.

VEGETATION COMMUNITIES/HABITAT:

BIO-3: To avoid spreading nonnative invasive species, construction vehicles will be contained within the delineated work limits, and avoid staging, turning around, or driving in habitat in Batiquitos Lagoon as restricted by delineated work limits.

BIO-4: Impacts to sensitive habitats shall be mitigated based on habitat and impact type in accordance with Habitat Management Plan Table 11 and Habitat Management Plan coastal zone standards (Habitat Management Plan Section D.7), as shown in the table below. Temporary impacts to sensitive habitats shall be revegetated in place at a 1:1 ratio after construction is complete.

Permanent and Temporary Impacts to Vegetation Communities and Required Mitigation

Vegetation Community/ Land Cover Type	Permanent Impacts (acres)	Mitigation Ratio – Permanent Impacts	Total Permanent Mitigation Impacts (acres)	Temporary Impacts (acres)[1, 2]
Riparian and Wetlands				
Southern coastal salt marsh – Non-tidal	0.000	4:1	0.000	0.027
Coastal brackish marsh	0.000	4:1	0.000	0.001
Open water	0.000	0:0	0.000	0.000
Nonnative riparian	0.000	3:1	0.000	0.010
Disturbed[3]	0.000	0:0	0.000	0.001
Uplands				
Coastal sage scrub	0.407	2:1	0.814[4]	1.173
Total	**0.407**	**N/A**	**0.814**	**1.212**

[1] Totals may not sum due to rounding after summation.
[2] Temporary impacts will be restored at a 1:1 ratio by revegetating impacted areas in place. Temporary impacts include areas where recontouring will occur.
[3] Disturbed habitat is included within this table only where it is considered to be jurisdictional and will be restored to match adjacent native habitat.
[4] Permanent impacts to coastal sage scrub will be mitigated at a 2:1 ratio and include 1:1 creation or substantial restoration to ensure no net loss.

Permanent coastal sage scrub habitat impacts will be mitigated through the use of Tier II upland (i.e., coastal sage scrub) mitigation credits at the Sage Hill Mitigation Parcel, located in unincorporated San Diego County, east of Rancho Santa Fe Road. The Sage Hill Mitigation Parcel was established by San Diego Association of Governments as part of an advance mitigation program for local streets and road projects pursuant to a Memorandum of Understanding between San Diego Association of Governments, Caltrans and the Wildlife Agencies, and a Conservation Credit Agreement, executed November 25, 2014. The no net loss requirement for impacts to coastal sage scrub will be met at the city-owned Crossings Golf Course property, which will include at least 1:1 coastal sage scrub in the form of creation or substantial restoration.

BIO-5: On-site and off-site creation, substantial restoration, restoration, and enhancement to mitigate impacts to sensitive native habitats will be included within the Habitat Mitigation and Monitoring Plan, a restoration plan that will outline restoration species for each habitat type, as described under BIO-4, timelines, success criteria, and maintenance and monitoring protocols. The restoration plan will be consistent with the Multiple Habitat Conservation Program, Appendix C (Revegetation Guidelines), and Volume III; Habitat Management Plan for Natural Communities in the City of Carlsbad (City of Carlsbad 2004, pp. F-8 to F-11); and the Components of a Conceptual Mitigation/Restoration Plan (City of Carlsbad 2008). The Habitat Mitigation and Monitoring Plan will be reviewed/approved by the City, California Department of Fish and Wildlife, California Coastal Commission, and other applicable agencies before proposed project initiation.

JURISDICTIONAL RESOURCES MEASURES:

BIO-6: Due to impacts to jurisdictional resources, the proposed project will obtain permits from U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife, and California Coastal Commission in compliance with the Clean Water Act, California Fish and Game Code 1600, and the California Coastal Act. Impacts to jurisdictional resources will be mitigated through implementation of Mitigation Measures BIO-4 and BIO-5.

SPECIAL-STATUS SPECIES:

BIO-7: To avoid impacts to listed avian species (coastal California gnatcatcher, least Bell's vireo, Belding's savannah sparrow, light-footed Ridgway's rail, California least tern, western snowy plover), and non-listed special-status avian species (yellow-breasted chat, yellow warbler, white-tailed kite, and black skimmer), the following measures will apply:

Project implementation should occur outside of the bird nesting season, if feasible (February 15 through September 15). To avoid impacts to coastal California gnatcatcher, clearing and grubbing of coastal sage scrub shall not be conducted from March 1 through August 15, per the conditions of coverage for this species.

- If vegetation disturbance or construction outside of the nesting season is not feasible, a qualified biologist shall perform a preconstruction nesting bird survey within the proposed construction area plus a 500-foot buffer no more than 72 hours before vegetation disturbance or construction is initiated during the nesting season. The area will be resurveyed if the planned activities do not occur within 72 hours of the nesting bird survey. If active nests are found, then the qualified biologist shall establish an adequate protective buffer around the nest in which vegetation removal and construction activities are prohibited until the nest is no longer active (i.e., all nestlings have successfully fledged). A nest buffer of 300-500 feet will be established around the nest of listed species and raptors, and the buffer width for other species will be determined by the Project Biologist based on species biology. The size of the nest buffers may be adjusted by a qualified biologist in coordination with the city based on the species, and type, intensity, and duration of the planned construction activities.

BIO-8: If a nest buffer is not sufficient to avoid and minimize impacts to the nest, noise barriers (e.g., walls, blankets, or other noise attenuation measures) may be required, or the contractor may delay work near the nest until the nest is no longer active.

BIO-9: To avoid impacts to special-status avian species, construction lighting will be shielded and pointed downward and away from Batiquitos Lagoon on the west side and from San Marcos Creek on the east side. Lighting of the pedestrian bridges will be limited to that required for safety and be directed away from the lagoon.

BIO-10: To avoid and minimize impacts to bats, the following measures will apply:

- A biological monitor shall provide contractor education specific to bats.
- Surface treatments on the existing bridge structure shall be completed between December 1 and January 31, when the bat population is at its lowest numbers. Surface treatments shall be applied to avoid leakage through to the seams to the underside of the bridge.
- Pedestrian bridge construction shall be timed to occur in the winter (between October 15 and March 15) to the maximum extent practicable, when roosts are in their lowest numbers.
- No construction activities shall occur within 50 feet of the existing bridge between June 1 and September 1, which is bat pupping season.
- Construction personnel shall not be present under the colony, especially during the evening exodus.
- Lights shall not be used under the existing bridge structure. Lighting of the pedestrian bridges shall be limited to that required for safety and shall not deter continued roosting under the existing bridge.
- Vehicles and equipment with internal combustion engines shall not be operated under the existing bridge structure, unless otherwise directed by the on-site biological monitor.
- During roadway construction activities, where possible, the contractor shall follow recommended noise buffers in the table below. If noise buffers cannot be maintained, noise attenuation measures shall be recommended by the monitoring biologist and implemented by the contractor. For construction activities in the immediate vicinity of the existing bridge where buffer distances cannot be maintained (e.g., pedestrian bridge construction), noise attenuation measures shall be applied in a way so as not to substantially restrict airspace access (e.g., placed around stationary equipment only, limited to active work areas) and be removed promptly when work is complete.
- Work shall be planned in a way that does not to restrict bat airspace access to the existing bridge structure (e.g., no blankets, walls, or other barriers shall be placed between the existing bridge and pedestrian bridges).

Recommended Disturbance Buffer Zones for Day and Night Roosts

Bat Species	Construction Trucks and Heavy Mobile Equipment [1]	Drilling, Trenching, and Small Stationary Equipment [1]	Stationary Diesel/Gasoline Exhaust Sources >2 minutes [1]
Yuma myotis, Mexican free-tailed bat	90	150	250

[1] Distance (in feet) between activity/equipment and roosts

[2] See Technical Guidance for Assessment and Mitigation of the Effects of Traffic Noise and Road Construction Noise on Bats (Caltrans 2016) for detailed discussions of noise impacts to bats at transportation projects and specific decibel levels of low frequency values for construction trucks and heavy equipment.

The following mitigation measures, in addition to measures **TCR-1 and TCR-2** for Tribal Monitoring, have been incorporated into the proposed project design to minimize impacts to cultural resources to the greatest extent practicable:

Cultural Resources

CR-1: Cultural awareness and sensitivity training shall be provided to construction crews working within the project area. In addition, the city will provide updates on the project construction schedule to those Native American tribes that requested them. An archaeological sensitivity training program will be developed in consultation with the TCA Tribe retained to monitor and delivered by a qualified professional archaeologist prior to the beginning of ground-disturbing work for construction crews working within the project area. The cultural awareness and sensitivity training shall provide notification procedures if potential archaeological material is discovered, procedures for coordination between construction and monitoring personnel, and information about other situations that may arise if cultural resources, including human remains, are discovered during construction. This training and communication protocol shall be communicated to all new construction personnel prior to construction crews beginning ground-disturbing work on the project, and on a poster that is placed in a visible location inside the construction job trailer.

Geology and Soils

GEO-1: A Paleontological Mitigation and Monitoring Plan in accordance with the Carlsbad Tribal, Cultural, and Paleontological Resources Guidelines (2017) would be prepared prior to the issuance of a grading permit or commencement of construction, whichever first occurs. The Paleontological Mitigation and Monitoring Plan shall address the following information, as applicable and appropriate:

a. The level of monitoring (spot checks, part time or full time), protocols and authorization for work stoppages, and safety procedures
b. The need for Contractor Awareness Training for all earth-moving personnel for any projects where a monitor will not be present full time
c. A research design listing the research questions and the data requirements for those questions
d. The level and type of assistance from the contractor needed by the paleontologist to take bulk samples and place them into a safe area for processing
e. The methods for fossil collection, fossil preparation, fossil identification, stratigraphic profiles, and curation
f. The types of progress reports that will be provided to the city (weekly or monthly)
g. The schedule for reporting
h. A recommendation for the updating of the paleontology sensitivity model, which takes into consideration the presence or absence of paleontological resources, the amount of ground disturbance, and the potential for future discoveries

i. The identity of the financially-responsible party

GEO-2: The city shall retain a professional paleontologist for the project prior to the issuance of a grading permit or commencement of ground disturbing activities, whichever occurs first. The task of the paleontologist shall be to monitor ground disturbance within the project site for the unearthing of previously unknown paleontological resources. Selection of the paleontologist shall be subject to the approval of the city, and no grading activities shall occur within the project site until the paleontologist has been approved by the city. The paleontologist shall be responsible for maintaining daily field notes and a photographic record and for reporting all finds to the city in a timely manner. The paleontologist shall be equipped to record and salvage paleontological resources that may be unearthed during grading activities. The paleontologist shall be empowered to temporarily halt or divert grading equipment to allow recording and removal of the unearthed resources.

In the event that potential paleontological resources are discovered during ground-disturbing activities, work shall stop in that area and within 30 feet of the find until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Specimens shall be curated into a professional, accredited museum repository with permanent retrievable storage such as the San Diego Natural History Museum. A report of findings, with an appended itemized inventory of specimens, shall be prepared and shall signify completion of the mitigation.

The paleontologist shall retain the option to reduce monitoring, with concurrence from the city, if it is determined that the sediments were previously disturbed. Monitoring may also be reduced with concurrence from the city if potentially fossiliferous units are not present or, if present, are determined to have a low potential to contain fossil resources.

The following mitigation measures, in addition to measure **CR-1** for Cultural Resources, have been incorporated into the proposed project design to minimize impacts to tribal cultural resources to the greatest extent practicable:

TCR-1: Tribal Monitoring. Prior to the commencement of ground-disturbing activities, the project developer shall:

a. Retain the services of a qualified archaeologist, defined as one either meeting the Secretary of the Interior's 1997 Professional Qualification Standards for Archeology or working under the supervision of a qualified archaeologist, who shall be on-site during ground-disturbing activities. In the event cultural material is encountered, the archaeologist is empowered to temporarily divert or halt grading to allow for coordination with the Luiseño Native American monitor, or other Traditionally and Culturally Affiliated Luiseño Tribes ("TCA Tribe"), and to determine the

significance of the discovery. The archaeologist shall follow all standard procedures for cultural materials that are not tribal cultural resources.

b. Enter into a Pre-Excavation Agreement, otherwise known as a Tribal Cultural Resources Treatment and Tribal Monitoring Agreement, with a TCA affiliated consulting tribe. This agreement shall meet all standard requirements of the tribe for such agreements, in accordance with applicable laws and regulations, including but not limited to the City of Carlsbad's 2017 Tribal, Cultural and Paleontological Resources Guidelines. This agreement will also contain provisions of a Luiseño Native American monitor and will also contain provisions to address the proper treatment of any Tribal Cultural Resources. The agreement shall outline the roles and powers of the Luiseño Native American monitors and the archaeologist and shall include the following provisions.

    i. A Luiseño Native American monitor shall be present during ground-disturbing activities. Ground-disturbing activities may include, but are not limited to, archaeological studies, clearing, grubbing, trenching, excavation, preparation for other infrastructure, and grading activities.

    ii. Any and all uncovered artifacts of Luiseño Native American cultural importance shall be returned to the San Luis Rey Band of Indians and/or the Most Likely Descendant for later reburial on the project site, if applicable, and shall not be curated, unless ordered to do so by a federal agency or a court of competent jurisdiction.

    iii. The Luiseño Native American monitor shall be present at the project's preconstruction meeting to discuss with grading and excavation contractors excavation schedules and safety issues, as well as to discuss with the archaeologist PI (principal investigator) concerning the proposed archaeologist techniques and/or strategies for the project.

    iv. Luiseño Native American monitors and archaeological monitors shall have joint authority to temporarily divert and/or halt construction activities. If tribal cultural resources are discovered during construction, earth-moving activity within and around the immediate discovery area will be diverted until the Luiseño Native American monitor and the archaeologist can assess the nature and significance of the find.

    v. If a significant tribal cultural resource(s) and/or unique archaeological resource(s) are discovered during ground-disturbing activities for this project, San Luis Rey Band of Mission Indians and other TCA tribes shall be notified and consulted regarding the respectful and dignified treatment of those resources. Pursuant to California PRC Section 21083.2(b), avoidance is the preferred method of preservation for archaeological and tribal cultural resources. If, however, the applicant is able to demonstrate that avoidance of a significant and/or unique cultural resource is infeasible and a data recovery plan, or other culturally-appropriate mitigation measure, is authorized by the City of Carlsbad as

the lead agency, the San Luis Rey Band of Mission Indians and other TCA tribes shall be consulted regarding the drafting and finalization of such recovery plan.

vi. If suspected Native American human remains are encountered, California Health and Safety Code Section 7050.5(b) states that no further disturbance shall occur until the San Diego County Medical Examiner has made the necessary findings as to origin. Further, pursuant to California PRC Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. Suspected Native American remains shall be examined in the field and kept in a secure location at the site. A Luiseño Native American monitor shall be present during the examination of the remains. If the San Diego County Medical Examiner determines the remains to be Native American, the NAHC will be contacted by the Medical Examiner within 24 hours. The NAHC will then immediately notify the "Most Likely Descendant" about the discovery. The Most Likely Descendant shall then make recommendations within 48 hours and engage in consultation concerning treatment of remains as provided in PRC Section 5097.98.

vii. In the event that fill material is imported into the project area, the fill shall be clean of tribal cultural resources and documented as such. Commercial sources of fill material are already permitted as appropriate and will be culturally sterile. If fill material is to be utilized and/or exported from areas within the project site, then that fill material shall be analyzed and confirmed by an archeologist and Luiseño Native American monitor that such fill material does not contain tribal cultural resources.

viii. No testing, invasive or non-invasive, shall be permitted on recovered tribal cultural resources without the written permission of the San Luis Rey Band of Mission Indians and other TCA tribes.

TCR-2: Prior to the completion of project construction, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis, and conclusions of the monitoring program shall be submitted by the Project Archaeologist, along with the Luiseño Native American monitor's notes and comments, to the City of Carlsbad for approval and shall be submitted to the South Coastal Information Center. Said report shall be subject to confidentiality as an exception to the Public Records Act and will not be available for general public distribution.

XXIII. EARLIER ANALYSES

Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)). In such cases, a discussion should identify the following on attached sheets:

a) Earlier analyses used. Identify earlier analyses and state where they are available for review.

b) Impacts adequately addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation measures. For effects that are "Less Than Significant with Mitigation Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document, and the extent to which they address site-specific conditions for the proposed project.

XXIV. EARLIER ANALYSIS USED AND SUPPORTING INFORMATION SOURCES

The following documents were used in the analysis of this proposed project and are on file in the City of Carlsbad Planning Division located at 1635 Faraday Avenue, Carlsbad, California 92008.

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Appendix A:

List of Acronyms, Initialisms, and Abbreviations

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Appendix A:
List of Acronyms, Initialisms, and Abbreviations

AB	Assembly Bill
ADA	Americans with Disabilities Act
APE	Area of Potential Effects
ATCM	Airborne Toxic Control Measure
BMP	Best Management Practice
BSA	Biological Study Area
BTR	Biological Technical Report
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CCA	California Coastal Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CH_4	methane
city	City of Carlsbad
CMC	Carlsbad Municipal Code
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CWA	Clean Water Act
dBA	A-weighted decibel
DPR	Department of Parks & Recreation
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESHA	environmentally sensitive habitat area

FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FPA	Focus Planning Area
GHG	greenhouse gas
HCP	Habitat Conservation Plan
HFCs	hydrofluorocarbons
HMMP	Habitat Mitigation and Monitoring Plan
HMP	Habitat Management Plan
JRMP	Jurisdictional Runoff Management Program
LBV	least Bell's vireo
LCP	Local Coastal Program
MBTA	Migratory Bird Treaty Act
MEP	maximum extent practicable
MHCP	Multiple Habitat Conservation Program
MMRP	Mitigation, Monitoring, and Reporting Program
MS4	Municipal Separate Storm Sewer System
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NO_2	nitrogen dioxide
NO_X	Oxides of Nitrogen
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Office of Planning and Research
OS	Open Space
PC	Planned Community
PM	particulate matter
PM10	PM equal to or less than 10 micrometers in diameter
PM2.5	PM equal to or less than 2.5 micrometers in diameter
PRC	Public Resources Code
RAQS	Regional Air Quality Strategy
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SB	Senate Bill
SDAB	San Diego Air Basin
SDAPCD	San Diego County Air Pollution Control District
SDMMP	San Diego Management and Monitoring Program
SIP	State Implementation Plan
SLF	Sacred Lands File

SO_2	sulfur dioxide
SO_X	Sulfur oxides
SPCCP	Spill Prevention, Control, and Countermeasure Program
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCA	Traditionally and Culturally Affiliated
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WDR	waste discharge requirement
WMA	Watershed Management Area
WPCP	Water Pollution Control Program
WQIP	Water Quality Improvement Plan

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Appendix B:

AQ/GHG/Energy Appendix

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El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

El Camino Real Roadway Improvements Project

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.83	Acre	1.83	79,714.80	0
Other Asphalt Surfaces	0.77	Acre	0.77	33,541.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project specific total acreage of 2.6 acres (of which 0.77 acre is paved).

Construction Phase - Project specific construction schedule.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for dump truck.

Grading - Soil export and vegetation removal accounted for in demolition debris screen.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for dump truck.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for concrete truck.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for dump truck (quantity 1) and for concrete truck (quantity 3).

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for concrete truck.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for concrete truck.

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for dump truck. Other construction equipment for milling machine (assumed average 154 HP).

Off-road Equipment -

Demolition - Based on approximately 50 loaded demolition-related truck trips.

Trips and VMT - Project specific #Trips Worker (/day) and total haul truck trips for concrete, aggregate base, PVC pipe, prefab bridges, and steel. Vendor trips to account for water trucks.

Construction Off-road Equipment Mitigation - Assumes implementation of SDAPCD Fugitive Dust Control requirements.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	11.00
tblConstructionPhase	NumDays	6.00	23.00
tblConstructionPhase	NumDays	220.00	66.00
tblConstructionPhase	NumDays	220.00	87.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	PhaseEndDate	11/14/2022	11/1/2022
tblGrading	AcresOfGrading	7.88	3.00
tblGrading	MaterialImported	0.00	2,300.00
tblOffRoadEquipment	HorsePower	172.00	154.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblOffRoadEquipment	UsageHours	8.00	0.00

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	7.00	3.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	99.00	100.00
tblTripsAndVMT	HaulingTripNumber	288.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	34.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	6.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	48.00	16.00
tblTripsAndVMT	WorkerTripNumber	48.00	24.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00

2.0 Emissions Summary

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.3709	11.9313	12.1073	0.0317	4.3619	0.5251	4.8869	2.3071	0.4832	2.7903	0.0000	3,068.2847	3,068.2847	0.8229	0.1078	3,091.3571
2023	8.3905	29.6526	31.8297	0.0985	0.3526	1.1587	1.5113	0.0937	1.0822	1.1760	0.0000	9,539.9587	9,539.9587	2.7187	0.0323	9,614.5950
Maximum	**8.3905**	**29.6526**	**31.8297**	**0.0985**	**4.3619**	**1.1587**	**4.8869**	**2.3071**	**1.0822**	**2.7903**	**0.0000**	**9,539.9587**	**9,539.9587**	**2.7187**	**0.1078**	**9,614.5950**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.3709	11.9313	12.1073	0.0317	2.0099	0.5251	2.5350	1.0510	0.4832	1.5341	0.0000	3,068.2847	3,068.2847	0.8229	0.1078	3,091.3571
2023	8.3905	29.6526	31.8297	0.0985	0.3526	1.1587	1.5113	0.0937	1.0822	1.1760	0.0000	9,539.9587	9,539.9587	2.7187	0.0323	9,614.5950
Maximum	**8.3905**	**29.6526**	**31.8297**	**0.0985**	**2.0099**	**1.1587**	**2.5350**	**1.0510**	**1.0822**	**1.5341**	**0.0000**	**9,539.9587**	**9,539.9587**	**2.7187**	**0.1078**	**9,614.5950**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	49.89	0.00	36.76	52.32	0.00	31.67	0.00	0.00	0.00	0.00	0.00	0.00

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0617	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.7000e-004	5.7000e-004	0.0000		6.1000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0617**	**0.0000**	**2.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**0.0000**	**6.1000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0617	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.7000e-004	5.7000e-004	0.0000		6.1000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0617**	**0.0000**	**2.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**0.0000**	**6.1000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/18/2022	11/1/2022	5	11	
2	Grading	Grading	11/2/2022	12/2/2022	5	23	
3	Retaining Wall	Building Construction	12/5/2022	3/6/2023	5	66	
4	Bridge Construction	Building Construction	2/6/2023	6/6/2023	5	87	
5	Curb & Gutter	Paving	5/5/2023	6/5/2023	5	22	
6	Sidewalk	Paving	6/6/2023	7/6/2023	5	23	
7	Paving	Paving	7/7/2023	7/21/2023	5	11	
8	Architectural Coating	Architectural Coating	7/17/2023	7/31/2023	5	11	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.6

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,795 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Demolition	Concrete/Industrial Saws	1	6.00	81	0.73

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Curb & Gutter	Cement and Mortar Mixers	0	0.00	9	0.56
Sidewalk	Cement and Mortar Mixers	0	0.00	9	0.56
Retaining Wall	Cranes	0	0.00	231	0.29
Grading	Graders	0	0.00	187	0.41
Bridge Construction	Cranes	1	3.00	231	0.29
Paving	Pavers	0	0.00	130	0.42
Paving	Paving Equipment	0	0.00	132	0.36
Paving	Rollers	1	6.00	80	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Retaining Wall	Forklifts	0	0.00	89	0.20
Bridge Construction	Forklifts	0	0.00	89	0.20
Demolition	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	3.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Retaining Wall	Generator Sets	0	0.00	84	0.74
Bridge Construction	Generator Sets	0	0.00	84	0.74
Curb & Gutter	Pavers	0	0.00	130	0.42
Sidewalk	Pavers	0	0.00	130	0.42
Curb & Gutter	Paving Equipment	0	0.00	132	0.36
Sidewalk	Paving Equipment	0	0.00	132	0.36
Curb & Gutter	Rollers	0	0.00	80	0.38
Sidewalk	Rollers	0	0.00	80	0.38
Retaining Wall	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Bridge Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Curb & Gutter	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Sidewalk	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Retaining Wall	Welders	0	0.00	46	0.45
Bridge Construction	Welders	0	0.00	46	0.45

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition	Skid Steer Loaders	2	6.00	65	0.37
Demolition	Off-Highway Trucks	1	6.00	402	0.38
Grading	Excavators	1	6.00	158	0.38
Grading	Off-Highway Trucks	1	6.00	402	0.38
Retaining Wall	Skid Steer Loaders	1	6.00	65	0.37
Retaining Wall	Pumps	1	6.00	84	0.74
Retaining Wall	Off-Highway Trucks	2	6.00	402	0.38
Bridge Construction	Bore/Drill Rigs	1	6.00	221	0.50
Bridge Construction	Off-Highway Trucks	1	7.00	402	0.38
Bridge Construction	Skid Steer Loaders	1	6.00	65	0.37
Bridge Construction	Pumps	1	6.00	84	0.74
Bridge Construction	Off-Highway Trucks	3	7.00	402	0.38
Curb & Gutter	Off-Highway Trucks	1	5.00	402	0.38
Sidewalk	Off-Highway Trucks	1	5.00	402	0.38
Paving	Sweepers/Scrubbers	1	2.00	64	0.46
Paving	Off-Highway Trucks	2	4.00	402	0.38
Paving	Other Construction Equipment	1	3.00	154	0.42

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	6.00	2.00	100.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Retaining Wall	6	16.00	0.00	30.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	6.00	2.00	30.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Bridge Construction	9	24.00	0.00	80.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	0.00	20.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Curb & Gutter	1	8.00	0.00	34.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Sidewalk		1	8.00	0.00	30.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9696	0.0000	1.9696	0.2983	0.0000	0.2983			0.0000			0.0000
Off-Road	0.8117	6.9324	7.9120	0.0185		0.2967	0.2967		0.2820	0.2820		1,783.2117	1,783.2117	0.4572		1,794.6420
Total	**0.8117**	**6.9324**	**7.9120**	**0.0185**	**1.9696**	**0.2967**	**2.2664**	**0.2983**	**0.2820**	**0.5803**		**1,783.2117**	**1,783.2117**	**0.4572**		**1,794.6420**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0397	1.5319	0.3644	5.7100e-003	0.1590	0.0143	0.1732	0.0436	0.0136	0.0572		628.2837	628.2837	0.0301	0.0998	658.7805
Vendor	4.4200e-003	0.1104	0.0367	4.3000e-004	0.0136	1.1600e-003	0.0147	3.9000e-003	1.1100e-003	5.0100e-003		45.9887	45.9887	1.3900e-003	6.6800e-003	48.0145
Worker	0.0190	0.0128	0.1475	4.2000e-004	0.0493	2.8000e-004	0.0496	0.0131	2.6000e-004	0.0133		43.2343	43.2343	1.4000e-003	1.2800e-003	43.6495
Total	**0.0631**	**1.6551**	**0.5485**	**6.5600e-003**	**0.2218**	**0.0157**	**0.2375**	**0.0606**	**0.0150**	**0.0756**		**717.5067**	**717.5067**	**0.0329**	**0.1078**	**750.4445**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8863	0.0000	0.8863	0.1342	0.0000	0.1342			0.0000			0.0000
Off-Road	0.8117	6.9324	7.9120	0.0185		0.2967	0.2967		0.2820	0.2820	0.0000	1,783.2117	1,783.2117	0.4572		1,794.6420
Total	**0.8117**	**6.9324**	**7.9120**	**0.0185**	**0.8863**	**0.2967**	**1.1831**	**0.1342**	**0.2820**	**0.4162**	**0.0000**	**1,783.2117**	**1,783.2117**	**0.4572**		**1,794.6420**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0397	1.5319	0.3644	5.7100e-003	0.1590	0.0143	0.1732	0.0436	0.0136	0.0572		628.2837	628.2837	0.0301	0.0998	658.7805
Vendor	4.4200e-003	0.1104	0.0367	4.3000e-004	0.0136	1.1600e-003	0.0147	3.9000e-003	1.1100e-003	5.0100e-003		45.9887	45.9887	1.3900e-003	6.6800e-003	48.0145
Worker	0.0190	0.0128	0.1475	4.2000e-004	0.0493	2.8000e-004	0.0496	0.0131	2.6000e-004	0.0133		43.2343	43.2343	1.4000e-003	1.2800e-003	43.6495
Total	**0.0631**	**1.6551**	**0.5485**	**6.5600e-003**	**0.2218**	**0.0157**	**0.2375**	**0.0606**	**0.0150**	**0.0756**		**717.5067**	**717.5067**	**0.0329**	**0.1078**	**750.4445**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.2762	0.0000	4.2762	2.2839	0.0000	2.2839			0.0000			0.0000
Off-Road	1.2405	11.5883	8.5109	0.0214		0.5216	0.5216		0.4799	0.4799		2,074.1628	2,074.1628	0.6708		2,090.9335
Total	**1.2405**	**11.5883**	**8.5109**	**0.0214**	**4.2762**	**0.5216**	**4.7978**	**2.2839**	**0.4799**	**2.7637**		**2,074.1628**	**2,074.1628**	**0.6708**		**2,090.9335**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.7000e-003	0.2198	0.0523	8.2000e-004	0.0228	2.0400e-003	0.0249	6.2500e-003	1.9600e-003	8.2100e-003		90.1451	90.1451	4.3200e-003	0.0143	94.5207
Vendor	4.4200e-003	0.1104	0.0367	4.3000e-004	0.0136	1.1600e-003	0.0147	3.9000e-003	1.1100e-003	5.0100e-003		45.9887	45.9887	1.3900e-003	6.6800e-003	48.0145
Worker	0.0190	0.0128	0.1475	4.2000e-004	0.0493	2.8000e-004	0.0496	0.0131	2.6000e-004	0.0133		43.2343	43.2343	1.4000e-003	1.2800e-003	43.6495
Total	**0.0291**	**0.3430**	**0.2365**	**1.6700e-003**	**0.0857**	**3.4800e-003**	**0.0891**	**0.0232**	**3.3300e-003**	**0.0266**		**179.3681**	**179.3681**	**7.1100e-003**	**0.0223**	**186.1847**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9243	0.0000	1.9243	1.0277	0.0000	1.0277			0.0000			0.0000
Off-Road	1.2405	11.5883	8.5109	0.0214		0.5216	0.5216		0.4799	0.4799	0.0000	2,074.1628	2,074.1628	0.6708		2,090.9335
Total	**1.2405**	**11.5883**	**8.5109**	**0.0214**	**1.9243**	**0.5216**	**2.4459**	**1.0277**	**0.4799**	**1.5076**	**0.0000**	**2,074.1628**	**2,074.1628**	**0.6708**		**2,090.9335**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.7000e-003	0.2198	0.0523	8.2000e-004	0.0228	2.0400e-003	0.0249	6.2500e-003	1.9600e-003	8.2100e-003		90.1451	90.1451	4.3200e-003	0.0143	94.5207
Vendor	4.4200e-003	0.1104	0.0367	4.3000e-004	0.0136	1.1600e-003	0.0147	3.9000e-003	1.1100e-003	5.0100e-003		45.9887	45.9887	1.3900e-003	6.6800e-003	48.0145
Worker	0.0190	0.0128	0.1475	4.2000e-004	0.0493	2.8000e-004	0.0496	0.0131	2.6000e-004	0.0133		43.2343	43.2343	1.4000e-003	1.2800e-003	43.6495
Total	**0.0291**	**0.3430**	**0.2365**	**1.6700e-003**	**0.0857**	**3.4800e-003**	**0.0891**	**0.0232**	**3.3300e-003**	**0.0266**		**179.3681**	**179.3681**	**7.1100e-003**	**0.0223**	**186.1847**

3.4 Retaining Wall - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3184	11.0655	11.6958	0.0303		0.4752	0.4752		0.4465	0.4465		2,921.5791	2,921.5791	0.8176		2,942.0195
Total	**1.3184**	**11.0655**	**11.6958**	**0.0303**		**0.4752**	**0.4752**		**0.4465**	**0.4465**		**2,921.5791**	**2,921.5791**	**0.8176**		**2,942.0195**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Retaining Wall - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9800e-003	0.0766	0.0182	2.9000e-004	7.9500e-003	7.1000e-004	8.6600e-003	2.1800e-003	6.8000e-004	2.8600e-003		31.4142	31.4142	1.5100e-003	4.9900e-003	32.9390
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0505	0.0342	0.3933	1.1300e-003	0.1314	7.4000e-004	0.1322	0.0349	6.9000e-004	0.0356		115.2915	115.2915	3.7200e-003	3.4000e-003	116.3986
Total	**0.0525**	**0.1108**	**0.4116**	**1.4200e-003**	**0.1394**	**1.4500e-003**	**0.1408**	**0.0370**	**1.3700e-003**	**0.0384**		**146.7057**	**146.7057**	**5.2300e-003**	**8.3900e-003**	**149.3376**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3184	11.0655	11.6958	0.0303		0.4752	0.4752		0.4465	0.4465	0.0000	2,921.5791	2,921.5791	0.8176		2,942.0195
Total	**1.3184**	**11.0655**	**11.6958**	**0.0303**		**0.4752**	**0.4752**		**0.4465**	**0.4465**	**0.0000**	**2,921.5791**	**2,921.5791**	**0.8176**		**2,942.0195**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Retaining Wall - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9800e-003	0.0766	0.0182	2.9000e-004	7.9500e-003	7.1000e-004	8.6600e-003	2.1800e-003	6.8000e-004	2.8600e-003		31.4142	31.4142	1.5100e-003	4.9900e-003	32.9390
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0505	0.0342	0.3933	1.1300e-003	0.1314	7.4000e-004	0.1322	0.0349	6.9000e-004	0.0356		115.2915	115.2915	3.7200e-003	3.4000e-003	116.3986
Total	**0.0525**	**0.1108**	**0.4116**	**1.4200e-003**	**0.1394**	**1.4500e-003**	**0.1408**	**0.0370**	**1.3700e-003**	**0.0384**		**146.7057**	**146.7057**	**5.2300e-003**	**8.3900e-003**	**149.3376**

3.4 Retaining Wall - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2433	10.0087	11.5753	0.0303		0.4122	0.4122		0.3874	0.3874		2,923.4335	2,923.4335	0.8158		2,943.8273
Total	**1.2433**	**10.0087**	**11.5753**	**0.0303**		**0.4122**	**0.4122**		**0.3874**	**0.3874**		**2,923.4335**	**2,923.4335**	**0.8158**		**2,943.8273**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Retaining Wall - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7000e-004	0.0619	0.0165	2.7000e-004	7.9500e-003	5.1000e-004	8.4600e-003	2.1800e-003	4.8000e-004	2.6600e-003		30.0873	30.0873	1.5100e-003	4.7800e-003	31.5509
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0306	0.3659	1.1000e-003	0.1314	7.1000e-004	0.1321	0.0349	6.5000e-004	0.0355		112.3233	112.3233	3.3900e-003	3.1600e-003	113.3511
Total	**0.0484**	**0.0924**	**0.3824**	**1.3700e-003**	**0.1394**	**1.2200e-003**	**0.1406**	**0.0370**	**1.1300e-003**	**0.0382**		**142.4105**	**142.4105**	**4.9000e-003**	**7.9400e-003**	**144.9020**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2433	10.0087	11.5753	0.0303		0.4122	0.4122		0.3874	0.3874	0.0000	2,923.4335	2,923.4335	0.8158		2,943.8273
Total	**1.2433**	**10.0087**	**11.5753**	**0.0303**		**0.4122**	**0.4122**		**0.3874**	**0.3874**	**0.0000**	**2,923.4335**	**2,923.4335**	**0.8158**		**2,943.8273**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Retaining Wall - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7000e-004	0.0619	0.0165	2.7000e-004	7.9500e-003	5.1000e-004	8.4600e-003	2.1800e-003	4.8000e-004	2.6600e-003		30.0873	30.0873	1.5100e-003	4.7800e-003	31.5509
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0306	0.3659	1.1000e-003	0.1314	7.1000e-004	0.1321	0.0349	6.5000e-004	0.0355		112.3233	112.3233	3.3900e-003	3.1600e-003	113.3511
Total	**0.0484**	**0.0924**	**0.3824**	**1.3700e-003**	**0.1394**	**1.2200e-003**	**0.1406**	**0.0370**	**1.1300e-003**	**0.0382**		**142.4105**	**142.4105**	**4.9000e-003**	**7.9400e-003**	**144.9020**

3.5 Bridge Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4743	19.3805	19.2897	0.0646		0.7432	0.7432		0.6918	0.6918		6,244.7636	6,244.7636	1.8899		6,292.0120
Total	**2.4743**	**19.3805**	**19.2897**	**0.0646**		**0.7432**	**0.7432**		**0.6918**	**0.6918**		**6,244.7636**	**6,244.7636**	**1.8899**		**6,292.0120**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Bridge Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9600e-003	0.1251	0.0335	5.5000e-004	0.0161	1.0200e-003	0.0171	4.4100e-003	9.8000e-004	5.3900e-003		60.8662	60.8662	3.0600e-003	9.6800e-003	63.8272
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0712	0.0458	0.5488	1.6500e-003	0.1972	1.0600e-003	0.1982	0.0523	9.8000e-004	0.0533		168.4849	168.4849	5.0800e-003	4.7500e-003	170.0266
Total	**0.0731**	**0.1710**	**0.5823**	**2.2000e-003**	**0.2132**	**2.0800e-003**	**0.2153**	**0.0567**	**1.9600e-003**	**0.0587**		**229.3511**	**229.3511**	**8.1400e-003**	**0.0144**	**233.8538**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4743	19.3805	19.2897	0.0646		0.7432	0.7432		0.6918	0.6918	0.0000	6,244.7636	6,244.7636	1.8899		6,292.0120
Total	**2.4743**	**19.3805**	**19.2897**	**0.0646**		**0.7432**	**0.7432**		**0.6918**	**0.6918**	**0.0000**	**6,244.7636**	**6,244.7636**	**1.8899**		**6,292.0120**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Bridge Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9600e-003	0.1251	0.0335	5.5000e-004	0.0161	1.0200e-003	0.0171	4.4100e-003	9.8000e-004	5.3900e-003		60.8662	60.8662	3.0600e-003	9.6800e-003	63.8272
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0712	0.0458	0.5488	1.6500e-003	0.1972	1.0600e-003	0.1982	0.0523	9.8000e-004	0.0533		168.4849	168.4849	5.0800e-003	4.7500e-003	170.0266
Total	**0.0731**	**0.1710**	**0.5823**	**2.2000e-003**	**0.2132**	**2.0800e-003**	**0.2153**	**0.0567**	**1.9600e-003**	**0.0587**		**229.3511**	**229.3511**	**8.1400e-003**	**0.0144**	**233.8538**

3.6 Curb & Gutter - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3165	2.2411	2.0656	8.3100e-003		0.0810	0.0810		0.0746	0.0746		803.9300	803.9300	0.2600		810.4302
Paving	0.0917					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4082**	**2.2411**	**2.0656**	**8.3100e-003**		**0.0810**	**0.0810**		**0.0746**	**0.0746**		**803.9300**	**803.9300**	**0.2600**		**810.4302**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Curb & Gutter - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2900e-003	0.2103	0.0562	9.3000e-004	0.0270	1.7200e-003	0.0288	7.4100e-003	1.6400e-003	9.0500e-003		102.2967	102.2967	5.1400e-003	0.0163	107.2732
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0237	0.0153	0.1829	5.5000e-004	0.0657	3.5000e-004	0.0661	0.0174	3.3000e-004	0.0178		56.1616	56.1616	1.6900e-003	1.5800e-003	56.6755
Total	**0.0270**	**0.2256**	**0.2392**	**1.4800e-003**	**0.0928**	**2.0700e-003**	**0.0948**	**0.0248**	**1.9700e-003**	**0.0268**		**158.4584**	**158.4584**	**6.8300e-003**	**0.0179**	**163.9487**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3165	2.2411	2.0656	8.3100e-003		0.0810	0.0810		0.0746	0.0746	0.0000	803.9300	803.9300	0.2600		810.4301
Paving	0.0917					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4082**	**2.2411**	**2.0656**	**8.3100e-003**		**0.0810**	**0.0810**		**0.0746**	**0.0746**	**0.0000**	**803.9300**	**803.9300**	**0.2600**		**810.4301**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Curb & Gutter - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2900e-003	0.2103	0.0562	9.3000e-004	0.0270	1.7200e-003	0.0288	7.4100e-003	1.6400e-003	9.0500e-003		102.2967	102.2967	5.1400e-003	0.0163	107.2732
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0237	0.0153	0.1829	5.5000e-004	0.0657	3.5000e-004	0.0661	0.0174	3.3000e-004	0.0178		56.1616	56.1616	1.6900e-003	1.5800e-003	56.6755
Total	**0.0270**	**0.2256**	**0.2392**	**1.4800e-003**	**0.0928**	**2.0700e-003**	**0.0948**	**0.0248**	**1.9700e-003**	**0.0268**		**158.4584**	**158.4584**	**6.8300e-003**	**0.0179**	**163.9487**

3.7 Sidewalk - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3165	2.2411	2.0656	8.3100e-003		0.0810	0.0810		0.0746	0.0746		803.9300	803.9300	0.2600		810.4302
Paving	0.0877					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4042**	**2.2411**	**2.0656**	**8.3100e-003**		**0.0810**	**0.0810**		**0.0746**	**0.0746**		**803.9300**	**803.9300**	**0.2600**		**810.4302**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Sidewalk - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.7800e-003	0.1775	0.0475	7.8000e-004	0.0228	1.4500e-003	0.0243	6.2500e-003	1.3900e-003	7.6400e-003		86.3374	86.3374	4.3400e-003	0.0137	90.5375
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0237	0.0153	0.1829	5.5000e-004	0.0657	3.5000e-004	0.0661	0.0174	3.3000e-004	0.0178		56.1616	56.1616	1.6900e-003	1.5800e-003	56.6755
Total	**0.0265**	**0.1928**	**0.2304**	**1.3300e-003**	**0.0885**	**1.8000e-003**	**0.0903**	**0.0237**	**1.7200e-003**	**0.0254**		**142.4990**	**142.4990**	**6.0300e-003**	**0.0153**	**147.2130**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3165	2.2411	2.0656	8.3100e-003		0.0810	0.0810		0.0746	0.0746	0.0000	803.9300	803.9300	0.2600		810.4301
Paving	0.0877					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4042**	**2.2411**	**2.0656**	**8.3100e-003**		**0.0810**	**0.0810**		**0.0746**	**0.0746**	**0.0000**	**803.9300**	**803.9300**	**0.2600**		**810.4301**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Sidewalk - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.7800e-003	0.1775	0.0475	7.8000e-004	0.0228	1.4500e-003	0.0243	6.2500e-003	1.3900e-003	7.6400e-003		86.3374	86.3374	4.3400e-003	0.0137	90.5375
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0237	0.0153	0.1829	5.5000e-004	0.0657	3.5000e-004	0.0661	0.0174	3.3000e-004	0.0178		56.1616	56.1616	1.6900e-003	1.5800e-003	56.6755
Total	**0.0265**	**0.1928**	**0.2304**	**1.3300e-003**	**0.0885**	**1.8000e-003**	**0.0903**	**0.0237**	**1.7200e-003**	**0.0254**		**142.4990**	**142.4990**	**6.0300e-003**	**0.0153**	**147.2130**

3.8 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7825	6.3573	6.4983	0.0179		0.2825	0.2825		0.2599	0.2599		1,736.4939	1,736.4939	0.5616		1,750.5344
Paving	0.1834					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9659**	**6.3573**	**6.4983**	**0.0179**		**0.2825**	**0.2825**		**0.2599**	**0.2599**		**1,736.4939**	**1,736.4939**	**0.5616**		**1,750.5344**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.8700e-003	0.2474	0.0662	1.0900e-003	0.0318	2.0200e-003	0.0338	8.7200e-003	1.9300e-003	0.0107		120.3491	120.3491	6.0400e-003	0.0191	126.2037
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0415	0.0267	0.3201	9.6000e-004	0.1150	6.2000e-004	0.1156	0.0305	5.7000e-004	0.0311		98.2829	98.2829	2.9700e-003	2.7700e-003	99.1822
Total	**0.0454**	**0.2742**	**0.3863**	**2.0500e-003**	**0.1468**	**2.6400e-003**	**0.1495**	**0.0392**	**2.5000e-003**	**0.0417**		**218.6319**	**218.6319**	**9.0100e-003**	**0.0219**	**225.3859**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7825	6.3573	6.4983	0.0179		0.2825	0.2825		0.2599	0.2599	0.0000	1,736.4939	1,736.4939	0.5616		1,750.5344
Paving	0.1834					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9659**	**6.3573**	**6.4983**	**0.0179**		**0.2825**	**0.2825**		**0.2599**	**0.2599**	**0.0000**	**1,736.4939**	**1,736.4939**	**0.5616**		**1,750.5344**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.8700e-003	0.2474	0.0662	1.0900e-003	0.0318	2.0200e-003	0.0338	8.7200e-003	1.9300e-003	0.0107		120.3491	120.3491	6.0400e-003	0.0191	126.2037
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0415	0.0267	0.3201	9.6000e-004	0.1150	6.2000e-004	0.1156	0.0305	5.7000e-004	0.0311		98.2829	98.2829	2.9700e-003	2.7700e-003	99.1822
Total	**0.0454**	**0.2742**	**0.3863**	**2.0500e-003**	**0.1468**	**2.6400e-003**	**0.1495**	**0.0392**	**2.5000e-003**	**0.0417**		**218.6319**	**218.6319**	**9.0100e-003**	**0.0219**	**225.3859**

3.9 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1579					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**7.3496**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0297	0.0191	0.2287	6.9000e-004	0.0822	4.4000e-004	0.0826	0.0218	4.1000e-004	0.0222		70.2020	70.2020	2.1200e-003	1.9800e-003	70.8444
Total	**0.0297**	**0.0191**	**0.2287**	**6.9000e-004**	**0.0822**	**4.4000e-004**	**0.0826**	**0.0218**	**4.1000e-004**	**0.0222**		**70.2020**	**70.2020**	**2.1200e-003**	**1.9800e-003**	**70.8444**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1579					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.3496**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0297	0.0191	0.2287	6.9000e-004	0.0822	4.4000e-004	0.0826	0.0218	4.1000e-004	0.0222		70.2020	70.2020	2.1200e-003	1.9800e-003	70.8444
Total	**0.0297**	**0.0191**	**0.2287**	**6.9000e-004**	**0.0822**	**4.4000e-004**	**0.0826**	**0.0218**	**4.1000e-004**	**0.0222**		**70.2020**	**70.2020**	**2.1200e-003**	**1.9800e-003**	**70.8444**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.553514	0.062792	0.181046	0.120736	0.024419	0.006214	0.008493	0.006184	0.000715	0.000556	0.029185	0.000982	0.005164
Other Non-Asphalt Surfaces	0.553514	0.062792	0.181046	0.120736	0.024419	0.006214	0.008493	0.006184	0.000715	0.000556	0.029185	0.000982	0.005164

5.0 Energy Detail

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0617	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.7000e-004	5.7000e-004	0.0000		6.1000e-004
Unmitigated	0.0617	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.7000e-004	5.7000e-004	0.0000		6.1000e-004

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0216					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0401					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.7000e-004	5.7000e-004	0.0000		6.1000e-004
Total	**0.0617**	**0.0000**	**2.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**5.7000e-004**	**5.7000e-004**	**0.0000**		**6.1000e-004**

El Camino Real Roadway Improvements Project - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0216					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0401					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.7000e-004	5.7000e-004	0.0000		6.1000e-004
Total	**0.0617**	**0.0000**	**2.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**5.7000e-004**	**5.7000e-004**	**0.0000**		**6.1000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

El Camino Real Roadway Improvements Project - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

El Camino Real Roadway Improvements Project

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.83	Acre	1.83	79,714.80	0
Other Asphalt Surfaces	0.77	Acre	0.77	33,541.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project specific total acreage of 2.6 acres (of which 0.77 acre is paved).

Construction Phase - Project specific construction schedule.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for dump truck.

Grading - Soil export and vegetation removal accounted for in demolition debris screen.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for dump truck.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for concrete truck.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for dump truck (quantity 1) and for concrete truck (quantity 3).

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for concrete truck.

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for concrete truck.

El Camino Real Roadway Improvements Project - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - Project specific equipment. Inserted Off-Highway Truck for dump truck. Other construction equipment for milling machine (assumed average 154 HP).

Off-road Equipment -

Demolition - Based on approximately 50 loaded demolition-related truck trips.

Trips and VMT - Project specific #Trips Worker (/day) and total haul truck trips for concrete, aggregate base, PVC pipe, prefab bridges, and steel. Vendor trips to account for water trucks.

Construction Off-road Equipment Mitigation - Assumes implementation of SDAPCD Fugitive Dust Control requirements.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	11.00
tblConstructionPhase	NumDays	6.00	23.00
tblConstructionPhase	NumDays	220.00	66.00
tblConstructionPhase	NumDays	220.00	87.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	PhaseEndDate	11/14/2022	11/1/2022
tblGrading	AcresOfGrading	7.88	3.00
tblGrading	MaterialImported	0.00	2,300.00
tblOffRoadEquipment	HorsePower	172.00	154.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37

El Camino Real Roadway Improvements Project - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblOffRoadEquipment	UsageHours	8.00	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	7.00	3.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	99.00	100.00
tblTripsAndVMT	HaulingTripNumber	288.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	34.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	6.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	48.00	16.00
tblTripsAndVMT	WorkerTripNumber	48.00	24.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00

2.0 Emissions Summary

El Camino Real Roadway Improvements Project - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0331	0.2962	0.2682	7.2000e-004	0.0635	0.0125	0.0761	0.0289	0.0117	0.0405	0.0000	63.8366	63.8366	0.0170	8.5000e-004	64.5130
2023	0.1960	1.1816	1.2403	3.9800e-003	0.0154	0.0458	0.0612	4.1100e-003	0.0427	0.0468	0.0000	350.5359	350.5359	0.1004	1.1900e-003	353.3998
Maximum	**0.1960**	**1.1816**	**1.2403**	**3.9800e-003**	**0.0635**	**0.0458**	**0.0761**	**0.0289**	**0.0427**	**0.0468**	**0.0000**	**350.5359**	**350.5359**	**0.1004**	**1.1900e-003**	**353.3998**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0331	0.2962	0.2682	7.2000e-004	0.0305	0.0125	0.0431	0.0135	0.0117	0.0252	0.0000	63.8365	63.8365	0.0170	8.5000e-004	64.5130
2023	0.1960	1.1816	1.2403	3.9800e-003	0.0154	0.0458	0.0612	4.1100e-003	0.0427	0.0468	0.0000	350.5355	350.5355	0.1004	1.1900e-003	353.3994
Maximum	**0.1960**	**1.1816**	**1.2403**	**3.9800e-003**	**0.0305**	**0.0458**	**0.0612**	**0.0135**	**0.0427**	**0.0468**	**0.0000**	**350.5355**	**350.5355**	**0.1004**	**1.1900e-003**	**353.3994**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**41.82**	**0.00**	**24.05**	**46.56**	**0.00**	**17.57**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**10-18-2022**	**1-17-2023**	0.3870	0.3870
2	**1-18-2023**	**4-17-2023**	0.7556	0.7556
3	**4-18-2023**	**7-17-2023**	0.4921	0.4921
4	**7-18-2023**	**9-30-2023**	0.0544	0.0544
		Highest	0.7556	0.7556

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0113	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0113**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0113	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0113**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/18/2022	11/1/2022	5	11	
2	Grading	Grading	11/2/2022	12/2/2022	5	23	
3	Retaining Wall	Building Construction	12/5/2022	3/6/2023	5	66	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Bridge Construction	Building Construction	2/6/2023	6/6/2023	5	87	
5	Curb & Gutter	Paving	5/5/2023	6/5/2023	5	22	
6	Sidewalk	Paving	6/6/2023	7/6/2023	5	23	
7	Paving	Paving	7/7/2023	7/21/2023	5	11	
8	Architectural Coating	Architectural Coating	7/17/2023	7/31/2023	5	11	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.6

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,795 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Demolition	Concrete/Industrial Saws	1	6.00	81	0.73
Curb & Gutter	Cement and Mortar Mixers	0	0.00	9	0.56
Sidewalk	Cement and Mortar Mixers	0	0.00	9	0.56
Retaining Wall	Cranes	0	0.00	231	0.29
Grading	Graders	0	0.00	187	0.41
Bridge Construction	Cranes	1	3.00	231	0.29
Paving	Pavers	0	0.00	130	0.42
Paving	Paving Equipment	0	0.00	132	0.36
Paving	Rollers	1	6.00	80	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Retaining Wall	Forklifts	0	0.00	89	0.20
Bridge Construction	Forklifts	0	0.00	89	0.20

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	3.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Retaining Wall	Generator Sets	0	0.00	84	0.74
Bridge Construction	Generator Sets	0	0.00	84	0.74
Curb & Gutter	Pavers	0	0.00	130	0.42
Sidewalk	Pavers	0	0.00	130	0.42
Curb & Gutter	Paving Equipment	0	0.00	132	0.36
Sidewalk	Paving Equipment	0	0.00	132	0.36
Curb & Gutter	Rollers	0	0.00	80	0.38
Sidewalk	Rollers	0	0.00	80	0.38
Retaining Wall	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Bridge Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Curb & Gutter	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Sidewalk	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Retaining Wall	Welders	0	0.00	46	0.45
Bridge Construction	Welders	0	0.00	46	0.45
Demolition	Skid Steer Loaders	2	6.00	65	0.37
Demolition	Off-Highway Trucks	1	6.00	402	0.38
Grading	Excavators	1	6.00	158	0.38
Grading	Off-Highway Trucks	1	6.00	402	0.38
Retaining Wall	Skid Steer Loaders	1	6.00	65	0.37
Retaining Wall	Pumps	1	6.00	84	0.74
Retaining Wall	Off-Highway Trucks	2	6.00	402	0.38
Bridge Construction	Bore/Drill Rigs	1	6.00	221	0.50
Bridge Construction	Off-Highway Trucks	1	7.00	402	0.38
Bridge Construction	Skid Steer Loaders	1	6.00	65	0.37
Bridge Construction	Pumps	1	6.00	84	0.74
Bridge Construction	Off-Highway Trucks	3	7.00	402	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Curb & Gutter	Off-Highway Trucks	1	5.00	402	0.38
Sidewalk	Off-Highway Trucks	1	5.00	402	0.38
Paving	Sweepers/Scrubbers	1	2.00	64	0.46
Paving	Off-Highway Trucks	2	4.00	402	0.38
Paving	Other Construction Equipment	1	3.00	154	0.42

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	6.00	2.00	100.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Retaining Wall	6	16.00	0.00	30.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	6.00	2.00	30.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Bridge Construction	9	24.00	0.00	80.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	0.00	20.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Curb & Gutter	1	8.00	0.00	34.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Sidewalk	1	8.00	0.00	30.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0108	0.0000	0.0108	1.6400e-003	0.0000	1.6400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4600e-003	0.0381	0.0435	1.0000e-004		1.6300e-003	1.6300e-003		1.5500e-003	1.5500e-003	0.0000	8.8974	8.8974	2.2800e-003	0.0000	8.9544
Total	**4.4600e-003**	**0.0381**	**0.0435**	**1.0000e-004**	**0.0108**	**1.6300e-003**	**0.0125**	**1.6400e-003**	**1.5500e-003**	**3.1900e-003**	**0.0000**	**8.8974**	**8.8974**	**2.2800e-003**	**0.0000**	**8.9544**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2000e-004	8.4200e-003	1.9900e-003	3.0000e-005	8.6000e-004	8.0000e-005	9.3000e-004	2.4000e-004	7.0000e-005	3.1000e-004	0.0000	3.1341	3.1341	1.5000e-004	5.0000e-004	3.2862
Vendor	2.0000e-005	6.1000e-004	2.0000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2294	0.2294	1.0000e-005	3.0000e-005	0.2395
Worker	1.0000e-004	7.0000e-005	8.1000e-004	0.0000	2.6000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2176	0.2176	1.0000e-005	1.0000e-005	0.2197
Total	**3.4000e-004**	**9.1000e-003**	**3.0000e-003**	**3.0000e-005**	**1.1900e-003**	**9.0000e-005**	**1.2800e-003**	**3.3000e-004**	**8.0000e-005**	**4.1000e-004**	**0.0000**	**3.5811**	**3.5811**	**1.7000e-004**	**5.4000e-004**	**3.7454**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.8700e-003	0.0000	4.8700e-003	7.4000e-004	0.0000	7.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4600e-003	0.0381	0.0435	1.0000e-004		1.6300e-003	1.6300e-003		1.5500e-003	1.5500e-003	0.0000	8.8974	8.8974	2.2800e-003	0.0000	8.9544
Total	**4.4600e-003**	**0.0381**	**0.0435**	**1.0000e-004**	**4.8700e-003**	**1.6300e-003**	**6.5000e-003**	**7.4000e-004**	**1.5500e-003**	**2.2900e-003**	**0.0000**	**8.8974**	**8.8974**	**2.2800e-003**	**0.0000**	**8.9544**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2000e-004	8.4200e-003	1.9900e-003	3.0000e-005	8.6000e-004	8.0000e-005	9.3000e-004	2.4000e-004	7.0000e-005	3.1000e-004	0.0000	3.1341	3.1341	1.5000e-004	5.0000e-004	3.2862
Vendor	2.0000e-005	6.1000e-004	2.0000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2294	0.2294	1.0000e-005	3.0000e-005	0.2395
Worker	1.0000e-004	7.0000e-005	8.1000e-004	0.0000	2.6000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2176	0.2176	1.0000e-005	1.0000e-005	0.2197
Total	**3.4000e-004**	**9.1000e-003**	**3.0000e-003**	**3.0000e-005**	**1.1900e-003**	**9.0000e-005**	**1.2800e-003**	**3.3000e-004**	**8.0000e-005**	**4.1000e-004**	**0.0000**	**3.5811**	**3.5811**	**1.7000e-004**	**5.4000e-004**	**3.7454**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0492	0.0000	0.0492	0.0263	0.0000	0.0263	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1333	0.0979	2.5000e-004		6.0000e-003	6.0000e-003		5.5200e-003	5.5200e-003	0.0000	21.6390	21.6390	7.0000e-003	0.0000	21.8139
Total	**0.0143**	**0.1333**	**0.0979**	**2.5000e-004**	**0.0492**	**6.0000e-003**	**0.0552**	**0.0263**	**5.5200e-003**	**0.0318**	**0.0000**	**21.6390**	**21.6390**	**7.0000e-003**	**0.0000**	**21.8139**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.5300e-003	6.0000e-004	1.0000e-005	2.6000e-004	2.0000e-005	2.8000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.9402	0.9402	5.0000e-005	1.5000e-004	0.9859
Vendor	5.0000e-005	1.2700e-003	4.1000e-004	0.0000	1.5000e-004	1.0000e-005	1.7000e-004	4.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.4796	0.4796	1.0000e-005	7.0000e-005	0.5008
Worker	2.0000e-004	1.4000e-004	1.7000e-003	0.0000	5.5000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4551	0.4551	1.0000e-005	1.0000e-005	0.4593
Total	**3.2000e-004**	**3.9400e-003**	**2.7100e-003**	**1.0000e-005**	**9.6000e-004**	**3.0000e-005**	**1.0100e-003**	**2.6000e-004**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.8749**	**1.8749**	**7.0000e-005**	**2.3000e-004**	**1.9460**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0221	0.0000	0.0221	0.0118	0.0000	0.0118	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1333	0.0979	2.5000e-004		6.0000e-003	6.0000e-003		5.5200e-003	5.5200e-003	0.0000	21.6389	21.6389	7.0000e-003	0.0000	21.8139
Total	**0.0143**	**0.1333**	**0.0979**	**2.5000e-004**	**0.0221**	**6.0000e-003**	**0.0281**	**0.0118**	**5.5200e-003**	**0.0173**	**0.0000**	**21.6389**	**21.6389**	**7.0000e-003**	**0.0000**	**21.8139**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.5300e-003	6.0000e-004	1.0000e-005	2.6000e-004	2.0000e-005	2.8000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.9402	0.9402	5.0000e-005	1.5000e-004	0.9859
Vendor	5.0000e-005	1.2700e-003	4.1000e-004	0.0000	1.5000e-004	1.0000e-005	1.7000e-004	4.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.4796	0.4796	1.0000e-005	7.0000e-005	0.5008
Worker	2.0000e-004	1.4000e-004	1.7000e-003	0.0000	5.5000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4551	0.4551	1.0000e-005	1.0000e-005	0.4593
Total	**3.2000e-004**	**3.9400e-003**	**2.7100e-003**	**1.0000e-005**	**9.6000e-004**	**3.0000e-005**	**1.0100e-003**	**2.6000e-004**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.8749**	**1.8749**	**7.0000e-005**	**2.3000e-004**	**1.9460**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Retaining Wall - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.1107	0.1170	3.0000e-004		4.7500e-003	4.7500e-003		4.4700e-003	4.4700e-003	0.0000	26.5041	26.5041	7.4200e-003	0.0000	26.6896
Total	**0.0132**	**0.1107**	**0.1170**	**3.0000e-004**		**4.7500e-003**	**4.7500e-003**		**4.4700e-003**	**4.4700e-003**	**0.0000**	**26.5041**	**26.5041**	**7.4200e-003**	**0.0000**	**26.6896**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.7000e-004	1.8000e-004	0.0000	8.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2849	0.2849	1.0000e-005	5.0000e-005	0.2987
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.4000e-004	3.9300e-003	1.0000e-005	1.2800e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0552	1.0552	3.0000e-005	3.0000e-005	1.0651
Total	**4.8000e-004**	**1.1100e-003**	**4.1100e-003**	**1.0000e-005**	**1.3600e-003**	**2.0000e-005**	**1.3700e-003**	**3.6000e-004**	**2.0000e-005**	**3.8000e-004**	**0.0000**	**1.3401**	**1.3401**	**4.0000e-005**	**8.0000e-005**	**1.3638**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Retaining Wall - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.1107	0.1170	3.0000e-004		4.7500e-003	4.7500e-003		4.4700e-003	4.4700e-003	0.0000	26.5041	26.5041	7.4200e-003	0.0000	26.6895
Total	**0.0132**	**0.1107**	**0.1170**	**3.0000e-004**		**4.7500e-003**	**4.7500e-003**		**4.4700e-003**	**4.4700e-003**	**0.0000**	**26.5041**	**26.5041**	**7.4200e-003**	**0.0000**	**26.6895**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.7000e-004	1.8000e-004	0.0000	8.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2849	0.2849	1.0000e-005	5.0000e-005	0.2987
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.4000e-004	3.9300e-003	1.0000e-005	1.2800e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0552	1.0552	3.0000e-005	3.0000e-005	1.0651
Total	**4.8000e-004**	**1.1100e-003**	**4.1100e-003**	**1.0000e-005**	**1.3600e-003**	**2.0000e-005**	**1.3700e-003**	**3.6000e-004**	**2.0000e-005**	**3.8000e-004**	**0.0000**	**1.3401**	**1.3401**	**4.0000e-005**	**8.0000e-005**	**1.3638**

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3.4 Retaining Wall - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0286	0.2302	0.2662	7.0000e-004		9.4800e-003	9.4800e-003		8.9100e-003	8.9100e-003	0.0000	60.9982	60.9982	0.0170	0.0000	61.4237
Total	**0.0286**	**0.2302**	**0.2662**	**7.0000e-004**		**9.4800e-003**	**9.4800e-003**		**8.9100e-003**	**8.9100e-003**	**0.0000**	**60.9982**	**60.9982**	**0.0170**	**0.0000**	**61.4237**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6274	0.6274	3.0000e-005	1.0000e-004	0.6580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-003	6.9000e-004	8.4100e-003	3.0000e-005	2.9500e-003	2.0000e-005	2.9700e-003	7.8000e-004	1.0000e-005	8.0000e-004	0.0000	2.3644	2.3644	7.0000e-005	7.0000e-005	2.3856
Total	**1.0200e-003**	**2.1100e-003**	**8.7900e-003**	**4.0000e-005**	**3.1300e-003**	**3.0000e-005**	**3.1600e-003**	**8.3000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.9918**	**2.9918**	**1.0000e-004**	**1.7000e-004**	**3.0435**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Retaining Wall - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0286	0.2302	0.2662	7.0000e-004		9.4800e-003	9.4800e-003		8.9100e-003	8.9100e-003	0.0000	60.9981	60.9981	0.0170	0.0000	61.4236
Total	**0.0286**	**0.2302**	**0.2662**	**7.0000e-004**		**9.4800e-003**	**9.4800e-003**		**8.9100e-003**	**8.9100e-003**	**0.0000**	**60.9981**	**60.9981**	**0.0170**	**0.0000**	**61.4236**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6274	0.6274	3.0000e-005	1.0000e-004	0.6580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-003	6.9000e-004	8.4100e-003	3.0000e-005	2.9500e-003	2.0000e-005	2.9700e-003	7.8000e-004	1.0000e-005	8.0000e-004	0.0000	2.3644	2.3644	7.0000e-005	7.0000e-005	2.3856
Total	**1.0200e-003**	**2.1100e-003**	**8.7900e-003**	**4.0000e-005**	**3.1300e-003**	**3.0000e-005**	**3.1600e-003**	**8.3000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.9918**	**2.9918**	**1.0000e-004**	**1.7000e-004**	**3.0435**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Bridge Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1076	0.8431	0.8391	2.8100e-003		0.0323	0.0323		0.0301	0.0301	0.0000	246.4342	246.4342	0.0746	0.0000	248.2988
Total	**0.1076**	**0.8431**	**0.8391**	**2.8100e-003**		**0.0323**	**0.0323**		**0.0301**	**0.0301**	**0.0000**	**246.4342**	**246.4342**	**0.0746**	**0.0000**	**248.2988**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-005	5.4300e-003	1.4400e-003	2.0000e-005	6.9000e-004	4.0000e-005	7.3000e-004	1.9000e-004	4.0000e-005	2.3000e-004	0.0000	2.4006	2.4006	1.2000e-004	3.8000e-004	2.5174
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8200e-003	1.9600e-003	0.0239	7.0000e-005	8.3700e-003	5.0000e-005	8.4200e-003	2.2200e-003	4.0000e-005	2.2700e-003	0.0000	6.7078	6.7078	2.0000e-004	1.8000e-004	6.7677
Total	**2.9100e-003**	**7.3900e-003**	**0.0253**	**9.0000e-005**	**9.0600e-003**	**9.0000e-005**	**9.1500e-003**	**2.4100e-003**	**8.0000e-005**	**2.5000e-003**	**0.0000**	**9.1083**	**9.1083**	**3.2000e-004**	**5.6000e-004**	**9.2851**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Bridge Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1076	0.8431	0.8391	2.8100e-003		0.0323	0.0323		0.0301	0.0301	0.0000	246.4339	246.4339	0.0746	0.0000	248.2985
Total	**0.1076**	**0.8431**	**0.8391**	**2.8100e-003**		**0.0323**	**0.0323**		**0.0301**	**0.0301**	**0.0000**	**246.4339**	**246.4339**	**0.0746**	**0.0000**	**248.2985**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-005	5.4300e-003	1.4400e-003	2.0000e-005	6.9000e-004	4.0000e-005	7.3000e-004	1.9000e-004	4.0000e-005	2.3000e-004	0.0000	2.4006	2.4006	1.2000e-004	3.8000e-004	2.5174
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8200e-003	1.9600e-003	0.0239	7.0000e-005	8.3700e-003	5.0000e-005	8.4200e-003	2.2200e-003	4.0000e-005	2.2700e-003	0.0000	6.7078	6.7078	2.0000e-004	1.8000e-004	6.7677
Total	**2.9100e-003**	**7.3900e-003**	**0.0253**	**9.0000e-005**	**9.0600e-003**	**9.0000e-005**	**9.1500e-003**	**2.4100e-003**	**8.0000e-005**	**2.5000e-003**	**0.0000**	**9.1083**	**9.1083**	**3.2000e-004**	**5.6000e-004**	**9.2851**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Curb & Gutter - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4800e-003	0.0247	0.0227	9.0000e-005		8.9000e-004	8.9000e-004		8.2000e-004	8.2000e-004	0.0000	8.0224	8.0224	2.5900e-003	0.0000	8.0873
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4900e-003**	**0.0247**	**0.0227**	**9.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**8.0224**	**8.0224**	**2.5900e-003**	**0.0000**	**8.0873**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.3100e-003	6.1000e-004	1.0000e-005	2.9000e-004	2.0000e-005	3.1000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0203	1.0203	5.0000e-005	1.6000e-004	1.0699
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.6000e-004	2.0100e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5654	0.5654	2.0000e-005	2.0000e-005	0.5705
Total	**2.8000e-004**	**2.4700e-003**	**2.6200e-003**	**2.0000e-005**	**1.0000e-003**	**2.0000e-005**	**1.0200e-003**	**2.7000e-004**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**1.5857**	**1.5857**	**7.0000e-005**	**1.8000e-004**	**1.6403**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Curb & Gutter - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4800e-003	0.0247	0.0227	9.0000e-005		8.9000e-004	8.9000e-004		8.2000e-004	8.2000e-004	0.0000	8.0224	8.0224	2.5900e-003	0.0000	8.0873
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4900e-003**	**0.0247**	**0.0227**	**9.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**8.0224**	**8.0224**	**2.5900e-003**	**0.0000**	**8.0873**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.3100e-003	6.1000e-004	1.0000e-005	2.9000e-004	2.0000e-005	3.1000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0203	1.0203	5.0000e-005	1.6000e-004	1.0699
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.6000e-004	2.0100e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5654	0.5654	2.0000e-005	2.0000e-005	0.5705
Total	**2.8000e-004**	**2.4700e-003**	**2.6200e-003**	**2.0000e-005**	**1.0000e-003**	**2.0000e-005**	**1.0200e-003**	**2.7000e-004**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**1.5857**	**1.5857**	**7.0000e-005**	**1.8000e-004**	**1.6403**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Sidewalk - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6400e-003	0.0258	0.0238	1.0000e-004		9.3000e-004	9.3000e-004		8.6000e-004	8.6000e-004	0.0000	8.3871	8.3871	2.7100e-003	0.0000	8.4549
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6500e-003**	**0.0258**	**0.0238**	**1.0000e-004**		**9.3000e-004**	**9.3000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**8.3871**	**8.3871**	**2.7100e-003**	**0.0000**	**8.4549**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	2.0400e-003	5.4000e-004	1.0000e-005	2.6000e-004	2.0000e-005	2.7000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.9002	0.9002	5.0000e-005	1.4000e-004	0.9440
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.7000e-004	2.1000e-003	1.0000e-005	7.4000e-004	0.0000	7.4000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.5911	0.5911	2.0000e-005	2.0000e-005	0.5964
Total	**2.8000e-004**	**2.2100e-003**	**2.6400e-003**	**2.0000e-005**	**1.0000e-003**	**2.0000e-005**	**1.0100e-003**	**2.7000e-004**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**1.4913**	**1.4913**	**7.0000e-005**	**1.6000e-004**	**1.5404**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Sidewalk - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6400e-003	0.0258	0.0238	1.0000e-004		9.3000e-004	9.3000e-004		8.6000e-004	8.6000e-004	0.0000	8.3871	8.3871	2.7100e-003	0.0000	8.4549
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6500e-003**	**0.0258**	**0.0238**	**1.0000e-004**		**9.3000e-004**	**9.3000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**8.3871**	**8.3871**	**2.7100e-003**	**0.0000**	**8.4549**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	2.0400e-003	5.4000e-004	1.0000e-005	2.6000e-004	2.0000e-005	2.7000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.9002	0.9002	5.0000e-005	1.4000e-004	0.9440
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.7000e-004	2.1000e-003	1.0000e-005	7.4000e-004	0.0000	7.4000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.5911	0.5911	2.0000e-005	2.0000e-005	0.5964
Total	**2.8000e-004**	**2.2100e-003**	**2.6400e-003**	**2.0000e-005**	**1.0000e-003**	**2.0000e-005**	**1.0100e-003**	**2.7000e-004**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**1.4913**	**1.4913**	**7.0000e-005**	**1.6000e-004**	**1.5404**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.3000e-003	0.0350	0.0357	1.0000e-004		1.5500e-003	1.5500e-003		1.4300e-003	1.4300e-003	0.0000	8.6643	8.6643	2.8000e-003	0.0000	8.7343
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3100e-003**	**0.0350**	**0.0357**	**1.0000e-004**		**1.5500e-003**	**1.5500e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**8.6643**	**8.6643**	**2.8000e-003**	**0.0000**	**8.7343**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6002	0.6002	3.0000e-005	1.0000e-004	0.6293
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.4000e-004	1.7600e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.4947	0.4947	1.0000e-005	1.0000e-005	0.4992
Total	**2.3000e-004**	**1.5000e-003**	**2.1200e-003**	**2.0000e-005**	**7.9000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**1.0949**	**1.0949**	**4.0000e-005**	**1.1000e-004**	**1.1285**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.3000e-003	0.0350	0.0357	1.0000e-004		1.5500e-003	1.5500e-003		1.4300e-003	1.4300e-003	0.0000	8.6643	8.6643	2.8000e-003	0.0000	8.7343
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3100e-003**	**0.0350**	**0.0357**	**1.0000e-004**		**1.5500e-003**	**1.5500e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**8.6643**	**8.6643**	**2.8000e-003**	**0.0000**	**8.7343**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6002	0.6002	3.0000e-005	1.0000e-004	0.6293
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.4000e-004	1.7600e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.4947	0.4947	1.0000e-005	1.0000e-005	0.4992
Total	**2.3000e-004**	**1.5000e-003**	**2.1200e-003**	**2.0000e-005**	**7.9000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**1.0949**	**1.0949**	**4.0000e-005**	**1.1000e-004**	**1.1285**

El Camino Real Roadway Improvements Project - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	7.1700e-003	9.9600e-003	2.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	1.4043	1.4043	8.0000e-005	0.0000	1.4064
Total	**0.0404**	**7.1700e-003**	**9.9600e-003**	**2.0000e-005**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**1.4043**	**1.4043**	**8.0000e-005**	**0.0000**	**1.4064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.0000e-004	1.2600e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3534	0.3534	1.0000e-005	1.0000e-005	0.3565
Total	**1.5000e-004**	**1.0000e-004**	**1.2600e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3534**	**0.3534**	**1.0000e-005**	**1.0000e-005**	**0.3565**

El Camino Real Roadway Improvements Project - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	7.1700e-003	9.9600e-003	2.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	1.4043	1.4043	8.0000e-005	0.0000	1.4064
Total	**0.0404**	**7.1700e-003**	**9.9600e-003**	**2.0000e-005**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**1.4043**	**1.4043**	**8.0000e-005**	**0.0000**	**1.4064**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.0000e-004	1.2600e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3534	0.3534	1.0000e-005	1.0000e-005	0.3565
Total	**1.5000e-004**	**1.0000e-004**	**1.2600e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3534**	**0.3534**	**1.0000e-005**	**1.0000e-005**	**0.3565**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.553514	0.062792	0.181046	0.120736	0.024419	0.006214	0.008493	0.006184	0.000715	0.000556	0.029185	0.000982	0.005164
Other Non-Asphalt Surfaces	0.553514	0.062792	0.181046	0.120736	0.024419	0.006214	0.008493	0.006184	0.000715	0.000556	0.029185	0.000982	0.005164

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

El Camino Real Roadway Improvements Project - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0113	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Unmitigated	0.0113	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.9400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.3200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	**0.0113**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.9400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.3200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	**0.0113**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

El Camino Real Roadway Improvements Project
Fuel Consumption Calculations

Phase	Source	Fuel	Total MT CO_2	CO2 Factor (lb CO2/gal)	Gallons
Demolition	Off-Road Equipment	Diesel	8.90	22.45	874
Demolition	Worker	Gasoline	0.22	17.86	27
Demolition	Vendor	Diesel	0.23	22.45	23
Demolition	Hauling	Diesel	3.13	22.45	308
Grading	Off-Road Equipment	Diesel	21.64	22.45	2,125
Grading	Worker	Gasoline	0.46	17.86	56
Grading	Vendor	Diesel	0.48	22.45	47
Grading	Hauling	Diesel	0.94	22.45	92
Retaining Wall - 2022	Off-Road Equipment	Diesel	26.50	22.45	2,603
Retaining Wall - 2022	Worker	Gasoline	1.06	17.86	130
Retaining Wall - 2022	Vendor	Diesel	0.00	22.45	0
Retaining Wall - 2022	Hauling	Diesel	0.28	22.45	28
Retaining Wall - 2023	Off-Road Equipment	Diesel	61.00	22.45	5,990
Retaining Wall - 2023	Worker	Gasoline	2.36	17.86	292
Retaining Wall - 2023	Vendor	Diesel	0.00	22.45	0
Retaining Wall - 2023	Hauling	Diesel	0.63	22.45	62
Bridge Construction	Off-Road Equipment	Diesel	246.43	22.45	24,200
Bridge Construction	Vendor	Diesel	0.00	22.45	0
Bridge Construction	Worker	Gasoline	6.71	17.86	828
Bridge Construction	Hauling	Diesel	2.40	22.45	236
Curb & Gutter	Off-Road Equipment	Diesel	8.02	22.45	788
Curb & Gutter	Worker	Gasoline	0.57	17.86	70
Curb & Gutter	Vendor	Diesel	0.00	22.45	0
Curb & Gutter	Hauling	Diesel	1.02	22.45	100
Sidewalk	Off-Road Equipment	Diesel	8.39	22.45	824
Sidewalk	Worker	Gasoline	0.59	17.86	73
Sidewalk	Vendor	Diesel	0.00	22.45	0
Sidewalk	Hauling	Diesel	0.90	22.45	88
Paving	Off-Road Equipment	Diesel	8.66	22.45	851
Paving	Worker	Gasoline	0.49	17.86	61
Paving	Vendor	Diesel	0.00	22.45	0
Paving	Hauling	Diesel	0.60	22.45	59
Arch Coating	Off-Road Equipment	Diesel	1.40	22.45	138
Arch Coating	Worker	Gasoline	0.35	17.86	44
Arch Coating	Vendor	Diesel	0.00	22.45	0
Arch Coating	Hauling	Diesel	0.00	22.45	0
		Total	**414.37**		

	Total Gallons
Diesel	39,435
Gasoline	1,581

1 MT = 2204.62 lb

	lb CO2/gallon
Diesel	22.45
Gasoline	17.86

U.S. Energy Information Administration released September 7, 2023 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)
Diesel = Diesel and Home Heating Fuel
Gasoline = Finished Motor Gasoline

Appendix C:

Biological Technical Report

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El Camino Real Widening Project, Arenal Road to La Costa Avenue, Project No. 6051, City of Carlsbad, California

Biological Technical Report

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July 2025

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ABBREVIATIONS, INITIALISMS, AND ACRONYMS

ADA	Americans with Disabilities Act
BSA	Biological Study Area
CCA	California Coastal Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
city	City of Carlsbad
CMC	Carlsbad Municipal Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
FESA	Federal Endangered Species Act
GIS	Geographic Information System
HCP	Habitat Conservation Plan
HMP	Habitat Management Plan
IPaC	Information for Planning and Consultation
LCP	Local Coastal Program
LUP	Land Use Plan
MBTA	Migratory Bird Treaty Act
MHCP	Multiple Habitat Conservation Program
MLLW	Mean Lower Low Water
NCCP Act	Natural Community Conservation Planning Act
OHWM	Ordinary High Water Mark
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
TCE	Temporary Construction Easement
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

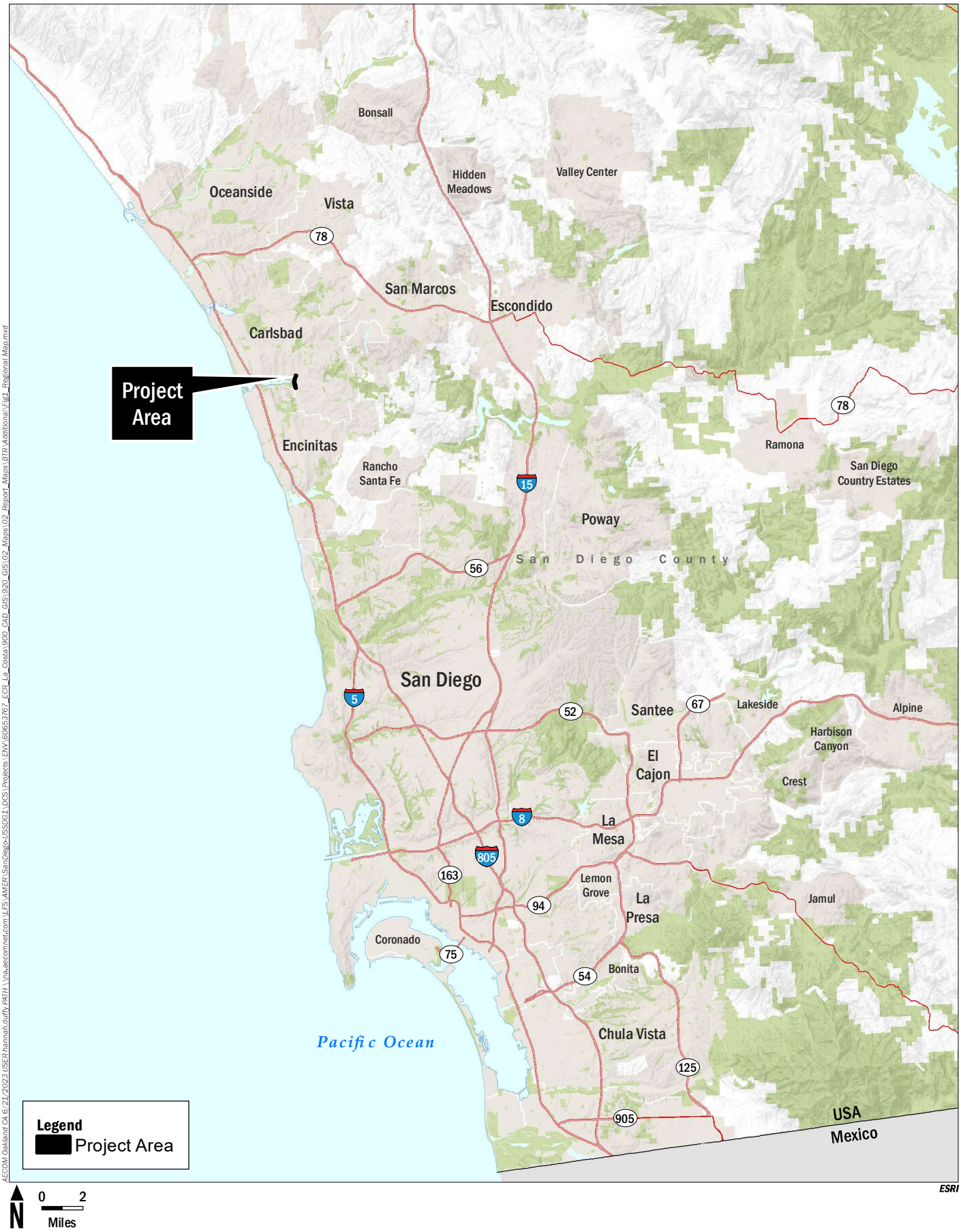
CHAPTER 1.0
SUMMARY OF FINDINGS

The City of Carlsbad (city) proposes to widen southbound El Camino Real from Arenal Road to La Costa Avenue (proposed project). The proposed project spans approximately 0.65 mile along El Camino Real in the City of Carlsbad, San Diego County, California (Figure 1) and involves adding a vehicle travel lane in the southbound direction; bike and pedestrian facilities, including sidewalks and pedestrian bridges; and street improvements, including curb ramps and additional street lighting (Figure 2A–2C). The widening of the existing roadway and installation of the pedestrian bridges would require expanding the current footprint outside of the existing right-of-way boundary in some locations.

This Biological Technical Report provides the regulatory framework applicable to the natural resources that occur within or adjacent to the proposed project; describes the existing biological resources in the vicinity of the proposed project; details the methodologies used to assess potential impacts to sensitive habitats and species; provides the results of the assessment; and presents avoidance, minimization, and mitigation measures to reduce potential impacts.

The project area is on the eastern edge of Batiquitos Lagoon Ecological Reserve (Batiquitos Lagoon), with development proposed to the north, east, and south. Batiquitos Lagoon is within the city's Habitat Management Plan (HMP) hardline preserve. The 120.35-acre Biological Study Area (BSA) for the proposed project includes a 460- to 550-foot survey radius surrounding the project boundaries (Figure 3A–3C). The difference in the BSA buffered area at different project locations is derived from final project design impacts. Field surveys conducted included a reconnaissance survey to map vegetation and assess potential for special-status species to occur in the BSA and a formal delineation of jurisdictional waters and wetlands. Protocol wildlife surveys for coastal California gnatcatcher (*Polioptila californica californica*), Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), and light-footed Ridgway's rail (*Rallus obsoletus levipes*) were conducted in 2021.

The BSA consists of developed landscape, but also supports sensitive vegetation and aquatic cover types, including various forms of coastal brackish marsh, southern arroyo willow riparian forest, southern coastal salt marsh, southern willow scrub, open water, nonnative riparian, and coastal sage scrub. Jurisdictional "waters of the U.S." and "waters of the State" occur in Batiquitos Lagoon and San Marcos Creek. California gnatcatcher was detected in the northwest portion of the BSA,



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AECOM

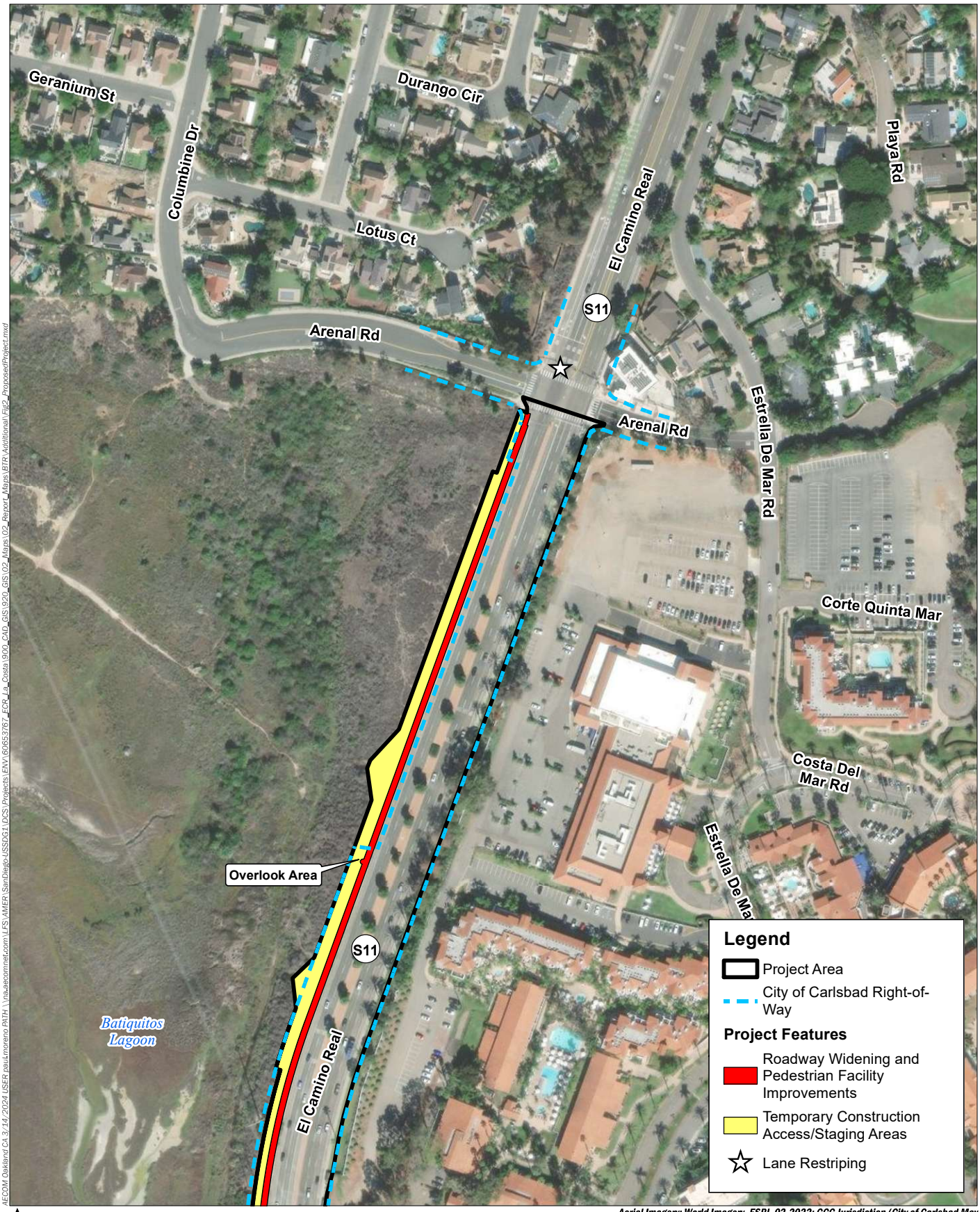
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 1
REGIONAL MAP



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

AECOM

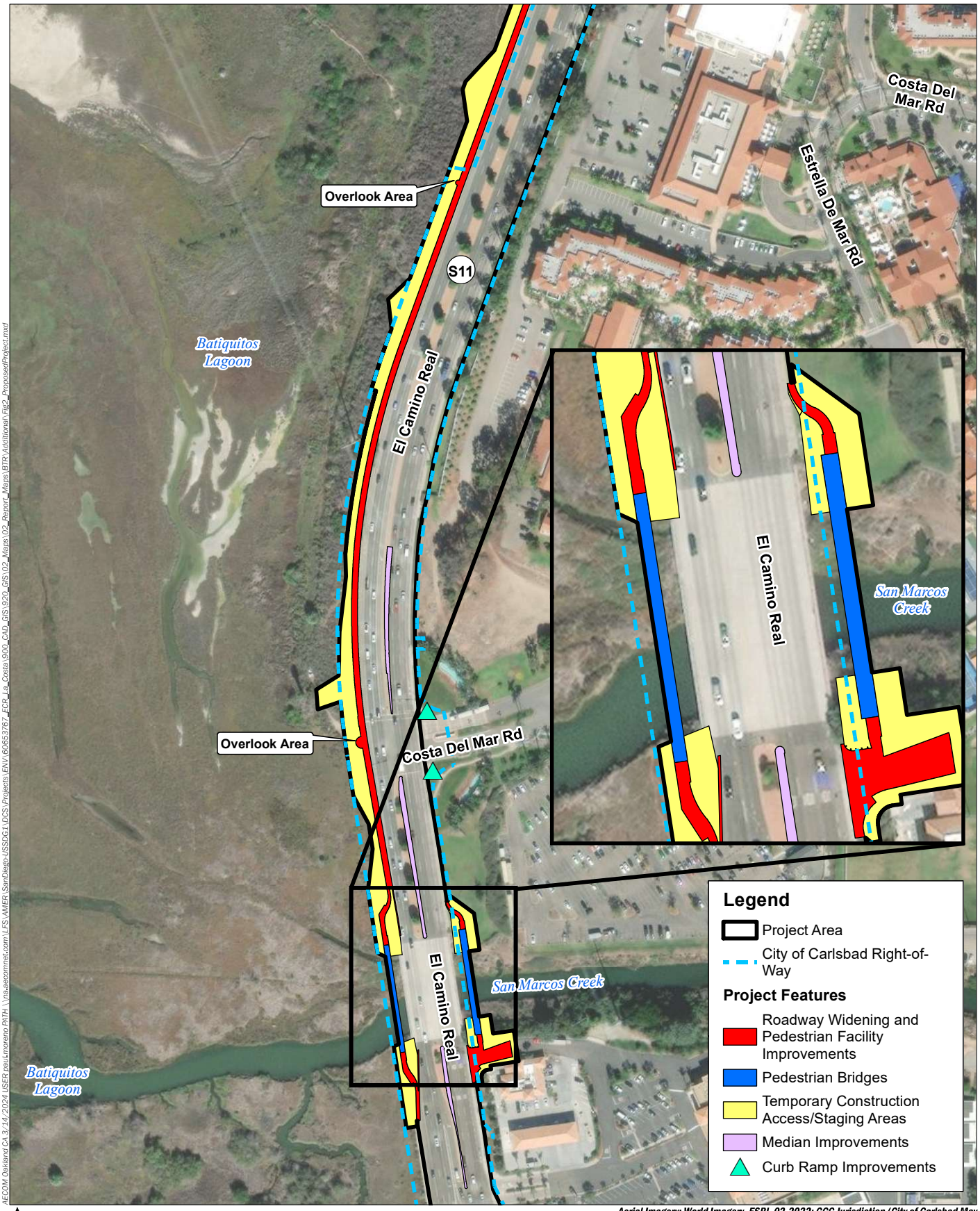
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2A - PROPOSED PROJECT



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

AECOM

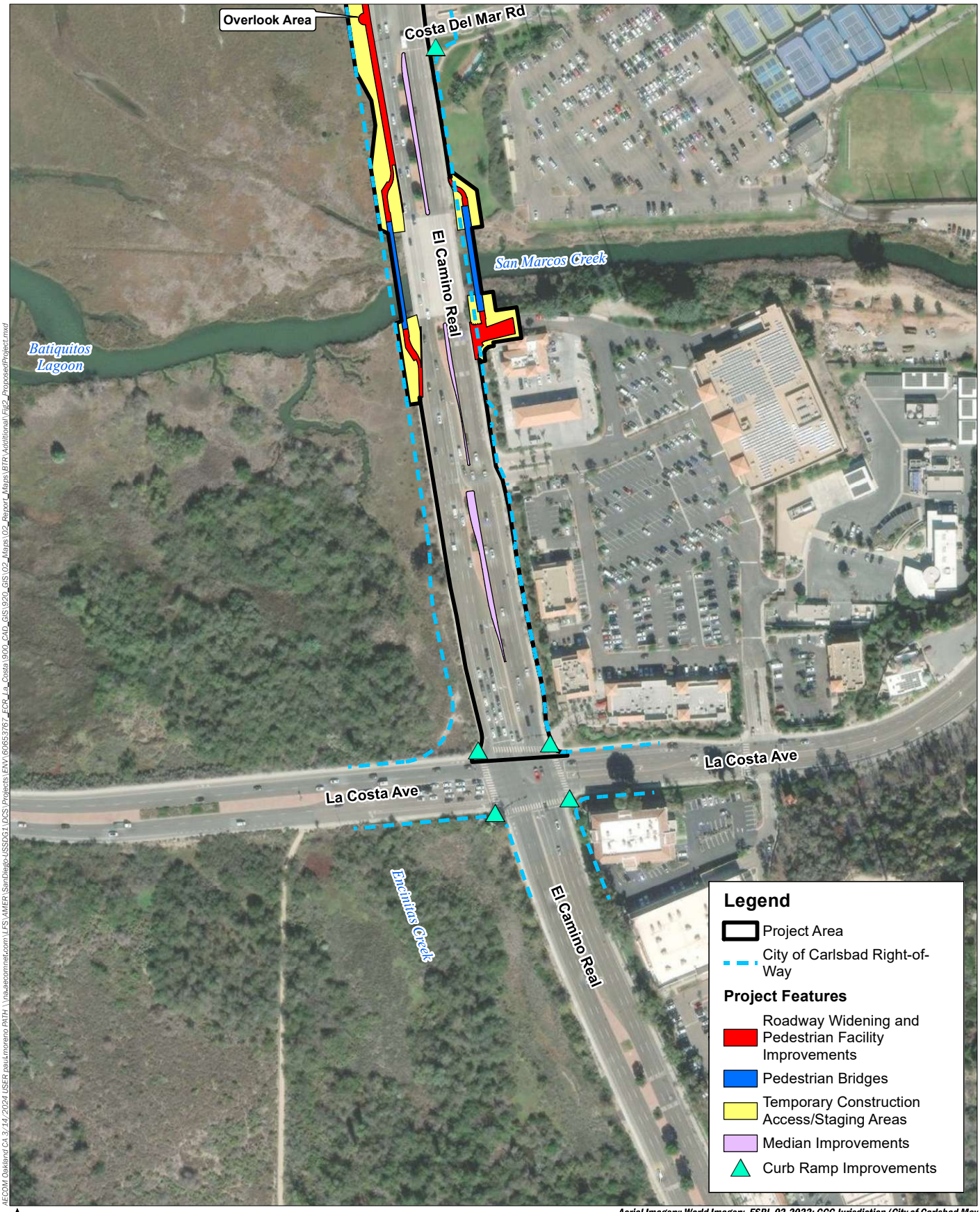
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2B - PROPOSED PROJECT



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

AECOM

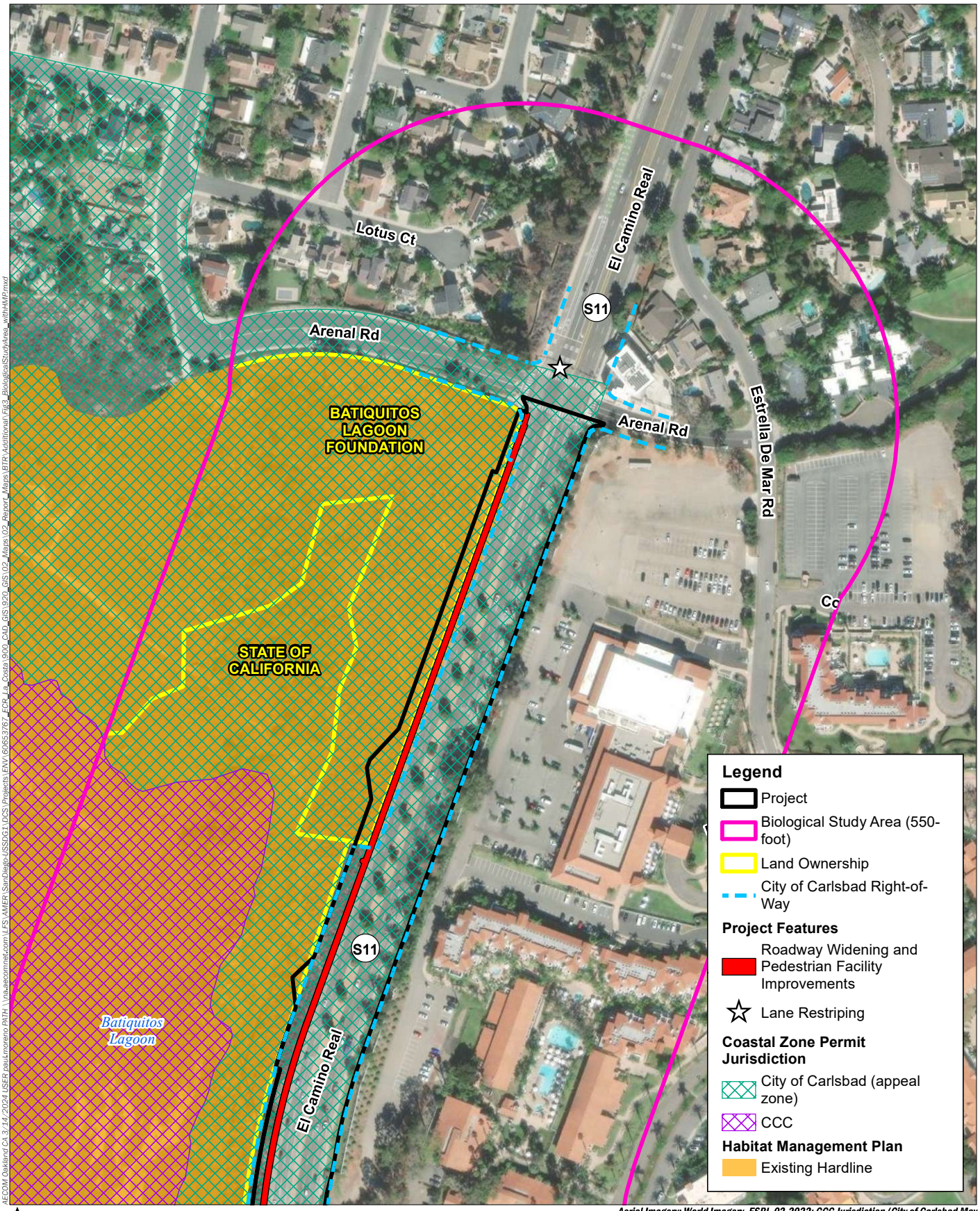
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2C - PROPOSED PROJECT



Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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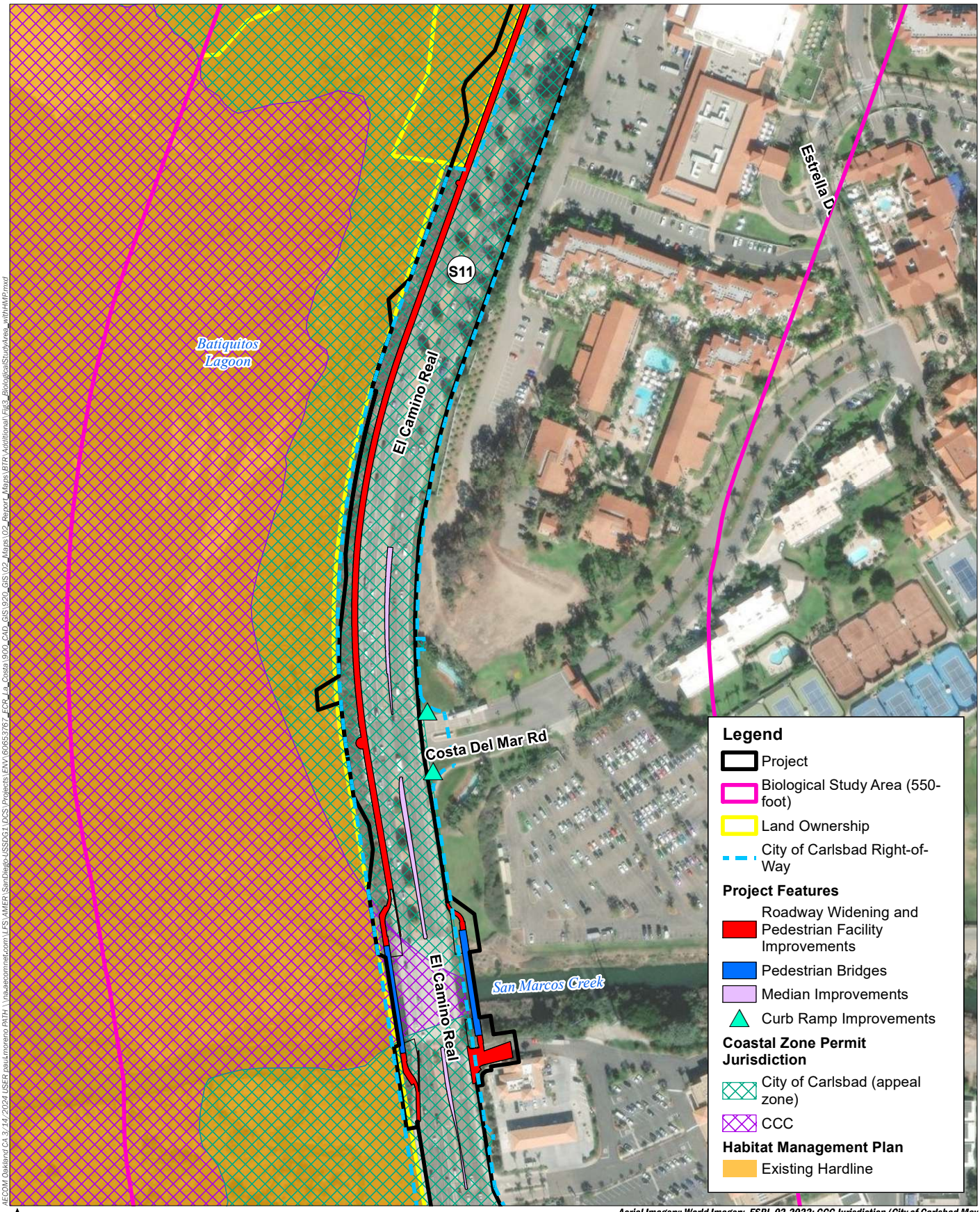
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 3A - BIOLOGICAL STUDY AREA



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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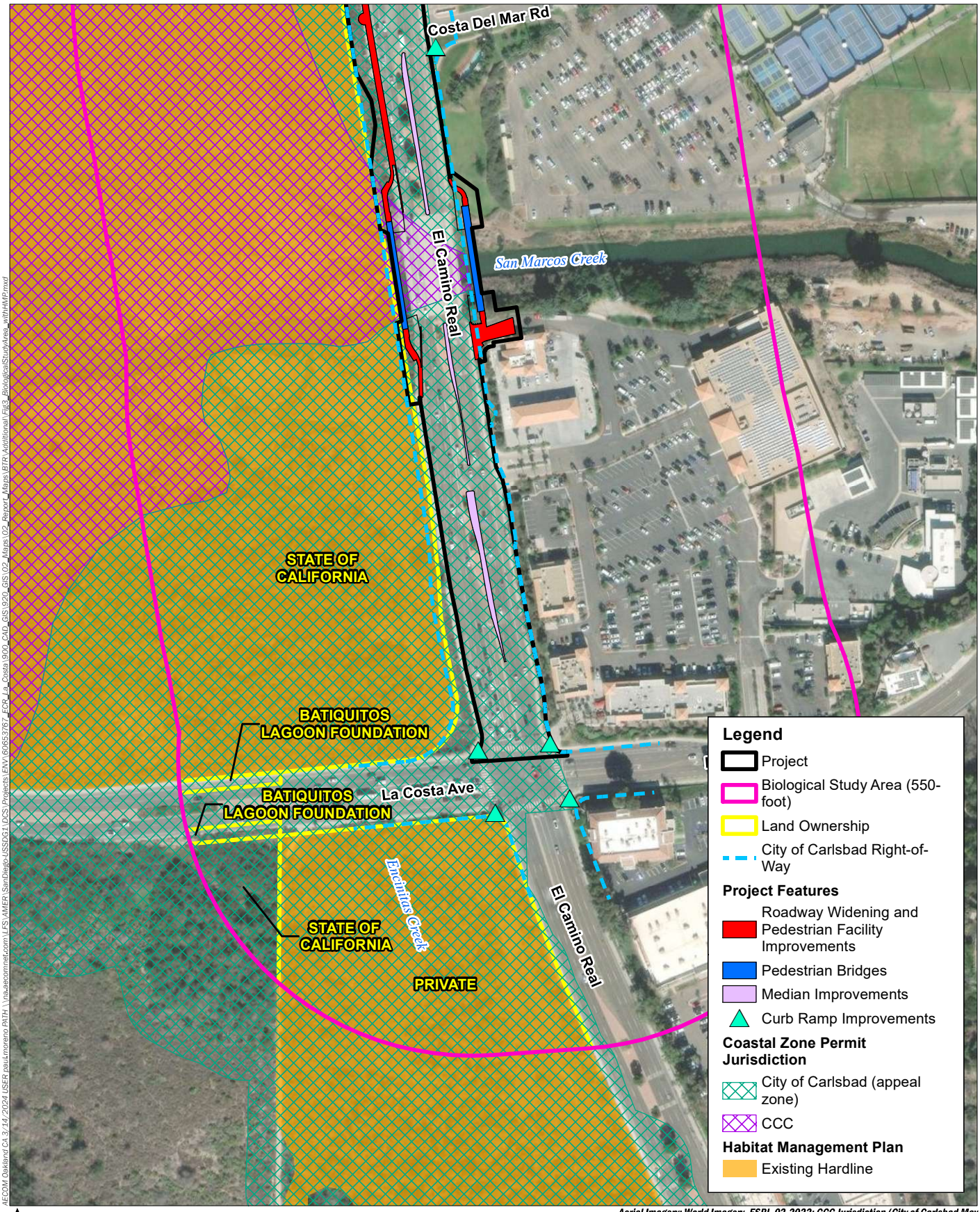
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 3B - BIOLOGICAL STUDY AREA



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 3C - BIOLOGICAL STUDY AREA

west of El Camino Real and south of Arenal Road (adjacent to and slightly within Batiquitos Lagoon). Belding's savannah sparrow and light-footed Ridgway's rail were detected in the western portion of the BSA in Batiquitos Lagoon.

To the west of the project area, encroachment into the existing hardline preserve area, as defined by the city's HMP (City of Carlsbad 2004), would occur temporarily during construction and permanently in localized areas. Because permanent impacts are not allowed within the HMP hardline, this area will be removed from the HMP hardline and replaced elsewhere in the city to ensure no net loss of HMP hardline in the city. In accordance with Carlsbad Municipal Code Section 21.210.080 A.1., minor changes to the HMP hardline boundary that do not reduce the acreage or quality of the habitat are processed as an HMP Minor Amendment pursuant to the required Equivalency Findings. The proposed project would permanently remove 0.201 acre of HMP hardline (consisting of 1.82 acre of coastal sage scrub and 0.019 acre of developed land cover) within the project area and replace it with at least of 0.201 acre of coastal sage scrub on city-owned The Crossings Golf Course property (BIO-1).The proposed project could also potentially impact vegetation communities, jurisdictional resources, and special-status species and would include the implementation of measures BIO-2 through BIO10 (see Chapter 7) to avoid, minimize, and mitigate impacts.

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CHAPTER 2.0
INTRODUCTION

2.1 PROJECT DESCRIPTION

The city plans to complete roadway widening improvements to match adjacent, multimodal roadway segments along El Camino Real between La Costa Avenue on the south and Arenal Road to the north. The project area is surrounded by commercial development on the east and the Batiquitos Lagoon Ecological Reserve on the west (see Figure 2A–2C).

The existing El Camino Real Bridge spans San Marcos Creek just east of its confluence with the lagoon. The proposed project involves road improvements to provide a third southbound travel lane from north of Arenal Road to south of La Costa Avenue and pedestrian and bicycle facilities, including sidewalks and a buffered bike lane along the roadway and parallel pedestrian bridges spanning San Marcos Creek adjacent to the El Camino Real Bridge. El Camino Real north of Arenal Road would also be restriped to accommodate three southbound lanes. At the existing bridge location, single-span steel truss pedestrian bridges would be installed on the western and eastern sides of El Camino Real. Pedestrian bridge facilities would be supported by abutments at the northern and southern ends to span San Marcos Creek. Road and bridge improvements in this location would be beneficial for pedestrians and cyclists, nearby retail, and regional travelers. Curb ramps at the intersection of Costa Del Mar Road and El Camino Real and La Costa Ave and El Camino Real would also be updated to meet current Americans with Disabilities Act (ADA) accessibility requirements.

The Batiquitos Lagoon Ecological Reserve was established by the California Fish and Game Commission in 1983 and is owned and managed by the California Department of Fish and Wildlife (CDFW). Batiquitos Lagoon underwent substantial restoration efforts in the mid-1990s and is home to several special-status species. Batiquitos Lagoon is also part of the City of Carlsbad's Hardline Preserve system as defined by the city's HMP (City of Carlsbad 2020). In addition to the Batiquitos Lagoon property owned by CDFW, an adjacent property is owned by Batiquitos Lagoon Foundation and managed as part of the hardline preserve area to widen El Camino Real in the north part of the BSA, right-of-way (ROW) acquisition within the Batiquitos Lagoon Foundation parcel as shown on Figure 3A–3C would permanently encroach into the hardline preserve area. Consistent with the HMP, a boundary line adjustment would be required for permanent impact areas to add equivalent habitat to the hardline preserve area so that there is no net loss of acreage protected within hardline preserve areas as a result of the proposed project. These boundary adjustments are therefore part of the proposed project. No ROW or hardline preserve area

adjustments are anticipated for the CDFW-owned parcel; however, a Temporary Construction Easement (TCE) would be required for temporary construction staging areas and access.

2.2 LOCATION

The following sections describe the regional location of the proposed project and its location with respect to the city's HMP. The project area is located within the California Coastal Zone; while some of the project area is within the City of Carlsbad Local Coastal Program (LCP) jurisdiction, areas underneath the existing bridge structure remain under the retained permitting authority of the California Coastal Commission (CCC).

2.2.1 Regional Location

The proposed project footprint consists of an approximately 0.65-mile segment of El Camino Real between Arenal Road to the north and La Costa Avenue to the south. The proposed project is in the City of Carlsbad, in coastal areas north San Diego County, California. The natural resources evaluated in this report are those occurring in the BSA. The BSA includes the project footprint plus a 550-foot buffer (see Figure 3A–3C).

2.2.2 Location with Respect to Habitat Management Plan Boundaries

The city's HMP, dated November 2004, serves to fulfill the Multi-Habitat Conservation Plan for the city, as mandated by the California Natural Community Conservation Planning Act of 1991 (NCCP Act). The city's HMP establishes preserve boundaries, which include existing and proposed "hardline preserve areas" that have already been conserved or are proposed to be conserved. The proposed project falls partially within a hardline preserve area (see Figure 3A–3C).

CHAPTER 3.0
REGULATORY SETTING

Various regulations have been established by federal, state, and local agencies to protect and conserve biological resources. This section provides a summary of the regulations that govern the biological resources potentially impacted by the proposed project.

3.1 FEDERAL

Federal regulations and plans pertaining to biological resources include the Federal Endangered Species Act (FESA), Migratory Bird Treaty Act (MBTA), and the Clean Water Act (CWA). These regulations and plans are described in this section.

3.1.1 Federal Endangered Species Act

FESA provides protections for species endangered or threatened with extinction. FESA prohibits the "take" of endangered or threatened wildlife species. *Take* is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). *Harm* is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 Code of Federal Regulations [CFR] Section 17.3). *Harass* is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR Section 17.3). Actions that result in take can result in civil or criminal penalties. See Section 3.3.1 for a discussion of the regional planning effort under the Multiple Habitat Conservation Program (MHCP) that addresses federally endangered and threatened species in the city's HMP. Projects that are implemented consistent with the measures to reduce threats to species survival outlined in the MHCP and HMP would be allowed to "take" listed species with the city's authorization and approval.

3.1.2 Migratory Bird Treaty Act

The MBTA of 1918 (16 U.S. Code §§ 703–712) prohibits pursuing, hunting, killing, capturing, possessing, purchasing, bartering for, or transporting native migratory birds or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. The migratory bird species protected by the MBTA are published in 50 CFR 10.13. The MBTA does not discriminate between live or dead birds and grants full protection to any bird parts,

including feathers, eggs, and nests, of the birds that are included on the published list. The U.S. Fish and Wildlife Service (USFWS) has statutory authority and responsibility for enforcing the MBTA. Under the MBTA, the proposed project would need to comply with the measures that would avoid or minimize effects on nesting migratory birds included on the published list.

3.1.3 Clean Water Act

Section 404 of the CWA requires that project proponents obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the U.S., including wetlands. Per 2023 definitions, Waters of the U.S. include (1) traditional navigable waters, territorial seas, and interstate waters; (2) impoundments of waters of the U.S.; (3) tributaries to any of these waters that are relatively permanent; (4) wetlands that are adjacent to any of these waters; and (5) intrastate lakes and ponds that are relatively permanent, standing, or continuously flowing bodies of water with a surface connection to other waters of the U.S. (33 CFR 328.3[a]). For coastal waters, the limit of navigable waters under USACE jurisdiction is considered the high tide line. Many surface waters and wetlands in California meet the criteria for waters of the U.S. In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate Regional Water Quality Control Board (RWQCB) to indicate that a project would not violate California water quality standards. If proposed development of the proposed project would result in unavoidable impacts to waters of the U.S., a 404 permit (likely NWP 14-Linear Transportation Projects) may be required.

3.1.4 Rivers and Harbors Act

Much of the lagoon area experiences tidal action, which meets the definition of Navigable Waters (e.g., Rivers and Harbors Act [RHA] Section 10 Waters [33 CFR 329.4]). The portion of the lagoon within the BSA is above the high tide line and some areas lack consistent wetland hydrology indicating nontidal conditions. Proposed work in or over navigable waters of the U.S., e.g., the proposed pedestrian bridges over Section 10 waters, would require authorization under the RHA. Because NWP 14 authorizes activities under CWA Section 404 (described above) and RHA Section 10, RHA evaluation can be assessed by USACE through the NWP process.

3.2 STATE

State regulations pertaining to biological resources include the California Environmental Quality Act (CEQA) and California Fish and Game Code (CFGC) Sections 2050 et seq.; 1900 et seq.; 3503; and 3511, 4700, 5050, and 5515. State water resources regulations also include CFGC

Section 1600 et seq. and the Porter-Cologne Water Quality Control Act. These regulations are described below.

3.2.1 California Environmental Quality Act

CEQA (Public Resources Code Section 15000 et seq.) requires identification of significant environmental effects of proposed projects (including impacts on biological resources) and avoidance (where feasible) or mitigation of the significant effects. CEQA applies to "projects" proposed to be undertaken or requiring approval by state and/or local governmental agencies. "Projects" are activities that have potential to have a physical impact on the environment.

3.2.2 Section 2050 et seq. (California Endangered Species Act)

The California Endangered Species Act (CESA) (Section 2050 et seq.) prohibits the "take" (defined as "to hunt, pursue, catch, capture, or kill") of state-listed species except as otherwise provided in state law. CESA is administered by CDFW and is similar to FESA. State lead agencies are required to consult with CDFW to ensure that their authorized actions are not likely to jeopardize the continued existence of any state-listed species or result in the degradation of occupied habitat.

Under Section 2081, CDFW authorizes "take" of state-listed endangered, threatened, or candidate species through incidental take permits or memoranda of understanding if (1) the take is incidental to otherwise lawful activities; (2) impacts of the take are minimized and fully mitigated; (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question; and (4) the applicant ensures suitable funding to implement the measures required by CDFW.

3.2.3 California Fish and Game Code Sections 1900 et seq.

CFGC Sections 1900 et seq., which is known as the Native Plant Protection Act of 1977, designates California rare, threatened, and endangered plant species. The purpose of this act is to preserve, protect, and enhance endangered or rare native plants of California. Many species and subspecies of native plants in California are in danger of extinction because their habitats are threatened with destruction, drastic modification, or severe curtailment as a result of exploitation by commercial or other means or due to disease or other factors. Title 14 California Code of Regulations (CCR), Section 670.2 lists the subspecies and varieties of California native plants that are endangered, threatened (as defined by CFGC Section 2067), or rare (as defined by CFGC Section 1901).

3.2.4 California Fish and Game Code Section 3503

CFGC Section 3503 protects California migratory birds by making it unlawful to take or possess any migratory non-game bird (or any part of such bird) as designated in the federal MBTA.

3.2.5 California Fish and Game Code Sections 3511, 4700, 5050, and 5515

CFGC Sections 3511, 4700, 5050, and 5515 specifically prohibit the take of wildlife species that are classified as "fully protected" in California, even if other CFGC sections provide for incidental take of the species.

3.2.6 California Fish and Game Code Sections 1600 et seq. (Streambed Alteration Agreement)

Pursuant to Sections 1600 et seq. of the CFGC, CDFW regulates activities of an applicant's project that would substantially alter the flow, bed, channel, or bank of streams or lakes, unless certain conditions outlined by CDFW are met by the applicant. The limits of CDFW jurisdiction are defined in CFGC Sections 1600 et seq. as the "bed, channel, or bank of any river, stream,[1] or lake designated by CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit."[2] However, in practice, CDFW usually extends its jurisdictional limit and assertion to the top of a bank of a stream, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider. Similarly, where freshwater streams flow into the ocean, CDFW usually extends its jurisdictional limit and assertion over the lagoon habitat.

3.2.7 Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act of the California Water Code (§§ 13000 et seq.) established nine RWQCBs to oversee water quality at the local and/or regional level. The act grants ultimate authority to the State Water Resources Control Board over state water rights and water quality policy. The RWQCBs are responsible for preparing and updating water quality control plans, issuing water quality certifications under Section 401 of the federal CWA for waters within federal jurisdiction, issuing Waste Discharge Requirements for waters that are outside federal jurisdiction, and National Pollutant Discharge Elimination System permits for point-source

[1] Title 14 CCR 1.72 defines a stream as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This definition includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

[2] This definition also includes the habitat on which they depend for continued viability (CFGC Division 5, Chapter 1, Section 45, and Division 2, Chapter 1, Section 711.2[a]).

discharges and waste discharge requirements for nonpoint-source discharges into jurisdictional waters of the state.

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 not subject to regulations under federal law are considered waters of the state and regulated accordingly.

3.2.8 California Coastal Act/Coastal Zone

The proposed project site is within the Coastal Zone as designated by the CCC, with the state lands subject to the California Coastal Act (CCA) of 1976. The CCA of 1976 tasked the agency with protection of coastal resources through the issuance of Coastal Development Permits (CDPs). Under the CCA, local governments are encouraged to adopt LCPs, which consist of a Land Use Plan (LUP) with goals and regulatory policies and a set of Implementing Ordinances. Development within the Coastal Zone may not commence until a CDP has been issued by the CCC or a local government that has a CCC-certified LCP. The City of Carlsbad has an adopted LCP, as described further below (City of Carlsbad 1996), and the proposed project activities would be located within both the approved City of Carlsbad LCP jurisdiction and jurisdictional areas retained by the CCC. Actions proposed within the Coastal Zone must be consistent with Chapter 3 of the CCA. The California Coastal Act (Public Resources Code §§ 30000 et seq.) authorizes the State of California to regulate development within the State Coastal Zone. Although scenic resources are not specifically mentioned, Public Resources Code Section 30001.5 calls to "protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources."

3.3 LOCAL PLANS AND POLICIES

Local plans and policies pertaining to biological resources include the City of Carlsbad HMP and the City of Carlsbad LCP. These regulations are described below.

3.3.1 City of Carlsbad Habitat Management Plan

The HMP, adopted by Carlsbad City Council in November 2004, is the city's subarea plan under the MHCP. The MHCP is a subregional, multi-jurisdictional conservation plan under the California Natural Community Conservation Program (NCCP) designed to create, manage and monitor habitat and species in northwestern San Diego County. The State of California passed the

NCCP Act in 1991, which called for a program that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. As mandated by the NCCP Act, the city prepared the HMP to fulfill the MHCP requirements. The HMP also serves as a Habitat Conservation Plan under Section 10(a)(1)B of the FESA.

The city's HMP is intended to act as a framework for conserving and managing land uses and implementing protective measures to preserve the city's diversity of natural habitats and rare and unique biological resources, while also allowing for development and economic growth as outlined in the city's General Plan. The city's HMP establishes preserve boundaries, which include Existing Hardline (areas already conserved), Proposed Hardline (future preserve areas on undeveloped properties for which the boundary has been pre-delineated), and Standard Areas (areas targeted for future preserves on undeveloped properties that must follow specific standards when delineating the preserve boundary). For the HMP to act as a formal regulatory tool, the city coordinated with wildlife agencies including CDFW and USFWS to execute the Implementing Agreement regarding potential impacts to wildlife species and habitat within the agencies' jurisdiction. As described above, the HMP constitutes a Habitat Conservation Plan, pursuant to Section 10(a)(1)B of FESA and NCCP Plan pursuant to Section 2835 of the CESA as part of the NCCP Program. The city has been issued a Section 10(a) Permit by USFWS and an NCCP Permit by CDFW, which allows Incidental Take of species covered by the HMP for city-approved projects in accordance with the Implementing Agreement. The HMP program consequently streamlines the permitting process in exchange for a citywide mitigation program for HMP covered species and their habitats.

3.3.2 City of Carlsbad Local Coastal Program

The proposed project area is within the California Coastal Zone (Figure 3A–3C). Development within the Coastal Zone may not commence until a CDP has been issued by the CCC or a local government that has a CCC-certified LCP, such as the city's adopted LCP (City of Carlsbad 1996).

The proposed project area is within the Mello II and East Batiquitos Lagoon segments of the city's approved LCP and within CCC-retained jurisdiction. Applicable to the segment of the LCP, the Batiquitos Lagoon Special Treatment Overlay limits the alteration of wetlands in Batiquitos Lagoon to minor incidental public facilities, restorative measures, and nature studies [Policy II-4.B.3(1)]. This policy also states that alteration of the wetlands must be approved by the city and the CCC.

3.3.3 Carlsbad California Municipal Code: Protection of Trees

The proposed project would involve removal of seven landscape trees. Carlsbad California Municipal Code 11.12.080, Protection of Trees, states that no person shall remove, trim, prune,

cut, or injure any tree, shrub, or plant growing in the street, median, sidewalk, or other public city ROW. Section E prohibits construction of concrete, asphalt, brick, or other fill material or placement of any building materials likely to cause injury to a tree near any tree, shrub, or plant growing in the street, sidewalk, median, or other public right-of way. Section 11.12.090 requires a permit from the city manager for any tree removal or maintenance. A city arborist must inspect the property and recommend approval or denial of an application before permit issuance.

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CHAPTER 4.0
METHODS AND SURVEY LIMITATIONS

4.1 BACKGROUND LITERATURE AND GEOGRAPHIC INFORMATION SYSTEM (GIS) DATA SEARCH

Available information pertaining to the natural resources of the region was reviewed before conducting field surveys. The following sources were initially consulted to obtain public information relevant to the BSA:

- City HMP Annual Report (City of Carlsbad 2023)
- USFWS Information for Planning and Consultation (IPaC) website (USFWS 2021)
- California Natural Diversity Database (CNDDB) (CDFW 2024b)
- Soil Survey of San Diego County San Diego Area, California, Natural Resources Conservation Service (USDA-NRCS 2016)

4.2 FIELD SURVEY METHODS

A field reconnaissance survey was conducted on April 2, 2021, by AECOM biologists Alexandra Fowler and Anthony Greco to map existing vegetation, identify the potential for rare plant occurrences, and assess wildlife habitat. The field reconnaissance survey was conducted by walking accessible portions within the BSA. The reconnaissance survey focused on areas of the BSA with potential to support natural and potentially sensitive biological resources. The biologists surveyed the BSA, including ridgelines and road shoulders, by walking a meandering path around the habitat within accessible portions of the BSA. On February 19 and 22, 2024, AECOM biologists Aaron Andrews and Natasha Foti conducted a field survey within the BSA to refine the habitat mapping that was conducted in April 2021. The purpose of the second survey was to refine the existing habitat mapping and provide a more detailed habitat map.

4.2.1 Vegetation Surveys

Vegetation was classified based on the dominant and characteristic plant species as described in the *Draft Vegetation Communities of San Diego County* (Oberbauer, Kely, and Buegge 2008), based on the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Species composition used to describe the vegetation communities within the BSA came from the botanical survey conducted by AECOM biologists Alexandra Fowler and Anthony

Greco. The BSA was surveyed on foot, and vegetation communities and dominant species were recorded.

Special-status plant surveys were not conducted as part of this study; however, special-status plant species were mapped and recorded if incidentally detected. These species are rated according to the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants*, 9.5th edition interface (CNPS 2024). This inventory ranks sensitive plants according to California Rare Plant Rank.

4.2.2 Formal Delineation of Jurisdictional Waters and Wetlands

On April 2, 2021, AECOM biologists Alexandra Fowler and Anthony Greco conducted a preliminary jurisdictional delineation within the BSA. A secondary, jurisdictional delineation was conducted by AECOM biologists Aaron Andrews and Natasha Foti on February 19 and 22, 2024 to map the jurisdictional resources at a finer scale than the previous survey. Aquatic features that meet the definition of waters of the U.S. or waters of the state include both wetlands and non-wetland waters. To be considered a wetland, all three parameters (wetland hydrology, hydric soils, and dominance of wetland vegetation) outlined in the 2008 USACE Arid West Supplement must be met (USACE 2008). Non-wetland waters were assessed to determine whether they meet the definition of an (a)(1)-(a)(4) waters of the U.S. in 33 CFR 328. USACE defines non-wetland waters based on the presence of an ordinary high water mark.[3] The aquatic features in the BSA have a continuous surface connection to the Batiquitos Lagoon and therefore the Pacific Ocean.

The delineation and vegetation classification were conducted in accordance with the guidance documents listed below:

- *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: a Delineation Manual* (Lichvar and McColley 2008)
- *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010)
- *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987)

[3] Federal regulations (33 CFR Part 328.3(e)) define the *ordinary high water mark* as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008)
- Field Indicators of Hydric Soils in the United States. Version 8.2 (USDA-NRCS 2018)
- National Wetland Plant List Indicator Rating Definitions. (Lichvar et al. 2008)
- *Draft Vegetation Communities of San Diego County* (Oberbauer, Kelly, and Buegge 2008)

Three subsurface investigations for hydric soil (e.g., soil pits) were conducted in 2021, and three sets of paired soil pits were investigated in 2024 west of the bridge and El Camino Real within the BSA. Areas where marsh habitats are mapped as hydric soils on the California hydric soil list (USDA-NRCS 2024) contain wetland vegetation and exhibit wetland hydrology. The transition between marsh habitats and higher elevation wetlands, uplands, or freshwater riparian habitats was easily observable. Wetland waters boundaries were mapped based on the species composition change and delineated along the same approximate elevation throughout the wetland. Data sheets for each of the nine subsurface investigations are included in Appendix A.

An Apple iPad, Arrow 1 Trimble unit (<1 meter accuracy) and the ESRI Collector application were used to collect data to map the boundaries of the aquatic resources present. Mapped polygons were visually adjusted, as needed, to match the resources as seen on the aerial imagery, the photogrammetric topographic data, and in the field.

4.2.3 Special-Status Species Protocol Surveys

Protocol surveys for coastal California gnatcatcher, Belding's savannah sparrow, and light-footed Ridgway's rail were conducted during the nesting season in 2021. Survey reports are provided as Appendices B and C.

Coastal California Gnatcatcher

AECOM biologist James McMorran conducted surveys under Endangered Species Permit TE-820658. Coastal California gnatcatcher surveys were conducted between 6 a.m. and 12 p.m., according to protocol requirements dated February 28, 1997, and amended on July 28, 1997 (USFWS 1997). The surveys consisted of the biologist walking meandering transects along and through potential coastal California gnatcatcher habitat, including all scrub associations. The biologist conducted passive surveillance (i.e., listening and looking for the species) in habitats with the potential to support coastal California gnatcatcher. If an observation was not made after approximately 5 minutes of passive survey activity, a recorded vocalization of coastal California gnatcatcher was played for approximately 10 seconds (i.e., active survey activity), followed by another period of passive observation. If a coastal California gnatcatcher was detected, passive

observation continued to try to assess if it was a single adult, a pair, one or more juveniles, or a family group. Once a coastal California gnatcatcher was observed, playback was stopped until the biologists moved far enough away that the observed birds could no longer hear the recording. Surveys were not conducted during periods of inclement weather such as extreme wind or during a rain event.

Belding's Savannah Sparrow

AECOM biologists conducted five surveys for Belding's savannah sparrow, a state-listed endangered species, within the BSA between April 24 and May 29, 2021. Surveys were conducted between 6:00 a.m. and 10:00 a.m. Biologists passively surveyed all suitable habitat within the BSA by observing with binoculars and spotting scopes and listening for singing birds. Biologists also walked the boundaries of suitable nesting habitat in an effort to locate nests; however, to avoid accidentally stepping on hidden nests, they did not walk into suitable habitat.

Light-Footed Ridgway's Rail

Protocol surveys for light-footed Ridgway's rail were conducted under required permits from USFWS and CDFW. Six surveys were conducted between March 15, 2021, and June 15, 2021. The surveys were conducted at dawn or dusk during each survey period. Dawn surveys were conducted at or just before sunrise and proceeded for no more than 3 hours after sunrise. Dusk surveys were conducted within 2 hours before sunset and were completed by 30 minutes after sunset. Survey methodology consisted of a passive component and broadcast component at each survey area. Permitted AECOM ornithologists walked along the edge of habitat and within habitat when appropriate. The ornithologists stopped approximately every 328 feet (100 meters) where there was suitable habitat to passively record light-footed Ridgway's rail observations both aurally and visually for 5 minutes. If light-footed Ridgway's rail were not detected after 5 minutes, a call-broadcast of light-footed Ridgway's rail "duet" and "kek" calls was played with a digital player and amplified speakers for a duration of 20 seconds, or the complete length of a light-footed Ridgway's rail vocalization. On completion of the call-broadcast, the ornithologist stood silently for a period of 1 minute to listen for light-footed Ridgway's rail call responses. If there was no response, this procedure was repeated up to two more times (for a total of three) before proceeding to the next stopping point. If a light-footed Ridgway's rail call was detected, the call-broadcasting was immediately stopped, and the surveyor moved at least approximately 656 feet (200 meters) before using a call-broadcast again. The detection locations were recorded using a global positioning system unit.

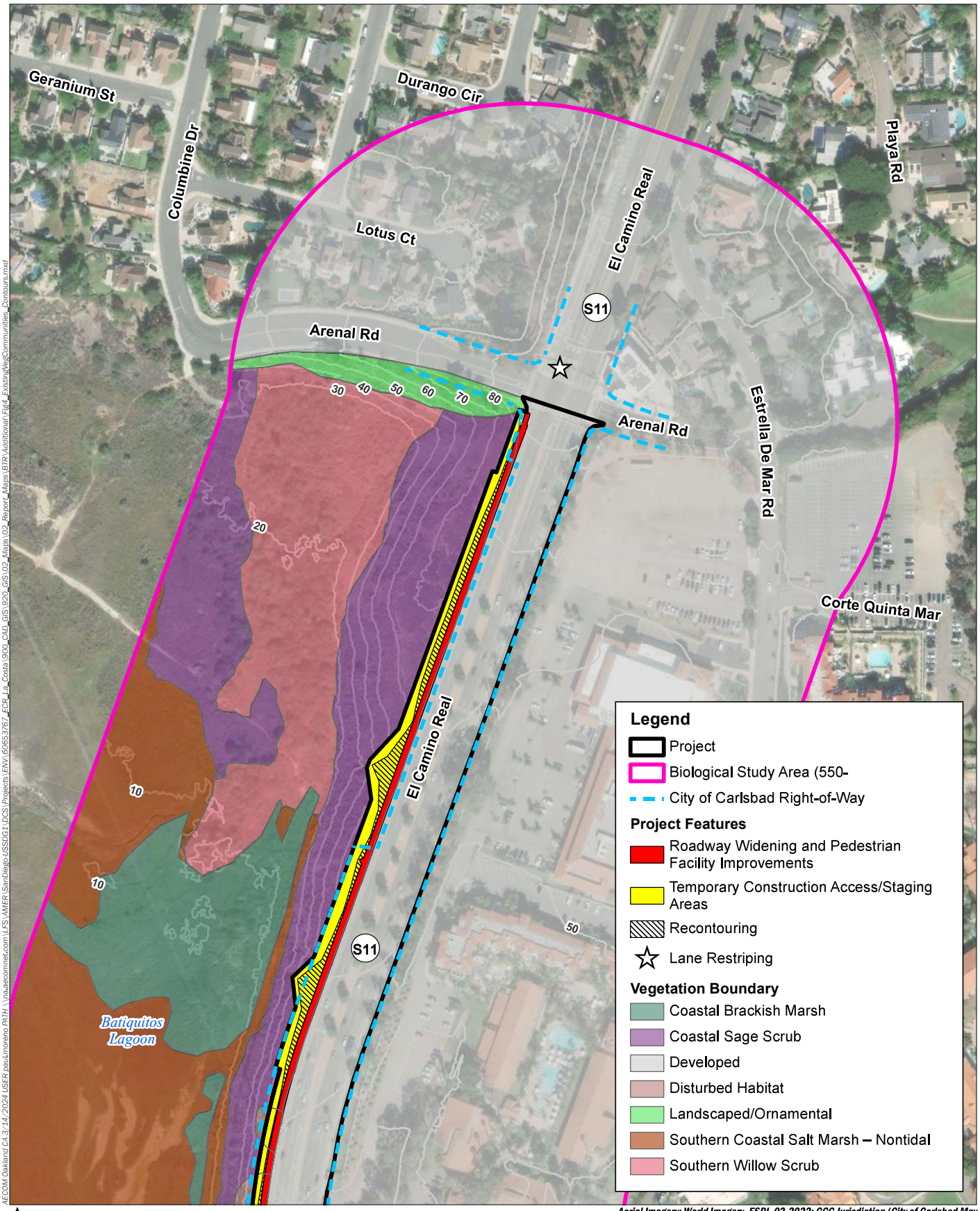
CHAPTER 5.0
RESULTS

The sections below describe the biological resources observed and those with the potential to occur within the BSA.

5.1 VEGETATION COMMUNITIES

This section describes the vegetation communities within the BSA. The BSA consists of a variety of vegetation communities and cover types, as seen on Figure 4A–4C and in Table 1. As previously noted, vegetation was classified in accordance with the city HMP, based on *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Seven different vegetation classifications were identified on the site. Riparian, wetland, and native upland vegetation communities found within the BSA are considered sensitive by the city.

Table 1 lists the vegetation communities and their acreages within the BSA. Because the proposed project requires a hardline preserve area boundary adjustment, Table 1 includes acreages of each vegetation community within and outside of the hardline preserve area.



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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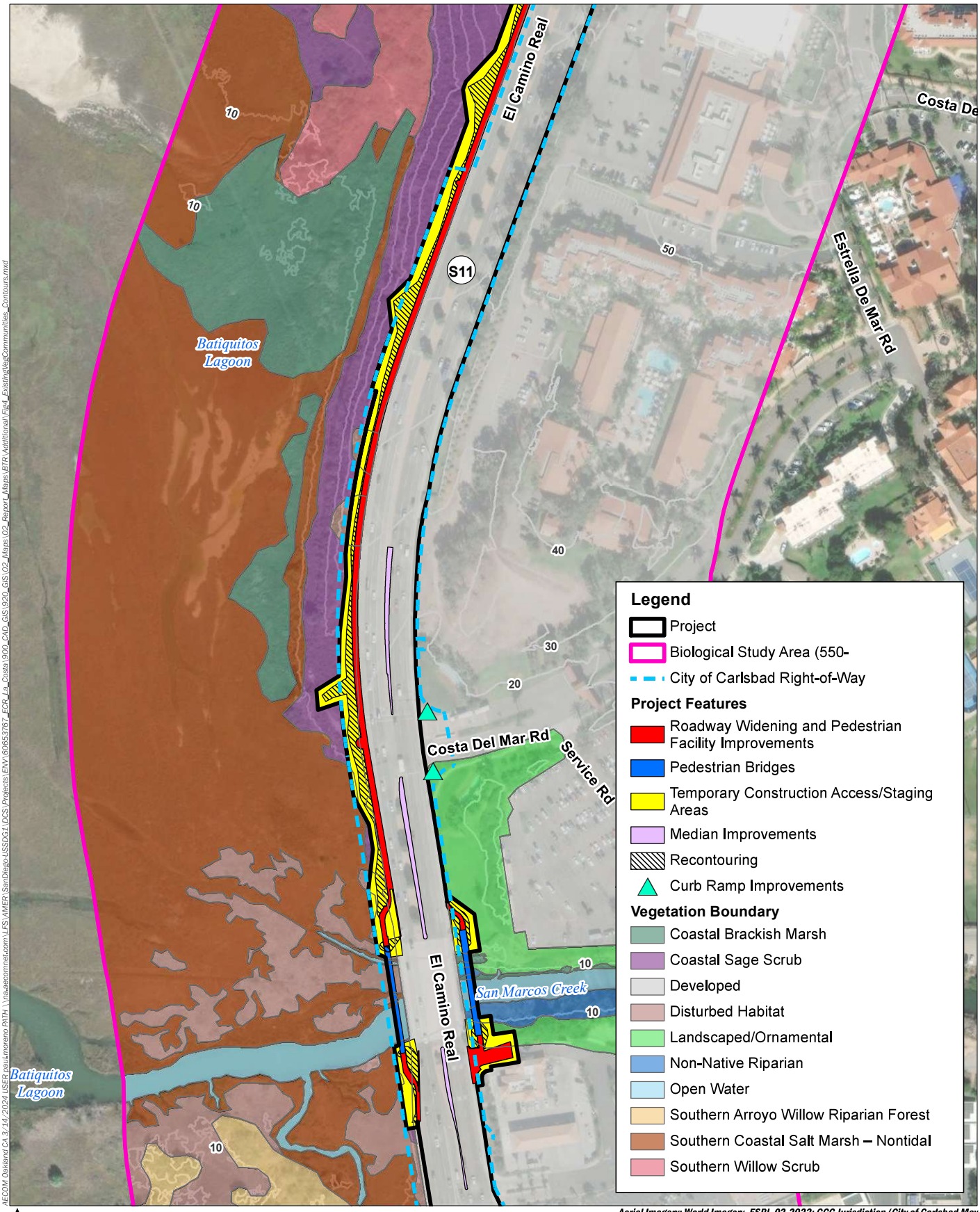
FIGURE 4A - EXISTING VEGETATION COMMUNITIES



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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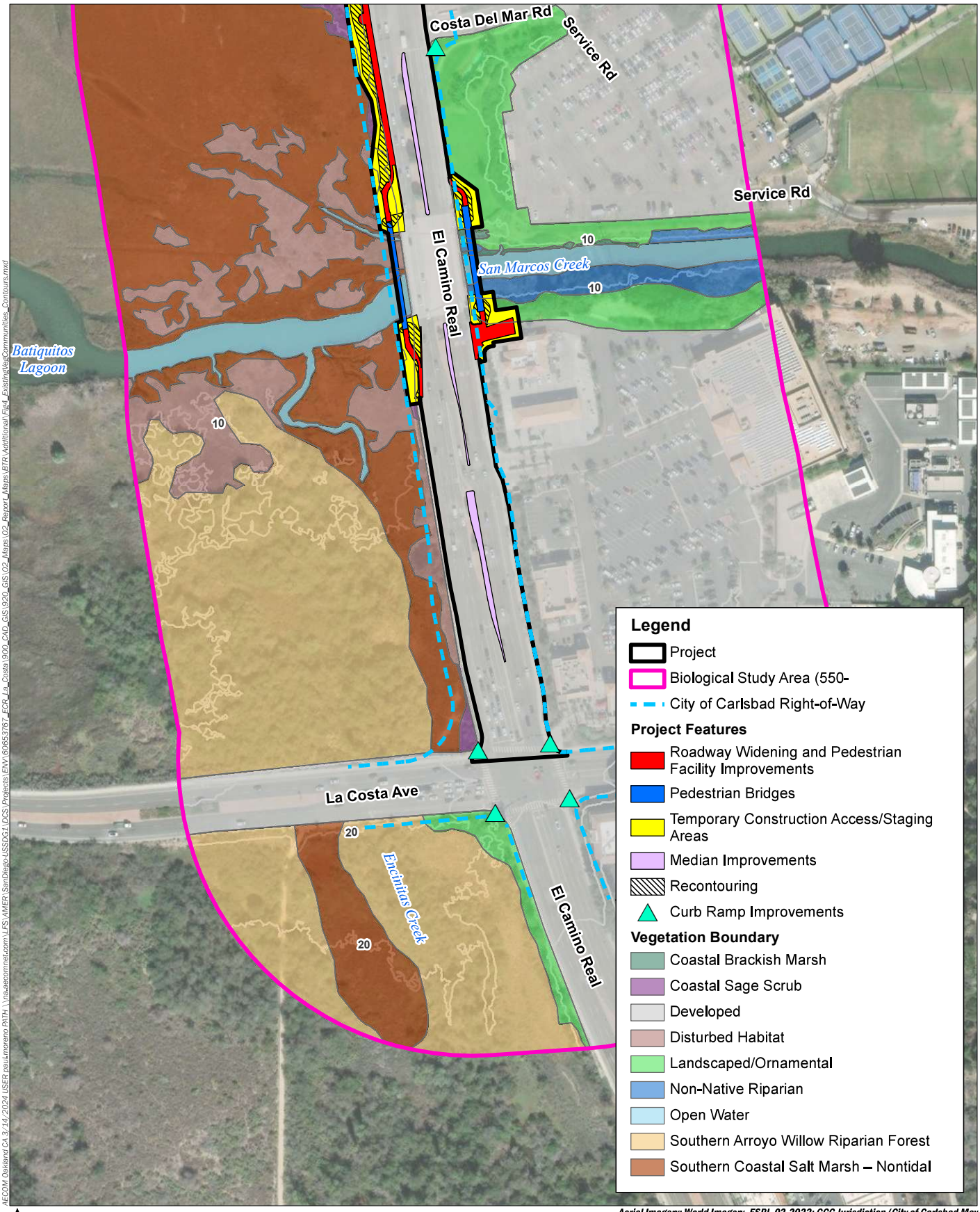
FIGURE 4B - EXISTING VEGETATION COMMUNITIES



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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FIGURE 4C - EXISTING VEGETATION COMMUNITIES

Table 1. Vegetation Communities Inside vs. Outside Hardline Preserve within the BSA

Vegetation Community/ Land Cover Type	Total Within BSA (acres) [1,2]	Project Area Occurring Within Existing Hardline Preserve Area (acres) [2]	Project Area Occurring Outside Existing Hardline Preserve Area (acres) [2]	Total Within Project Area (acres)[2]
Riparian and Wetlands	**38.004**	**0.002**	**0.150**	**0.152**
Coastal brackish marsh	3.476	0.000	0.016	0.016
Southern arroyo willow riparian forest	10.245	0.000	0.000	0.000
Southern coastal salt marsh	17.72	0.002	0.033	0.034
Southern willow scrub	4.470	0.000	0.000	0.000
Open water	1.418	0.000	0.071	0.071
Nonnative riparian	0.674	0.000	0.031	0.031
Uplands	**7.886**	**0.670**	**0.913**	**1.583**
Coastal sage scrub	7.886	0.670	0.913	1.583
Other Cover Types	**74.466**	**0.080**	**9.441**	**9.520**
Disturbed	3.122	0.001	0.237	0.237
Developed	67.868	0.079	9.026	9.105
Landscaped/ornamental[3]	3.476	0.000	0.178	0.178
Total	**120.356**	**0.751**	**10.504**	**11.256**

[1] Includes the project area and buffer.
[2] Totals may not sum due to rounding after summation.
[3] Landscaped/ornamental deviates from Holland classifications and has been separated from hardscape classifications (i.e., developed) to differentiate between vegetated and non-vegetated areas. This differentiation is maintained throughout the remainder of this report.

5.1.1 Wetlands

Coastal Brackish Marsh (52200)

Coastal brackish marsh is a wetland plant community dominated by perennial, emergent, herbaceous monocots measuring roughly two meters in height. Cover is often complete and dense. Coastal brackish marshes are similar to coastal salt marshes (52100) and to freshwater marshes (52400), with some plants characteristic of each. These communities are similar to coastal salt marshes, but brackish from freshwater input. Salinity may vary considerably and may increase at high tide or during seasons of low freshwater runoff or both. Coastal brackish marsh is located on the western edge of the BSA in Batiquitos Lagoon, across from the Omni La Costa Resort entrance in a remnant secondary channel of San Marcos Creek. Coastal brackish marsh in the BSA is characterized by areas of brackish water ringed with salt pannes, alkali bulrush (*Bolboschoenus maritimus*), Pacific pickleweed (*Salicornia pacifica*), and salty Susan (*Jaumea carnosa*), as well as assorted species of bulrush (*Schoenoplectus* sp.) and rush (*Juncus* sp.).

Southern Coastal Salt Marsh (52120)

Southern coastal salt marsh occurs in bays, lagoons, and estuaries along the coast from about Point Conception to the Mexican border. This community is similar to other coastal salt marshes but has a longer growing season and a greater abundance of suffrutescent species in the higher, drier sites. Southern coastal salt marsh constitutes the majority of the acreage of natural vegetation communities found within the BSA. It is ubiquitous throughout the portion of the BSA west of El Camino Real. Southern coastal salt marsh is characterized by the presence of halophytic species, including alkali heath (*Frankenia salina*), salt grass (*Distichlis spicata*), Pacific pickleweed, and salty Susan. In several locations along the road that receive increased freshwater runoff from the surrounding urban areas, pockets of freshwater marsh species occur, including cattails (*Typha* spp.), several species of bulrush (*Schoenoplectus* sp.), and southwestern spiny rush (*Juncus acutus*). Areas of salt marsh closer to San Marcos Creek, where regular freshwater flushing occurs, tend to be weedier, with black mustard (*Brassica nigra*) densely intermingled with the native salt marsh species. The majority of the southern coastal salt marsh found within the BSA is non-tidal because the elevations exceed 7.5 feet Mean Lower Low Water (MLLW). To apply different datums for surveying or coastal management, the various datums must be reduced to MLLW, which is the reference datum for predictions, benchmark publication, and nautical charting (NOAA 2024). King tides, which are typically the highest tide of the year, can reach up to 7.5 feet in elevation.

Southern Willow Scrub (63320)

Southern willow scrub is composed of dense, broad-leafed, winter-deciduous riparian thickets dominated by several *Salix* species, with scattered emergent Fremont's cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). Most stands are too dense to allow much understory development. Southern willow scrub is usually found in association with loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. This early seral type requires repeated flooding to prevent succession to southern cottonwood–sycamore riparian forest (61330). Characteristic species of this community type include arrowweed (*Pluchea sericea*), Fremont's cottonwood, and several willow species (*Salix gooddingii, S. hindsiana, S. lasiolepis, S. leucodendroides, S. laevigata*, and *S. lasiandra*). Southern willow scrub was formerly extensive along the major rivers and arroyos of coastal Southern California but is now much reduced by urban expansion, flood control, and channel improvements. Within the BSA, southern willow scrub is found in the north part of the BSA in a low-lying portion of land between two areas of coastal sage scrub. The southern willow scrub is dominated by arroyo willow (*Salix lasiolepis*) and mule-fat (*Baccharis salicifolia*), with nonnative species such as tamarisk (*Tamarix* sp.), Mexican fan palm (*Washingtonia robusta*), and ngaio (*Myoporum* sp.) also present.

Southern Arroyo Willow Riparian Forest (61320)

Southern arroyo willow riparian forest is winter-deciduous riparian forest dominated by moderately tall, broad-leafed trees and dominated by arroyo willow and having closed or nearly closed canopies. Understories usually are shrubby willows. Southern arroyo willow riparian forest is found on the southwestern portion of the BSA where Encinitas Creek joins San Marcos Creek. It is characterized by dense stands of arroyo willow in both the canopy and shrub strata. Other species present include nonnative trees (*Washingtonia robusta*, *Tamarix* sp., and *Acacia* sp.), western sycamore in the canopy and shrub strata, and invasive ornamental species like pampas grass (*Cortaderia jubata*).

Nonnative Riparian (65000)

Nonnative riparian communities are densely vegetated riparian thickets dominated by nonnative, invasive species. This designation is applied where nonnative, invasive species account for greater than 50% of the total vegetative cover within a mapping unit. Nonnative riparian habitat is found along the banks of San Marcos Creek to the east of El Camino Real and consists of a variety of nonnative tree, shrub, and herbaceous species that include black mustard, fennel (*Foeniculum vulgare*), poison hemlock (*Conium maculatum*), and tree tobacco (*Nicotiana glauca*).

Open Water (64200 Non-Vegetated Floodplain or Channel)

Open water is generally unvegetated on a relatively permanent basis. Variable water lines inhibit the growth of vegetation, although some weedy species of grasses may grow along the outer edges of the wash. Vegetation may exist here, but it is usually less than 10 percent total cover. Open water is found along the channel of San Marcos Creek from the channelized section in the east to where it empties into Batiquitos Lagoon in the west. It is unvegetated and subject to tidal influences.

5.1.2 Uplands

Diegan Coastal Sage Scrub, Coastal Form (32500)

Diegan coastal sage scrub is characterized by low, soft-woody subshrubs (to 1 meter high) that are most active in winter and early spring. Many taxa are facultatively drought deciduous. Diegan coastal sage scrub in the BSA occurs along the sides of roads and slopes down to where the land flattens out into coastal salt marsh; it also occurs in the northern side of the site at the higher elevations of Batiquitos Lagoon. The on-site coastal sage scrub is dominated by California sage brush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and spreading

goldenbush (*Isocoma menziesii*), with occasional lemonade berry (*Rhus integrifolia*), black sage (*Salvia mellifera*), California encelia (*Encelia californica*), chaparral broom (*Baccharis pilularis*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Much of the sagebrush community present within the BSA appears to have mainly been created during the installation of the raised roadways; a small portion in the northwest corner appears to be naturally occurring.

5.1.3 Other Cover Types

Developed/Landscape/Ornamental (12000)

Developed areas do not support native habitat. Developed land occurs throughout the eastern half of the BSA. This land cover consists of existing roads, commercial development, and residential housing. The residences and roadsides include some ornamental vegetation, including various nonnative trees, shrubs, and turf.

Disturbed Habitat (11300)

Disturbed habitats are areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association, though they continue to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of nonnative plant species such as ornamentals or ruderal exotic species that take advantage of disturbance or shows signs of past or present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal. Characteristic species typically include invasive, nonnative forb species, such as thistles (*Centaurea*, *Carduus*, and *Cynara* spp.), Russian thistle (*Salsola tragus*), mustards (*Brassica* spp. and *Hirschfeldia* spp.), wild radish (*Raphanus* spp.), iceplant (*Carpobrotus edulis*), and fennel (*Foeniculum vulgare*). Within the BSA, several areas were mapped as disturbed habitat; they occur to the north and south of San Marcos Creek under the El Camino Real Bridge and primarily consist of mustard, wild radish, iceplant and other nonnative grasses.

5.2 JURISDICTIONAL WATERS AND WETLANDS

AECOM delineated 39.765 acres of aquatic resources in the BSA consisting of 19.908 acres of dual waters of the U.S. and State, and an additional 19.857 acres of waters of the State exclusively under CDFW and/or CCC purview. Figure 5A–5C and Table 2 illustrate jurisdictional resources delineated in the BSA. Detailed results of the aquatic resource delineation are provided in Appendix A.

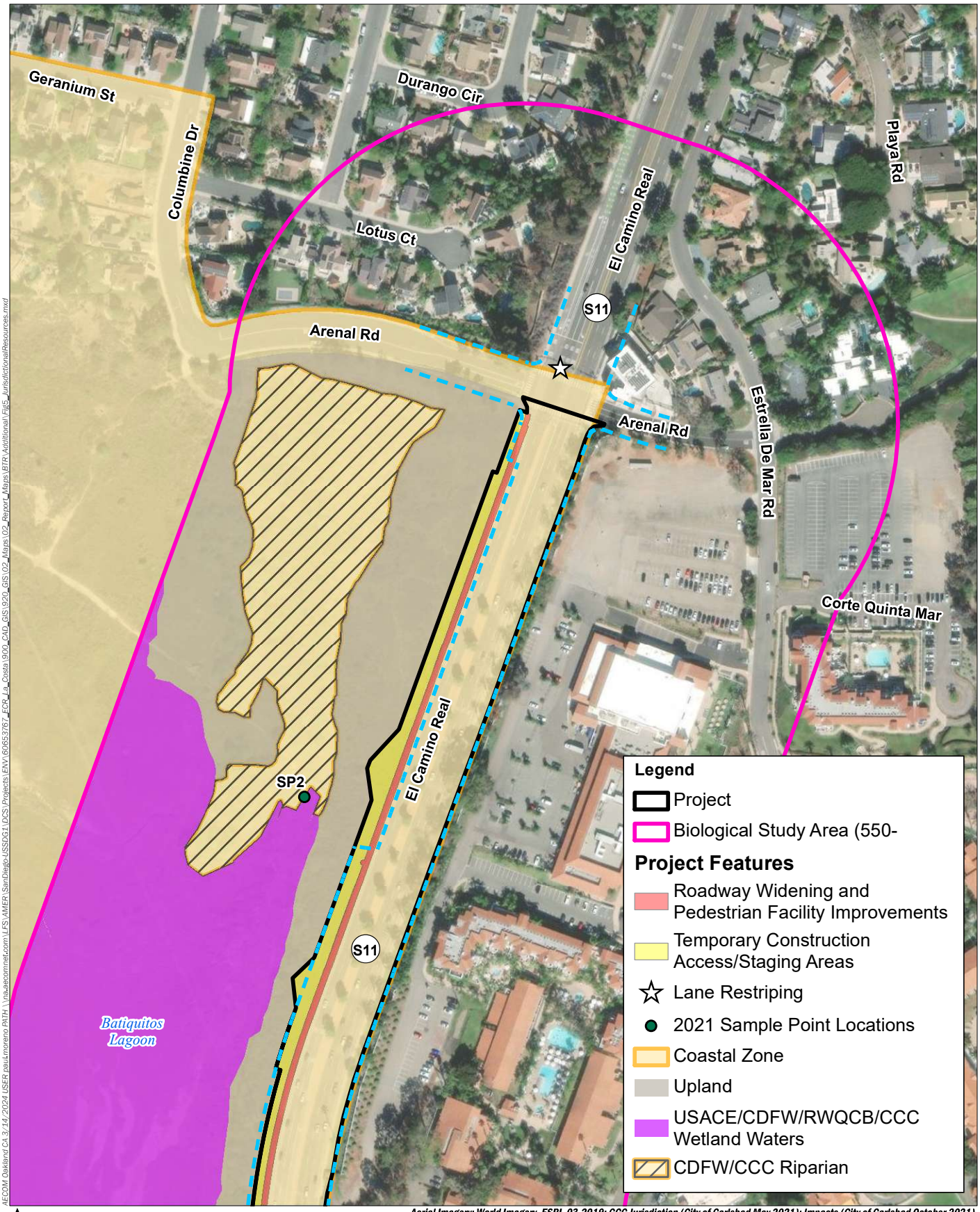

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FIGURE 5A - JURISDICTIONAL RESOURCES



Aerial Imagery: World Imagery, ESRI, 03-2019; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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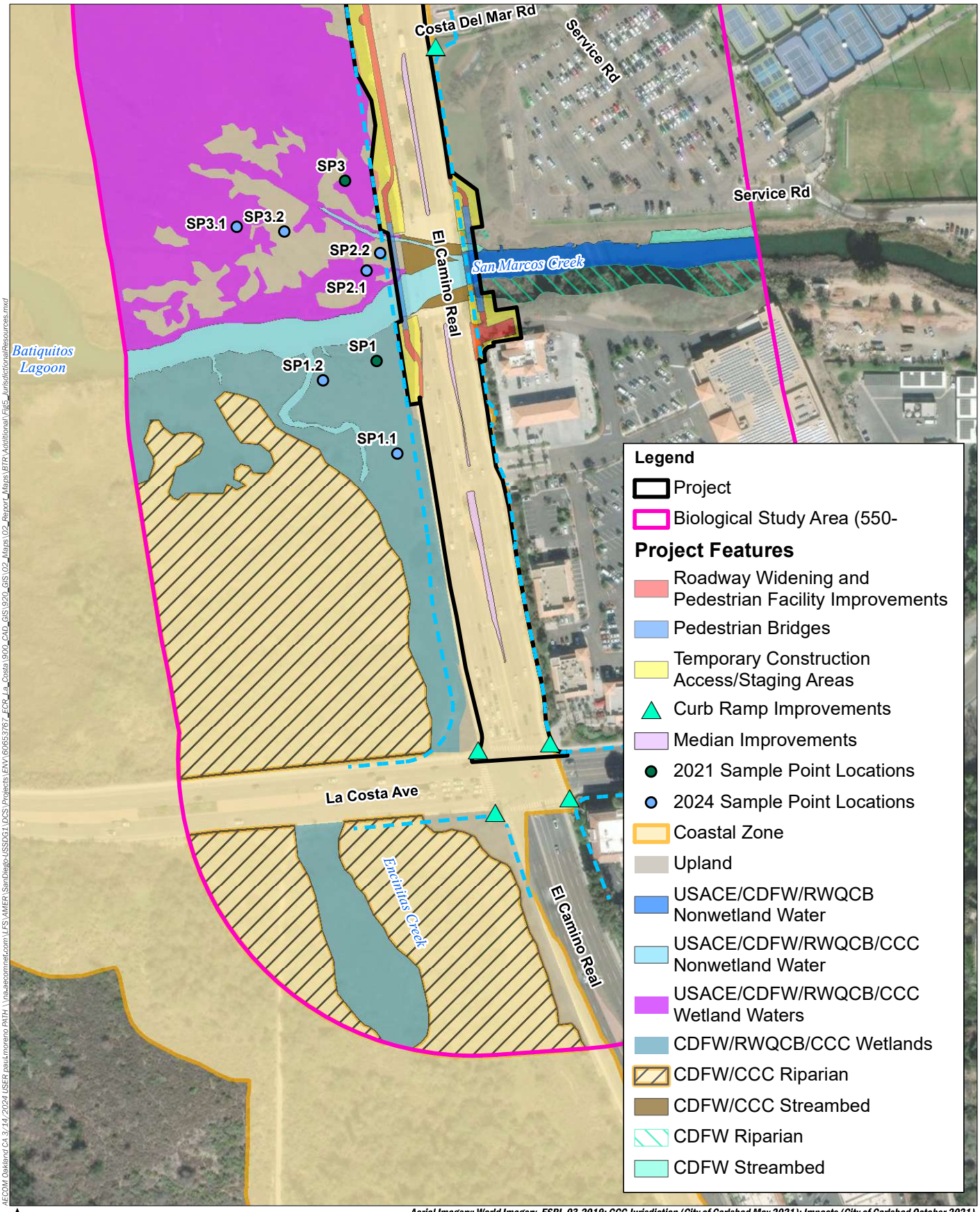
FIGURE 5B - JURISDICTIONAL RESOURCES



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Aerial Imagery: World Imagery, ESRI, 03-2019; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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FIGURE 5C - JURISDICTIONAL RESOURCES

Table 2. Summary of Jurisdictional Waters of the U.S. and State Occurring Within the BSA

Aquatic Resource Type	Habitat Type	Regulatory Authority	Total within Project Area (acres) [1]	Total within BSA (acres)[1]
Jurisdictional Waters of the U.S. and Waters of the State[2]				
Non-wetland Waters – Open Water	Open Water	USACE, CDFW, RWQCB, and CCC	0.202	1.019
Non-wetland Waters – Open Water	Open Water	USACE, CDFW, and RWQCB	0.036	0.607
Wetland Waters – Non-tidal Waters	Coastal Brackish Marsh, Southern Coastal Saltmarsh	USACE, CDFW, RWQCB, CCC	0.029	18.282
		Subtotal Jurisdictional Waters of the U.S/State.	*0.268*	*19.908*
Jurisdictional Waters of the State, Exclusively				
Wetlands- Non-tidal Waters	Southern Coastal Saltmarsh, Disturbed	CDFW, RWQCB, CCC	0.005	4.294
Riparian	Southern Arroyo Willow Riparian Forest, Southern Willow Scrub	CDFW, CCC	0.000	14.716
Riparian	Coastal Brackish Marsh, Nonnative Riparian	CDFW	0.033	0.587
Streambed	Disturbed/Bare Ground	CDFW, CCC	0.152	0.152
Streambed	Disturbed	CDFW	0.009	0.107
		Subtotal Jurisdictional Waters of the State	*0.200*	*19.857*
		Grand Total Jurisdictional Waters	**0.468**	**39.765**

[1] Totals may not sum due to rounding after summation. Total includes area underneath the existing bridge.
[2] Jurisdictional waters of the U.S., including jurisdictional waters of the state, that are under the purview of CCC, CDFW, RWQCB, and USACE.

5.3 SENSITIVE SPECIES

For the purposes of this report, species are considered to have special status if they meet at least one of the following criteria:

- Are listed as endangered, threatened, or proposed for listing as endangered by USFWS (USFWS 2023a, 2023b, 2023c, 2023d)
- Are listed as endangered, threatened, or rare by the CDFW (CDFW 2024a, 2024b)
- Are considered special vascular plants, bryophytes, or lichens (CDFW 2024c)
- Are on the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2024)
- Are considered "special animals" (CDFW 2024d)
- Are considered HMP "covered species" or "narrow endemics" known from the city (City of Carlsbad 1999).

- Are designated as high, medium, low, or periphery by the Western Bat Working Group (Western Bat Working Group 2023)

Special-status species with potential to occur in the BSA are discussed in the plant and wildlife sections below and in Appendices B and C. Figure 6 shows the locations of detected sensitive species.

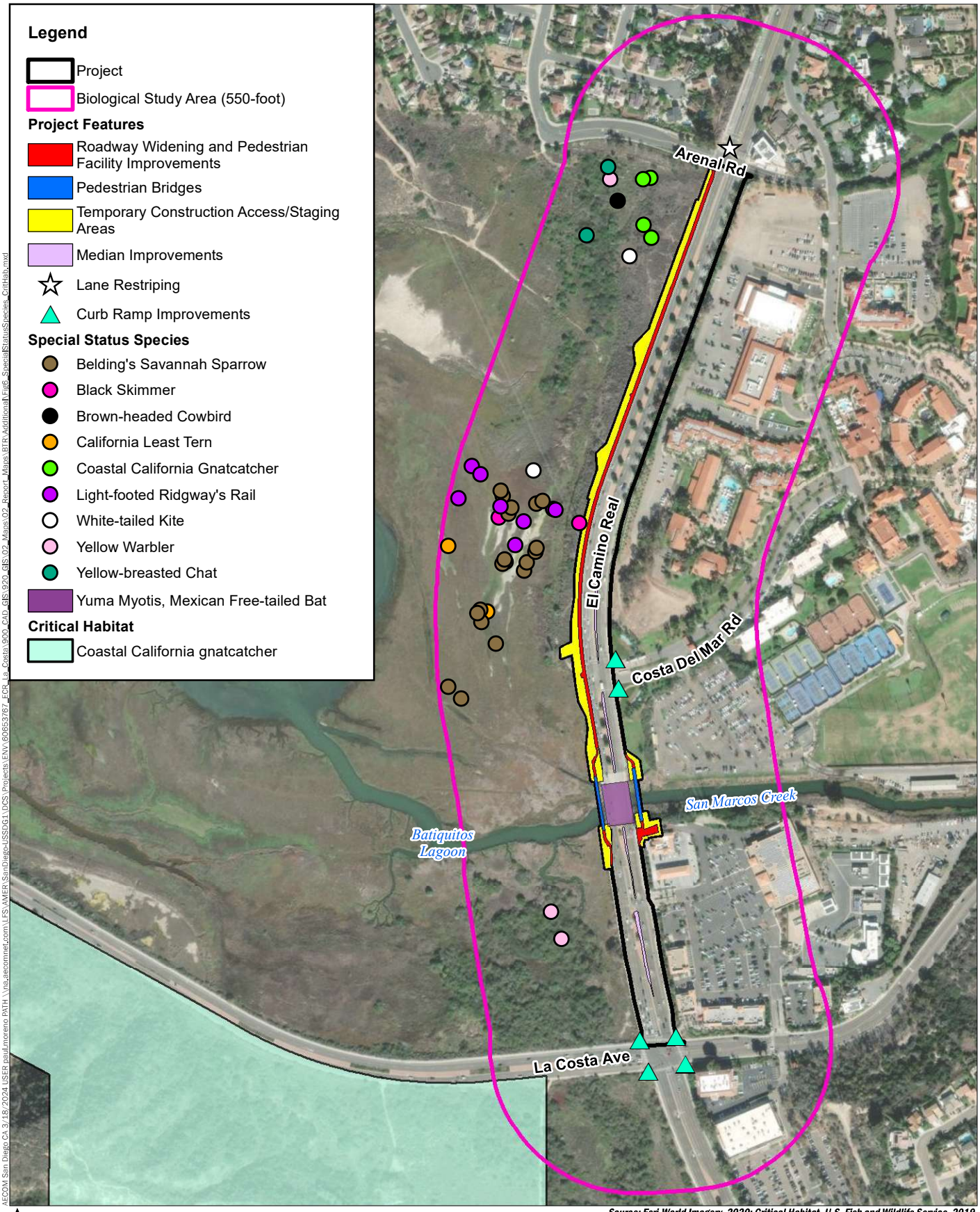
5.3.1 Special-Status Plant Species

Before conducting fieldwork, the CNDDB (CDFW 2021) was reviewed for the most recent distribution information for special-status plant and wildlife species within the San Luis Rey and Encinitas quadrangles, parts of which constitute the BSA. A CNDDB search produced 12 special-status plant species in the vicinity (1 mile) of the BSA.

A total of 12 special-status plant species were evaluated for the proposed project because of the results of the CNDDB search described above and incidental observations of one additional species. Each species' potential to occur was evaluated based on whether suitable habitat was observed during the field surveys. These species are described in Table B-1 of Appendix B, which also lists the sensitivity status of each species, its general habitat requirements, and the probability of its occurrence within the BSA. Further discussion is provided for each species with moderate to high potential to occur in the BSA.

Three federally listed, two of which are state listed, species have known populations within 1 mile of the BSA (Del Mar manzanita [*Arctostaphylos glandulosa* ssp. *crassifolia*], Encinitas baccharis [*Baccharis vanessae*], and thread-leaved brodiaea [*Brodiaea filifolia*]); however, all were determined to have low potential to occur due to the lack of suitable habitat and soils within the BSA.

Of the potentially occurring species (detailed in Appendix B), no federally or state-listed plant species were observed within the BSA. Two species, Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) and estuary seablite (*Suaeda esteroa*), were determined to have high potential to occur in the BSA. Both of these species are listed as California Rare Plant Rank (CRPR) 1B.2 species. The Del Mar sand-aster (*Corethrogyne filaginifolia* var. *linifolia*) was determined to have a moderate potential to occur in the BSA. This species is a CRPR 1B.1 ranked species and a HMP covered species. No nonlisted, special-status plant species were detected during the habitat assessment. Other nonlisted special-status plant species not detected but with low potential to occur in the BSA are detailed in Appendix B.



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AECOM
City of Carlsbad
El Camino Real Widening
ARENAL ROAD TO LA COSTA AVENUE
PROJECT NO. 6051

FIGURE 6 - SPECIAL-STATUS SPECIES OCCURRENCES AND CRITICAL HABITAT

5.3.2 Special-Status Wildlife Species

The BSA is partially within the Batiquitos Lagoon Hardline Preserve boundary. Several wildlife species are known to use suitable wetland and coastal sage scrub habitat in the BSA adjacent to the project site. A CNDDB search produced 14 special-status wildlife species within 1 mile of the BSA. These species were evaluated for their potential to occur in the BSA. These species are described in Table B-2 of Appendix B, which includes the sensitivity status of each species, its general habitat requirements, and the probability to occur within the BSA.

The following paragraphs discuss special-status wildlife species detected during protocol surveys or that have moderate to high potential to occur in the BSA.

Listed Species

Four federally and/or state-listed species were detected during surveys conducted for the proposed project. Two additional species have a moderate potential to occur in the BSA. These species are discussed below.

Belding's Savannah Sparrow

Belding's savannah sparrow was detected in the BSA during surveys. The Belding's savannah sparrow is state endangered and is covered by the city's HMP. Belding's savannah sparrow is a year-round resident in San Diego County. The preferred habitat of the species is pickleweed-dominated coastal salt marsh associations. Suitable habitat occurs in the southern coastal salt marsh in Batiquitos Lagoon. This species is known to utilize Batiquitos Lagoon for nesting and foraging (AECOM 2021a) and has high potential to occur in the BSA. Up to five Belding's savannah sparrow individuals were detected in the BSA during protocol surveys. The observations were concentrated in the pickleweed, salt grass, and tidal mudflats west of El Camino Real and north of San Marcos Creek. Appendix C details the results for each of the five protocol surveys.

Coastal California Gnatcatcher

Coastal California gnatcatcher was detected in the BSA during protocol surveys. The coastal California gnatcatcher is federally threatened, a CDFW species of special concern, and a species covered by the city's HMP. Coastal California gnatcatcher is a year-round resident in San Diego County that nests and forages in coastal sage scrub habitat. This species prefers habitat composed of coastal sage scrub dominated by California sagebrush and flat-topped buckwheat, which are the primary plants used by coastal California gnatcatcher when foraging for insects (RECON 1987; ERCE 1990). The species inhabits coastal sage scrub vegetation along the coastal slope in San Diego County. Suitable coastal sage scrub is present within the BSA south of Arenal Road and

west of El Camino Real, where individuals were detected during the protocol surveys. Details of the protocol surveys conducted for the proposed project are provided in Appendix D.

Light-footed Ridgway's Rail

Light-footed Ridgway's rail was detected in the BSA during protocol surveys. The light-footed Ridgway's rail is federally endangered, state endangered, and CDFW fully protected, and this species is covered by the city's HMP. Light-footed Ridgway's rail is a year-round resident in San Diego County and can be heard calling in the morning and evening, although it is rarely seen. The species prefers coastal salt marshes in Southern California where vegetation is dominated by cordgrass and pickleweed. It can also be found in brackish and freshwater marshes with cattails and bulrushes. Light-footed Ridgway's rail forages in higher marsh vegetation and along tidal creeks and at the interface between vegetation and adjacent mudflats. The light-footed Ridgway's rail is a reclusive species and will nest in and utilize relatively small patches of its preferred habitat when isolated from external anthropogenic disturbances (Zembal et al. 2011; Zembal and Hoffman 2012). Suitable habitat occurs in the southern coastal salt marsh in Batiquitos Lagoon. This species is known to utilize Batiquitos Lagoon for nesting and foraging (AECOM 2021b) and was detected west of El Camino Real and north of San Marcos Creek. Details of the protocol survey results are provided in Appendix D.

Least Bell's Vireo

Least Bell's vireo (*Vireo bellii pusillus*) was not detected during surveys and has a moderate potential to occur in the BSA. The least Bell's vireo is federally, and state endangered, and it is covered by the city's HMP. Least Bell's vireo is a migratory bird that nests in riparian habitats. This species prefers to nest within willow-dominated woodlands adjacent to a stream or river. Least Bell's vireo forage in woodland or scrub habitat and upland vegetation occurring adjacent to riparian corridors (SDMMP 2010). This species could potentially occupy the Southern Arroyo Willow Riparian Forest, located in the southwest portion of the BSA, near Batiquitos Lagoon and San Marcos Creek. Focused protocol surveys were not conducted within the BSA due to lack of suitable breeding habitat located within the project area and the large distance between the suitable breeding habitat and the project area. This species was not observed incidentally during other sensitive species surveys conducted during the least Bells' vireo breeding season.

California Least Tern

The California least tern (*Sterna antillarum browni*) was detected in the BSA during surveys. The California least tern is federally, and state endangered and CDFW fully protected and is covered by the city's HMP. California least tern is a migratory bird that is common in the summer months

in San Diego County. It nests on undisturbed stretches of beach and forages on aquatic and marine organisms in open water. This species is known to utilize Batiquitos Lagoon for nesting and foraging (AECOM 2021b). California least terns are known to nest on the nesting island adjacent to the BSA (Batiquitos Lagoon Foundation 2005). California least terns were incidentally observed during protocol surveys for Belding's savannah sparrow, coastal California gnatcatcher, and light-footed Ridgway's rail.

Western Snowy Plover

The western snowy plover (*Charadrius nivosus nivosus)* was not detected during surveys and has a moderate potential to occur in the BSA. The western snowy plover is federally threatened, a CDFW species of special concern, and is covered by the city's HMP. Western snowy plover is a shore bird that nests on beaches, dunes, and salt flats in San Diego County. Outside the breeding season, this species is more widespread but not common along the county's coast. This species is known to utilize Batiquitos Lagoon for nesting and foraging (USFWS 2007). A nesting island where western snowy plovers are known to nest occurs to the west of the BSA. Therefore, there is moderate potential for this species to be present in the BSA, flying over the BSA or potentially foraging within it.

Nonlisted Species

The following nonlisted special-status wildlife species have been detected in or have a moderate or high potential to occur within the BSA. One nonlisted special-status species that is not expected to occur within the BSA is detailed in Appendix B.

Yellow-breasted Chat

The yellow-breasted chat (*Icteria virens*) was detected in the BSA during surveys. The yellow-breasted chat is a CDFW species of special concern. In San Diego County, nest building typically occurs in May and fledging is completed by August. In San Diego County, this species occurs in the coastal lowlands and is strongly concentrated in the northwest portion of the county (i.e., Santa Margarita River and San Luis Rey River). Yellow-breasted chats were detected in the upland habitat near the northern end of the BSA during focused protocol surveys for Belding's savannah sparrow in 2021 (Figure 6).

Yellow Warbler

The yellow warbler (*Setophaga petechia brewsteri*) was detected in the BSA during surveys. The yellow warbler is a CDFW species of special concern. The yellow warbler breeds from northern

Alaska and Canada southward to the middle United States and in the western United States southward into Mexico. This warbler winters in Mexico and Central and South America. Nest building may occur as early as April in San Diego County, with fledglings reaching independence by August. This species occurs most commonly in riparian woodlands dominated by willows. Yellow warblers were found in the upland habitat near the northern end of the BSA during focused protocol surveys for Belding's savannah sparrow and light-footed Ridgway's rail in 2021 (Figure 6).

White-tailed Kite

The white-tailed kite (*Elanus leucurus)* was detected in the BSA during surveys. The white-tailed kite is a CDFW fully protected species. The white-tailed kite inhabits grasslands, open woodlands, riparian woodlands, marshes, and cultivated fields. This species nests in riparian woodland, oaks, and sycamores and forages in open grassy areas as a year-round resident. White-tailed kites were detected west of El Camino Real during protocol surveys for Belding's savannah sparrow and light-footed Ridgway's rail in 2021 (Figure 6).

Black Skimmer

The black skimmer (*Rynchops niger)* was detected in the BSA during surveys. The black skimmer is a CDFW species of special concern. Black skimmers inhabit coastal waters, including bays, estuaries, lagoons, and mudflats in migration and during winter. They are also found in quiet waters of rivers and lakes. Black skimmers were detected west of El Camino Real during protocol surveys for Belding's savannah sparrow and light-footed Ridgway's rail in 2021 (Figure 6).

Reptiles and Amphibians

No special-status reptile or amphibian species are considered to have high potential to occur within the BSA. One species, orange-throated whiptail (*Aspidocelis hyperthra*), is considered to have moderate potential to occur within the BSA. The orange-throated whiptail is a CDFW fully protected species and is covered by the city's HMP. This species is found within a variety of habitats, including coastal sage scrub and requires areas with friable soil.

Mammals

Three special-status mammal species known from the region have potential to occur within the BSA. Of these three species, two were detected in the BSA during 2021 bat surveys (Appendix E), the Yuma myotis (*Myotis yumanensis*) and the Mexican free-tailed bat (*Tadarida brasiliensis*), as

shown on Figure 6. The species were observed within a large maternity colony under the El Camino Real Bridge, which spans San Marcos Creek.

Yuma myotis and Mexican free-tailed bat were found roosting in nearly all of the bridge seams on both sides of San Marcos Creek (see Appendix E). Yuma myotis and Mexican free-tailed bat are both Western Bat Working Group Low Priority rank species. Yuma myotis is found in a wide variety of upland and lowland habitats, including riparian, desert scrub, moist woodlands, and forests, usually near open water. Warm-season roosts are in caves, cliff crevices, bridges, buildings, tunnels, and cavities and nooks in large live trees near water. Winter roosts include some of these same situations but in general are poorly known. Large nursery colonies may form in buildings, caves, and mine tunnels, and under bridges. Mexican free-tailed bats prefer to roost in caves, but can also be found in attics, under bridges, or in abandoned buildings. They often choose to roost near water, as the water is habitat for the insects they eat.

The third mammal species, the northwestern San Diego pocket mouse (Chaetodipus fallax fallax), has moderate potential to occur in the BSA. This species is a CDFW special species of concern. The northwestern San Diego mouse is found within coastal sage scrub habitat.

5.3.3 Critical Habitat

The FESA authorizes USFWS to designate critical habitat for threatened and endangered species. Critical habitat refers to specific geographic areas that contain features essential to the conservation of threatened and endangered species. As seen on Figure 6, a small portion of critical habitat for coastal California gnatcatcher occurs in the southwestern part of the BSA, south of La Costa Avenue and outside of the project boundary.

5.3.4 Wildlife Movement Corridors and Habitat Fragmentation

Impacts to wildlife movement corridors and pathways through habitat fragmentation can be detrimental to populations of species that rely on these areas for seasonal migration (usually one direction per season), interpopulation movement (long-term genetic exchange), and daily movement corridors within an animal's territory (small travel pathways). Small travel pathways facilitate movement for daily home range activities such as foraging or escape from predators; however, they also provide connection between outlying populations and larger movement corridors, permitting an increase in gene flow between populations. Larger linkages between habitat types can extend for miles between primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub, the movement between wildlife

populations is facilitated through habitat linkages (i.e., migration corridors and movement corridors).

The BSA is partially within Batiquitos Lagoon, identified as Core #8 and Linkage Focus Planning Area in the city's HMP. The HMP designates these core areas as wildlife movement corridors, and Batiquitos Lagoon itself functions as a wildlife corridor for many wetland and upland species.

CHAPTER 6.0
IMPACTS

This chapter analyzes direct and indirect impacts to biological resources that could result from the proposed project. These types of impacts are defined below. Direct and indirect impacts can be permanent or temporary in nature. Permanent and temporary impacts are also defined below.

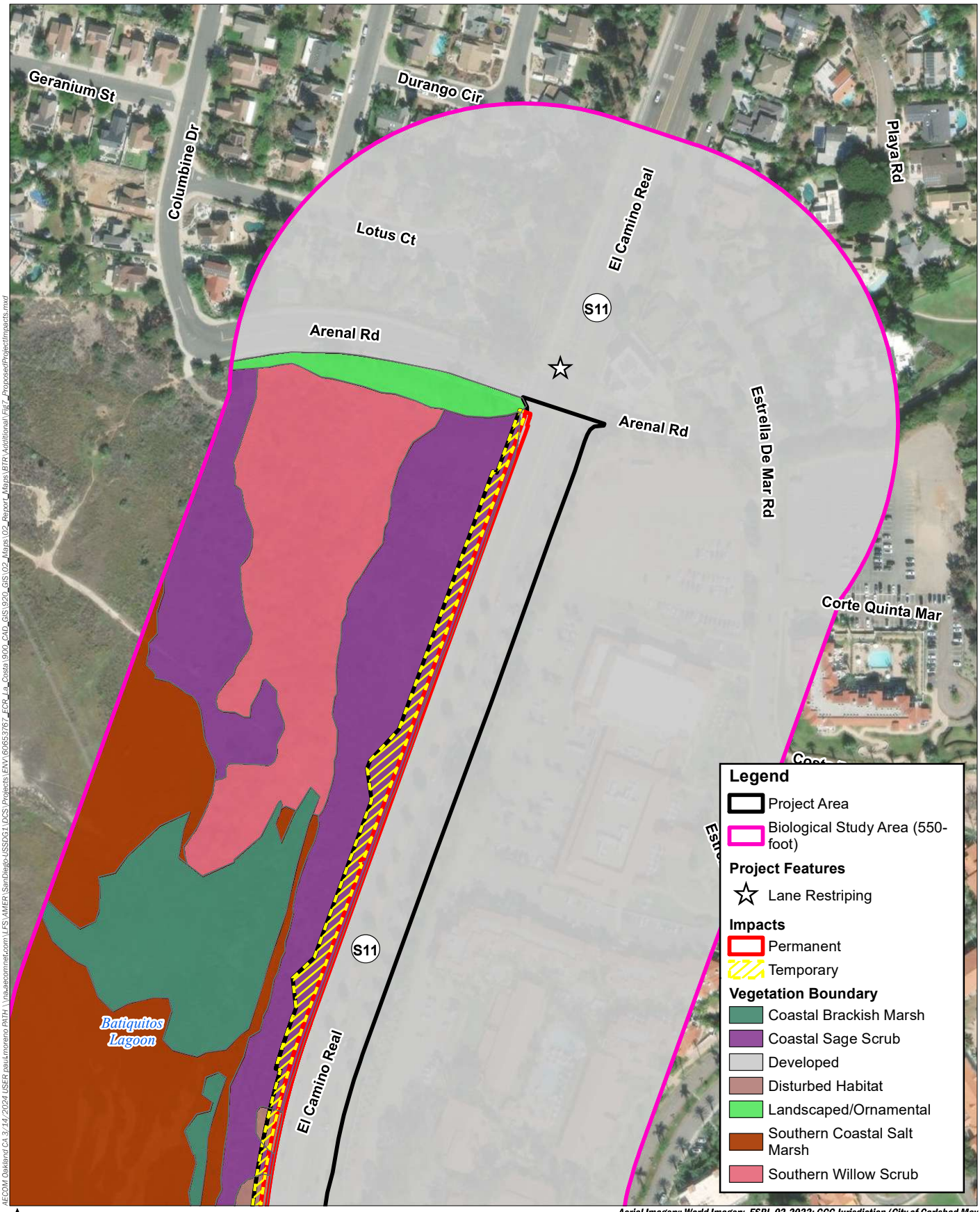
- Direct Impacts: Physical alteration, disturbance, or destruction of biological resources that would result from proposed project-related activities is considered a direct impact. Examples include grading, vegetation clearing, and loss of individual species and/or their habitats.
- Indirect Impacts: Indirect impacts occur later in time or are farther removed in distance but are still reasonably foreseeable and attributable to proposed project-related activities. Examples include elevated noise levels, human activity, decreased water quality, and introduction of invasive species.
- Permanent Impacts: Direct or indirect impacts that result in the irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road within an area containing biological resources.
- Temporary Impacts: Direct or indirect impacts that are reversible or limited in duration are considered as temporary. Recontouring the topography of an area and conducting revegetation to preconstruction conditions would be considered a temporary impact. Other examples may include the generation of fugitive dust during construction activities or removal of vegetation for construction of an underground pipeline, after which natural vegetation can be allowed to recolonize the impact area.

Proposed project permanent and temporary impacts are illustrated on Figure 7A–7C.

6.1 IMPACTS TO VEGETATION COMMUNITIES

6.1.1 Permanent and Temporary Direct Impacts

Temporary impacts to vegetation communities would occur from construction of the roadway widening and pedestrian bridges. These impacts would primarily occur on the west side of El



Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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AECOM

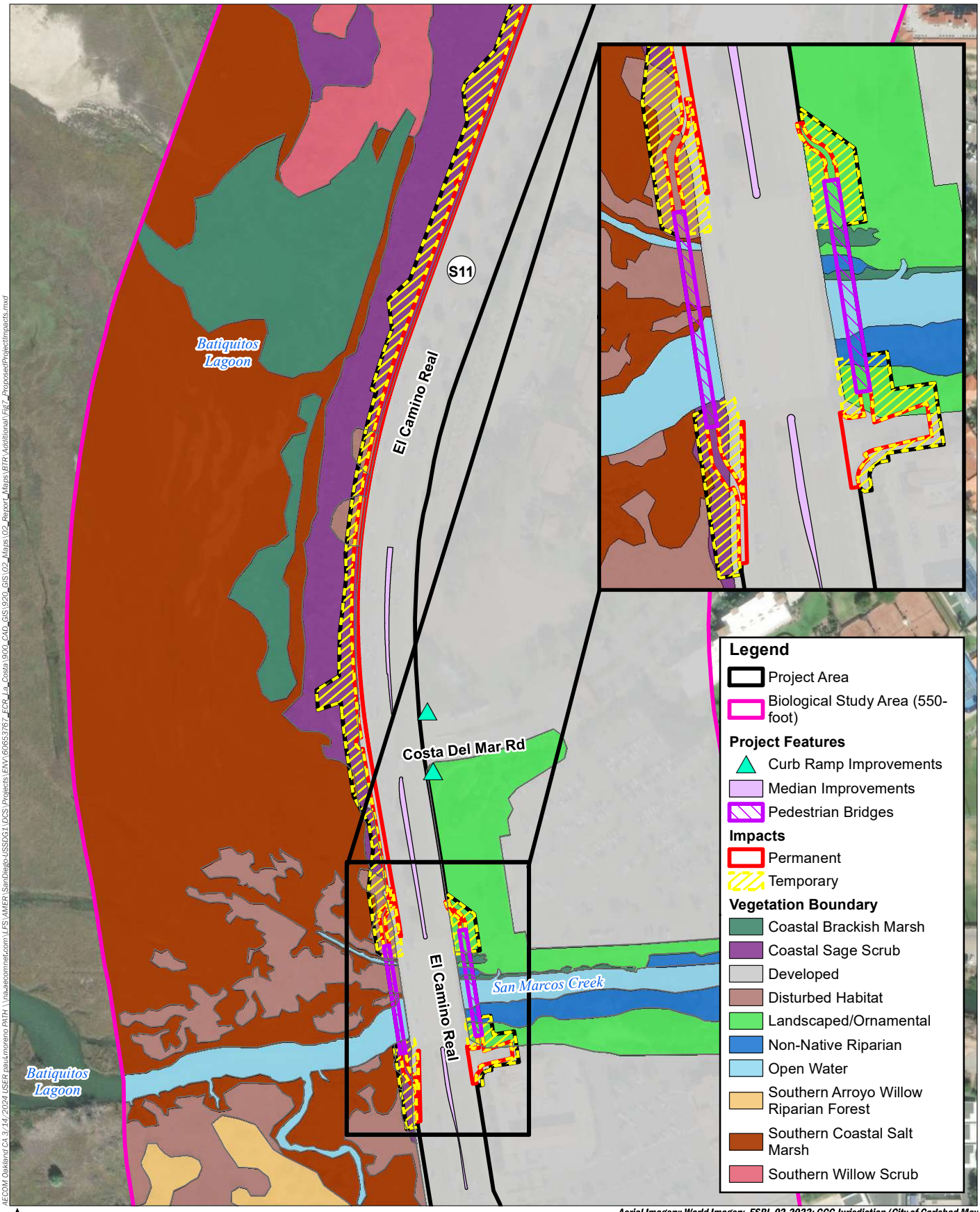
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 7A - PROPOSED PROJECT IMPACTS



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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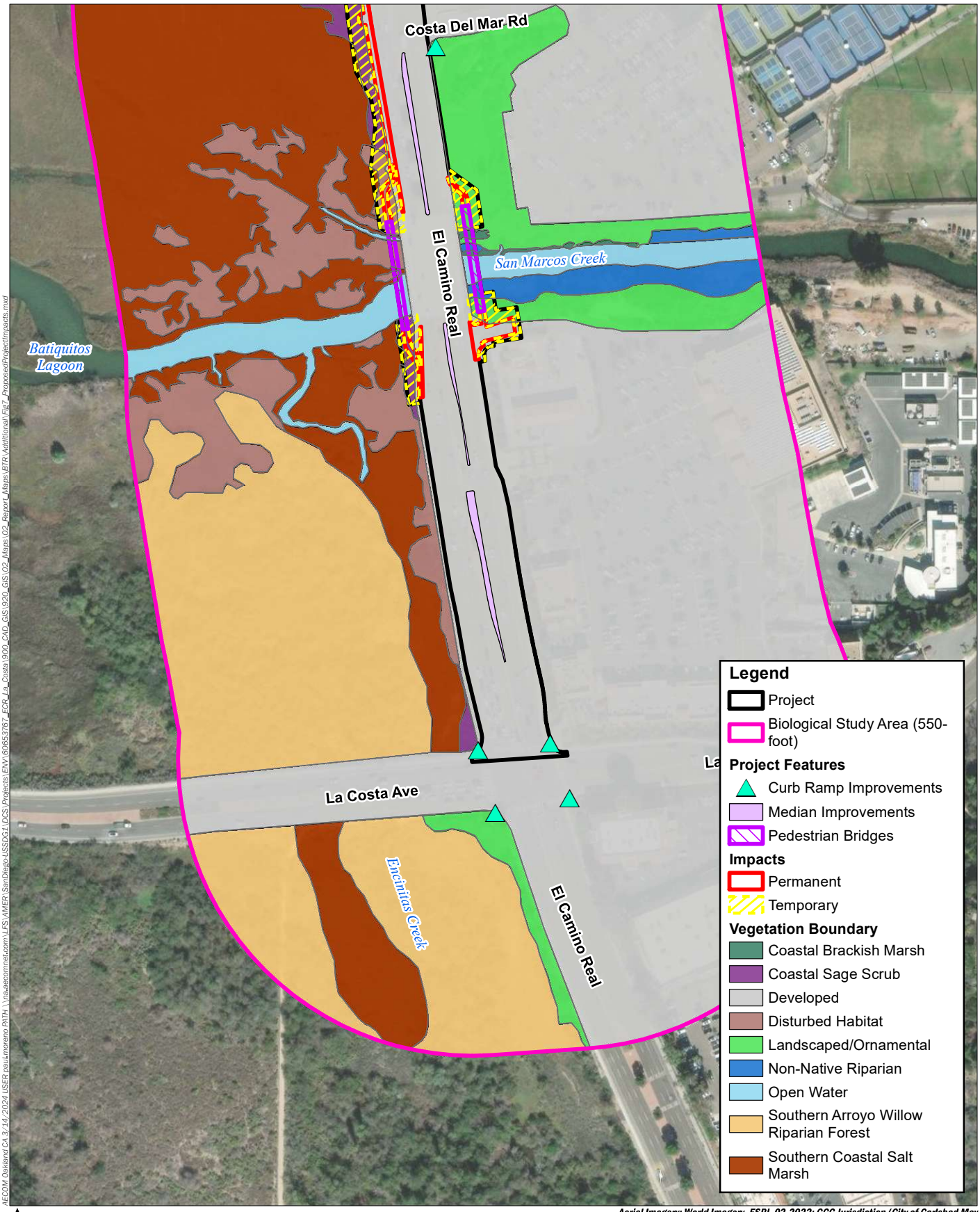
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 7B - PROPOSED PROJECT IMPACTS



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Feet

Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 7C - PROPOSED PROJECT IMPACTS

Camino Real, where recontouring and temporary equipment access may need to occur within habitat. Recontoured areas are considered temporary in nature and would be restored at a 1:1 ratio in-place post-construction through revegetation (BIO-5). Permanent impacts would also occur where the roadway is being extended permanently and would be mitigated as described in mitigation measure BIO-4.

The proposed pedestrian bridges would result in 10-foot wide strips of shading over ornamental, coastal brackish marsh, non-native riparian, and open water to the east and over southern coastal salt marsh, coastal sage scrub, disturbed habitat, and open water west of the existing road bridge. The bridge would range in height of approximately 6 to 12 feet above these vegetation communities depending on topography and the tide. It is expected that sensitive vegetation communities would not be adversely affected by the pedestrian bridge shading due to the narrow width of the bridge which would allow adequate sunlight for sensitive vegetation communities to persist. Therefore, any impacts from shading are considered negligible, and no mitigation would be required.

Table 3 lists the temporary and permanent impacts to vegetation communities. These temporary and permanent impacts to sensitive vegetation communities, including riparian and wetland communities as well as coastal sage scrub are considered significant. To mitigate for the permanent and temporary significant impacts to vegetation communities as outlined in Table 3, mitigation measures BIO-4 and BIO-5 would be implemented.

Permanent impacts to coastal sage scrub would be mitigated at a 2:1 ratio that would result in 0.407 acre of credits purchased from the San Diego Association of Governments and include 1:1 creation or substantial restoration component of 0.407 acre to ensure no net loss. Approximately 1.173 acres of temporary impacts to coastal sage scrub would be restored at a 1:1 ratio after construction.

Temporary impacts to non-tidal coastal salt marsh would result in 0.027 acre of salt marsh habitat that would be restored at a 1:1 ratio after construction. Temporary impacts to coastal brackish marsh would result in 0.001 acre of coastal brackish marsh habitat that would be restored at a 1:1 ratio after construction. Temporary impacts to non-native riparian habitat would result in 0.010 acre of riparian habitat that would be restored at a 1:1 ratio after construction.

Table 3. Permanent and Temporary Impacts to Vegetation Communities and Required Mitigation

Vegetation Community/ Land Cover Type	Permanent Impacts (acres)	Mitigation Ratio– Permanent Impacts	Total Mitigation Required for Permanent Impacts (acres)	Temporary Impacts (acres) [1, 2]
Riparian and Wetlands				
Southern coastal salt marsh – non-tidal	0.000	4:1	0.000	0.027
Coastal brackish marsh	0.000	4:1	0.000	0.001
Open water	0.000	0:0	0.000	0.000
Nonnative riparian	0.000	3:1	0.000	0.010
Disturbed [3]	0.000	0:0	0.000	0.001
Uplands				
Coastal sage scrub	0.407	2:1	0.814 [4]	1.173
Total	**0.407**	**N/A**	**0.814**	**1.212**

[1] Totals may not sum due to rounding after summation.
[2] Temporary impacts would be restored at a 1:1 ratio by revegetating impacted areas in place. Temporary impacts include areas where recontouring would occur.
[3] Disturbed habitat is included in this table only where it is considered to be jurisdictional and would be restored to match adjacent native habitat.
[4] Permanent impacts to coastal sage scrub would be mitigated at a ratio of 2:1 and include 1:1 creation or substantial restoration to ensure no net loss.

6.1.2 Permanent and Temporary Indirect Impacts

Indirect impacts to vegetation communities may occur from construction, including fugitive dust, increased human presence in the area with potential for trampling, and soil compaction. Construction activities also have potential to introduce exotic plants to adjacent habitat by carrying seeds from outside sources on vehicles, people, and equipment. These indirect impacts would be temporary in nature and would cease when construction is completed. Measures BIO-2 and BIO-3 would avoid and minimize indirect impacts from construction to vegetation communities.

6.2 IMPACTS TO JURISDICTIONAL RESOURCES

6.2.1 Permanent and Temporary Direct Impacts

Although the design of the pedestrian bridge is intended to minimize impacts to jurisdictional resources, some temporary impacts would still occur. No permanent impacts to jurisdictional resources are expected to occur. Table 4 lists the impacts to jurisdictional resources. In compliance with the city's HMP, the city would pursue necessary jurisdictional resources permits (USACE

RWQCB, CDFW, and CCC) (BIO-6). Temporary impacts to wetland habitat shall be mitigated in accordance with HMP Table 5, as described in BIO-4.

Table 4. Temporary Impacts to Jurisdictional Resources

Type of Jurisdictional Waters of the U.S. and State	Regulatory Authority	Temporary Impacts (acres) [1]
Dual Waters of the U.S. and State [2]		
Non-wetland Waters - Open water	USACE, CDFW, RWQCB, and CCC	0.000
Non-wetland Waters - Open water	USACE, CDFW, and RWQCB	0.000
Wetland Waters - Non-tidal Waters	USACE, CDFW, RWQCB, and CCC	0.022
Subtotal Jurisdictional Waters of the U.S./State		*0.022*
Waters of the State		
Wetlands- Non-tidal Waters	CDFW, RWQCB, and CCC	0.005
Streambed	CDFW, CCC	0.001
Riparian	CDFW	0.011
Subtotal Jurisdictional Waters of the State		*0.017*
Grand Total Jurisdictional Waters		**0.039**

[1] Totals may not sum due to rounding after summation. Temporary impacts include areas underneath the bridge shading areas where temporary workspace and/or recontouring would occur.
[2] Dual jurisdictional waters of the U.S. include jurisdictional waters of the state and are under the purview of CDFW, RWQCB, USACE, and CCC (when within the coastal zone).

The western pedestrian bridge would result in shading over open water and non-tidal coastal salt marsh, under the jurisdiction of USACE, RWQCB, CDFW, and CCC. The eastern pedestrian bridge that crosses San Marcos Creek would result in shading over open water under the jurisdiction of USACE, RWQCB, and CDFW. Additional shade areas over the eastern pedestrian bridge include coastal brackish marsh, nonnative riparian, and disturbed, all are under the jurisdiction of CDFW. The bridge would range in height of approximately 6 to 12 feet above these vegetation communities depending on topography and the tide. It is expected that jurisdictional resources will not be adversely affected due to the narrow width of the bridge, which would allow adequate sunlight for sensitive vegetation communities to persist.

Temporary impacts to dual waters of the U.S. and the state would result in 0.022 acre of temporary impacts to non-tidal wetlands under the jurisdiction of USACE, CDFW, RWQCB, and CCC on the west side of the bridge. In the southwestern area of the bridge, there would be 0.005 acre of temporary impacts to non-tidal wetlands under the jurisdiction of CDFW, RWQCB, and CCC.

Temporary impacts to waters of the state streambed would occur beneath the bridge along San Marcos Creek to 0.001 acre of streambed under the jurisdiction of CDFW and CCC. Temporary impacts to jurisdictional waters of the state on the east side of the bridge along San Marcos Creek to 0.008 acre of riparian habitat under the jurisdiction of CDFW.

6.2.2 Permanent and Temporary Indirect Impacts

The proposed project includes the installation of pedestrian bridge facilities across San Marcos Creek. With the increase in pedestrian traffic overhead, there could be an increase in trash that may degrade habitat. In addition, runoff, sedimentation, and erosion could adversely affect jurisdictional resources. Measures BIO-2 and BIO-6 would avoid and minimize indirect impacts to jurisdictional resources.

6.3 SPECIAL-STATUS PLANT SPECIES IMPACTS

6.3.1 Permanent and Temporary Direct Impacts

Of the special status plant species with potential to occur in the BSA, only estuary seablite (CRPR 1B.2), has a high potential to occur in the project area. There are no permanent impacts to wetland vegetation communities that support this species. Temporary direct impacts to estuary seablite may occur during vegetation clearing/trimming, recontouring, or establishing temporary workspace within the project area. Recontoured areas are considered temporary in nature and would be restored at a 1:1 ratio in-place post-construction through revegetation (BIO-5). The restoration plan would consider including estuary seablite to the plant palette if it is detected in the temporary work area.

6.3.2 Permanent and Temporary Indirect Impacts

Indirect impacts to estuary seablite may occur from construction, including fugitive dust, increased human presence in the area with potential for trampling, and soil compaction. Construction activities also have potential to introduce exotic plants to adjacent habitat by carrying seeds from outside sources on vehicles, people, and equipment. These indirect impacts would be temporary in nature and would cease when construction is completed. Measures BIO-2 and BIO-3 would avoid and minimize indirect impacts from construction to estuary seablite.

6.4 SPECIAL-STATUS WILDLIFE SPECIES IMPACTS

6.4.1 Permanent and Temporary Direct Impacts

Permanent direct impacts to special-status wildlife species could be the “take” of a species as defined by the regulations in Chapter 3. Direct impacts would occur from the loss of habitat associated with the widening of the roadway. Permanent direct impacts could also occur if nests are not avoided when vegetation removal or grading are occurring. Habitat that would be impacted would be mitigated for as described in mitigation measure BIO-4. Vegetation clearing would be

restricted to outside of the nesting season (BIO-7), and the presence of a biological monitor (BIO-2) would also mitigate permanent impacts. Furthermore, critical habitat occurs in the southwestern portion of the BSA and would not be impacted by the proposed project.

6.4.2 Permanent and Temporary Indirect Impacts

During construction, the proposed project has potential to indirectly impact special-status wildlife species with construction light, noise, dust, and traffic. Elevated ambient noise levels have potential to disturb wildlife species and cause habitat avoidance. The impact of noise on wildlife differs from species to species and is dependent on the source of the noise (e.g., vehicle traffic versus blasting) and the decibel level, duration, and timing. During construction, noise levels may temporarily exceed background levels, potentially resulting in nest abandonment or avoidance of the BSA during migration or dispersal movements. Bird species that could be affected during the breeding season include Belding's savannah sparrow, light-footed Ridgway's rail, least Bell's vireo, yellow-breasted chat, yellow warbler, and coastal California gnatcatcher. To reduce indirect impacts water and wetland habitat., equipment storage, refueling, and staging shall occur at least 100-feet from the waters of the U.S. (**BIO-2i**). To address these potential impacts, breeding bird avoidance measures would be implemented during the nesting season (**BIO-7 and BIO-8**). To avoid and minimize indirect impacts to least Bells's vireo, a focused species survey would be conducted before any construction activities to document presence/absence during the breeding season. To avoid and minimize indirect impacts from lighting, construction lighting would be pointed downward and eastward, away from Batiquitos Lagoon (BIO-9).

As described in Section 5.3.2.2, a large maternity roost of a special-status bat species occurs in nearly all of the bridge seams on the existing structure that spans San Marcos Creek. In addition, the bridge has historically been used as a bat maternity site and there is a potential to impact flightless young during the construction process. Although the existing bridge is not being altered, application of surface treatments; the addition of the pedestrian facilities; and general construction noise, light, dust, and the presence of humans/machinery have potential to indirectly impact that population. However, to reduce this potentially significant impact to the bat colony that exists under the San Marcos Creek bridge, structures will not restrict airspace to roosting bats and movement of the bat colony would be maintained and work shall be conducted outside of the bat maternity season (**BIO-10**).

6.5 LOCAL AND REGIONAL IMPACTS

Seven landscape trees would be removed as part of the roadway realignment. The trees proposed for removal are ornamental and non-native. Per Carlsbad Municipal Code 11.12.090, permits would be required for tree removal before construction activities. The seven trees would be

replaced at a 2:1 ratio as outlined in the Community Forest Management Plan and would not result in a substantial change to trees located along the current roadway. The 14 new trees would be planted within the reconstructed median at the Arenal Road intersection and within the existing median north of Costa Del Mar Road or as determined by the City of Carlsbad Park and Recreation Department.

6.6 WILDLIFE MOVEMENT CORRIDOR IMPACTS

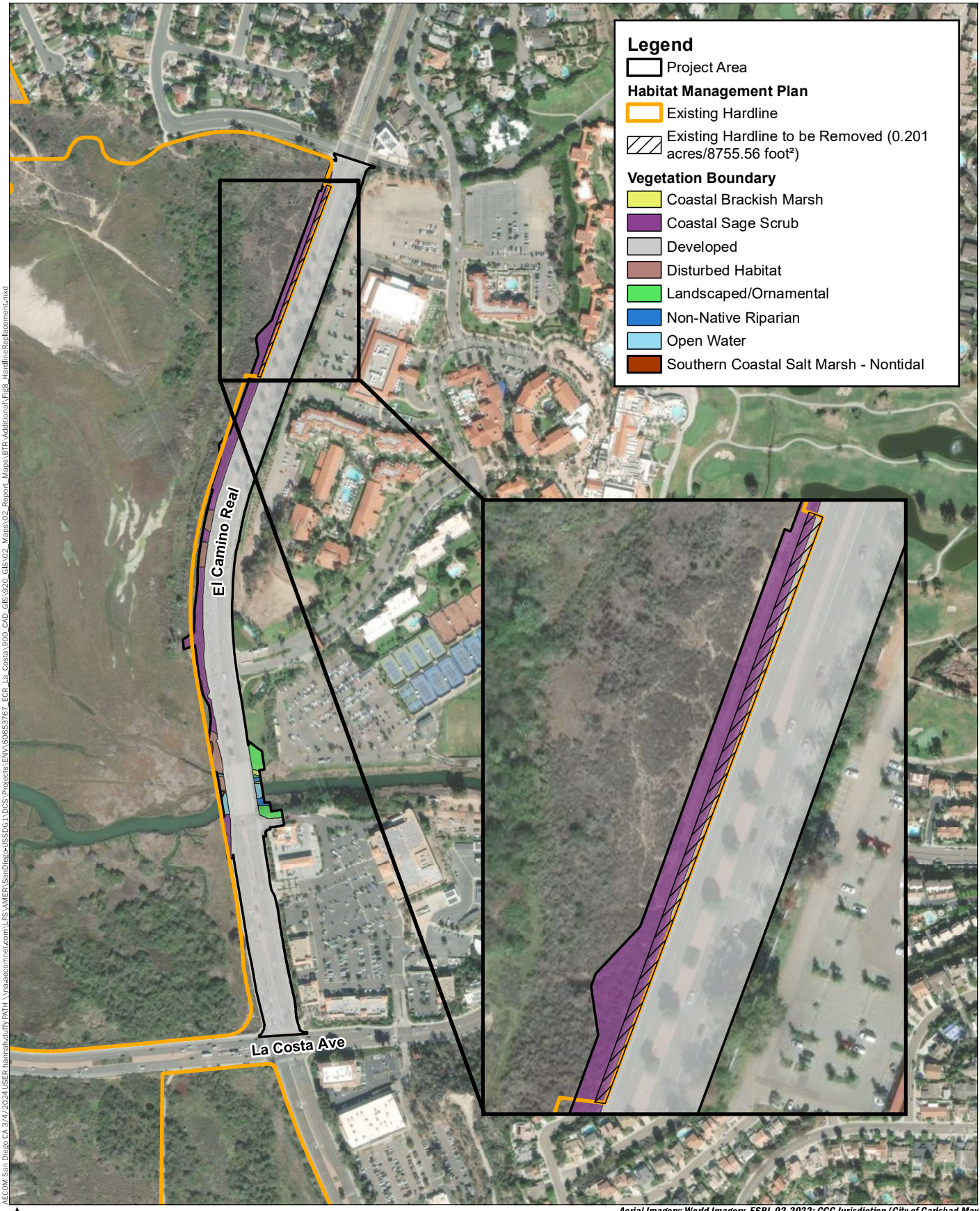
No direct or indirect temporary or permanent impacts to wildlife movement corridors are anticipated. This absence of impacts is because the proposed project would not significantly alter the composition, size, or geographical connectivity of HMP Core #8 (Batiquitos Lagoon).

6.7 HABITAT MANAGEMENT PLAN CONSISTENCY

All projects in the City of Carlsbad must be consistent with the HMP and include measures to avoid, minimize, and mitigate impacts to HMP covered species and sensitive vegetation communities. Because the project is located within the coastal zone, the project must be consistent with the HMP coastal zone standards.

The project is located adjacent to preserved habitat, and therefore, must be consistent with HMP Adjacency Standards that aim to prevent negative effects of urban areas onto preserve habitat and vice versa. The five topics of the Adjacency Standards include: fire management, predator and exotic species control, erosion control, landscaping restrictions, and fencing, signs, and lighting. Fire management and predator control measures are not applicable to the project; however, through the implementation of **BIO-2**, no pollution nor sedimentation to sensitive aquatic resources, nor slope destabilization are expected to occur. Landscaping restrictions shall be successfully implemented through reducing the likelihood of introducing additional invasive weed species (**BIO-3**) to the project vicinity, reducing restoration generated irrigation runoff to the adjacent preserve land, and planting the appropriate local floral species during the restoration process (**BIO-5**). Nighttime lighting shall reduce potential impacts to sensitive biological resources through the implementation of **BIO-9**.

In addition, project impact area occurs within a small portion of HMP Existing Hardline, as shown on **Figure 8**, which is not allowed under the HMP. Therefore, the project will remove this area from the HMP hardline and replace it at the city-owned Crossings Golf course property adjacent to Existing Hardline, through the HMP Minor Amendment process.



Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

AECOM

City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 8- HARDLINE REPLACEMENT WITHIN PROJECT AREA



N

0 400

Feet

Source: AECOM 2023, Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community; Coastal Zone Boundary, California Coastal Commission, 2023; Existing Hardline, City of Carlsbad, 2023; Original Voluntary Revegetated Areas, City of Carlsbad, 2023.

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ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 9 - HARDLINE REPLACEMENT AND COASTAL SAGE SCRUB MITIGATION AREA AT THE CROSSINGS

As discussed above, the project will extend the city's ROW in a 0.201-acre area that overlaps with Existing Hardline, which is owned and maintained by the Batiquitos Lagoon Foundation. Adding ROW would result in a permanent impact. Permanent impacts are not allowed within an Existing Hardline (Figure 8). Therefore, to accommodate the project, this area will be removed from the HMP hardline and replaced elsewhere in the city to ensure no net loss of HMP hardline in the city. In accordance with CMC Section 21.210.080 A.1., minor changes to the HMP hardline boundary that do not reduce the acreage or quality of the habitat are processed as an HMP Minor Amendment pursuant to the required Equivalency Findings. The proposed project would permanently remove 0.201 acre of HMP hardline (consisting of 0.182 acre of coastal sage scrub and 0.019 acre of developed land cover) within the project area and replace it with at least 0.201 acre of coastal sage scrub on city-owned Crossings Golf Course property (**BIO-1**). As required by the HMP, the replacement HMP hardline will be located adjacent to Existing HMP hardline (city-owned Crossings Golf Course property) and placed under long-term management.

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CHAPTER 7.0
AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

Impacts to vegetation communities and special-status species' habitat would be mitigated for according to the HMP. The measures listed below describe how the proposed project will avoid, minimize, and mitigate for impacts to biological resources.

Hardline Preserve:

BIO-1: Prior to issuance of a grading permit or the commencement of construction, whichever first occurs, and to accommodate the project footprint and increase to the city's ROW, the city will process a Habitat Management Plan hardline boundary adjustment (Minor Amendment to the Habitat Management Plan) per Carlsbad Municipal Code Section 21.210.080 A.1. A total of 0.201 acre will be removed from the Habitat Management Plan hardline preserve area along the western edge of the project boundary on land currently owned by the Batiquitos Lagoon Foundation and replaced with at least 0.201 acre of Habitat Management Plan hardline preserve on the city-owned Crossings Golf Course property adjacent to Existing Hardline. The adjustment will result in equal or more than equal acres in the hardline preserve area consisting of vegetation communities of equal or better biological value. To formally amend the Habitat Management Plan hardline boundary, the city shall process a Habitat Management Plan Minor Amendment by providing written notice of the Equivalency Findings to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. Unless the agencies object within 30 days of notification, the change shall be considered automatically approved. If objections are raised, the city shall meet with the agencies to resolve the objection and written approval of the change from the agencies shall be required.

General Biological Resources:

BIO-2: The potential for significant indirect impacts during construction shall be mitigated through implementation of the standard measures stated in the city's Guidelines for Biological Studies (2022), as revised below.

a) A qualified biologist shall conduct a training session for project personnel before project activities. At a minimum, the training shall include a description of the target species of concern and its habitats; the general provisions of the federal and state Endangered Species Acts and the Habitat Management Plan; the need to adhere to the provisions of the act and the Habitat Management Plan; the penalties associated with

violating the provisions of the act; and the general measures that are being implemented to conserve the target species of concern as they relate to the project, access routes, and project site boundaries within which the project activities must be accomplished.

b) The footprint of disturbance shall be specified in the construction plans. Before construction, the project's limits of disturbance shall be delineated with orange fencing, and in areas potentially subject to project-related runoff, silt fencing will be used to delineate the impact footprint consistent with the project's Stormwater Pollution Prevention Plan. All fencing shall be reviewed by the project biologist before the initiation of the work. All fencing shall be maintained until the completion of project construction activities, at which time all fencing will be removed. Construction personnel and associates shall be instructed that their activities, vehicles, equipment, and construction materials are restricted to the project footprint, designated staging areas, and routes of travel. If any impacts occur beyond the approved impact footprint, work in the immediate vicinity shall cease until the disturbance limit breach has been addressed to the satisfaction of the City of Carlsbad and the resource agencies.

c) A water pollution and erosion control plan shall be developed that describes sediment and hazardous materials control, fueling and equipment management practices, and other factors deemed necessary by reviewing agencies. Erosion control measures shall be monitored on a regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures shall be implemented in the event that the erosion control strategies are inadequate. Sediment/erosion control measures shall be continued at the project site until such time as the revegetation efforts are successful at soil stabilization.

d) The qualified project biologist shall review grading plans (e.g., the access routes and staging areas) and monitor construction activities throughout the duration of the grading/ground disturbance associated with the project to ensure that all practicable measures are being employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint.

e) Construction monitoring reports that summarize how the project is in compliance with applicable conditions shall be completed and provided to the city. The project biologist shall halt work activity if necessary and confer with city staff to ensure the proper implementation of species and habitat protection measures.

f) Any habitat that is impacted that is not in the identified project footprint shall be disclosed immediately to the city, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and California Coastal Commission and shall be compensated at a ratio to be negotiated with the agencies.

g) Construction access to and from the site shall be located along existing access routes or disturbed areas to the greatest extent possible. All access routes outside of existing roads or construction areas shall be clearly marked.

h) Construction employees shall limit activities and storage of vehicles, equipment, and construction materials to the fenced project footprint.

i) Equipment storage, fueling, and staging areas shall be located on disturbed upland sites at least 100 feet from waters of the U.S. and with minimal risk of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project-related spills of hazardous materials shall be reported to the city and shall be cleaned up immediately, and contaminated soils shall be moved to approved disposal areas.

j) Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.

k) Fugitive dust shall be avoided and minimized through watering and other appropriate measures.

Vegetation Communities/Habitat:

BIO-3: To avoid spreading nonnative invasive species, construction vehicles will be contained within the delineated work limits, and avoid staging, turning around, or driving in habitat in Batiquitos Lagoon as restricted by delineated work limits.

BIO-4: Impacts to sensitive habitats shall be mitigated based on habitat and impact type in accordance with Habitat Management Plan Table 5 and Habitat Management Plan coastal zone standards (Habitat Management Plan Section D.7), as shown in the table below. Temporary impacts to sensitive habitats shall be revegetated in place at a 1:1 ratio after construction is complete.

Permanent coastal sage scrub habitat impacts will be mitigated through the use of Tier II upland (i.e., coastal sage scrub) mitigation credits at the Sage Hill Mitigation Parcel, located in unincorporated San Diego County, east of Rancho Santa Fe Road. The Sage Hill Mitigation Parcel was established by San Diego Association of Governments as part of an advance mitigation program for local streets and road projects pursuant to a Memorandum of Understanding between San Diego Association of Governments, Caltrans and the Wildlife Agencies, and a Conservation Credit Agreement, executed November 25, 2014.

The no net loss requirement for impacts to coastal sage scrub will be met at the city-owned Crossings Golf Course property, which will include at least 1:1 coastal sage scrub in the form of creation or substantial restoration.

Table 5. Permanent and Temporary Impacts to Vegetation Communities and Required Mitigation

Vegetation Community/ Land Cover Type	Permanent Impacts (acres)	Mitigation Ratio–Permanent Impacts	Total Permanent Mitigation Impacts (acres)	Temporary Impacts (acres)[1, 2]
Riparian and Wetlands				
Southern coastal salt marsh – Non-tidal	0.000	4:1	0.000	0.027
Coastal brackish marsh	0.000	4:1	0.000	0.001
Open water	0.000	0:0	0.000	0.000
Nonnative riparian	0.000	3:1	0.000	0.010
Disturbed[3]	0.000	0:0	0.000	0.001
Uplands				
Coastal sage scrub	0.407	2:1	0.814[4]	1.173
Total	**0.407**	**N/A**	**0.814**	**1.212**

[1] Totals may not sum due to rounding after summation.
[2] Temporary impacts will be restored at a 1:1 ratio by revegetating impacted areas in place. Temporary impacts include areas where recontouring will occur.
[3] Disturbed habitat is included within this table only where it is considered to be jurisdictional and will be restored to match adjacent native habitat.
[4] Permanent impacts to coastal sage scrub will be mitigated at a 2:1 ratio and include 1:1 creation or substantial restoration to ensure no net loss.

BIO-5: On-site and off-site creation, substantial restoration, restoration, and enhancement to mitigate impacts to sensitive native habitats will be included within the Habitat Mitigation and Monitoring Plan, a restoration plan that will outline restoration species for each habitat type, as described under BIO-4, timelines, success criteria, maintenance and monitoring protocols. The restoration plan will be consistent with the Multiple Habitat Conservation Program, Appendix C (Revegetation Guidelines), and Volume III; Habitat Management Plan for Natural Communities in the City of Carlsbad (City of Carlsbad 2004, pp. F-8 to F-11); and the Components of a Conceptual Mitigation/Restoration Plan (City of Carlsbad 2008). The HMMP will be reviewed/approved by the city, California Department of Fish and Wildlife, California Coastal Commission, and other applicable agencies before proposed project initiation.

Jurisdictional Resources Measures:

BIO-6: Due to impacts to jurisdictional resources, the proposed project will obtain permits from U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife, and California Coastal Commission in compliance with

the Clean Water Act, California Fish and Game Code 1600, and the California Coastal Act. Impacts to jurisdictional resources will be mitigated through implementation of Mitigation Measures BIO-4 and BIO-5.

Special-Status Species:

BIO-7: To avoid impacts to listed avian species (coastal California gnatcatcher, least Bell's vireo, Belding's savannah sparrow, light-footed Ridgway's rail, California least tern, western snowy plover), and non-listed special-status avian species (yellow-breasted chat, yellow warbler, white-tailed kite, and black skimmer), the following measures will apply:

- Project implementation should occur outside of the bird nesting season, if feasible (February 15 through September 15). To avoid impacts to coastal California gnatcatcher, clearing and grubbing of coastal sage scrub shall not be conducted from March 1 through August 15, per the conditions of coverage for this species.
- If vegetation disturbance or construction outside of the nesting season is not feasible, a qualified biologist shall perform a preconstruction nesting bird survey within the proposed construction area plus a 500-foot buffer no more than 72 hours before vegetation disturbance or construction is initiated during the nesting season. The area will be resurveyed if the planned activities do not occur within 72 hours of the nesting bird survey.
- If active nests are found, then the qualified biologist shall establish an adequate protective buffer around the nest in which vegetation removal and construction activities are prohibited until the nest is no longer active (i.e., all nestlings have successfully fledged). A nest buffer of 300-500 feet will be established around the nest of listed species and raptors, and the buffer width for other species will be determined by the Project Biologist based on species biology. The size of the nest buffer zone may be adjusted by a qualified biologist in coordination with the city based on the species and type, intensity, and duration of the planned construction activities.

BIO-8: If a nest buffer is not sufficient to avoid and minimize impacts to the nest, noise barriers (e.g., walls, blankets, or other noise attenuation measures) may be required, or the contractor may delay work near the nest until the nest is no longer active.

BIO-9: To avoid impacts to special-status avian species, construction lighting will be shielded and pointed downward and away from Batiquitos Lagoon on the west side and from San Marcos Creek on the east side. Lighting of the pedestrian bridges will be limited to that required for safety and be directed away from the lagoon.

BIO-10: To avoid and minimize impacts to bats, the following measures will apply:

- A biological monitor shall provide contractor education specific to bats.
- Surface treatments on the existing bridge structure shall be completed between December 1 and January 31, when the bat population is at its lowest numbers. Surface treatments shall be applied to avoid leakage through to the seams to the underside of the bridge.
- Pedestrian bridge construction shall be timed to occur in the winter (between October 15 and March 15) to the maximum extent practicable, when roosts are in their lowest numbers.
- No construction activities shall occur within 50 feet of the existing bridge between June 1 and September 1, which is bat pupping season.
- Construction personnel shall not be present under the colony, especially during the evening exodus.
- Lights shall not be used under the existing bridge structure. Lighting of the pedestrian bridges shall be limited to that required for safety and shall not deter continued roosting under the existing bridge.
- Vehicles and equipment with internal combustion engines shall not be operated under the existing bridge structure, unless otherwise directed by the on-site biological monitor.
- During roadway construction activities, where possible, the contractor shall follow recommended noise buffers in the table below. If noise buffers cannot be maintained, noise attenuation measures shall be recommended by the monitoring biologist and implemented by the contractor. For construction activities in the immediate vicinity of the existing bridge where buffer distances cannot be maintained (e.g., pedestrian bridge construction), noise attenuation measures shall be applied in a way so as not to substantially restrict airspace access (e.g., placed around stationary equipment only, limited to active work areas) and be removed promptly when work is complete.
- Work shall be planned in a way that does not to restrict bat airspace access to the existing bridge structure (e.g., no blankets, walls, or other barriers shall be placed between the existing bridge and pedestrian bridges

Table 6. Recommended Disturbance Buffer Zones for Day and Night Roosts[1]

Bat Species	Construction Trucks and Heavy Mobile Equipment[2]	Drilling, Trenching, and Small Stationary Equipment[2]	Stationary Diesel/Gasoline Exhaust Sources >2 minutes[2]
Yuma myotis, Mexican free-tailed bat	**90**	**150**	**250**

[1] Distance (in feet) between activity/equipment and roosts
[2] See Technical Guidance for Assessment and Mitigation of the Effects of Traffic Noise and Road Construction Noise on Bats (Caltrans 2016) for detailed discussions of noise impacts to bats at transportation projects and specific decibel levels of low frequency values for construction trucks and heavy equipment.

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CHAPTER 8.0
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APPENDIX A

JURISDICTIONAL DELINEATION REPORT

AECOM Imagine it. Delivered.

El Camino Real Widening Project (Arenal Road to La Costa Avenue), City of Carlsbad, California Aquatic Resource Delineation Report –

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SUMMARY/PURPOSE

AECOM conducted a delineation of potentially jurisdictional aquatic resources for the City of Carlsbad (City) El Camino Real Widening Project (proposed project) to determine if the known aquatic features onsite meet the definition of "Waters of the U.S." (WOTUS) or Waters of the State (WOTS) and thus would be under the jurisdictional purview of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), the California Department of Fish and Wildlife (CDFW), and/or the California Coastal Commission (CCC). The purpose of this report is to present the results of this delineation. Note that findings herein regarding WOTUS within the proposed project are considered "potential" WOTUS; only USACE can make the official jurisdictional determination.

Under contract with the City, AECOM is providing City decision makers with information on aquatic resources that could potentially be impacted from future development of the proposed project. A formal jurisdictional delineation (JD) was conducted within the proposed project area and an approximate 550-foot buffer, collectively referred to as the Biological Study Area (BSA), of the proposed project with a specific focus on the bridge spanning Encinitas Creek at the eastern edge of Batiquitos Lagoon.

PROPOSED PROJECT SETTING/LOCATION

The proposed project is located within the City right-of-way along El Camino Real from Arenal Road south to La Costa Avenue (Figures 1 and 2a through 2c; see Appendix A for all figures referenced herein). The proposed project is bounded by residential and commercial development to the north, east, and south, and Batiquitos Lagoon State Marine Conservation Area to the west.

The elevation for the majority of the BSA ranges between sea level and approximately 100 feet above mean sea level.

To access the proposed project from Interstate 5, take La Costa Avenue east to El Camino Real. The center point of the bridge is located at Latitude 33.088004 and Longitude -117.269159.

REGULATORY SETTING

Wetland and non-wetland waters (e.g., streams, rivers, ephemeral drainages) and associated riparian corridors occurring within California may be regulated under federal and state laws. The following section summarizes the federal and state statutes and regulations pertaining to the JD conducted for the BSA.

FEDERAL

Under the Clean Water Act (CWA) Section 404, USACE regulates the discharge of dredged or fill material into any aquatic feature that meets the current definition of WOTUS as defined in 33 Code of Federal Regulations (CFR) 328.

Amendments to the 2023 Rule

On August 29, 2023, the United States Environmental Protection Agency (USEPA) and Department of the Army (the agencies) issued a final rule[1,2] to amend the final "Revised Definition of 'Waters of the United States'" rule, published in the Federal Register on January 18, 2023.[3] This final rule conforms the definition of "waters of the United States" to the U.S. Supreme Court's May 25, 2023, decision in the case of Sackett v. Environmental Protection Agency.[4] Parts of the January 2023 Rule are invalid under the Supreme Court's interpretation of the CWA in the Sackett decision. Therefore, the agencies have amended key aspects of the regulatory text to conform it to the Court's decision. The conforming rule, "Revised Definition of 'Waters of the United States'; Conforming, " as published in the Federal Register became effective on September 8, 2023.

Per §328.3 Definitions[5] (F5)

(a)(1- 5) Waters of the U.S.

- (a)(1) - Traditional Navigable Waters, Territorial Seas, Interstate Waters
- (a)(2) - Impoundments
- (a)(3) - Tributaries
- (a)(4) - Adjacent Wetlands to (1) TNW, Territorial Seas, Interstate Waters, or (2) relatively permanent impoundment or tributary with continuous surface connection to those waters
- (a)(5) - Intrastate Lake or Pond not identified in A.1-4 that is a relatively permanent, standing or continuously flowing body of water

Jurisdictional waters must now be **relatively permanent waters** (RPW) and must connect to downstream A1 waters (**Traditional Navigable Waters** (TNWs), Territorial Seas, Interstate Waters). These waters encompass only relatively permanent, standing, or continuously flowing bodies of water, such as streams, oceans, rivers, and lakes. These waters do not necessarily exclude streams, rivers, or lakes that might dry up in extraordinary circumstances, such as drought or seasonal rivers, which contain continuous flow during some months of the year but no flow during the dry months. Ephemeral drainages are likely no longer considered jurisdictional, whereas intermittent drainages would likely be jurisdictional.

The new definition of **adjacent wetlands** no longer includes "bordering, continuous, or neighboring." Wetlands must have a continuous surface connection to other jurisdictional WOTUS. Wetlands lacking such a surface connection to WOTUS, including isolated wetlands (e.g., vernal pools, prairie potholes), are likely no longer considered jurisdictional. Seasonal wetlands

[1] Sources: USEPA 2023e (September 8, 2023); USEPA and USACE 2023c (September 8, 2023); Federal Register/Vol. 88, No. 173/Friday, September 8, 2023/Rules and Regulations/Final Rule/p61964-61969
[2] Source: USEPA 2023a (Redline Version, dated August 14, 2023).
[3] Sources: USEPA 2023c; USEPA and USACE 2023b (January 18, 2023), Federal Register / Vol. 88, No. 11 / Wednesday, January 18, 2023 / Rules and Regulations/Final Rule/p3004-3144; USACE and USEPA 2023a (effective March 20, 2023)
[4] Source: USEPA 2023d
[5] 33 CFR part 328 (Regulations); Authority: 33 U.S. C 1251 et seq. (Clean Water Act)

with a continuous surface connection to an RPW for at least part of the year may be considered WOTUS, pending agency guidance.

STATE

Under Section 401 of the CWA and in accordance with the 1969 Porter-Cologne Water Quality Control Act, the RWQCB regulates the discharges of wastes, which include discharges of dredged or fill material, which may affect the quality of WOTS. WOTS include all natural wetlands and some, but not all, artificial wetlands, as well as other non-wetland features, including the oceans, lakes, and rivers. On April 2, 2019, the Water Boards (i.e., the State Water Resources Control Board and all nine RWQCBs) adopted their *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*. This policy is the first part of the "Wetland Riparian Area Protection Policy" that defines what constitutes a wetland and how wetlands should be delineated and protected in the state (SWRCB 2019). The Procedures became effective May 28, 2020. For the purposes of this analysis, the extent of WOTS subject to the authority of RWQCB was considered to include all WOTUS, as discussed above.

Under California Fish and Game Code (CFGC) Sections 1600–1616, CDFW regulates activities that would (1) substantially divert or obstruct the natural flow of a stream; (2) substantially change the bed, channel, or banks of a stream, or use any material from the bed, channel, or banks; or (3) dispose of debris or waste materials where it may pass into a stream. In practice, CDFW extends its jurisdictional limit and assertion to the top of a bank of a stream, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider. Where freshwater streams flow into the ocean, CDFW usually extends its jurisdictional limit and assertion over the lagoon habitat.

The proposed project occurs within the California coastal zone. Wetlands found in the "coastal zone" are regulated under the California Coastal Act and the federal Coastal Zone Management Act and are within jurisdiction of the CCC. The CCC defines wetlands as habitats that only need to meet one of the three USACE wetland criteria (presence of hydrophytic vegetation, wetland hydrology, or hydric soil). Where a municipality has a CCC-approved Local Coastal Program (LCP), permitting authority is held by the municipality rather than the CCC. However, the CCC has the right to appeal any action that is permitted administratively located within 100 feet of a CCC-jurisdictional wetland. The City of Carlsbad has a CCC-approved LCP (City of Carlsbad 1997, as amended 2019). At the time of writing this report, the City was in the process of updating its LCP; however, the LCP had not yet been finalized and approved by the CCC. The majority of the BSA is located in the City's LCP; however, portions occurring in Batiquitos Lagoon proper have retained jurisdiction by the CCC.

METHODOLOGY

The jurisdictional waters delineation included two components: desktop review and field assessment.

DESKTOP METHODS

Prior to the field investigation, a desktop review was conducted to determine the existing conditions and historical uses of the proposed project site and the surrounding area. The following resources and previous studies were utilized:

- Natural Resources Conservation Service Soil Survey Mapping (USDA-NRCS 2024)
- Hydric soils: Hydric Soils – Criteria and 2014 State List for California (USDA-NRCS 2014); Field Indicators of Hydric Soils in the United States, version 8.2 (USDA-NRCS 2018)
- National Wetlands Inventory (NWI) (USFWS 2024)
- Watershed Boundary Dataset accessed via WATERS GeoViewer (USEPA 2024)
- National Hydrography Dataset (NHD) accessed via WATERS GeoViewer (USGS 2024)
- Historical Aerial Imagery (1994–2021) (Google 2024)
- Wetland (WETS) Climate Tables (NOAA 2019)
- San Diego Basin Plan (SDRWQCB 2018)

FIELD ASSESSMENT METHODS

On April 2, 2021, AECOM biologists Alexandra Fowler and Anthony Greco conducted a JD within the BSA. A follow-up JD was conducted on February 19 and 22, 2024, by AECOM biologists Aaron Andrews and Natasha Foti. The purpose of the 2024 follow-up JD was to confirm or refine, where needed, the 2021 mapping, which was conducted using a coarser mapping scale relative to the scale of project features.

Aquatic features that meet the definition of WOTUS or WOTS include both wetlands and non-wetland waters. To be considered a wetland, all three parameters (wetland hydrology, hydric soils, and dominance of wetland vegetation) outlined in the 2008 USACE Arid West Supplement must be met (USACE 2008). Non-wetland waters were assessed to determine whether they meet the definition of an (a)(1)-(a)(4) WOTUS in 33 CFR 328. USACE defines non-wetland waters based on the presence of an ordinary high water mark.[6] The aquatic features in the BSA have a continuous surface connection to Batiquitos Lagoon and therefore the Pacific Ocean.

The delineation and vegetation classification were conducted in accordance with the guidance and reference documents listed below:

- A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley 2008)
- Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Curtis and Lichvar 2010)
- Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987)
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008)
- Field Indicators of Hydric Soils in the United States, version 8.2 (USDA-NRCS 2018)

[6] Federal regulations (33 CFR Part 328.3(e)) define the "ordinary high water mark" as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

- National Wetland Plant List Indicator Rating Definitions. (Lichvar et al. 2018)
- Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008)

Three wetland sample points were taken during the 2021 JD west of the bridge and El Camino Real. Three paired sample points (six total) were taken during the 2024 JD. During both surveys, three-parameter wetlands were observed in the area north of San Marcos Creek. Wetland waters boundaries were mapped based upon the species composition change and delineated along the same approximate elevation throughout the wetland. Data sheets for each sample point from 2021 and 2024 are included in Appendix B.

An Apple IPAD, Arrow 1 Trimble unit (<1 meter accuracy), and the ESRI Collector application (ESRI 2024) were used to collect data to map the boundaries of the aquatic resources present. Mapped polygons were visually adjusted, as needed, to match the resources as seen on the aerial imagery, the photogrammetric topographic data, and in the field.

RESULTS

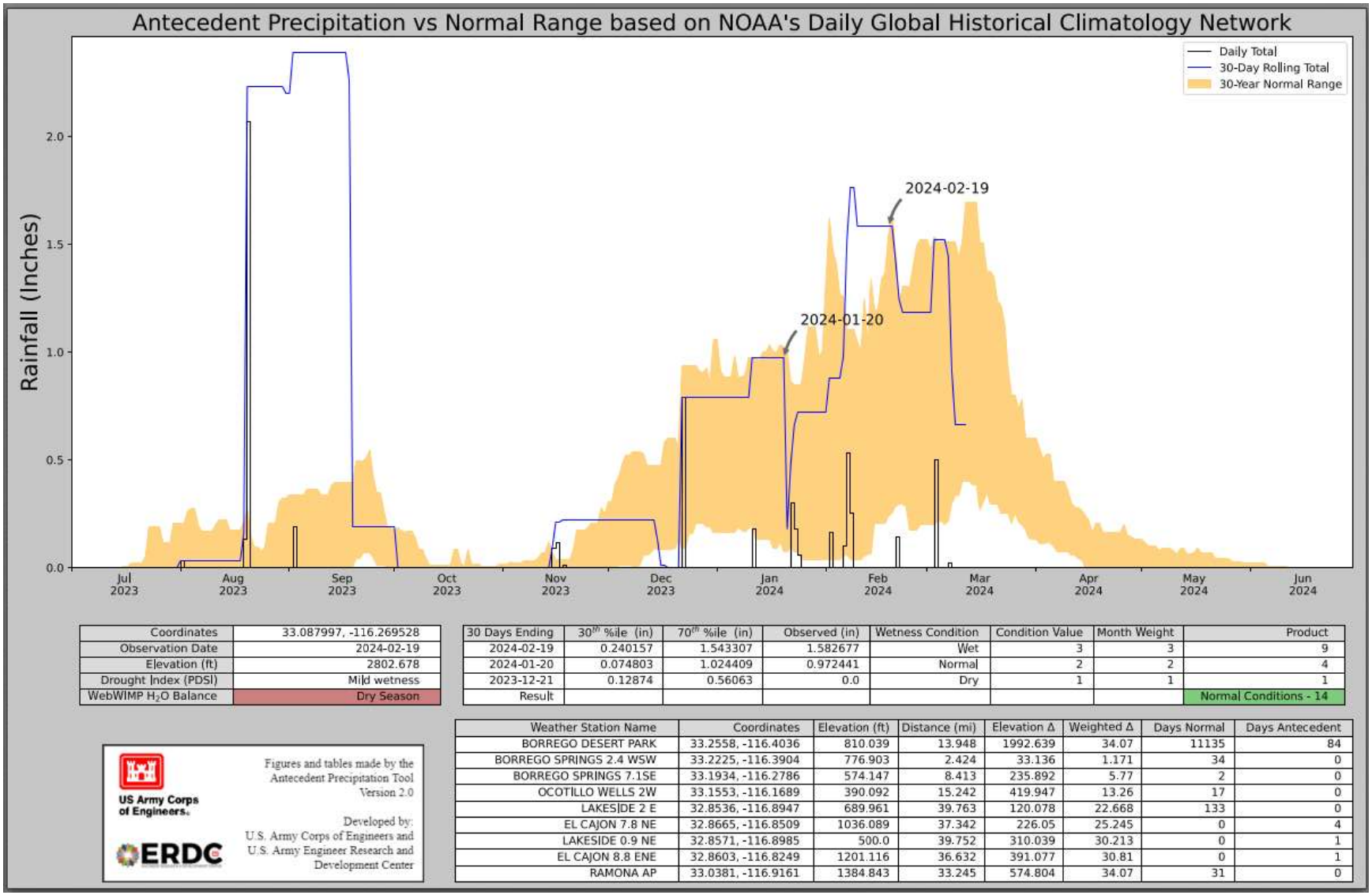
The results of the desktop analyses and vegetation surveys conducted for the BSA, and results of the jurisdictional delineation are presented below.

HYDROLOGY

The proposed project is located within the San Luis Rey-Escondido watershed (HUC 18070303) within the San Marcos Hydrologic Area. Figure 3 shows the location of the proposed project within these watersheds. The proposed project spans open water of San Marcos Creek near the terminus into Batiquitos Lagoon. Encinitas Creek also terminates into Batiquitos Lagoon in the southeast portion of the BSA (see Figures 6a through 6c). Historic Google Earth satellite imagery taken since 1993 shows open water in San Marcos Creek within the BSA. Batiquitos Lagoon and San Marcos Creek are included in the CWA Section 303(d) list of waterbodies impaired by DDE (dichlorodiphenyldichloroethylene**)**, toxicity, benthic community effects, indicator bacteria, phosphorus, and selenium.

Per the San Diego Basin Plan, the beneficial uses for the San Marcos Creek watershed include municipal and domestic water supply (MUN), agriculture supply (AGR), water contact recreation (REC1), noncontact water recreation (REC2), warm freshwater habitat (WARM), and wildlife habitat (WILD) (SDRWQCB 2018). The National Wetland Inventory shows a mosaic of aquatic features within the BSA (USFWS 2024) including tidal flats, estuarine and marine wetland, estuarine and marine deepwater habitat, freshwater emergent wetland, and freshwater forested/shrub wetland.

The Antecedent Precipitation Tool (APT) was used to display rainfall conditions within the Study Area (see Graphic 1 below) (Gutenson 2023; Gutenson et al. 2023). Per data sourced from the National Oceanic and Atmospheric Administration, the APT indicated that the field visit was conducted during a period of "Normal Conditions" for the time of year, and the overall climatic conditions for the region are "Wet Season."



Coordinates	33.087997, -116.269528
Observation Date	2024-02-19
Elevation (ft)	2802.678
Drought Index (PDSI)	Mild wetness
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-02-19	0.240157	1.543307	1.582677	Wet	3	3	9
2024-01-20	0.074803	1.024409	0.972441	Normal	2	2	4
2023-12-21	0.12874	0.56063	0.0	Dry	1	1	1
Result							Normal Conditions - 14

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
BORREGO DESERT PARK	33.2558, -116.4036	810.039	13.948	1992.639	34.07	11135	84
BORREGO SPRINGS 2.4 WSW	33.2225, -116.3904	776.903	2.424	33.136	1.171	34	0
BORREGO SPRINGS 7.1SE	33.1934, -116.2786	574.147	8.413	235.892	5.77	2	0
OCOTILLO WELLS 2W	33.1553, -116.1689	390.092	15.242	419.947	13.26	17	0
LAKESIDE 2 E	32.8536, -116.8947	689.961	39.763	120.078	22.668	133	0
EL CAJON 7.8 NE	32.8665, -116.8509	1036.089	37.342	226.05	25.245	0	4
LAKESIDE 0.9 NE	32.8571, -116.8985	500.0	39.752	310.039	30.213	0	1
EL CAJON 8.8 ENE	32.8603, -116.8249	1201.116	36.632	391.077	30.81	0	1
RAMONA AP	33.0381, -116.9161	1384.843	33.245	574.804	34.07	31	0

Graphic 1. APT graph of the BSA for February 19, 2024. Note the determination that the aquatic resource delineation was completed in "normal conditions." Location for the APT graph was Batiquitos Lagoon.

SOILS

Based on the Natural Resources Conservation Service Web Soil Survey (USDA-NRCS 2024), soils mapped within the BSA include Tidal flats; Placentia sandy loam, thick surface, 2 to 9 percent slopes; Salinas clay loam, 0 to 2 percent slopes; Huerhuero loam, 15 to 30 percent slopes; and Huerhuero-Urban land complex, 2 to 9 percent slopes (Figure 4). One of these soils, tidal flats, is considered hydric.

VEGETATION

The BSA consists of a variety of vegetation communities and cover types, as seen in Figures 5A through 5C. As previously noted, vegetation was classified in accordance with the City Habitat Management Plan (City of Carlsbad 2004), based on *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Seven different vegetation classifications were identified on the site. Riparian, wetland, and native upland vegetation communities found within the BSA are considered sensitive by the City. Wetland-riparian vegetation communities observed within the BSA include coastal brackish marsh, southern coastal salt marsh, southern willow scrub, southern arroyo willow riparian forest, nonnative riparian, and open water. Upland vegetation communities observed within the BSA include Diegan coastal sage scrub, coastal form. Other cover types observed within the BSA include developed/landscape/ornamental, and disturbed habitat. See Section 5.1 of the Biological Technical Report (AECOM 2024) for the proposed project for a detailed description of the vegetation communities within the BSA.

JURISDICTIONAL RESOURCE DELINEATION

AECOM delineated 39.765 acres of aquatic resources in the BSA consisting of 19.908 acres of dual WOTUS and WOTS, and an additional 19.857 acres of WOTS exclusively under CDFW and/or CCC purview. Figure 6 and Table 1 illustrate jurisdictional resources delineated in the BSA.

Table 1. Summary of Jurisdictional Waters of the U.S. and State Occurring within the Biological Study Area

Feature Name	Aquatic Resource Type	Habitat Type	Regulatory Authority	Total within Project Area (acres) [1]	Total within BSA (acres)[1]
	Jurisdictional Waters of the U.S. and Waters of the State[2]				
San Marcos Creek, Batiquitos Lagoon	Non-wetland Waters – Open Water	Open Water	USACE, CDFW, RWQCB, and CCC	0.202	1.019
San Marcos Creek	Non-wetland Waters – Open Water	Open Water	USACE, CDFW, and RWQCB	0.036	0.607
Batiquitos Lagoon	Wetland Waters – Non-tidal Waters	Coastal Brackish Marsh, Southern Coastal Saltmarsh	USACE, CDFW, RWQCB, CCC	0.029	18.282
	Subtotal Jurisdictional Waters of the U.S/State.			*0.268*	*19.908*

Feature Name	Aquatic Resource Type	Habitat Type	Regulatory Authority	Total within Project Area (acres) [1]	Total within BSA (acres)[1]
	Jurisdictional Waters of the State, Exclusively				
Batiquitos Lagoon	Wetlands-Non-tidal Waters	Southern Coastal Saltmarsh, Disturbed	CDFW, RWQCB, CCC	0.005	4.294
Batiquitos Lagoon	Riparian	Southern Arroyo Willow Riparian Forest, Southern Willow Scrub	CDFW, CCC	0.000	14.716
Batiquitos Lagoon, San Marcos Creek	Riparian	Coastal Brackish Marsh, Nonnative Riparian	CDFW	0.033	0.587
Batiquitos Lagoon	Streambed	Disturbed/Bare Ground	CDFW, CCC	0.152	0.152
San Marcos Creek	Streambed	Disturbed	CDFW	0.009	0.107
			Subtotal Jurisdictional Waters of the State	*0.200*	*19.857*
			Grand Total Jurisdictional Waters	**0.468**	**39.765**

[1] Totals may not sum due to rounding after summation.

[2] Jurisdictional waters of the U.S., including jurisdictional waters of the state, which are under the purview of CCC, CDFW, RWQCB, and USACE.

San Marcos Creek

San Marcos Creek contains deep water habitat within the BSA with relatively permanent or intermittent hydrology. The channel exhibits deep, incised banks characterized by a 60-foot-wide OHWM and a 60- to 90-foot-wide streambed. The El Camino Real bridge marks the boundary of the coastal zone, which means the western portion of San Marcos Creek is inside the coastal zone, while the eastern portion is outside. Within this eastern portion, disturbed riparian habitat occurs along the southern banks. This habitat contains a mixture of upland and aquatic species, dominated by willow (*Salix* sp.; FACW [7]), mulefat (*Baccharis salicifolia*; FAC), and black mustard (*Hirschfeldia incana*). No vegetation grows underneath the bridge. Additionally, stingrays were observed in the open water habitat near the bridge during the 2021 field surveys. San Marcos Creek empties into Batiquitos Lagoon, which in turn leads to the Pacific Ocean. Due to the surface connection/relatively permanent nature of the channel, as well as connection to the Pacific Ocean, San Marcos Creek is considered likely USACE-, RWQCB-, and CDFW-jurisdictional, as well CCC-jurisdictional within the coastal zone. CDFW-only streambeds and riparian habitat are also present as part of the creek.

[7] An indicator status reflects the likelihood that a particular plant occurs in a wetland. The five indicator statuses are: Obligate (OBL) plants which always occurs in standing water or saturated soils, Facultative Wet (FACW) plants which nearly always occur in standing water or saturated soils, Facultative (FAC) plants which are equally likely to occur in wetland or upland environments, Facultative Upland (FACU) plants that typically occur in upland, non-wetland habitats, and Upland (UPL) plants that almost never occur in water of saturated soils.

Batiquitos Lagoon

Batiquitos Lagoon occurs in the western portion of the BSA and is hydrologically connected to San Marcos Creek to the east, Encinitas Creek to the south, and the Pacific Ocean to the west. The lagoon is tidally influenced; however, the portion of the lagoon within the BSA is above the high tide line and lacks consistent wetland hydrology, therefore indicating the feature is nontidal within the BSA. Three wetland sample points were taken during the 2021 JD, and six sample points, both wetland and upland, were taken during the 2024 JD. During both surveys, three-parameter wetlands were observed in the area north of San Marcos Creek. Dominant vegetation species included pickleweed (*Salicornia pacifica*; OBL), and alkali heath (*Frankenia salina*; FACW). Soil investigations within these wetlands revealed hydric soil indicators in the form of depleted matrix (see Appendix B – Datasheets). Hydrology indicators included a high water table and saturation. Therefore, the portion of Batiquitos Lagoon meets the three-parameter wetland criteria and is likely USACE-, CDFW-, RWQCB-, and CCC-jurisdictional.

South of San Marcos Creek within Batiquitos Lagoon, the landscape is significantly more disturbed with a mixture of upland and aquatic plants dominated by saltgrass (*Distichlis spicata*; FAC), alkali heath, and brome grasses (*Bromus* sp.) The 2024 sample points revealed one- and two-parameter wetlands throughout the area, but a lack of wetland hydrology indicators prevented the three parameter-wetland criteria from being met. Note that one of the sample points taken in 2021 (SP 1 in Appendix B) determined the presence of a three-parameter wetland; however, the 2021 JD was conducted with a more high-level approach. The 2024 results are assumed more reliable as they represent a more refined version of the 2021 JD. Therefore, the portion of Batiquitos Lagoon located south of San Marcos Creek was determined to be likely CDFW-, RWQCB-, and CCC-jurisdictional, and likely USACE-non-jurisdictional.

Batiquitos lagoon consists of a matrix of saltmarsh vegetation communities, freshwater marsh vegetation communities, and open water input channels. Several disturbed, upland areas were also observed within Batiquitos Lagoon. These areas were dominated by upland invasives including black mustard and wild radish (*Raphinus sativus*). A sample point was taken within this habitat (see SP 3.2 in Appendix B) and none of the three-parameter wetland criteria were met.

The southern portion of the BSA contains Encinitas Creek, which flows south to north where it terminates into Batiquitos Lagoon. The habitat surrounding Encinitas Creek contains a mosaic of emergent wetlands, riparian forest, and riparian scrub habitats.

Waters of the U.S.

San Marcos Creek, and the portion of Batiquitos Lagoon located north of San Marcos Creek (including final acreages and types) delineated within the BSA are considered potential WOTUS prior to a formal jurisdictional determination performed by USACE/USEPA. The final JD issued by USACE may remove portions of delineated waters from being considered as jurisdictional and/or may include additional waters not initially considered as jurisdictional during the field delineation (and thus not included in this Aquatic Resource Delineation Report (ARDR). WOTUS, as described in Table 1 and Figures 6a through 6c, include wetland waters (18.282 acres; Figures 6a through 6c), and non-wetland waters (1.626 acres; Figures 6a through 6c) within Batiquitos Lagoon and San Marcos Creek.

Waters of the State

RWQCB-regulated waters within the BSA include the same WOTUS acreages noted above, plus the portion of Batiquitos Lagoon located south of San Marcos Creek (4.294 acres; Figures 6a through 6c).

CDFW-regulated waters within the BSA also include all areas of WOTUS and WOTS. Additional CDFW-regulated waters include the streambed and bank, as well as additional riparian habitat. In the BSA, these CDFW-regulated waters include the riparian wetland waters adjacent to Batiquitos Lagoon (14.716 acres; Figures 6a through 6c), the bank of San Marcos Creek (0.587 acres; Figures 6a through 6c), and disturbed/bare ground within Batiquitos Lagoon (0.259 acres; Figures 6a through 6c).

CCC-regulated waters include tidally and non-tidally influenced waters, and wetland waters that meet one wetland perimeter in the coastal zone. El Camino Real marks the boundary of the coastal zone; therefore, all waters and wetland waters in the coastal zone boundary (34.463 acres; Figures 6a through 6c) are under jurisdiction of the CCC.

Jurisdictional Determination

Within the BSA, San Marcos Creek, Encinitas Creek, and Batiquitos Lagoon meet the definition of WOTUS and are likely to be regulated under the CWA by USACE and RWQCB as traditional navigable waters. The portion of Batiquitos Lagoon (west of El Camino Real) north of San Marcos Creek meets the definition of a wetland WOTUS and is likely to be regulated under the CWA by USACE and RWQCB as adjacent wetlands.

The BSA also contains potentially jurisdictional streambeds that are likely to be regulated under the CFGC, in addition to the open waters and wetlands noted above.

The areas of the BSA west of the coastal zone boundary are regulated by the CCC and/or the City of Carlsbad through its LCP.

DISCUSSION

Development constraints and opportunities for the proposed project site are being considered by the City. Regulations, processes, and agency authorizations that may be required prior to development of the site are discussed below. The applicable process will depend on the proposed development design.

CWA SECTION 404 AUTHORIZATION

The delineation and analysis presented herein indicate that "potential" WOTUS are present within the BSA. Proposed discharges of fill into WOTUS would require authorization by USACE. Therefore, if proposed development of the proposed project would result in unavoidable impacts to WOTUS, a Nationwide Permit (NWP) (likely NWP 14-Linear Transportation Projects; or an Individual Permit) may be required.

CWA SECTION 401 WATER QUALITY CERTIFICATION

Proposed discharges to the aquatic resources within the BSA that are regulated under the CWA would require a companion Water Quality Certification (WQC) issued by the RWQCB. If proposed impacts qualify for authorization via an NWP, then an individual WQC would need to be obtained unless the applicable NWP has been pre-certified by the State of California.

RHA SECTION 10 AUTHORIZATION

Much of the lagoon area experiences tidal action. Therefore, this ARDR considers the tidal area to meet the definition of Navigable Waters (e.g., Rivers and Harbors Act [RHA] Section 10 Waters [33 CFR 329.4]). As noted previously, the portion of the lagoon within the BSA is above the high tide line and some areas lack consistent wetland hydrology indicating nontidal conditions. Proposed work in or over navigable WOTUS, e.g., the proposed pedestrian bridges over Section 10 waters, would require authorization under the RHA. Because NWP 14 authorizes activities under CWA Section 404 (described above) and RHA Section 10, RHA evaluation will be assessed by USACE through the NWP process.

CDFW STREAMBED ALTERATION AGREEMENT

Proposed impacts to CDFW 1602 jurisdiction within the BSA will likely require a Streambed Alteration Agreement from CDFW.

COASTAL DEVELOPMENT PERMIT

Because the proposed project is partially within a CCC-retained jurisdiction area and in a CCC-appealable area, a Coastal Development Permit (CDP) from both the CCC and the City may be required. Alternatively, the City may request a CDP from the CCC for the entire proposed project.

CONCLUSION

Any impacts to aquatic resources within the BSA will likely require USACE and RWQCB authorizations under the CWA, a Streambed Alteration Agreement with CDFW, and a CDP from the CCC and City.

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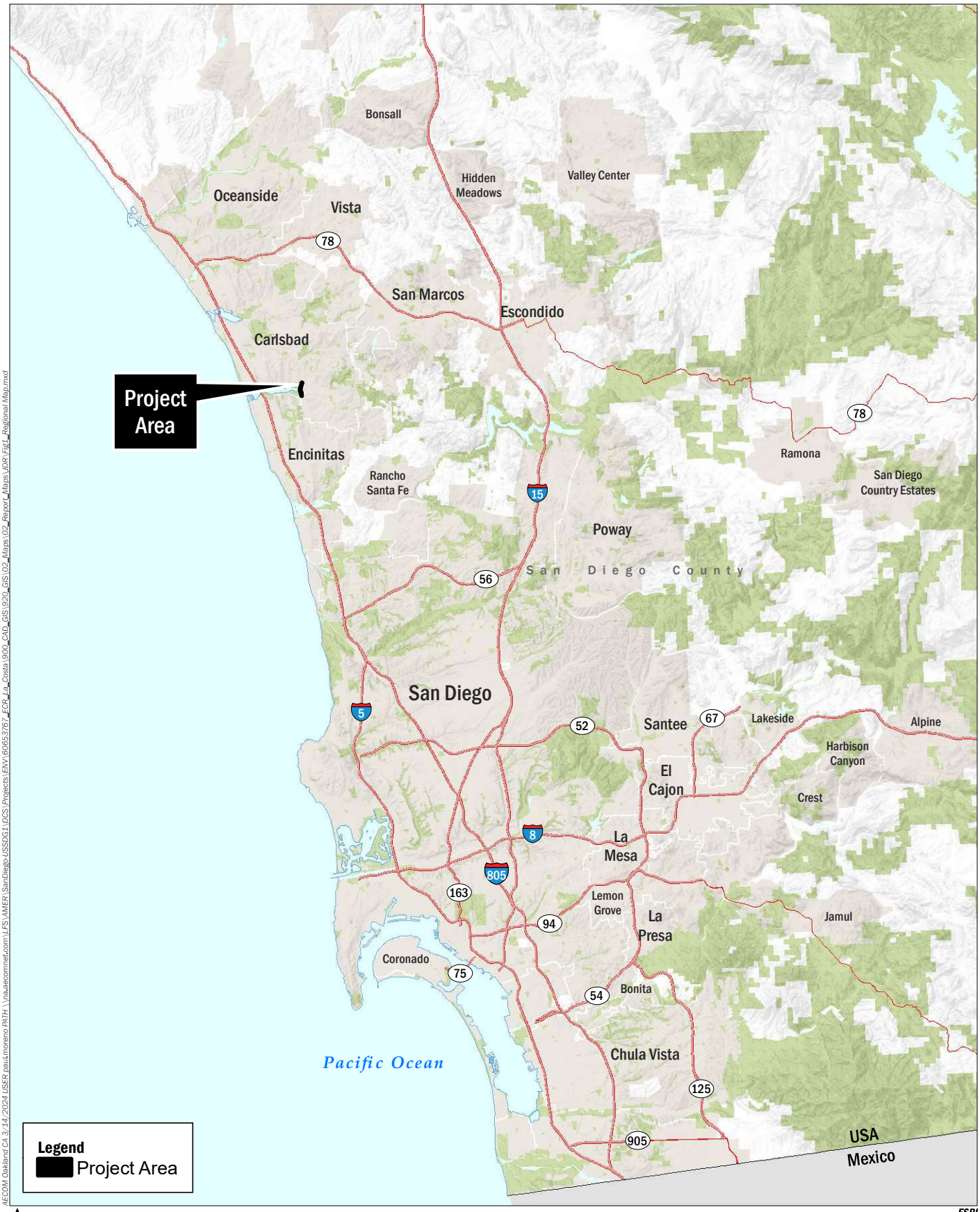
Appendix A

Figures



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AECOM

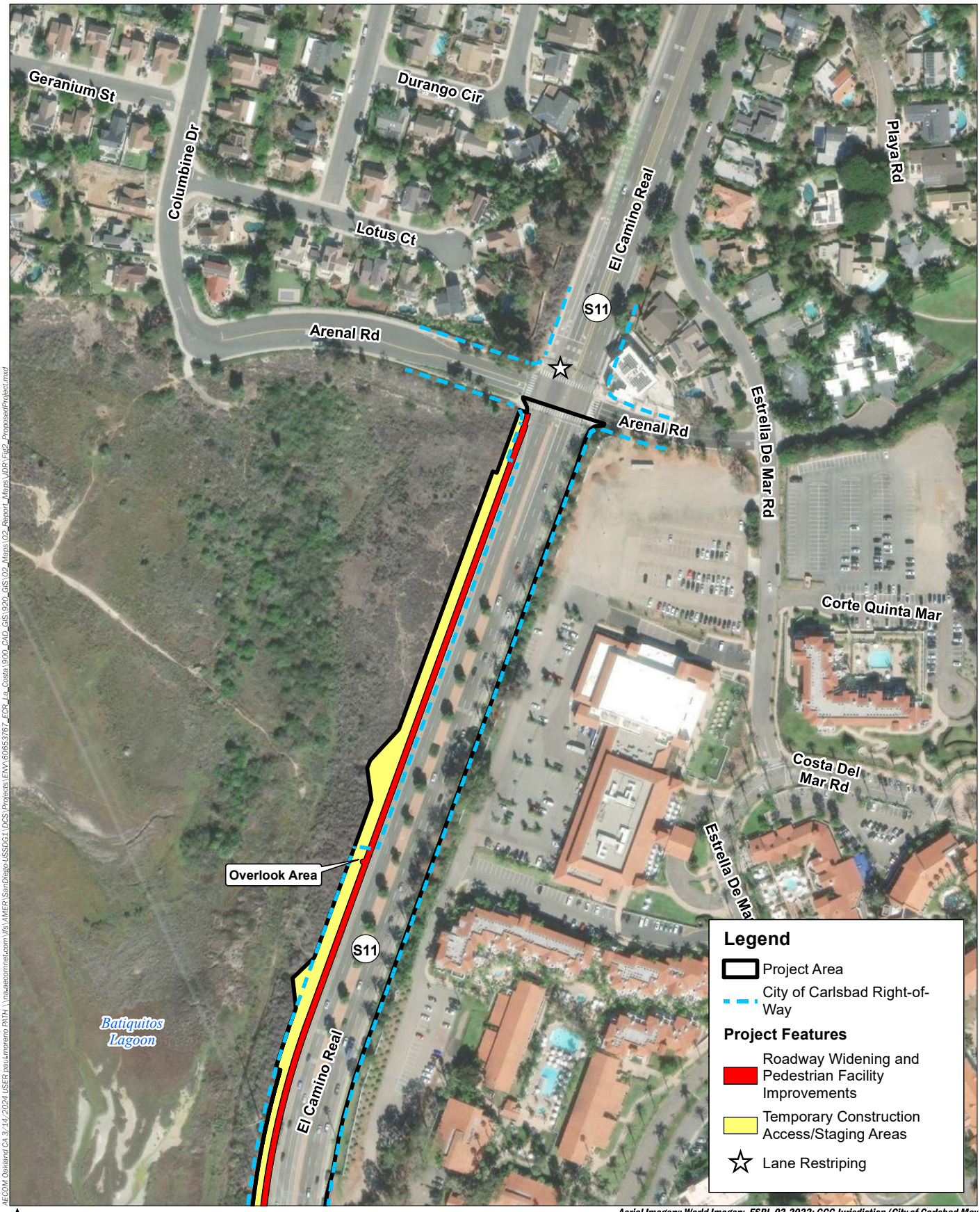
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 1
REGIONAL MAP



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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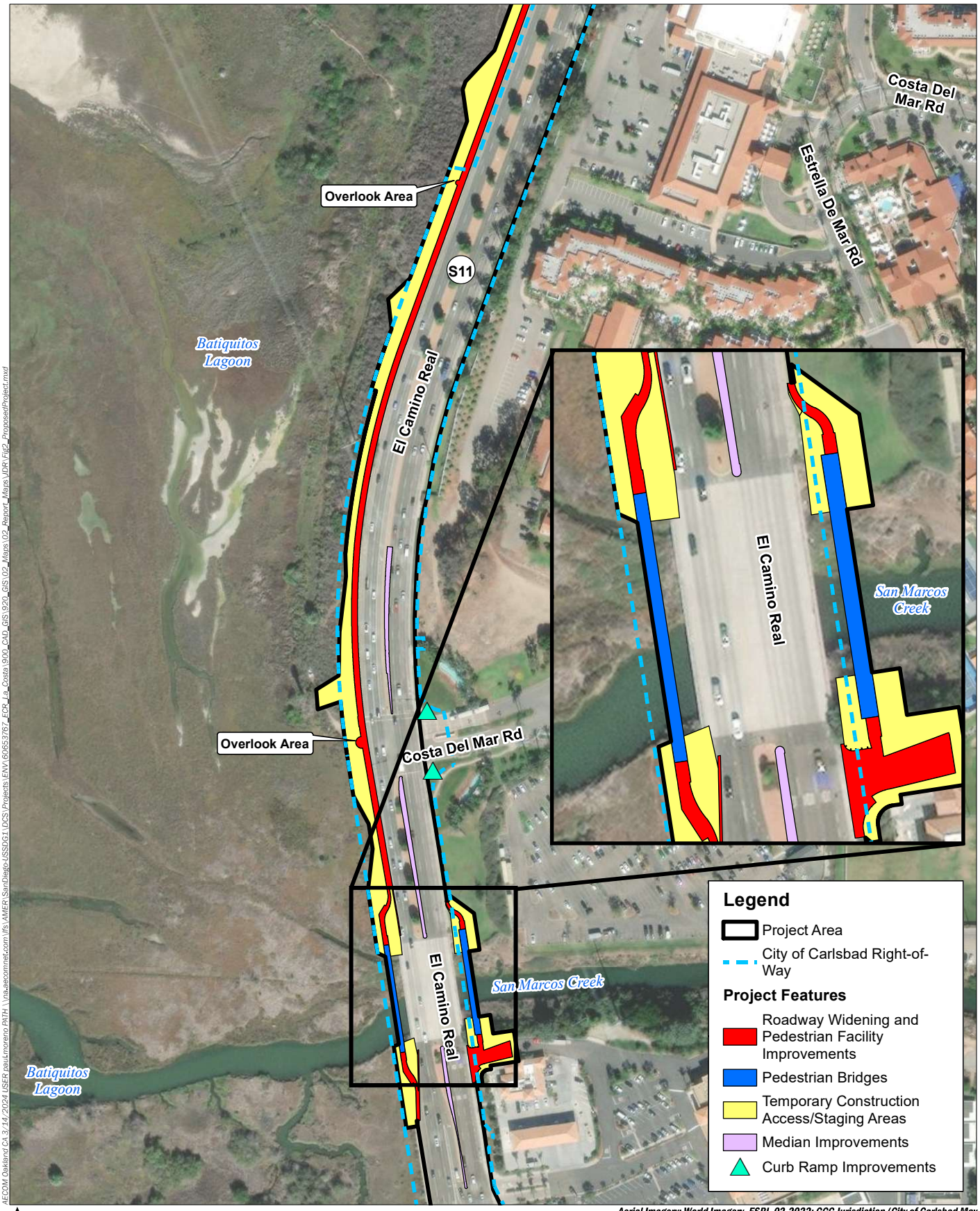
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2A - PROPOSED PROJECT



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Feet

Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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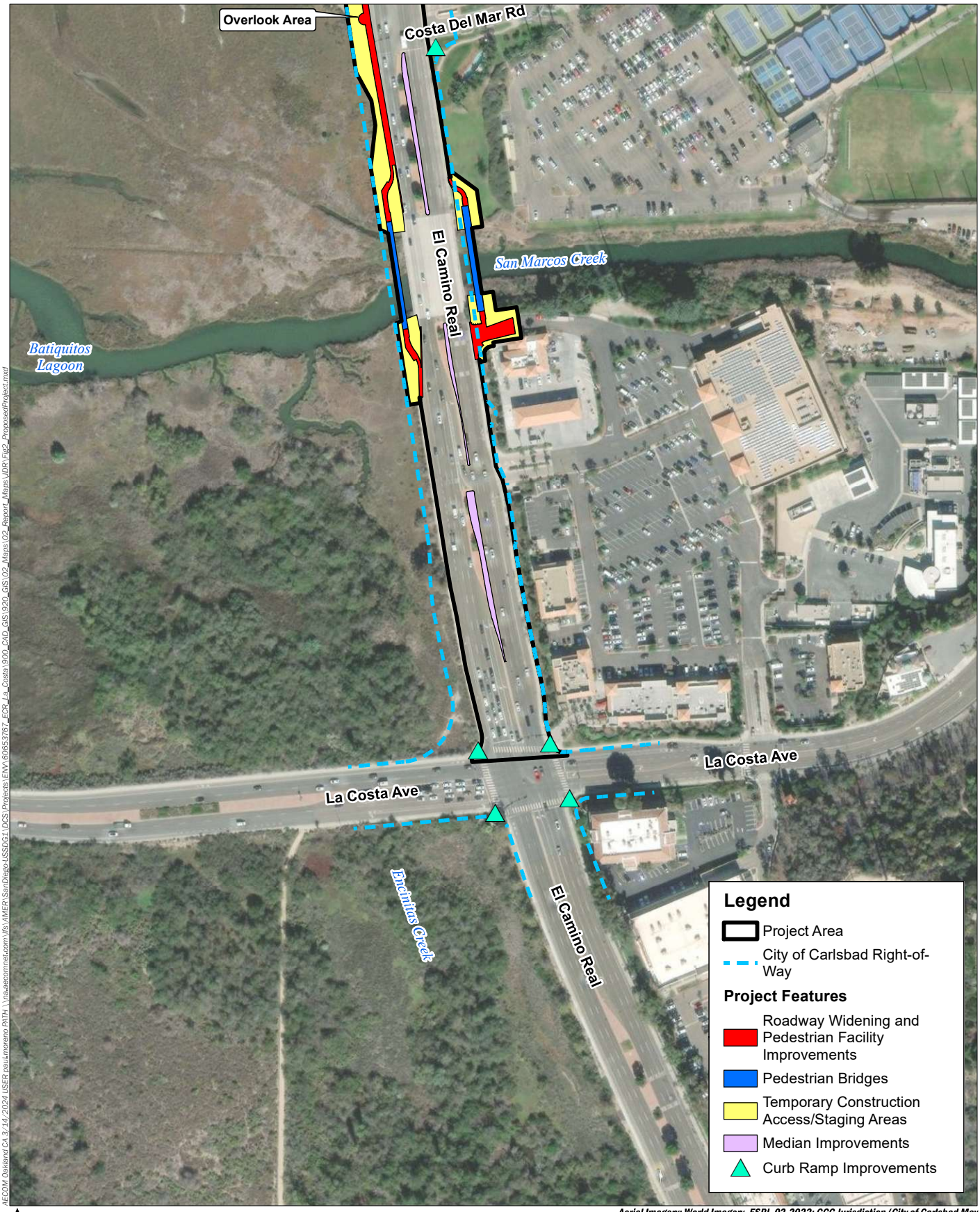
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2B - PROPOSED PROJECT



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Feet

Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2C - PROPOSED PROJECT

AECOM San Diego CA 3/14/2024 USER paul.moreno PATH \\na.aecomnet.com\lfs\AMER\SanDiego-USSDG1\DCS\Projects\ENV\60653767_ECR_La_Costa\900_CAD_GIS\920_GIS\02_Maps\02_Report_Maps\JDR\Fig3_Hydrology.mxd



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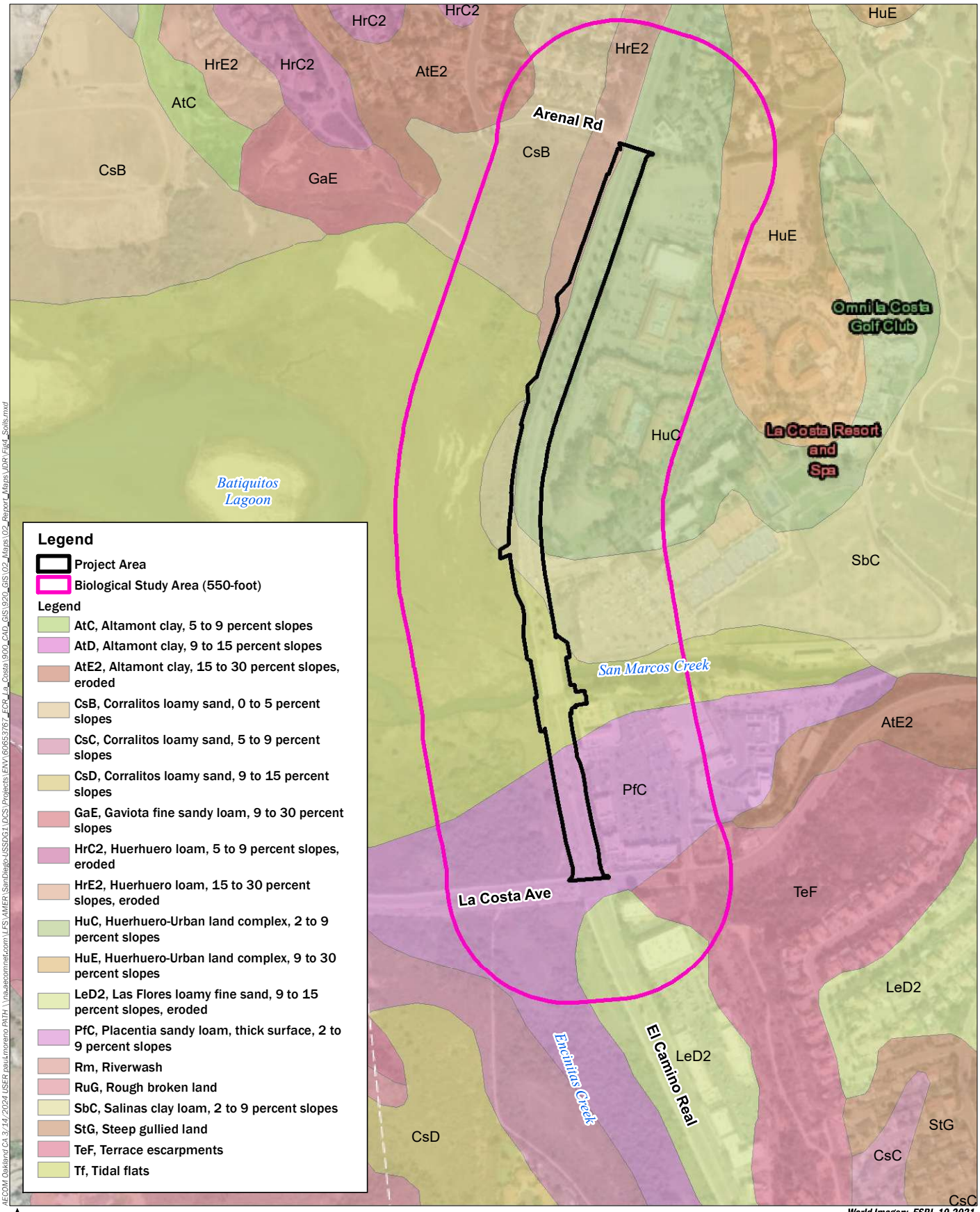
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 3 - HYDROLOGY



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City of Carlsbad

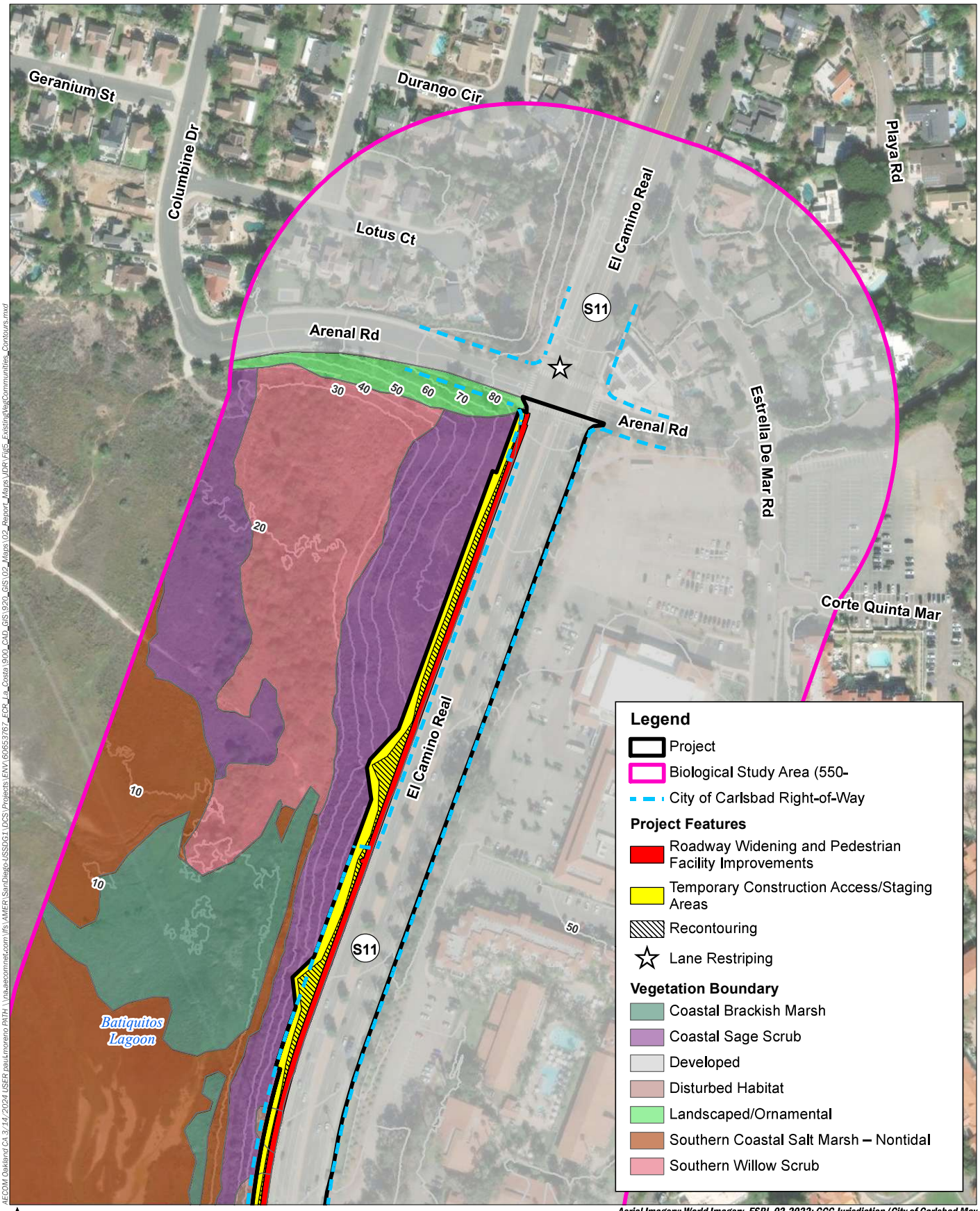
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 4

Soils Map



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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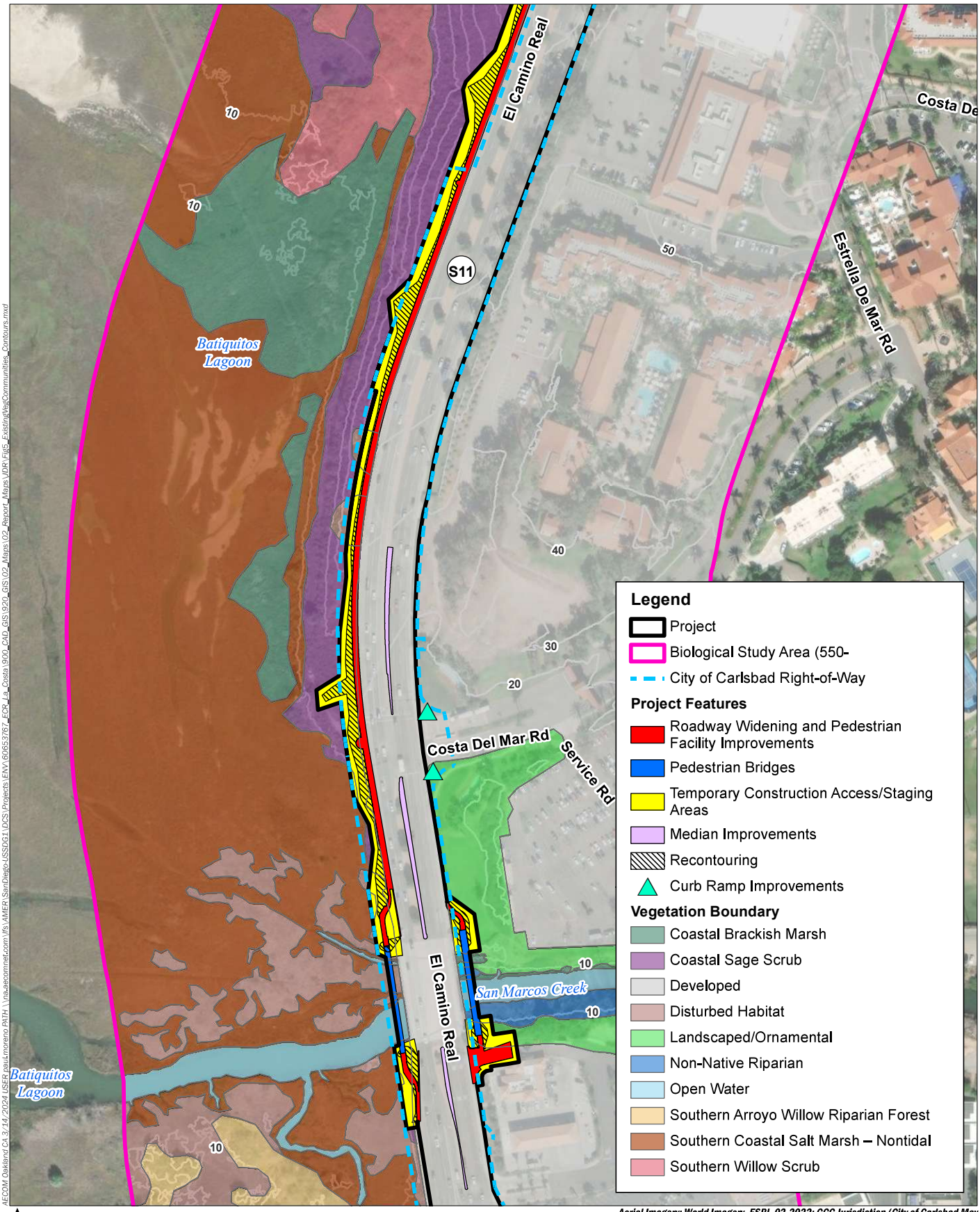
El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 5A - EXISTING VEGETATION COMMUNITIES



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Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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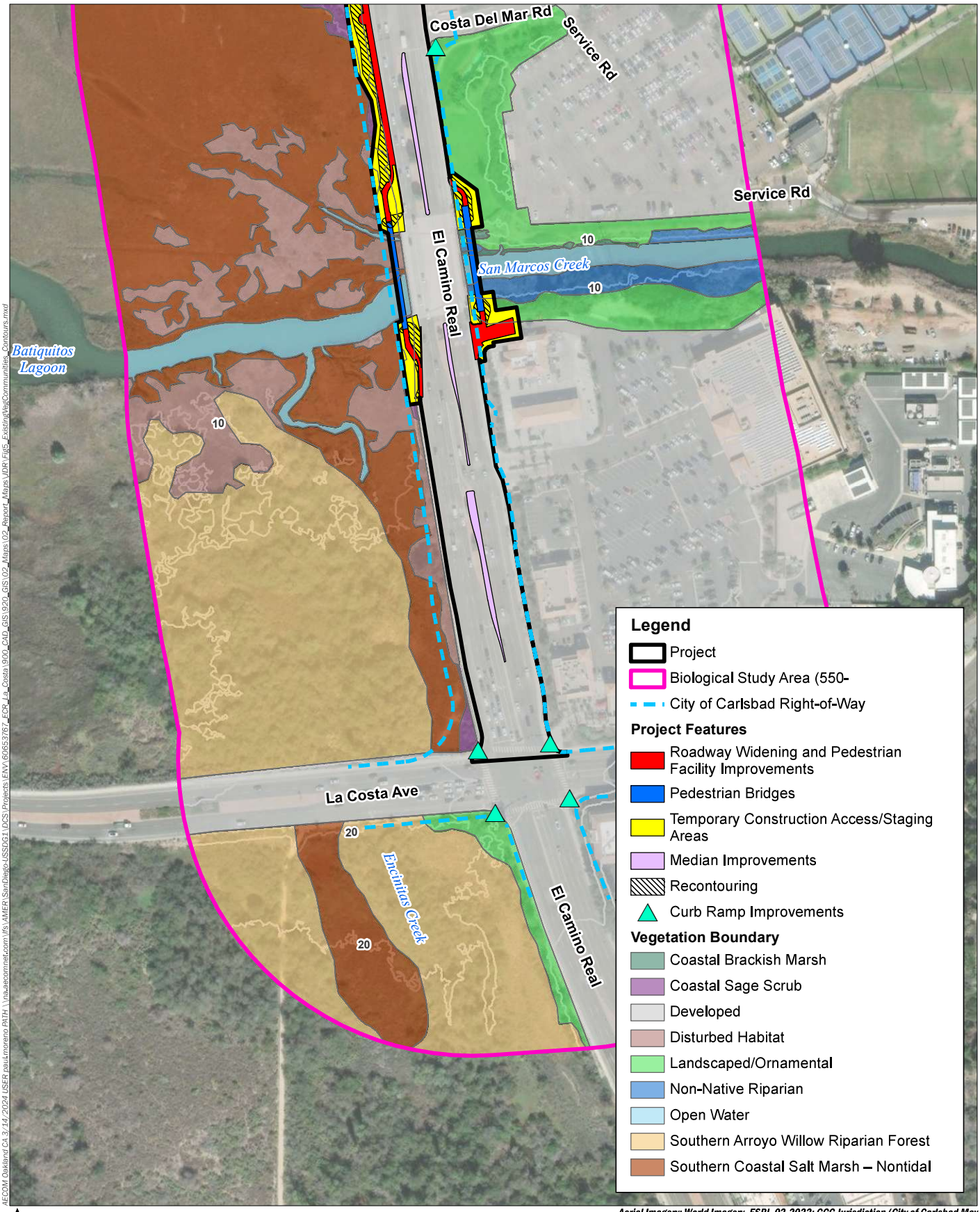
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 5B - EXISTING VEGETATION COMMUNITIES



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Feet

Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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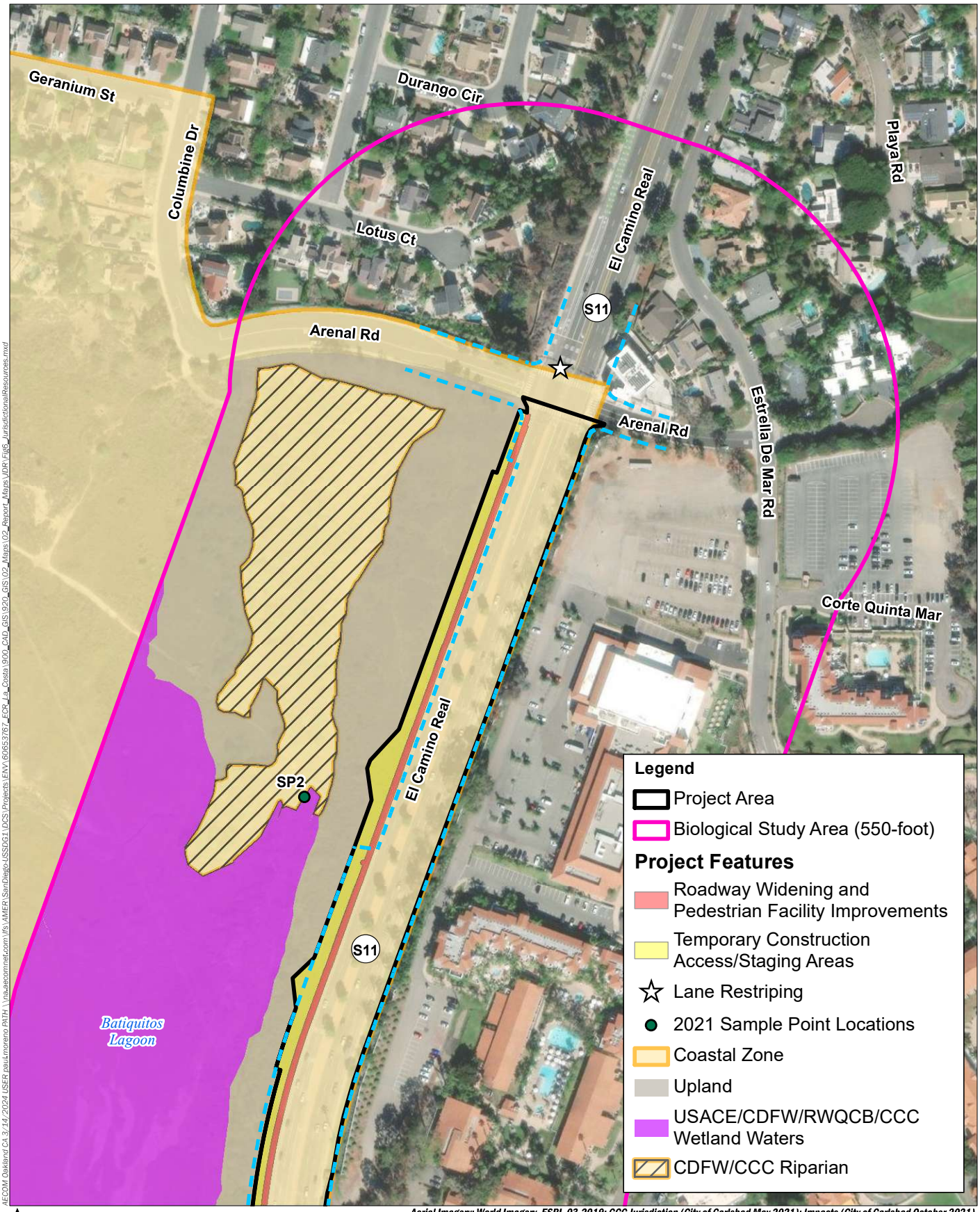
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 5C - EXISTING VEGETATION COMMUNITIES



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Aerial Imagery: World Imagery, ESRI, 03-2019; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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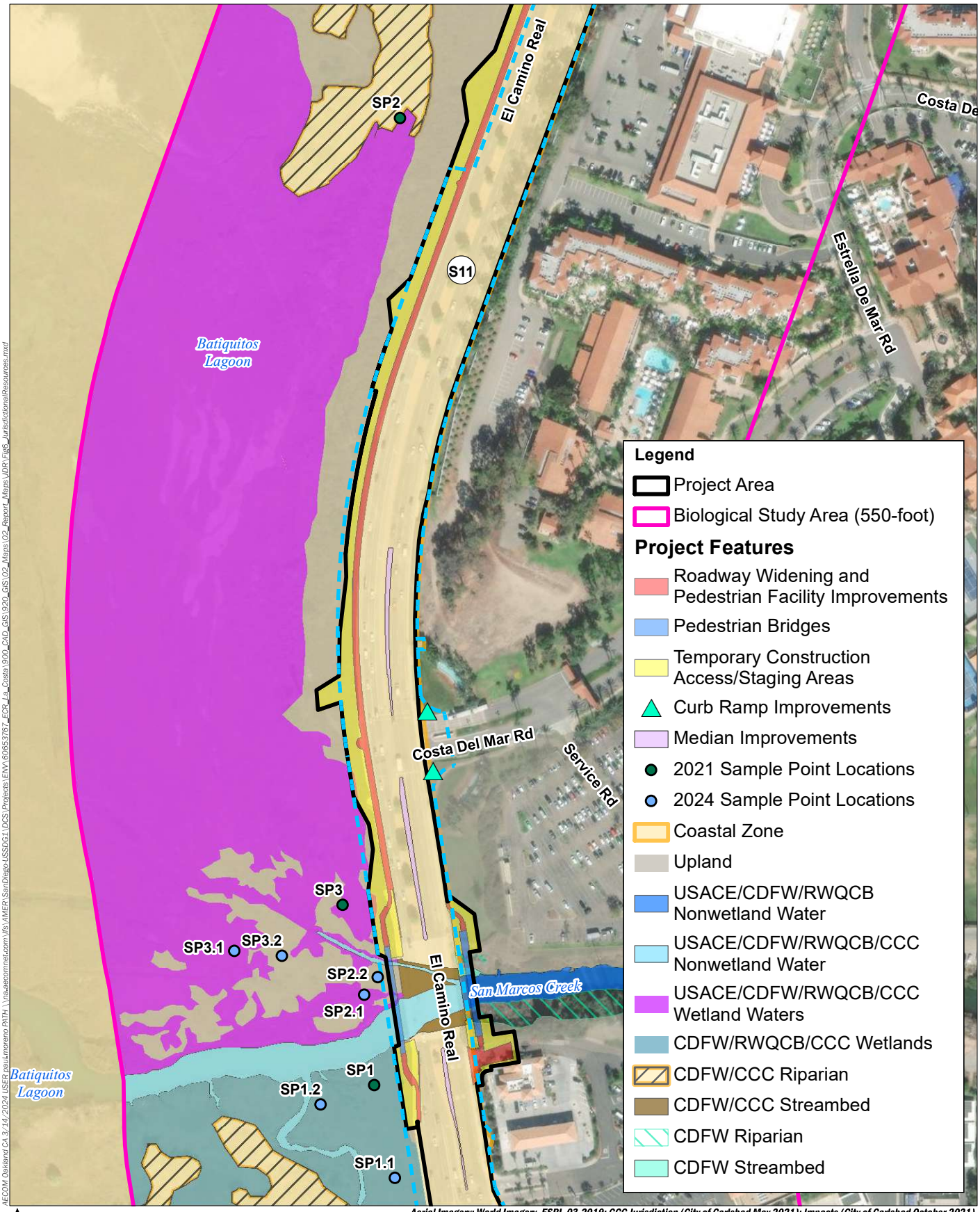
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 6A - JURISDICTIONAL RESOURCES



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Feet

Aerial Imagery: World Imagery, ESRI, 03-2019; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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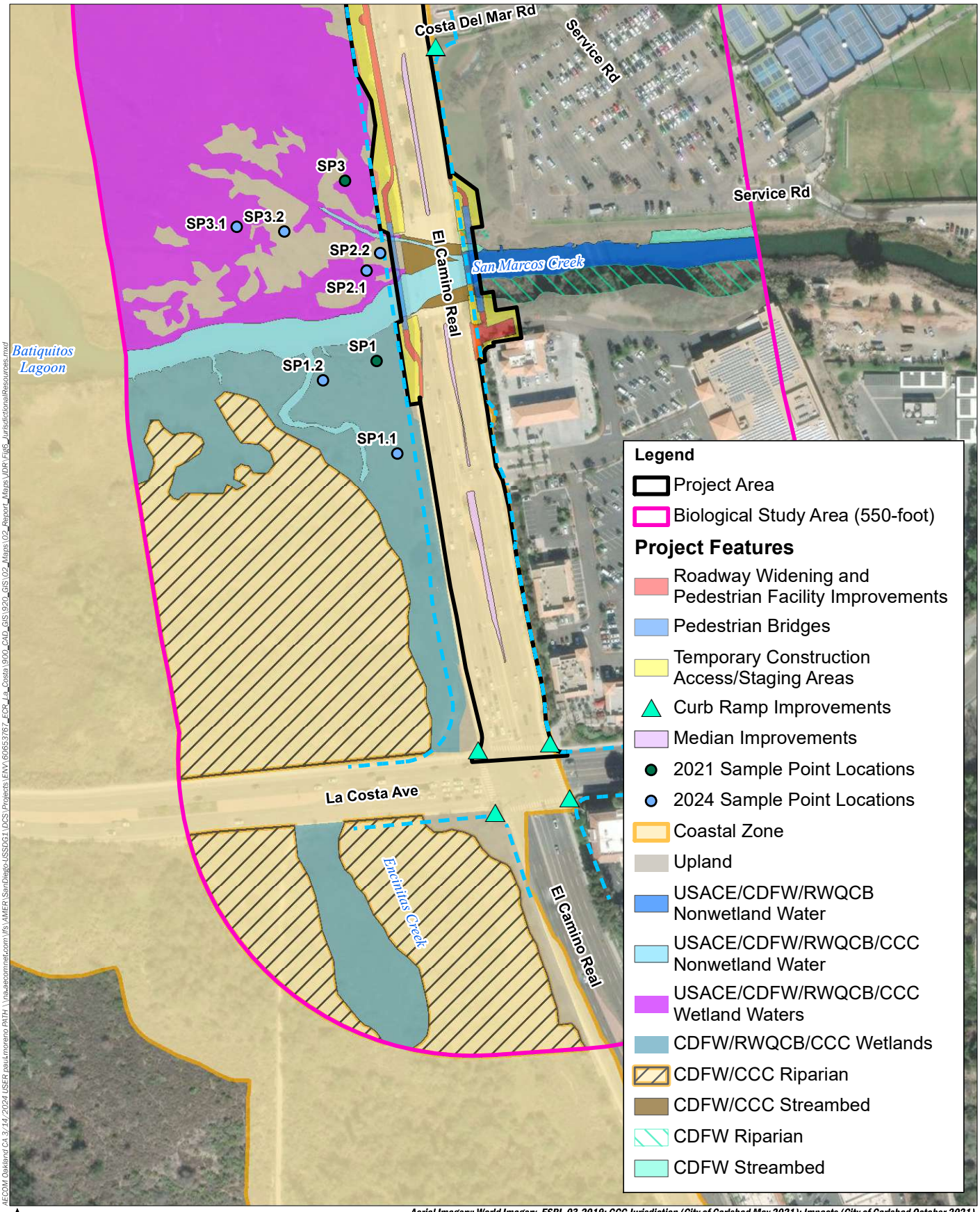
City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 6B - JURISDICTIONAL RESOURCES



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Feet

Aerial Imagery: World Imagery, ESRI, 03-2019; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021).

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City of Carlsbad

El Camino Real Widening

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 6C - JURISDICTIONAL RESOURCES

Appendix B

Datasheets

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: El Camino Real Widening Project | City/County: City of Carlsbad, San Diego | Sampling Date: 2021.04.02

Applicant/Owner: City of Carlsbad | State: CA | Sampling Point: 01

Investigator(s): Alexandra Fowler, Anthony Greco | Section, Township, Range:

Landform (hillslope, terrace, etc.): Tidal flat | Local relief (concave, convex, none): none | Slope (%): 0-2

Subregion (LRR): C - Mediterranean California | Lat: 33.087533° | Long: -117.269461° | Datum: WGS84

Soil Map Unit Name: Tidal flats | NWI classification: PEM1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Foeniculum vulgare*	5	No	Not Listed
2. *Isocoma menziessii*	5	No	FAC
3. *Baccharis pilularis*	5	No	Not Listed
4.			
5.			
Total Cover:	15 %		
Herb Stratum			
1. *Bromus diandrus*	25	Yes	Not Listed
2. *Distichlis spicata*	25	Yes	FAC
3. *Frankenia salina*	25	Yes	FACW
4. *Salicornia pacifica*	10	No	OBL
5. *Juncus acutus*	10	No	FACW
6. *Silybum marianum*	5	No	Not Listed
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	35	x 2 =	70
FAC species	30	x 3 =	90
FACU species		x 4 =	0
UPL species	40	x 5 =	200
Column Totals:	115 (A)		370 (B)

Prevalence Index = B/A = 3.22

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-24"	10YR 3/3	95	5YR 4/6	5	C	M	loam	Loc2: PL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: Sample point 01 is located within previously mapped hydric tidal flat soils (USDA-NRCS 2016).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: El Camino Real Widening Project | City/County: City of Carlsbad, San Diego | Sampling Date: 2021.04.02

Applicant/Owner: City of Carlsbad | State: CA | Sampling Point: 02

Investigator(s): Alexandra Fowler, Anthony Greco | Section, Township, Range:

Landform (hillslope, terrace, etc.): Tidal flat | Local relief (concave, convex, none): none | Slope (%): 0-2

Subregion (LRR): C - Mediterranean California | Lat: 33.092525° | Long: -117.269389° | Datum: WGS84

Soil Map Unit Name: Tidal flats | NWI classification: PEM1/SSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Juncus acutus*	30	Yes	FACW
2. *Artemis californica*	5	No	UPL
3.			
4.			
5.			
Total Cover:	35 %		
Herb Stratum			
1. *Salicornia pacifica*	20	Yes	OBL
2. *Distichlis spicata*	20	Yes	FAC
3. *Frankenia salina*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	50 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	40	x 2 =	80
FAC species	20	x 3 =	60
FACU species		x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	85 (A)		185 (B)

Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	5Y 6/2	100					sandy loam	salt crust, decomposed veg layer
4-16	2.5Y 5/6	60	7.5 YR 5/8	40	RM	M	sandy loam	Type1: C, Loc2: PL
16>	Gley 2.5/10Y	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☒ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Decomposed veg layer

Depth (inches): 2-3

Hydric Soil Present? Yes ◉ No ○

Remarks: Sample point 02 is located within previously mapped hydric tidal flat soils (USDA-NRCS 2016).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☒ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☒ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 16

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: El Camino Real Widening Project | City/County: City of Carlsbad, San Diego | Sampling Date: 2021.04.02

Applicant/Owner: City of Carlsbad | State: CA | Sampling Point: 03

Investigator(s): Alexandra Fowler, Anthony Greco | Section, Township, Range:

Landform (hillslope, terrace, etc.): Tidal flat | Local relief (concave, convex, none): none | Slope (%): 0-2

Subregion (LRR): C - Mediterranean California | Lat: 33.088459° | Long: -117.269665° | Datum: WGS84

Soil Map Unit Name: Tidal flats | NWI classification: PEM1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Isocoma menziessi*	5	Yes	FACW
2.			
3.			
4.			
5.			
Total Cover:	5 %		
Herb Stratum			
1. *Brassica nigra*	40	Yes	Not Listed
2. *Frankenia salina*	20	Yes	FACW
3. *Salicornia pacifica*	20	Yes	OBL
4.			
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	25	x 2 =	50
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	40	x 5 =	200
Column Totals:	85 (A)		270 (B)

Prevalence Index = B/A = 3.18

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-24	2.5YR 6/4	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Sample point 03 is located within previously mapped hydric tidal flat soils (USDA-NRCS 2016).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☒ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

OMB Control No. 0710-XXXX

Approval Expires:

Project ID #: Carlsbad ECR Bridge	Site Name: San Marcos Creek	Date and Time: 2/22/2024, 2:15 pm
Location (lat/long): 33.087951, 33.087951	Investigator(s): Aaron Andrews, Natasha Foti	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- ☐ gage data
- ☐ LiDAR
- ☒ geologic maps
- ☐ climatic data
- ☐ satellite imagery
- ☒ land use maps
- ☒ aerial photos
- ☒ topographic maps
- ☐ Other: _____

Describe land use and flow conditions from online resources.

Were there any recent extreme events (floods or drought)?

Shopping center/urban area to the south, El Camino Real Road to the east. No recent extreme flood events.

Step 2 Site conditions during field assessment

First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Perennial stream flows east to west and empties into Batiquitos Lagoon, which flows into the Pacific Ocean. Both tidal and riparian influence, but feature is outside the high tide line and therefore non in nature. The channel is unvegetated but surrounding vegetation consists of disturbed ice plant to the north, and disturbed riparian to the south.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

OHWM. Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- ☒ **Break in slope:** b
  - ☒ *on the bank:* b
  - ☐ *undercut bank:*
  - ☐ *valley bottom:*
  - ☐ Other: _____
- ☐ **Shelving:**
  - ☐ *shelf at top of bank:*
  - ☐ *natural levee:*
  - ☐ *man-made berms or levees:*
  - ☐ *other berms:* _____
- ☐ **Channel bar:**
  - ☐ *shelving (berms) on bar:*
  - ☐ *unvegetated:*
  - ☐ *vegetation transition (go to veg. indicators)*
  - ☐ *sediment transition (go to sed. indicators)*
  - ☐ *upper limit of deposition on bar:*
- ☐ **Instream bedforms and other bedload transport evidence:**
  - ☐ *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - ☐ *bedforms (e.g., poofs, riffles, steps, etc.):*
  - ☐ *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- ☐ **Secondary channels:**

Sediment indicators

- ☐ **Soil development:**
- ☐ **Changes in character of soil:**
- ☐ **Mudcracks:**
- ☐ **Changes in particle-sized distribution:**
  - ☐ *transition from* _____ to _____
  - ☐ *upper limit of sand-sized particles*
  - ☐ *silt deposits:*

Vegetation Indicators

- ☒ **Change in vegetation type and/or density:** x

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - ☐ *vegetation absent to:*
  - ☐ *moss to:*
  - ☒ *forbs to:* graminoids
  - ☐ *graminoids to:*
  - ☐ *woody shrubs to:*
  - ☐ *deciduous trees to:*
  - ☐ *coniferous trees to:*
- ☐ **Vegetation matted down and/or bent:**
- ☐ **Exposed roots below intact soil layer:**

Ancillary indicators

- ☐ **Wracking/presence of organic litter:**
- ☐ **Presence of large wood:**
- ☐ **Leaf litter disturbed or washed away:**
- ☐ **Water staining:**
- ☐ **Weathered clasts or bedrock:**

Other observed indicators?

Describe:

Step 4 Is additional information needed to support this determination?

☐ Yes ☒ No

If yes, describe and attach information to datasheet:

Project ID #: Carlsbad ECR Bridge

Step 5 Describe rationale for location of OHWM

OHWM location based on break in slope/incised banks and change in vegetation from Juncus acutus and aquatic grasses to non-native upland grasses.

Additional observations or notes

60' wide OHWM and Streambed.

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carlsbad ECR Bridge | City/County: Carlsbad/San Diego | Sampling Date: 2/19/2024
Applicant/Owner: City of Carlsbad | State: CA | Sampling Point: 1.1
Investigator(s): Natasha Foti, Aaron Andrews | Section, Township, Range:
Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRR): LRR C | Lat: 33.087056 | Long: -117.269328 | Datum:
Soil Map Unit Name: TF - Tidal Flats | NWI classification: PEM1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 10' radius)			
1. *Isocoma menziesii*	2	No	
2. *Baccharis pilularis*	1	No	UPL
3.			
4.			
5.			
	3	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Distichlis spicata*	80	Yes	FAC
2. *Frankenia salina*	10	No	FACW
3. *Juncus acutus*	1	No	FACW
4. *Raphanus sativus*	1	No	UPL
5. *Hirschfeldia incana*	1	No	UPL
6. *Lactuca serriola*	1	No	FACU
7.			
8.			
	94	=Total Cover	
Woody Vine Stratum (Plot size: n/a)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 6 | % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 1.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	98	7.5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations
8-20	10YR 4/2	85	7.5YR 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) **(LRR C)**
___ 1 cm Muck (A9) **(LRR D)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR C)**
___ 2 cm Muck (A10) **(LRR B)**
___ Iron-Manganese Masses (F12) **(LRR D)**
___ Reduced Vertic (F18)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) **(Nonriverine)**
___ Sediment Deposits (B2) **(Nonriverine)**
___ Drift Deposits (B3) **(Nonriverine)**
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Water Marks (B1) **(Riverine)**
___ Sediment Deposits (B2) **(Riverine)**
___ Drift Deposits (B3) **(Riverine)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology indicators observed.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carlsbad ECR Bridge City/County: Carlsbad/San Diego Sampling Date: 2/19/2024
Applicant/Owner: City of Carlsbad State: CA Sampling Point: 1.2
Investigator(s): Natasha Foti, Aaron Andrews Section, Township, Range:
Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): LRR C Lat: 33.087431 Long: -117.269786 Datum:
Soil Map Unit Name: Tf - Tidal Flats NWI classification: PEM1R
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: n/a)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. *Bromus sp.*	60	Yes	UPL
2. *Frankenia salina*	20	Yes	FACW
3. *Hirschfelia incana*	5	No	UPL
4. *Brassica nigra*	5	No	UPL
5. *Geranium californicum*	2	No	FAC
6.			
7.			
8.			
	92 =Total Cover		
Woody Vine Stratum (Plot size: n/a)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 8 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	70	x 5 =	350
Column Totals:	92 (A)		396 (B)

Prevalence Index = B/A = 4.30

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

SOIL

Sampling Point: 1.2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	100					Loamy/Clayey	No redox observed.
10-20	10YR 4/2	80	5YR 4/3	20	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology indicators observed.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carlsbad ECR Bridge City/County: Carlsbad/San Diego Sampling Date: 2/19/2024

Applicant/Owner: City of Carlsbad State: CA Sampling Point: 2.1

Investigator(s): Natasha Foti, Aaron Andrews Section, Township, Range:

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRR C Lat: 33.087997 Long: -117.269528 Datum:

Soil Map Unit Name: Tf - Tidal flats NWI classification: PEM1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: n/a)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. *Salicornia pacifica*	60	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	60 =Total Cover		
Woody Vine Stratum (Plot size: n/a)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 2.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 5/1	85	5YR 4/4	15	C	M	Loamy/Clayey	Prominent redox concentrations
12-20	2.5Y 5/1	93	5YR 4/4	7	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes X	No ___	Depth (inches): 4		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carlsbad ECR Bridge | City/County: Carlsbad/San Diego | Sampling Date: 2/19/2024
Applicant/Owner: City of Carlsbad | State: CA | Sampling Point: 2.2
Investigator(s): Natasha Foti, Aaron Andrews | Section, Township, Range:
Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): convex | Slope (%): 0-2
Subregion (LRR): LRR C | Lat: 33.088089 | Long: -117.269447 | Datum:
Soil Map Unit Name: Tf - Tidal flats | NWI classification: PEM1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation significantly disturbed due to dominance of non-native/invasive ice plant. Upland of 2.1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: n/a)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. *Carpobrotus chilensis*	98	Yes	FACU
2. *Frankenia salina*	2	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: n/a)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 | % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 2.2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/3	38	7.5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

No hydric soil indicators observed. Additional soil color: 10YR 2/1, 60%. No redox observed within this color.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carlsbad ECR Bridge | City/County: Carlsbad/San Diego | Sampling Date: 2/19/2024
Applicant/Owner: City of Carlsbad | State: CA | Sampling Point: 3.1
Investigator(s): Natasha Foti, Aaron Andrews | Section, Township, Range:
Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRR): LRR C | Lat: 33.088217 | Long: -117.270325 | Datum:
Soil Map Unit Name: Tf - Tidal flats | NWI classification: PEM1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: n/a)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. *Frankenia salina*	60	Yes	FACW
2. *Distichlis spicata*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: n/a)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10 | % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 3.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					Loamy/Clayey	No redox observed.
6-20	2.5Y 5/2	88	7.5YR 5/4	12	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carlsbad ECR Bridge | City/County: Carlsbad/San Diego | Sampling Date: 2/19/2024
Applicant/Owner: City of Carlsbad | State: CA | Sampling Point: 3.2
Investigator(s): Natasha Foti, Aaron Andrews | Section, Township, Range:
Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRR): LRR C | Lat: 33.088194 | Long: -117.270033 | Datum:
Soil Map Unit Name: Tf - Tidal flats | NWI classification: PEM1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation significantly disturbed due to dominance of non-native species. Upland of 3.1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: n/a)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. *Raphanus sativus*	30	Yes	UPL
2. *Hirschfeldia incana*	30	Yes	UPL
3. *Brassica nigra*	30	Yes	UPL
4.			
5.			
6.			
7.			
8.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: n/a)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10 | % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	90	x 5 =	450
Column Totals:	90 (A)		450 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 3.2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/3	99	7.5YR 4/4	1	C	M	Loamy/Clayey	Faint redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) **(LRR C)**
___ 1 cm Muck (A9) **(LRR D)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR C)**
___ 2 cm Muck (A10) **(LRR B)**
___ Iron-Manganese Masses (F12) **(LRR D)**
___ Reduced Vertic (F18)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
No hydric soil indicators met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) **(Nonriverine)**
___ Sediment Deposits (B2) **(Nonriverine)**
___ Drift Deposits (B3) **(Nonriverine)**
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Water Marks (B1) **(Riverine)**
___ Sediment Deposits (B2) **(Riverine)**
___ Drift Deposits (B3) **(Riverine)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology indicators observed.

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APPENDIX B

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR

APPENDIX B

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR WITH POTENTIAL TO OCCUR WITHIN THE VICINITY OF THE BIOLOGICAL SURVEY AREA

Table B-1
Special-Status Plant Species with Potential to Occur within the BSA

Species Common Name	Species Scientific Name	Listing Status[1]	Habitat Description	Flowering Period	Findings	Potential to Occur within the Project Site
Spineshrub	*Adolphia californica*	CRPR: 2B.1	Clay soils in coastal sage scrub, chaparral, and valley and foothill grassland.	Deciduous shrub, blooms December-May	Low Potential	Known occurrence within 1,000 feet of the BSA, however suitable habitat and soils within the BSA are limited.
Wart-stemmed ceanothus	*Ceanothus verrucosus*	CRPR: 2B.2 HMP covered	Maritime chaparral and southern mixed chaparral on sandy soils and metavolcanic rock.	Evergreen shrub, blooms December-May	Low Potential	Known historical occurrence within the southeast corner of the BSA, however suitable habitat and soils are limited.
Del Mar Mesa sand-aster	*Corethrogyne filaginifolia* var. *linifolia*	CRPR: 1B.1 HMP covered	Chaparral and coastal sage scrub and open areas with sandy soils in central coastal San Diego County.	Perennial herb, blooms May-September	Moderate Potential	Known occurrences less than 1000 feet from the Project area.
Coulter's goldfields	*Lasthenia glabrata ssp. coulteri*	CRPR: 1B.2	Coastal salt marsh, freshwater wetlands, alkali sink, and wetland-riparian.	Annual herb, blooms February-June	High Potential	Historical collections of Coulter's goldfields have been made in the BSA's vicinity, and CNDDB shows a range throughout the BSA. Although much of the BSA east of El Camino Real The majority of habitat on the west side of El Camino Real is suitable for this species.
Sea dahlia	*Leptosyne (Coreopsis) maritima*	CRPR: 2B.2	Coastal bluffs and slopes in woodlands, chaparral, coastal sage scrub, and a few more interior locations with coastal-facing canyons and ridges.	Perennial herb, blooms March-May	Low Potential	Known occurrence within 1 mile of the Project area on the south side of Batiquitos Lagoon, however suitable habitat within the BSA is limited
Estuary seablite	*Suaeda esteroa*	1B.2	Coastal salt marsh and wetland-riparian.	Perennial herb, blooms May-October	High Potential	One known occurrence (un-dated) located within the BSA. Suitable habitat is widespread.
Del Mar manzanita	*Arctostaphylos glandulosa ssp. crassifolia*	FE, 1B.1 HMP Covered	Rocky outcrops, slopes and ridges	Evergreen shrub, blooms December-May	Low Potential	Known occurrences occur outside of the BSA within the 1-mile CNDDB search area. Suitable habitat is not present, therefore low potential to occur.
Encinitas baccharis	*Baccharis vanessae*	FT, SE, 1B.1 HMP Covered	Occurs in several chaparral habitat types below 3,000 feet in maritime climates	Perennial herb, blooms April-November	Low Potential	Known occurrences occur outside of the BSA approximately 0.9 mile from the project area. Suitable habitat is not present, therefore low potential to occur.
Thread-leaved brodiaea	*Brodiaea filifolia*	1B.1 HMP Covered	Typically grows in herbaceous plant communities such as grassland communities, alkali playa, and in vernal pools	Perennial herb, blooms March-June	Low Potential	Known occurrences occur outside of the BSA within in the Rancho La Costa Reserve. Suitable habitat is not present, therefore low potential to occur.
Summer holly	*Comarostaphylis diversifolia ssp. diversifolia*	FT, SE, 1B.2 HMP Covered	Coastal chaparral habitat, usually on well drained slopes	Shrub, blooms April-June	Low Potential	Known occurrences occur outside of the BSA within the 1-mile CNDDB search area. Suitable habitat is not present, therefore low potential to occur.
Palmer's grapplinghook	*Harpagonella palmeri*	4.2	Coastal Sage Scrub, Chaparral, Valley Grassland	Annual herb, blooms March-May	Low Potential	Known occurrences occur outside of the BSA within the 1-mile CNDDB search area. Suitable habitat is not present, therefore low potential to occur.
Nuttall's scrub oak	*Quercus dumosa*	1B.1 HMP Covered	Coastal Sage Scrub, Chaparral	Evergreen shrub, blooms February-March	Low Potential	Known occurrences occur outside of the BSA within the 1-mile CNDDB search area. Suitable habitat is not present, therefore low potential to occur.

[1] Note: Listing statuses are as follows: USFWS: Federal listing status
FE: Federally listed as endangered
FT: Federally listed as threatened
SE: State listed as endangered

HMP Covered: Species protected under the City HMP

California Rare Plant Rank (CRPR)
1A: Plants presumed extirpated in California and either rare or extinct elsewhere
1B: Plants rare, threatened, or endangered in California and elsewhere
2A: Plants presumed extirpated in California but common elsewhere
2B: Plants rare, threatened, or endangered in California but more common elsewhere
3: Review List: Plants about which more information is needed
4: Watch List: Plants of limited distribution

Threat Ranks
0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Table B-2
Special-Status Wildlife Species with Potential to Occur within the BSA

Species Common Name	Species Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings	Potential to Occur/Comments [2]
Reptiles and Amphibians					
Orange throated whiptail	*Aspidocelis hyperythra*	CDFW: WL HMP: Covered	A variety of habitats including coastal sage scrub, chaparral, and coniferous and broadleaf forests (Stebbins, 2006). Found on sandy or friable soils within open habitat areas. Requires open areas, bushes, and fine loose soil.	Moderate Potential	Known occurrence from 1989 within approximately 2,500 feet of the Project area.
Birds					
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	CDFW: WL HMP: covered	Inhabits and breeds in coastal sage scrub habitat, xeric chaparral, and recently burned chaparral. Resident species.	Not expected	There is no suitable habitat in the Project area.
Western snowy plover	*Charadrius alexandrinus nivosus*	USFWS: FT CDFW: SSC HMP: covered	Beaches, dry mud or salt flats, sandy shores of rivers, lakes, and ponds.	Moderate Potential	Suitable habitat occurs within Batiquitos Lagoon (mudflats), and the species is known to nest in Batiquitos Lagoon.
White-tailed kite	*Elanus leucurus*	CDFW: FP (nesting and wintering)	Inhabits grasslands, open woodlands, riparian woodlands, marshes, and cultivated fields. Nests in riparian woodland, oaks, and sycamores, and forages in open grassy areas as a year-round resident.	Present	Detected west of El Camino Real.
Yellow-breasted chat	*Icteria virens*	CDFW: SSC HMP: Covered	Breeds in second growth, shrubby old pastures, thickets, bushy areas, scrub, woodland undergrowth, and fence rows including low wet places near streams, pond edges, or swamps; thickets with few tall trees; early successional stages of forest regeneration. Commonly found in sites close to human habitation.	Present	Detected in upland habitat near the northern end of the Project area.
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	CDFW: SE HMP: Covered	Salt marshes.	Present	Detected. Present in suitable habitat within the Project survey area.
Coastal California gnatcatcher	*Polioptila californica californica*	USFWS: FT CDFW: SSC HMP: covered	Diegan coastal sage scrub dominated by California sagebrush (Artemisia californica) and flat-topped buckwheat (*Eriogonum fasciculatum*). Generally avoids steep slopes above 25 percent and dense, tall vegetation for nesting. Resident in area.	Present	Detected. One adult male was observed in the same general area of suitable CAGN habitat in the northwestern portion of the Project area. It is possible a CAGN pair/family group utilized the project survey area; however, the majority of their territory and nest could have been located outside of the project survey area.
Light-footed Ridgway's Rail	*Rallus obsoletus levipes*	USFWS: FE CDFW: SE, FP HMP: Covered	Pickleweed (*Salicornia*) and cordgrass (*Spartina foliosa*) marshes.	Present	One LFRR pair was detected within the project survey area and appeared to associate with a territory; individuals detected within the project survey area were thought to be associated with this pair.
Black Skimmer	*Rynchops niger*	CDFW: SSC	Coastal waters, including bays, estuaries, lagoons and mudflats in migration and winter. Also found in quiet waters of rivers and lakes	Present	Detected west of El Camino Real.
Yellow warbler	*Setophaga petechia brewsteri*	CDFW: SSC	Open scrub, second-growth woodland, thickets, farmlands, and gardens, especially near water; riparian woodlands, especially of willows	Present	Detected in upland habitat near the northern end of the Project area.
California least tern	*Sternula antillarum browni*	USFWS: FE CDFW: SE, FP HMP: Covered	Seacoasts, beaches, bays, estuaries, lagoons, lakes, and rivers.	Present	Detected. Known occurrences within Batiquitos Lagoon.
Least Bell's vireo	*Vireo bellii pusillus*	USFWS: FE CDFW: SE HMP: Covered	Dense brush, mesquite, willow-cottonwood forest, streamside thickets, and scrub oak, in arid regions but often near water.	Low Potential	Suitable habitat occurs in the southwest corner of the Project area, and there is one known occurrence within 1 mile of the Project area.
Mammals					
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	CDFW: SSC	Coastal sage scrub, sage scrub/grassland ecotones and chaparral communities	Moderate Potential	Suitable habitat may occur within the upland portions of the Project area.
Yuma myotis	*Myotis yumanensis*	WBWG: L	Found in a wide variety of upland and lowland habitats, including riparian, desert scrub, moist woodlands, and forests, usually near open water. Warm-season roosts are in caves, cliff crevices, bridges, buildings, tunnels, and cavities and nooks in large live trees near water. Winter roosts include some of these same situations but in general are poorly known. Large nursery colonies may form in buildings, caves, and mine tunnels, and under bridges.	Present	Detected. Observed roosting in nearly all of the 15 bridge seams on both sides of San Marcos Creek.

Species Common Name	Species Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings	Potential to Occur/Comments [2]
Mexican free-tailed bat	*Tadarida brasiliensis*	WBWG: L	Found in a wide variety of upland and lowland habitats, including riparian, desert scrub, moist woodlands, and forests, usually near open water. Warm-season roosts are in caves, cliff crevices, bridges, buildings, tunnels, and cavities and nooks in large live trees near water. Winter roosts include some of these same situations but in general are poorly known. Large nursery colonies may form in buildings, caves, and mine tunnels, and under bridges.	Present	Detected. Observed roosting in all of the 4 bridge sections on both sides of San Marcos Creek.

Note: Listing statuses are as follows:
USFWS: Federal listing status
FE: Federally listed as endangered
FT: Federally listed as threatened
CDFW: State listing status
SE: State listed as endangered
CT: State listed as candidate threatened
FP: Fully Protected
SSC: Species of Special Concern
WL: On the State Watchlist
HMP Covered: Species protected under the City's HMP
WBWG: Western Bat Working Group status
LM: Low Priority rank
Sensitivity Status was taken from State of California Special Animals List (State of California 2024).
Within the sensitivity status column, parentheses around nesting, wintering, staging, nesting colony, and burrow sites indicate that the particular sensitivity status applies to the species when the species is nesting, wintering, staging, or in a nesting colony, or its burrow sites.

APPENDIX C

BELDING'S SAVANNAH SPARROW SURVEY REPORT

AECOM
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September 13, 2021

Mr. Brandon Miles
City of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92008

Dear Mr. Miles:

RE: 2021 Belding's Savannah Sparrow Summary Report for the El Camino Real Roadway Widening Project (Arenal Road to La Costa Avenue), San Diego County, California

Introduction and Setting

This letter report summarizes the results of surveys for Belding's savannah sparrow (*Passerculus sandwichensis beldingi;* BSSP), state-listed endangered, in support of the El Camino Real Widening Project, San Diego County, California (Figure 1).

Project Description

The project involves street and bridge widening improvements along El Camino Real, between Arenal Road and La Costa Avenue. Proposed improvements to El Camino Real include widening of the existing roadway for addition of a third southbound lane and buffered bike lane, and separated pedestrian walkways on the western and eastern sides of the existing bridge that spans over San Marcos Creek. Surveys will be conducted within potentially suitable habitat within the project limits plus a surrounding 500-foot buffer (Figure 2).

Site Description

The project is located within the City of Carlsbad and east of Interstate 5 along El Camino Real between Arenal Road and La Costa Avenue. The project survey area included potentially suitable habitat within the existing roadway plus a surrounding 500-foot buffer (Figure 2). The project survey area is composed of disturbed and developed areas along with wetland, riparian, and upland vegetation communities.

Background Information

BSSP is a nonmigratory subspecies of the savannah sparrow endemic to the coastal salt marshes of southern California and northern Baja California (American Ornithologists' Union 1983). In San Diego County, as throughout its range, BSSP is restricted to salt marsh habitat dominated by dense stands of pickleweed (*Salicornia* spp.) and salt grass (*Distichlis spicata*) (Unitt 2004; Zembal and Hoffman 2010). Surveys of the entire San Dieguito Lagoon in 2010 found 44 territories of BSSP (Zembal and Hoffman 2010).

Methods

AECOM biologists conducted five surveys for BSSP at the project survey area between April 24 and May 29, 2021. Surveys were conducted between 6:00 a.m. and 10:00 a.m. Biologists passively surveyed suitable habitat by observing with binoculars and spotting scopes and listening for singing birds. Biologists also walked the boundaries of suitable nesting habitat in an effort to locate nests; however, to avoid accidentally stepping on hidden nests, they did not walk into suitable habitat.

Results

The survey effort is summarized in Table 1 below, including survey numbers, dates, personnel, start/end times, and BSSP detections. A list of wildlife species detected during the surveys is provided in Appendix A. Weather data for each survey are provided in Appendix B.

Table 1
Summary of Belding's Savannah Sparrow Surveys

Survey Number	Date	Time	Biologists	BSSP Observations
1	24 April 2021	0700–0812	James McMorran	Up to five BSSP detected*
2	5 May 2021	0721–0924	James McMorran	Four BSSP detected
3	15 May 2021	0659–0824	James McMorran	Three BSSP detected
4	22 May 2021	0658–0852	James McMorran	Three BSSP detected
5	29 May 2021	0622–0829	James McMorran	Two BSSP detected

*BSSP individuals very active and difficult to get accurate count. No more than five BSSP detected.

As shown in Table 1, several BSSP were detected in the project survey area. The BSSP observations were concentrated in the pickleweed, salt grass, and tidal mudflats within these habitats in the project survey area. During Survey 1, the BSSP were extremely active in singing, flying around and interacting with other BSSP. On one occasion, three BSSP were detected in one condensed area of vegetation, and two other BSSP were singing at other locations. However, all BSSP were not observed simultaneously and it was unclear how many were actually detected on this survey. During the remaining four BSSP surveys, the number of BSSP detected during each survey were more obvious because they were interacting less and were seen and heard in their established territories

The presence of singing males detected during most surveys suggests that BSSP may have nested within the project survey area, although no nests were found during the focused surveys. The locations of BSSP detections are shown in Figure 3.

Wildlife species detected during surveys are recorded in Appendix A. Six sensitive species were incidentally observed within the project survey area during BSSP surveys: Light-footed Ridgway's rail (*Rallus obsoletus levipes*; U.S. Fish and Wildlife Service [USFWS]

Endangered species, California Department of Fish and Wildlife [CDFW] Endangered species, CDFW Fully Protected Species [FP]); California least tern (*Sterna antillarum browni*; USFWS Endangered species, CDFW Endangered species, CDFW FP), white-tailed kite (*Elanus leucurus*; CDFW FP); black skimmer (*Rynchops niger*; CDFW Species of Special Concern [SSC]), yellow warbler(*Setophaga petechia*; CDFW SSC), and yellow-breasted chat (*Icteria virens*; CDFW SSC). The locations of these species are displayed in Figures 3.

Discussion

BSSP are present in suitable habitat within the project survey area. The suitable BSSP habitat within the project survey area is contiguous with extensive suitable BSSP habitat present within Batiquitos Lagoon. If the suitable BSSP habitat located within the project survey area remains at the current quality, BSSP will likely continue to inhabit this area.

Please call me at (361) 361-4603 if you have any questions.

Sincerely,

Wildlife Biologist

Attachments:
Figure 1. Regional Location
Figure 2. Vicinity Map and Survey Areas
Figure 3. 2021 Belding's Savannah Sparrow and Sensitive Species Observations during Surveys

Appendices:
Appendix A – Wildlife Species Detected during Surveys
Appendix B – Weather Data

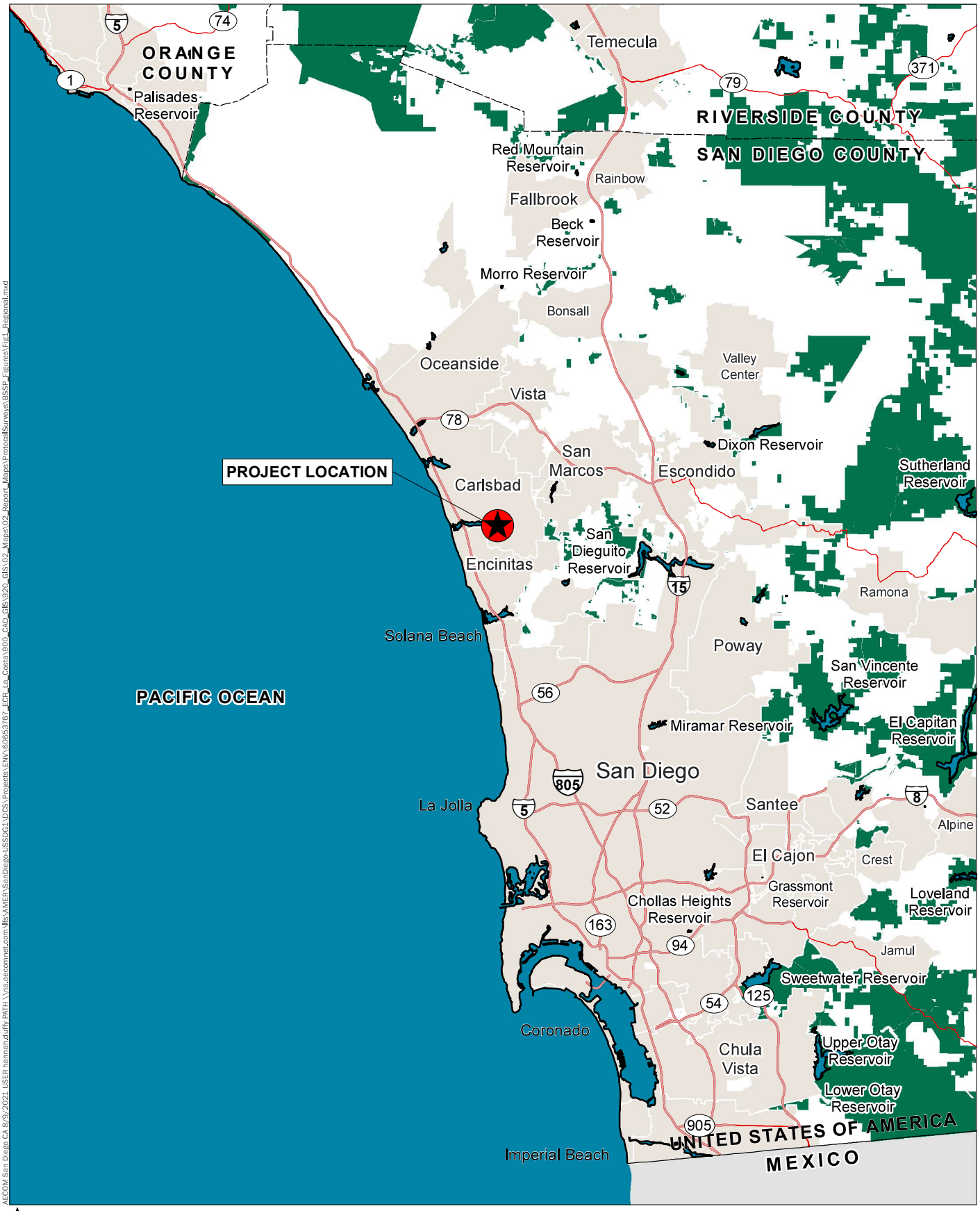
References

American Ornithologists' Union (AOU). 1983. *Check-list of North American Birds*, 6th ed. American Ornithologists' Union, Washington, D.C.

Unitt, P. 2004. *San Diego County Bird Atlas*. Proc. San Diego Soc. Nat. Hist. 39.

Zembal and Hoffman. 2010. *A Survey of the Belding's Savannah Sparrow (Passerculus sandwichensis beldingi) in California*. Department of Fish and Game Wildlife Branch. September.

Figures



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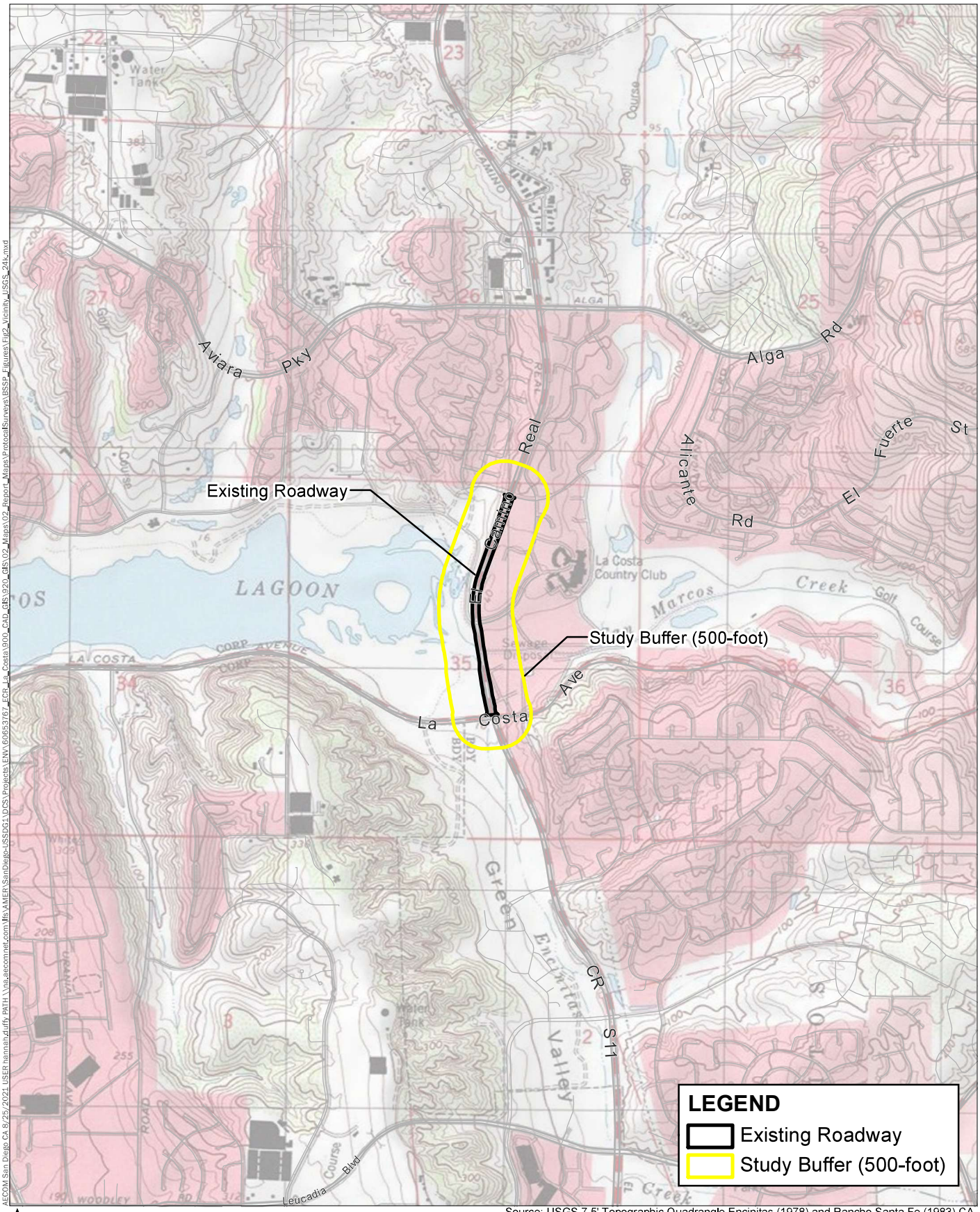
AECOM

City of Carlsbad, California
2021 Belding's Savannah Sparrow Survey Report for
El Camino Real Widening Project

FIGURE 1 - REGIONAL LOCATION MAP



Source: USGS 7.5' Topographic Quadrangle Encinitas (1978) and Rancho Santa Fe (1983) CA.

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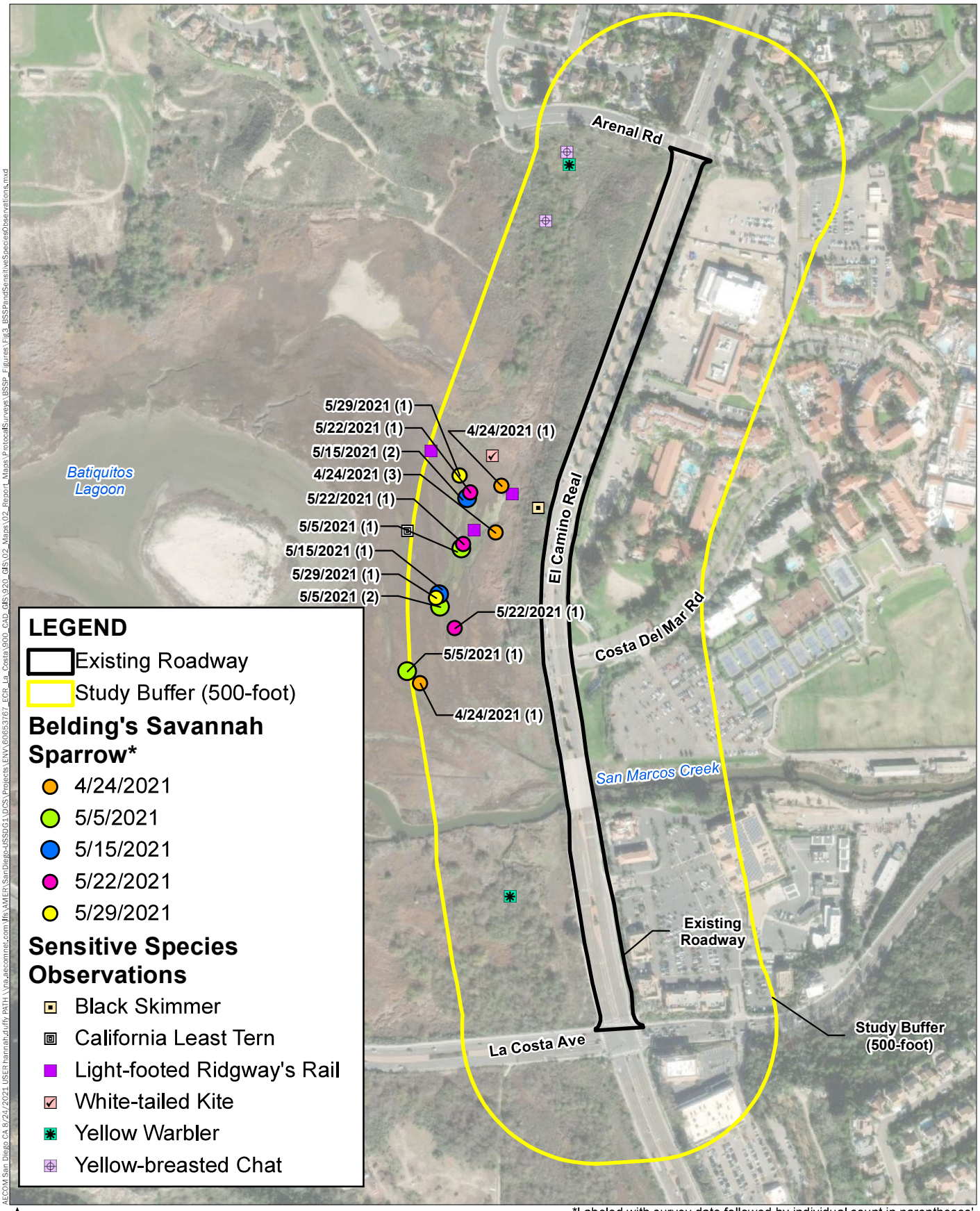
City of Carlsbad, California
2021 Belding's Savannah Sparrow Survey Report for
El Camino Real Widening Project

FIGURE 2 - VICINITY MAP AND SURVEY AREAS



*Labeled with survey date followed by individual count in parentheses'.

Source: Esri, World Imagery, 2020.

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City of Carlsbad, California

2021 Belding's Savannah Sparrow Survey Report for El Camino Real Widening Project

FIGURE 3 - 2021 BELDING'S SAVANNAH SPARROW AND SENSITIVE SPECIES OBSERVATIONS DURING SURVEYS

Appendix A

Wildlife Species Detected during Surveys

Appendix A

Species Observations During BSSP Surveys

Common Name	Scientific Name	Order	Family
Avian			
White-tailed Kite[3]	*Elanus leucurus*	Accipitriformes	Accipitridae
Green-winged Teal	*Anas crecca*	Anseriformes	Anatidae
Blue-winged Teal	*Anas discors*	Anseriformes	Anatidae
Mallard	*Anas platyrhynchos*	Anseriformes	Anatidae
Gadwall	*Anas strepera*	Anseriformes	Anatidae
Ruddy Duck	*Oxyura jamaicensis*	Anseriformes	Anatidae
Semipalmated Plover	*Charadrius semipalmatus*	Charadriiformes	Charadriidae
Killdeer	*Charadrius vociferus*	Charadriiformes	Charadriidae
Caspian Tern	*Hydroprogne caspia*	Charadriiformes	Laridae
Black Skimmer[4]	*Rynchops niger*	Charadriiformes	Laridae
California Least Tern[1,2,3]	*Sternula antillarum browni*	Charadriiformes	Laridae
Elegant Tern	*Thalasseus elegans*	Charadriiformes	Laridae
Black-necked Stilt	*Himantopus mexicanus*	Charadriiformes	Recurvirostridae
American Avocet	*Recurvirostra americana*	Charadriiformes	Recurvirostridae
Western Sandpiper	*Calidris mauri*	Charadriiformes	Scolopacidae
Least Sandpiper	*Calidris minutilla*	Charadriiformes	Scolopacidae
Red-necked Phalarope	*Phalaropus lobatus*	Charadriiformes	Scolopacidae
Willet	*Tringa semipalmata*	Charadriiformes	Scolopacidae
Mourning Dove	*Zenaida macroura*	Columbiformes	Columbidae
American Coot	*Fulica americana*	Gruiformes	Rallidae
Light-footed Ridgway's Rail[1,2,3]	*Rallus obsoletus levipes*	Gruiformes	Rallidae
Bushtit	*Psaltriparus minimus*	Passeriformes	Aegithalidae
Cedar Waxwing	*Bombycilla cedrorum*	Passeriformes	Bombycillidae
Black-headed Grosbeak	*Pheucticus melanocephalus*	Passeriformes	Cardinalidae
American Crow	*Corvus brachyrhynchos*	Passeriformes	Corvidae
Song Sparrow	*Melospiza melodia*	Passeriformes	Emberizidae
California Towhee	*Melozone crissalis*	Passeriformes	Emberizidae
Belding's Savannah Sparrow[2]	*Passerculus sandwichensis beldingi*	Passeriformes	Emberizidae
Spotted Towhee	*Pipilo maculatus*	Passeriformes	Emberizidae
House Finch	*Haemorhous mexicanus*	Passeriformes	Fringillidae
Lesser Goldfinch	*Spinus psaltria*	Passeriformes	Fringillidae
Barn Swallow	*Hirundo rustica*	Passeriformes	Hirundinidae
Cliff Swallow	*Petrochelidon pyrrhonota*	Passeriformes	Hirundinidae
Tree Swallow	*Tachycineta bicolor*	Passeriformes	Hirundinidae
Hooded Oriole	*Icterus cucullatus*	Passeriformes	Icteridae

Common Name	Scientific Name	Order	Family
Brown-headed Cowbird	*Molothrus ater*	Passeriformes	Icteridae
Common Yellowthroat	*Geothlypis trichas*	Passeriformes	Parulidae
Yellow-breasted Chat[4]	*Icteria virens*	Passeriformes	Parulidae
Yellow Warbler[4]	*Setophaga petechia brewsteri*	Passeriformes	Parulidae
Wrentit	*Chamaea fasciata*	Passeriformes	Sylviidae
Marsh Wren	*Cistothorus palustris*	Passeriformes	Troglodytidae
Great Egret	*Ardea alba*	Pelecaniformes	Ardeidae
Snowy Egret	*Egretta thula*	Pelecaniformes	Ardeidae
American White Pelican	*Pelecanus erythrorhynchos*	Pelecaniformes	Pelecanidae
Double-crested Cormorant	*Phalacrocorax auritus*	Suliformes	Phalacrocoracidae

[1]Federally Endangered, [2]State Endangered, [3]State Fully Protected, [4]State Species of Special Concern

Appendix B

Weather Data

Appendix B
Weather Data

BSSP

Survey Number	Date	Time	Weather Summary	Temp. (°F)	Cloud Cover (%)	Average Wind Speed (mph)
1	04/24/2021	07:00:51 AM	Cloudy	58	100	0
1	04/24/2021	07:43:32 AM	Cloudy	59	100	0
2	05/05/2021	07:21:54 AM	Drizzle	57	100	3.5
2	05/05/2021	10:08:18 AM	Cloudy	66	100	5.8
3	05/15/2021	06:59:14 AM	Cloudy	62	100	1.7
3	05/15/2021	08:24:33 AM	Cloudy	59	98	2.4
4	05/22/2021	07:07:59 AM	Cloudy	55	100	0
4	05/22/2021	08:52:20 AM	Mostly cloudy	58	76	2.9
5	05/29/2021	06:55:10 AM	Cloudy	60	100	8.1
5	05/29/2021	08:33:10 AM	Cloudy	57	100	2.8

APPENDIX D

LIGHT-FOOTED RIDGWAY'S RAIL AND COASTAL CALIFORNIA GNATCATCHER 45-DAY REPORT

AECOM
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September 13, 2021

Ms. Stacey Love
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

RE: 2021 Light-Footed Ridgway's Rail and Coastal California Gnatcatcher 45-Day Summary Report for the El Camino Real Roadway Widening Project (Arenal Road to La Costa Avenue), San Diego County, California

Dear Ms. Love:

In compliance with AECOM's Special Terms and Conditions for Endangered and Threatened Wildlife Species Permit TE-820658, AECOM submits this letter report summarizing the results of focused surveys conducted during 2021 for the federally listed endangered light-footed Ridgway's rail (*Rallus obsoletus levipes*; LFRR), and federally listed threatened coastal California gnatcatcher (*Polioptila californica californica*; CAGN) in support of the El Camino Real Roadway Widening Project (Arenal Road to La Costa Avenue), San Diego County, California (Figure 1). As an environmental consultant, AECOM was contracted by the City of Carlsbad to conduct protocol-level surveys for LFRR and CAGN. Surveys were conducted under AECOM's 10(a) Recovery Permit (TE-820658).

For the purpose of simplicity and to reduce redundancy, this report summarizes the methods and results of protocol surveys for both LFRR and CAGN. The proposed project and site descriptions are provided first, followed by a species-by-species section that includes the specific methods, results, and discussion of survey results for each species.

Project Description

The project involves street and bridge widening improvements along El Camino Real, between Arenal Road and La Costa Avenue (Figure 2). Proposed improvements to El Camino Real include widening of the existing roadway for addition of a third southbound lane and buffered bike lane, and separated pedestrian walkways on the western and eastern sides of the existing bridge that spans over San Marcos Creek.

Site Description

The project is located within the City of Carlsbad and east of Interstate 5 along El Camino Real between Arenal Road and La Costa Avenue. The project survey area included potentially suitable habitat within the existing roadway plus a surrounding 500-foot buffer (Figure 2). The project survey area is composed of disturbed and developed areas along with wetland, riparian, and upland vegetation communities.

Light-footed Ridgway's Rail

Background Information

LFRR is federally and state listed as endangered. It was listed as endangered on October 13, 1970 (*Federal Register* 35 FR 16047). This listing status applies to the entire population of the species in the United States. The state listed the subspecies as endangered on June 27, 1971. The U.S Fish and Wildlife Service (USFWS) has not designated critical habitat for this species.

The species is restricted to coastal salt marshes in southern California where vegetation is dominated by cordgrass (*Spartina foliosa*) and pickleweed (*Salicornia* sp.) (USFWS 1985). LFRR nests in pickleweed are most often located on the ground, while nests in cordgrass are elevated 10 to 45 centimeters (4 to 18 inches) above the ground (USFWS 1985). LFRR forage in higher marsh vegetation and along tidal creeks and at the interface between vegetation and adjacent mudflats (USFWS 1985).

Common LFRR vocalizations include clapper, kek, kek-burr, and agitated kek calls. Clappering vocalizations have a bimodal peak, with peaks during the onset of breeding season (mid-February through mid-April) and in late summer/early fall (September through October) (Zembal and Massey 1987). The majority (96 percent [%]) of LFRR "kekking" calls have been documented during March through June in southern California (Zembal and Massey 1987).

Survey Methodology

Surveys for LFRR were conducted in accordance with the recommendations provided to USFWS by the Clapper Rail Study Team (2009). Surveys were conducted by experienced AECOM marsh bird ornithologists with required permits from USFWS and California Department of Fish and Wildlife (CDFW). Six surveys were conducted between March 15, 2021, and June 15, 2021. This time period coincides with the approximate peak of the marsh bird breeding season and the seasonal peak in vocalization for most marsh birds.

The surveys were conducted at dawn or dusk during each survey period. Dawn surveys were conducted at or just before sunrise and proceeded for no more than 3 hours after sunrise. Dusk surveys were conducted within 2 hours before sunset and were completed by 30 minutes after sunset. The surveys were conducted only during dawn or dusk when air temperature was greater than 50 degrees Fahrenheit (10 degrees Celsius). The surveys were not conducted when wind speed was greater than 12 miles per hour or during sustained rain or heavy fog.

Survey methodology consisted of a passive component and broadcast component at each survey area. Permitted AECOM ornithologists walked along the edge of habitat and within habitat when appropriate. The ornithologists stopped approximately every 328 feet (100 meters) where there was suitable habitat to passively record LFRR observations both aurally and visually for 5 minutes. If LFRR were not detected after 5 minutes, a call-broadcast of

LFRR “duet” and “kek” calls was played with a digital player and amplified speakers for a duration of 20 seconds, or the complete length of a LFRR vocalization. Upon completion of the call-broadcast, the ornithologist stood silently for a period of 1 minute to listen for LFRR call responses. If there was no response, this procedure was repeated up to two more times (for a total of three) before proceeding to the next stopping point. If an LFRR call was detected, the call-broadcasting was immediately stopped, and the surveyor moved at least approximately 656 feet (200 meters) before using a call-broadcast again. The detection locations were recorded using a global positioning system unit.

Monitoring data collected for each LFRR detected included the following:

- Detection type (visual, aural);
- Type of call if detection was aural;
- Number of individuals, sex, age class, if possible;
- Distance of observation from observer (a range finder was used to help determine the distance); and
- LFRR locations recorded on a digitized map in a Fulcrum application.

The following information was recorded for each survey:

- Name of observer(s);
- Survey start and end times; and
- Weather (temperature and average wind speed/direction) at the start and end of each survey period.

Results

The survey effort is summarized in Table 1 below, including survey numbers, dates, personnel, start/end times, and LFRR detections. A list of wildlife species detected during the surveys is provided in Appendix A. Weather data for each survey are provided in Appendix B. Locations of LFRR detected during each focused survey are displayed in Figure 3.

Four sensitive species were incidentally observed within the project survey area during LFRR surveys: California least tern (*Sterna antillarum browni*; USFWS Endangered species; CDFW Endangered species; CDFW fully protected species), Belding’s savannah sparrow (*Passerculus sandwichensis beldingi*; CDFW Endangered species), black skimmer (*Rynchops niger*; CDFW Species of Special Concern [SSC]), yellow warbler (*Setophaga petechia*; CDFW SSC). The locations of these sensitive species are displayed in Figure 3.

Table 1. LFRR Survey Numbers, Dates, Personnel, Times, and Detections

Survey Number	Date	Survey Personnel	Start Time	End Time	LFRR Detection
1	4/24/2021	James McMorran	05:50 AM	06:59 AM	2 Individuals
2	5/5/2021	James McMorran	05:46 AM	07:21 AM	1 Pair
3	5/15/2021	James McMorran	05:41 AM	06:58 AM	1 Pair
4	5/22/2021	James McMorran	05:28 AM	07:06 AM	No LFRR
5	5/29/2021	James McMorran	06:15 PM	07:48 PM	1 Individual
6	6/5/2021	James McMorran	06:10 PM	07:42 PM	No LFRR

Discussion

One LFRR pair was detected within the project survey area and appeared to associate with a territory, and it is possible that this pair may have bred within the project survey area. The detections of individual LFRR within the project survey area were thought to be associated with this pair. An additional LFRR pair was also detected; however, it was outside of the project survey area. While LFRR was not detected throughout the suitable coastal salt marsh habitats within the project survey area, LFRR likely use this habitat to forage or find refuge during extreme high tides throughout the year.

Coastal California Gnatcatcher

Background Information

CAGN, a subspecies of the California gnatcatcher (*Polioptila californica*), was federally listed by USFWS in 1993 as threatened (USFWS 1993) and is considered a CDFW SSC (CDFW 2021). No recovery plan has been drafted for CAGN. CAGN is an uncommon year-round resident of southern California. This species is declining proportionately with the continued loss of coastal sage scrub habitat in the six southern California counties located within the coastal plain (San Bernardino, Ventura, Los Angeles, Orange, San Diego, and Riverside).

The primary cause of the decline of CAGN is the cumulative loss of coastal sage scrub vegetation to urban and agricultural development. Studies suggest that CAGN may be highly sensitive to the effects of habitat fragmentation and development activity (Atwood 1990; Environmental and Energy Services Co. 1990). USFWS has estimated that coastal sage scrub habitat has been reduced by 70% to 90% of its historical extent (USFWS 1991), and little of what remains is protected in natural open space.

CAGN generally inhabits Diegan coastal sage scrub and Riversidian coastal sage scrub dominated by California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*), generally below 1,500 feet in elevation along the coastal slope. When nesting, CAGN typically avoids slopes greater than 25% and areas that have tall, dense vegetation. CAGN pairs will attempt several nests each year, each placed in a different location inside of their breeding territory, but most nest attempts are unsuccessful due to depredation by a variety of species (Atwood and Bontrager 2001). Clutch size ranges

from one to five eggs, with three or four eggs most common. CAGN will remain paired through the nonbreeding season and will generally expand their home range when not breeding.

CAGN is particularly vulnerable to habitat destruction and fragmentation because of poor dispersal, reliance on a specific habitat type, and difficulty in successful breeding. Juvenile CAGN tend to remain close to their natal territories. On average, juveniles disperse less than 1.2 miles from their natal territories, making colonization of distant habitat patches difficult. CAGN are closely tied to coastal sage scrub and have been described as “obligate residents of coastal sage scrub” (Atwood and Bontrager 2001). CAGN typically experiences a high rate of nest failure, with an annual mean number of four nest attempts per pair in San Diego County (Grishaver et al. 1998). CAGN tends to have slightly smaller clutches in years with poor rainfall and will experience a higher rate of mortality during cold winters (Grishaver et al. 1998; Atwood and Bontrager 2001).

Survey Methodology

The project is located within an active Natural Community Conservation Plan area; therefore, three CAGN surveys were completed during the 2021 breeding season per the current USFWS protocol for the species, dated February 28, 1997, and amended on July 28, 1997 (USFWS 1997).

AECOM biologist James McMorran conducted surveys under Endangered Species Permit TE-820658. CAGN surveys were conducted between 6 AM and 12 PM, according to protocol requirements. The surveys consisted of biologists walking meandering transects along and through potential CAGN habitat, including scrub associations. Biologists conducted passive surveillance (i.e., listening and looking for the species) in habitats with potential to support CAGN. If an observation was not made after approximately 5 minutes of passive survey activity, a recorded vocalization of CAGN was played for approximately 10 seconds (i.e., active survey activity), followed by another period of passive observation. If a CAGN was detected, passive observation continued to try to assess if it was a single adult, a pair, one or more juveniles, or a family group. Once a CAGN was observed, playback was stopped until the biologists moved far enough away that the observed birds could no longer hear the recording. Surveys were not conducted during periods of inclement weather such as extreme wind or during a rain event. As allowed under the endangered species permits, the survey activity “takes” CAGN through harassment with playback of taped CAGN vocalizations.

CAGN surveys were conducted within suitable CAGN habitat within the project survey area.

Results

Protocol-level CAGN surveys were conducted between May 18 and July 13, 2021. Survey data are summarized in Table 2, including survey numbers, survey dates, personnel, survey areas, start and end times, and CAGN detections. A list of wildlife species detected during

surveys is provided in Appendix A. Weather data for each survey are provided in Appendix B.

Across the three CAGN protocol surveys, detections included individual detections of an adult male; on Survey 2, the adult male was accompanied by another individual that was not observed and was an auditory only detection. Therefore, age or sex of this individual was not confirmed. Locations of CAGN detected during each focused survey are displayed in Figure 4.

One sensitive species was incidentally observed within the project survey area during CAGN surveys: white-tailed kite (*Elanus leucurus*; CDFW Fully Protected species).

Two brown-headed cowbirds (*Molothrus ater*), known for nest predation and brood parasitism to CAGN, were also observed in the project survey area. The locations of the white-tailed kite and brown-headed cowbirds are displayed in Figure 4.

Table 2. CAGN Survey Numbers, Dates, Personnel, Area, Times, and Observations

Survey Number	Date	Survey Personnel	Start Time	End Time	CAGN Detections
1	5/18/2021	James McMorran	06:15 AM	08:45 AM	1 CAGN
2	6/16/2021	James McMorran	09:02 AM	11:20 AM	2 CAGN
3	7/13/2021	James McMorran	06:35 AM	09:29 AM	1 CAGN

Discussion

One adult male was seen in the same general area of suitable CAGN habitat on all three surveys. On survey 2, a second individual CAGN was detected in close proximity of the adult male that was present. This individual was not seen and was an auditory detection only; therefore, its age and sex are unknown. No nests were found, and no nest-building activity was observed. It is possible a CAGN pair/family group utilized the project survey area; however, the majority of their territory and nest could have been located outside of the project survey area.

If you have any questions or require additional information about any of the two protocol species surveys that were conducted, please feel free to contact me at (361) 443-4603.

Sincerely,

James McMorran

Attachments:

Figures
- Figure 1 – Regional Location Map
- Figure 2 – Vicinity Map and Survey Areas
- Figure 3 – Light-footed Ridgway's Rail and Sensitive Species Observations
- Figure 4 – Coastal California Gnatcatcher and Sensitive Species Observations

Appendices
- Appendix A – Wildlife Species Detected during Surveys
- Appendix B – Weather Data

Certification Statement

The qualified AECOM biologist who conducted LFRR and CAGN surveys certifies that the information in this survey report fully and accurately represents the work he performed. The signature of the permitted AECOM biologist who conducted protocol-level surveys is included below.

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."



James McMorran
TE-820658
August 25, 2021

Literature Cited

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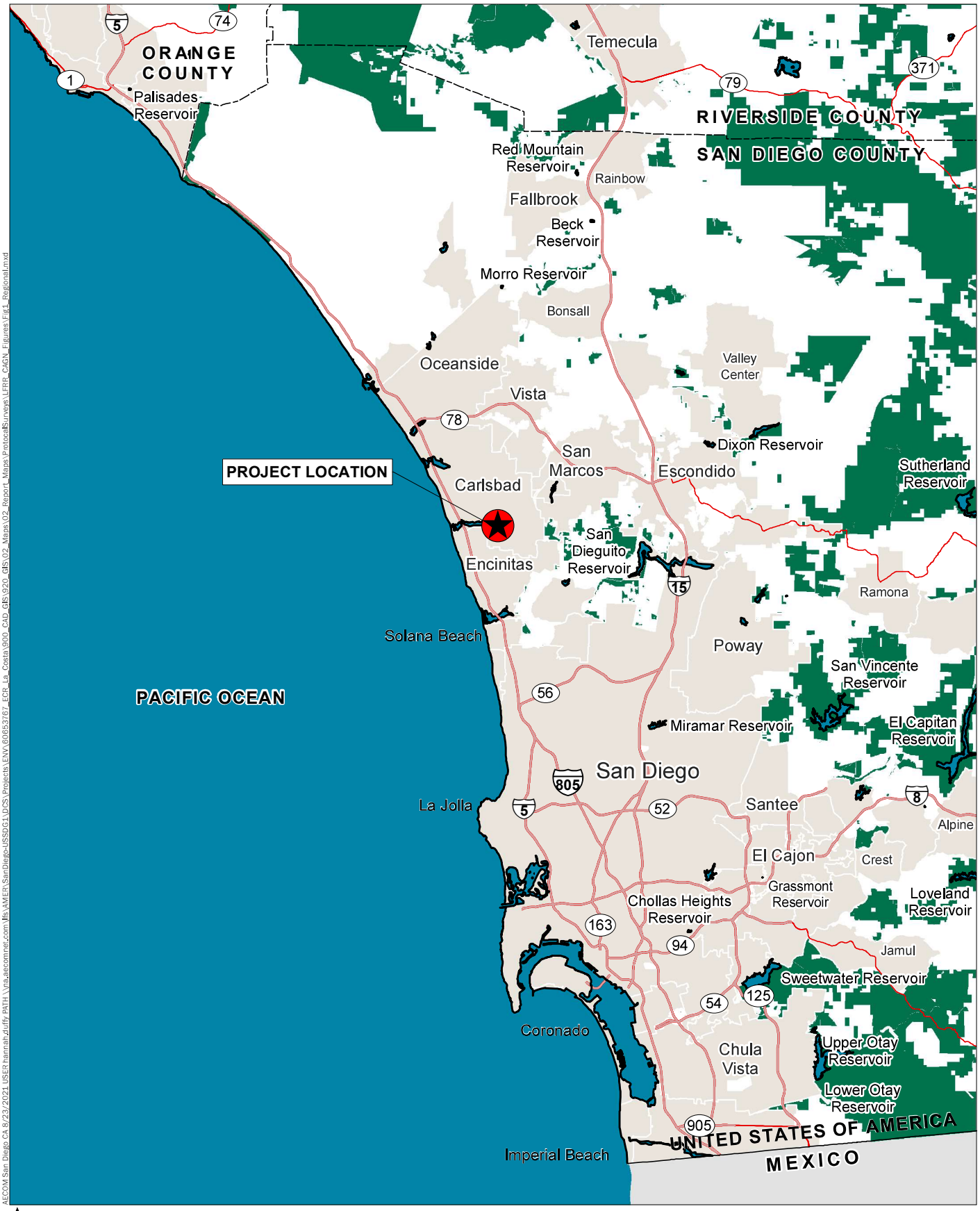
FIGURES



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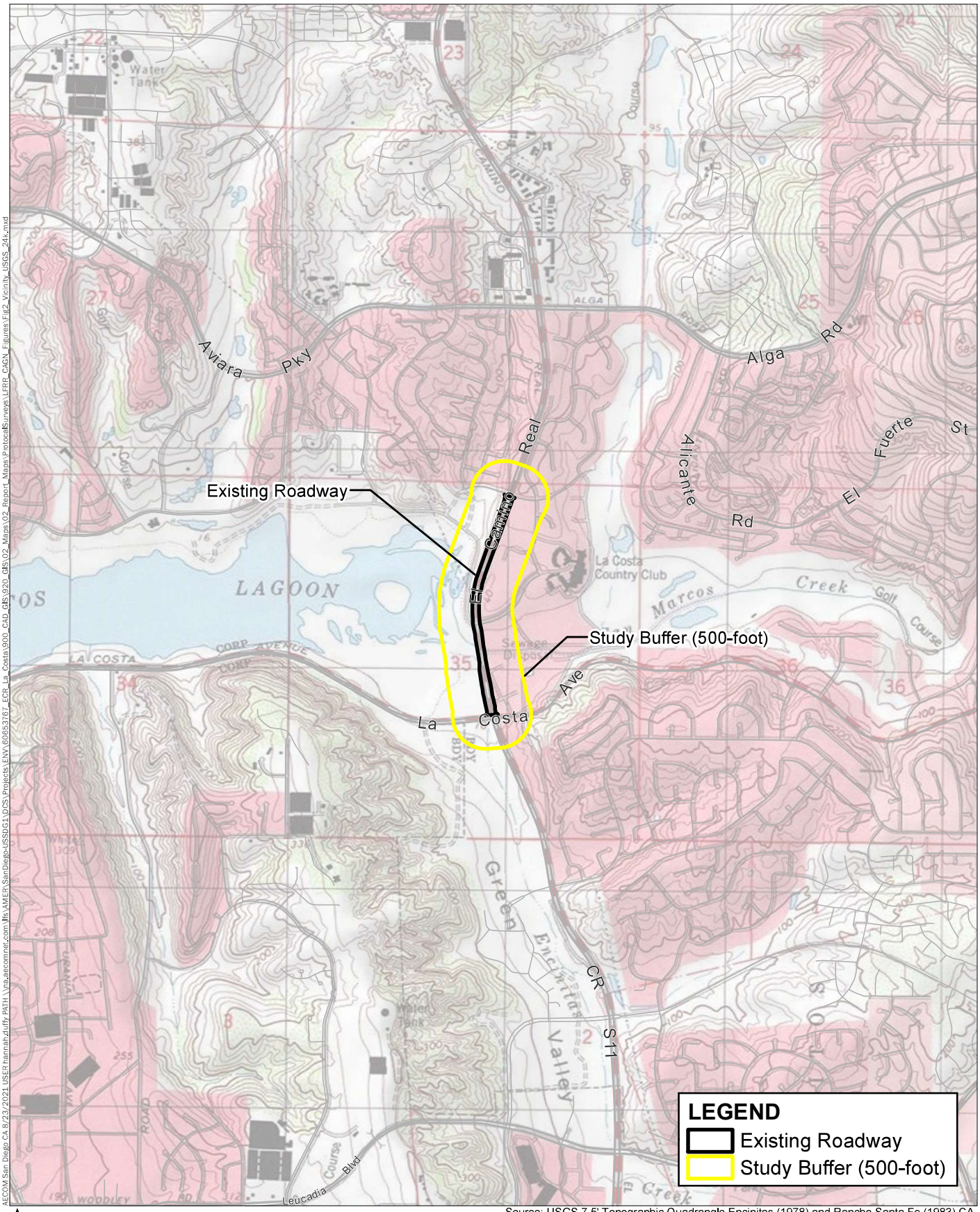
City of Carlsbad, California
Light-footed Ridgway's Rail and Coastal California Gnatcatcher
45-Day Summary Report for El Camino Real Widening Project

FIGURE 1 - REGIONAL LOCATION MAP



Source: USGS 7.5' Topographic Quadrangle Encinitas (1978) and Rancho Santa Fe (1983) CA.

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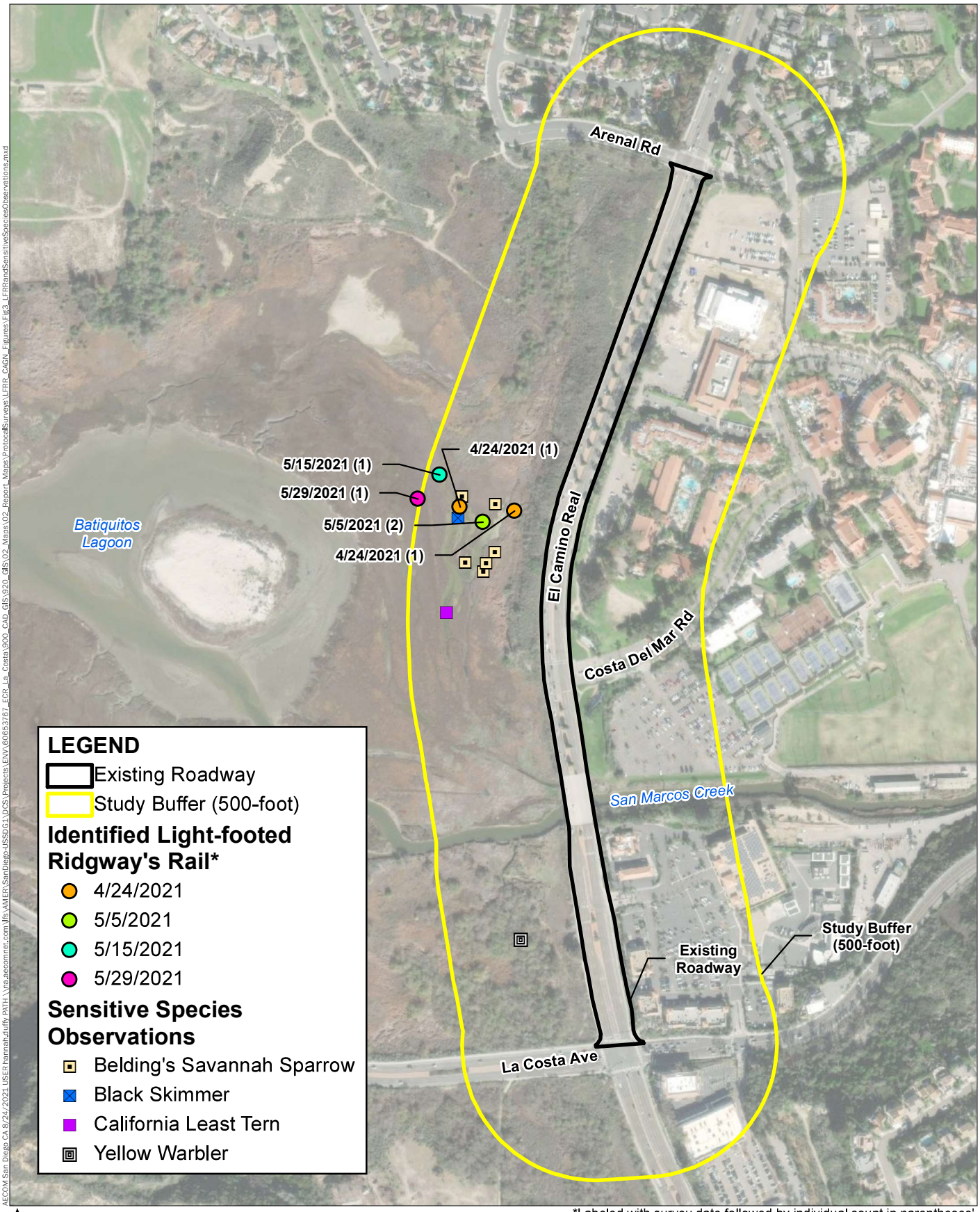
City of Carlsbad, California
Light-footed Ridgway's Rail and Coastal California Gnatcatcher
45-Day Summary Report for El Camino Real Widening Project

FIGURE 2 - VICINITY MAP AND SURVEY AREAS



*Labeled with survey date followed by individual count in parentheses'.

Source: Esri, World Imagery, 2020.

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Light-footed Ridgway's Rail and
Coastal California Gnatcatcher 45-Day Summary
Report for El Camino Real Widening Project

FIGURE 3 – LIGHT-FOOTED RIDGWAY'S RAIL AND SENSITIVE SPECIES OBSERVATIONS

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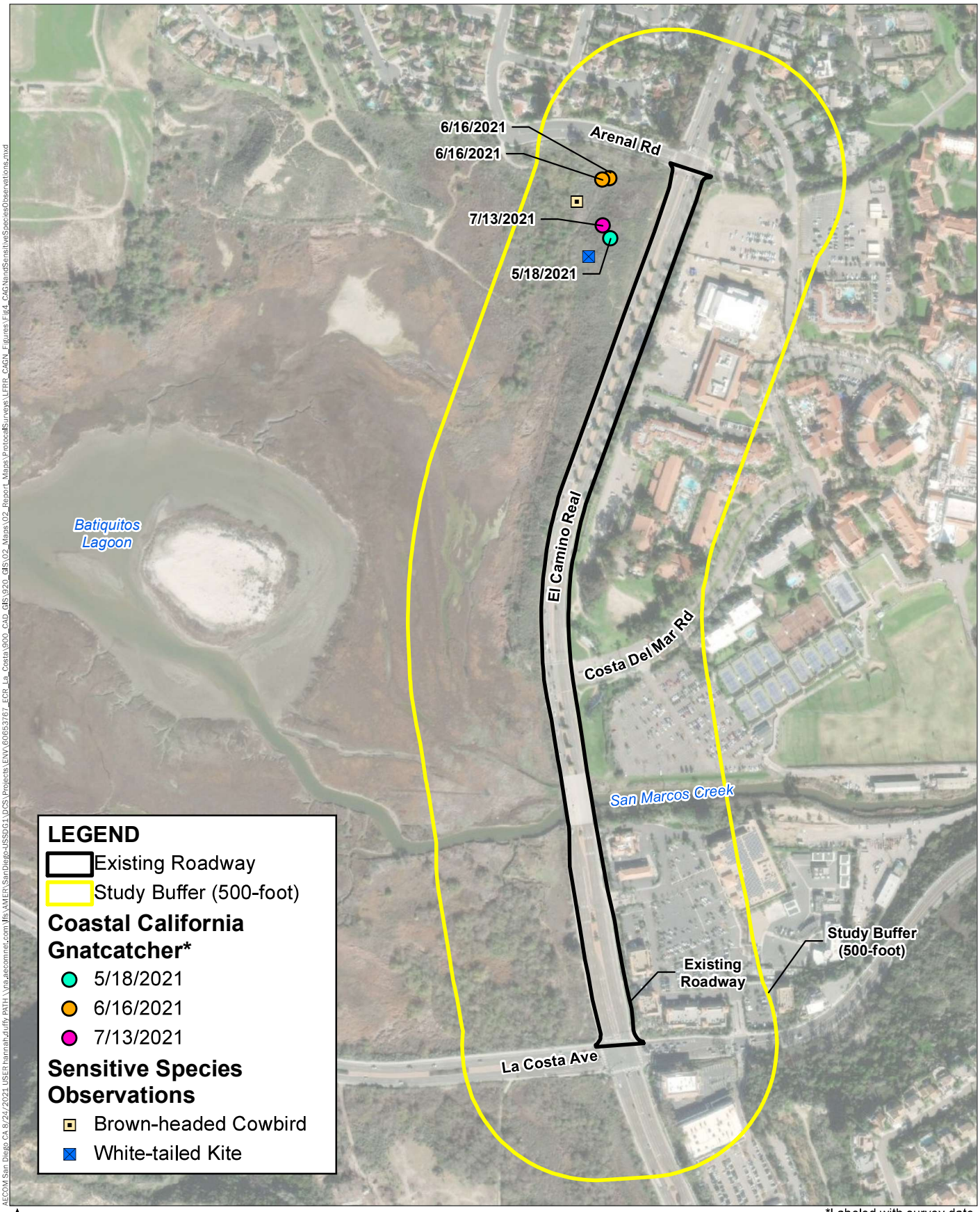


*Labeled with survey date.

Source: Esri, World Imagery, 2020.

AECOM San Diego, CA 8/24/2021 USER hannah.duffy PATH: \\na.aecomnet.com\lfs\AMER\SanDiego-USSDG1\DCS\Projects\ENV\60653767_ECR_La_Costa\900_CAD_GIS\920_GIS\02_Maps\02_Report_Maps\ProtocolSurveys\LFRR_CAGN_Figures\Fig4_CAGNandSensitiveSpeciesObservations.mxd

AECOM

City of Carlsbad, California
Light-footed Ridgway's Rail and
Coastal California Gnatcatcher 45-Day Summary
Report for El Camino Real Widening Project

FIGURE 4 – COASTAL CALIFORNIA GNATCATCHER AND SENSITIVE SPECIES OBSERVATIONS

APPENDIX A

WILDLIFE SPECIES DETECTED DURING SURVEYS

Appendix A

Species Observations During LFRR Surveys

Common Name	Scientific Name	Order	Family
Avian			
American Wigeon	*Anas americana*	Anseriformes	Anatidae
Cinnamon Teal	*Anas cyanoptera*	Anseriformes	Anatidae
Blue-winged Teal	*Anas discors*	Anseriformes	Anatidae
Mallard	*Anas platyrhynchos*	Anseriformes	Anatidae
Lesser Scaup	*Aythya affinis*	Anseriformes	Anatidae
Canada Goose	*Branta canadensis*	Anseriformes	Anatidae
Ruddy Duck	*Oxyura jamaicensis*	Anseriformes	Anatidae
Vaux's Swift	*Chaetura vauxi*	Apodiformes	Apodidae
Anna's Hummingbird	*Calypte anna*	Apodiformes	Trochilidae
Semipalmated Plover	*Charadrius semipalmatus*	Charadriiformes	Charadriidae
Killdeer	*Charadrius vociferus*	Charadriiformes	Charadriidae
Caspian Tern	*Hydroprogne caspia*	Charadriiformes	Laridae
Black Skimmer[4]	*Rynchops niger*	Charadriiformes	Laridae
California Least Tern[1,2,3]	*Sternula antillarum browni*	Charadriiformes	Laridae
Black-necked Stilt	*Himantopus mexicanus*	Charadriiformes	Recurvirostridae
American Avocet	*Recurvirostra americana*	Charadriiformes	Recurvirostridae
Least Sandpiper	*Calidris minutilla*	Charadriiformes	Scolopacidae
Whimbrel	*Numenius phaeopus*	Charadriiformes	Scolopacidae
Red-necked Phalarope	*Phalaropus lobatus*	Charadriiformes	Scolopacidae
Greater Yellowlegs	*Tringa melanoleuca*	Charadriiformes	Scolopacidae
Light-footed Ridgway's Rail[1,2,3]	*Rallus obsoletus levipes*	Gruiformes	Rallidae
Bushtit	*Psaltriparus minimus*	Passeriformes	Aegithalidae
Black-headed Grosbeak	*Pheucticus melanocephalus*	Passeriformes	Cardinalidae
California Scrub-Jay	*Aphelocoma californica*	Passeriformes	Corvidae
American Crow	*Corvus brachyrhynchos*	Passeriformes	Corvidae
Song Sparrow	*Melospiza melodia*	Passeriformes	Emberizidae
California Towhee	*Melozone crissalis*	Passeriformes	Emberizidae
Belding's Savannah Sparrow[2]	*Passerculus sandwichensis beldingi*	Passeriformes	Emberizidae
Spotted Towhee	*Pipilo maculatus*	Passeriformes	Emberizidae
Lesser Goldfinch	*Spinus psaltria*	Passeriformes	Fringillidae
Barn Swallow	*Hirundo rustica*	Passeriformes	Hirundinidae
Cliff Swallow	*Petrochelidon pyrrhonota*	Passeriformes	Hirundinidae
Tree Swallow	*Tachycineta bicolor*	Passeriformes	Hirundinidae
Common Yellowthroat	*Geothlypis trichas*	Passeriformes	Parulidae

Common Name	Scientific Name	Order	Family
Orange-crowned Warbler	*Oreothlypis celata*	Passeriformes	Parulidae
Yellow Warbler[4]	*Setophaga petechia brewsteri*	Passeriformes	Parulidae
Marsh Wren	*Cistothorus palustris*	Passeriformes	Troglodytidae
Great Egret	*Ardea alba*	Pelecaniformes	Ardeidae
Great Blue Heron	*Ardea herodias*	Pelecaniformes	Ardeidae
Snowy Egret	*Egretta thula*	Pelecaniformes	Ardeidae
Nuttall's Woodpecker	*Picoides nuttallii*	Piciformes	Picidae

[1]Federally Endangered, [2]State Endangered, [3]State Fully Protected, [4]State Species of Special Concern

Species Observations During CAGN Surveys

Common Name	Scientific Name	Order	Family
White-tailed Kite[2]	*Elanus leucurus*[2]	Accipitriformes	Accipitridae
Mourning Dove	*Zenaida macroura*	Columbiformes	Columbidae
Bushtit	*Psaltriparus minimus*	Passeriformes	Aegithalidae
Black-headed Grosbeak	*Pheucticus melanocephalus*	Passeriformes	Cardinalidae
Song Sparrow	*Melospiza melodia*	Passeriformes	Emberizidae
California Towhee	*Melozone crissalis*	Passeriformes	Emberizidae
Spotted Towhee	*Pipilo maculatus*	Passeriformes	Emberizidae
Scaly-breasted Munia	*Lonchura punctulata*	Passeriformes	Estrildidae
House Finch	*Haemorhous mexicanus*	Passeriformes	Fringillidae
Cliff Swallow	*Petrochelidon pyrrhonota*	Passeriformes	Hirundinidae
Hooded Oriole	*Icterus cucullatus*	Passeriformes	Icteridae
Brown-headed Cowbird	*Molothrus ater*	Passeriformes	Icteridae
California Thrasher	*Toxostoma redivivum*	Passeriformes	Mimidae
Common Yellowthroat	*Geothlypis trichas*	Passeriformes	Parulidae
Coastal California Gnatcatcher[1,3]	*Polioptila californica californica*	Passeriformes	Polioptilidae
Wrentit	*Chamaea fasciata*	Passeriformes	Sylviidae
Nuttall's Woodpecker	*Picoides nuttallii*	Piciformes	Picidae

[1]State Threatened, [2]State Fully Protected, [3]State Species of Special Concern

APPENDIX B

WEATHER DATA

Appendix B
Weather Data

LFRR Surveys

Survey Number	Date	Time	Weather Summary	Temp. (°F)	Cloud Cover (%)	Average Wind Speed (mph)
1	04/24/2021	06:26:30 AM	Cloudy	58	100	0
1	04/24/2021	07:00:14 AM	Cloudy	58	100	0
2	05/05/2021	06:55:56 AM	Drizzle	57	100	0
2	05/05/2021	07:21:09 AM	Drizzle	57	100	3.5
3	05/15/2021	06:22:56 AM	Cloudy	60	100	4.6
3	05/15/2021	06:58:19 AM	Cloudy	62	100	1.7
4	05/22/2021	06:59:39 AM	Cloudy	51	100	0
4	05/22/2021	07:06:30 AM	Cloudy	55	100	0
5	05/29/2021	06:31:36 PM	Mostly cloudy	65	76	8.1
5	05/29/2021	08:32:45 PM	Mostly cloudy	58	87	3.1

CAGN Surveys

Survey Number	Date	Time	Weather Summary	Temp. (°F)	Cloud Cover (%)	Average Wind Speed (mph)
1	05/18/2021	06:41:01 AM	Cloudy	61	100	3.5
1	05/18/2021	08:45:01 AM	Cloudy	60	100	1.8
2	06/16/2021	10:38:49 AM	Cloudy	66	100	5.8
2	06/16/2021	10:59:04 AM	Sunny	70	10	6.9
3	07/13/2021	07:12:04 AM	Mostly sunny	66	25	0
3	07/13/2021	9:14:16 AM	Mostly sunny	69	11	1.1

APPENDIX E

BAT SURVEY REPORT

October 25, 2021

Michelle Fehrensen
AECOM
401 West A Street, Suite 1200
San Diego, CA 92101

RE: 2021 Bat Survey Summary for El Camino Real Roadway Widening Project (AECOM No. 60653767; SDNHM Project B202)

Dear Ms. Fehrensen:

This letter provides a summary of the bat surveys conducted in 2021 by the San Diego Natural History Museum (SDNHM) within the City of Carlsbad's El Camino Real Roadway Widening Project from La Costa Avenue to Arenal Road (Project) area, located in the City of Carlsbad, San Diego County, California. The Project includes widening of the existing El Camino Real bridge over San Marcos Creek to accommodate buffered bike lanes and pedestrian paths. A preferred Project alternative is being considered currently and would likely involve re-striping of the existing bridge to allow for three lanes of vehicle traffic and a buffered bike lane in each direction, and installation of a single-span, prefabricated steel truss pedestrian bridge on either side of the existing bridge. Gaps between the existing bridge and the northbound/southbound pedestrian bridges are currently proposed, as is lighting for the roadway and pedestrian bridges.

As a maternity colony of Mexican free-tailed bats (*Tadarida brasiliensis*) is known to occur in the El Camino Real bridge over San Marcos Creek, the purpose of this study was to estimate the number of Mexican free-tailed bats utilizing the bridge, and identify and quantify any other bat species roosting in the bridge. Potential project impacts and mitigation measures will be addressed in a separate biological technical report to be prepared by AECOM.

Project Area Description

Vegetation communities and land cover types adjacent to the existing roadway include non-native riparian, southern coastal saltmarsh, coastal sage scrub, open water, landscaped/ornamental, disturbed habitat, and urban/developed land (e.g., parking lot, road, bridge). The area beneath El Camino Real bridge largely comprises bare dirt, rock, and the open water of San Marcos Creek. Sign of human activity (e.g., trash, footprints, graffiti) was observed beneath the bridge; however, no transient camps were observed in the immediate vicinity of the bridge.

El Camino Real bridge over San Marcos Creek has 15 expansion joint seams running north to south along the length of the bridge. Each of these seams provides suitable roosting accommodations for crevice-roosting bat species and were, therefore, the focus of this survey effort. The 15 expansion joint seams are separated into five sections by bridge support buttresses. For reporting purposes, the seams are numbered 1 through 15 from east to west, and the sections are labeled A through E from south to north (Figure 1).

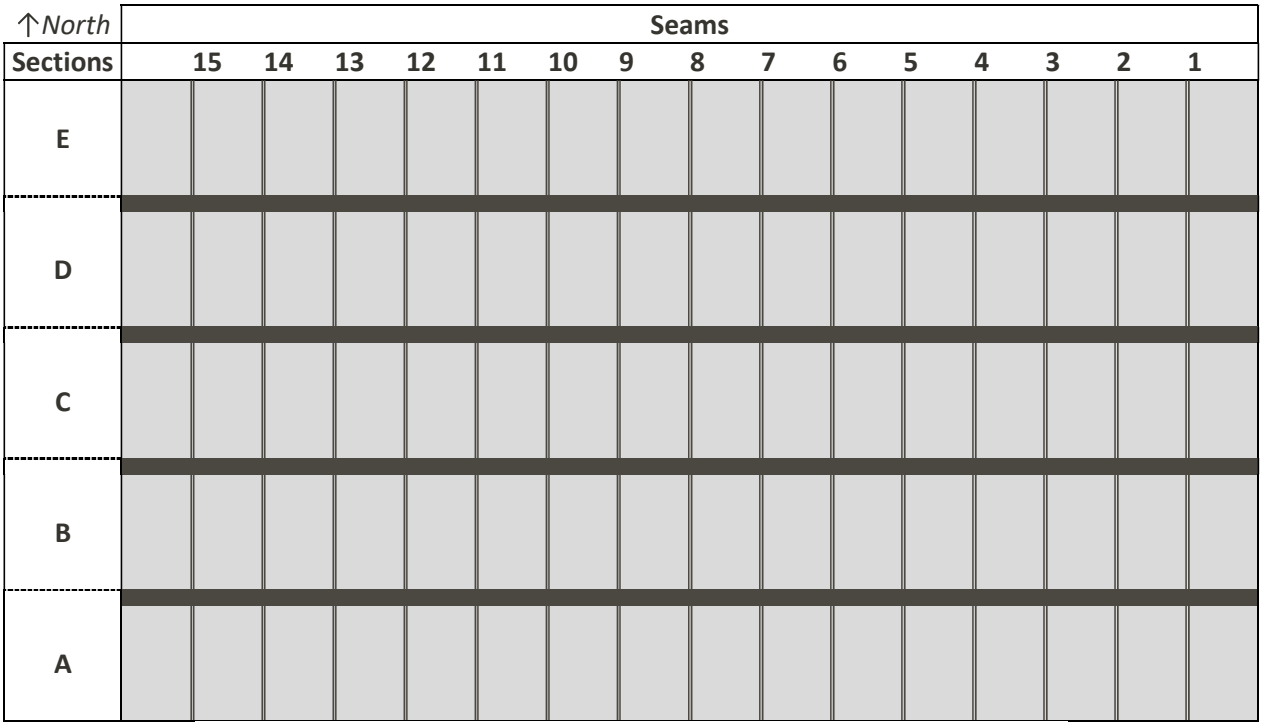


Figure 1. Overview Diagram of Bridge Seams and Sections (Not to Scale)

Methods

SDNHM employed two survey techniques to estimate the total number of bats roosting in the bridge at the beginning of the breeding season and at the peak of breeding season (i.e., pupping season), when the colonies would be expected to be in their highest numbers.

Diurnal Surveys

SDNHM Bat Specialist Drew Stokes and Senior Biologist Brenna Ogg conducted diurnal surveys of El Camino Real bridge over San Marcos Creek on 14 April and 29 July 2021 (Table 1). To get a minimum count of day-roosting bats, the biologists visually inspected the bridge's expansion joint seams for bats and/or bat sign (e.g., guano, staining) and counted all visible bats. Seams were inspected from the ground, using flashlights and binoculars, as necessary. Due to the presence of water in San Marcos Creek at the time of both surveys, seams within section B and portions of section C of the bridge could not be thoroughly inspected. Therefore, counts were estimated to represent the minimum number of bats roosting in the bridge at the time of each survey.

Table 1. Bat Survey Dates, Types, Times, and Personnel at El Camino Real Bridge over San Marcos Creek

Date	Survey Type	Survey Time	Surveyors	Sunset Time
14 April 2021	Diurnal Survey	17:00–18:45	D. Stokes, B. Ogg	19:19
	Evening Exit Count	19:00–20:00		
29 July 2021	Diurnal Survey	17:00–18:45	D. Stokes, B. Ogg	19:50
	Evening Exit Count	19:45–20:45		

Evening Exit Counts

Following each daytime survey, Mr. Stokes and Ms. Ogg performed an exit count survey to get a second estimate of the number of bats roosting in the bridge (see Table 1). Each exit count began just prior to sunset. Mr. Stokes was positioned at the southwest corner of the bridge to watch/count bats as they

exited toward the west, while Ms. Ogg was positioned at the northeast corner to watch/count bats as they exited to the east. It should be noted that visibility was partially obstructed by vegetation on the east side of the bridge and, therefore, likely reduced the number of bats that could be seen exiting the bridge.

Results

Diurnal Survey Results

Along with a substantial amount of bat sign (i.e., guano and staining; see Appendix A: Photographs 1 through 3), we observed the following two bat species roosting in nearly all of the 15 seams on both sides of San Marcos Creek: Mexican free-tailed bat (TABR) and Yuma myotis (*Myotis yumanensis*; MYYU) (Appendix A: Photographs 4 through 6). Of these species, MYYU is considered a special-status species, as it has a Western Bat Working Group [WBWG] Low-Medium Priority rank.

During the April 2021 daytime survey, we counted 57 TABR and 11 MYYU in the southern bridge section (A) and 104 TABR and 108 MYYU in the northern sections (C–E), for a total number of 280 bats (161 TABR, 119 MYYU). Assuming section B, which was not thoroughly inspected due to its location over open water, was occupied by a proportionate number of bats, the extrapolated daytime total count of bats in the bridge at the time of the survey was 336 (280 + 20 percent).

As expected, the counts of bats were higher in July 2021. Our daytime visual count/estimate yielded 1,217 bats, which comprised 696 TABR and 521 MYYU. The highest concentration of bats in any one bridge section was observed in section C, which was the center section of the bridge span and was mostly over open water. The highest concentration of bats in any one seam section was observed in seam 9 of section A, where female TABR with young, non-volant pups were observed. As access to section B and portions of section C was again limited, these counts likely represent an underestimate of the true number of bats roosting in the bridge. The extrapolated daytime total count of bats in the bridge at the time of the July survey was 1,472 (1,217 + 20 percent). Table 2 shows the distribution of bats in the bridge at the time of the July surveys, and shows that the majority of bats were concentrated in the south and east areas of the bridge.

Evening Exit Count Results

During the April exit count, bats began to exit the bridge at approximately 19:25 in both directions, and by approximately 19:50, no more bats could be seen exiting the bridge. Mr. Stokes observed approximately 187 bats exiting to the west, most of which were exiting near the south end. Ms. Ogg observed approximately 38 bats exiting to the east; most were observed near the north end of the bridge, at least in part due to visual obstruction from vegetation. In both cases, the bats appeared to favor exiting the bridge near land as opposed to directly over the creek, which may be a terrain-hugging predator avoidance strategy by the exiting bats. The total number of bats observed exiting during the exit count was 225 indicating that not all of the bats left the bridge during the exit count period, or perhaps more likely, not all exiting bats could be seen. Regardless, the exit count appeared to provide an underestimate of the true number of bats roosting in the bridge, as a minimum of 280 bats was counted during the diurnal inspection.

During the July exit count, the first bats were observed exiting the bridge at approximately 19:50, and the last bats were observed exiting the bridge around 20:40. Mr. Stokes counted 639 bats exiting to the west, and Ms. Ogg counted approximately 1,050 bats exiting to the east. In this case, the exit count provided a higher estimate (1,689) than the diurnal count (1,217), suggesting a high concentration of bats was likely present in the central bridge sections that could not be thoroughly examined during the daytime. This was corroborated by the presence of heavy staining at seven of the seams in section B.

Table 2. Daytime Count of Bats on 29 July 2021 at the El Camino Real Bridge Over San Marcos Creek

Section (North-South)	Number of Bats by Seam (West-East)															Total MYYU by Section	Total TABR by Section	Observation Notes
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1			
E	1	1	3	2	0	0	1	0	1	0	0	3	0	1	3	13	3	Seams E14 and E15 were approximately half over open water at time of survey. Counts are exact.
D	1	1	26	1	0	3	50	11	1	16	6	9	31	85	30	174	97	MYYU counts for seams D1 and D2 are approximate.
C	1	50	1	1	1	8	15	14	24	14	35	70	5	100	100	254	185	Seams C1 and C2 were over water, C3 and C4 were mostly over water, C5-C12 were approximately half over water, C13-C15 were approximately one-third over water at time of survey. TABR counts for seams C2, C4, C5, C6, C7, and C14, and MYYU counts for seams C1, C4, C5, C6, C7, C9, and C14 are approximate and likely represent minimum number present.
B	unk	unk	unk	unk	unk	unk	unk	unk	unk	unk	unk	45	40	unk	unk	65	20	Entire section/span was over water at time of survey. Staining observed at seams B1, B2, and B8-B12. Counts are approximate and likely represent minimum number present.
A	3	0	3	4	4	50	200	70	19	2	15	8	20	7	1	15	391	West side of span partially over water at time of survey (did not note which seams). MYYU counts are exact. TABR counts for A8, A9, and A10 are approximate. Seam A9 includes young, non-volant TABR, some pinkies.
Total MYYU by Seam	**5**	**19**	**6**	**4**	**0**	**9**	**36**	**13**	**9**	**12**	**39**	**86**	**73**	**76**	**134**	**521**		**MINIMUM GRAND TOTAL MYYU**
Total TABR by Seam	**1**	**33**	**27**	**4**	**5**	**52**	**230**	**82**	**36**	**20**	**17**	**49**	**23**	**117**	**0**		**696**	**MINIMUM GRAND TOTAL TABR**
																1217		**MINIMUM GRAND TOTAL OF BATS**

NOTES:

MYYU = *Myotis yumanensis* (Yuma myotis). TABR = *Tadarida brasiliensis* (Mexican free-tailed bat). unk = unknown number of bats present due to lack of access.

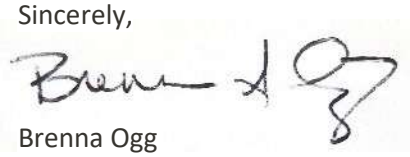
Presence of staining was noted only for seams that could not be accessed/surveyed, as the staining suggests likely presence of bats.

Blue fill represents seam/section that was at least partially over water at the time of the survey.

Immediately following the exit count, the biologists also briefly inspected the seam section (A9) where young TABR were observed during the daytime survey and observed at least 100 flightless TABR, which was higher than the estimate of young present during the daytime count.

If you have any questions about the contents of this letter, please feel free to contact me at (619) 255-0178 or **bogg@sdnhm.org** or Drew Stokes at **dstokes@sdnhm.org**.

Sincerely,



Brenna Ogg
Senior Biologist, BioServices

Cc: Kathryn Cartaino, AECOM
Cindy Kinkade, AECOM

Appendix A

Photographs of Survey Area



Photograph 1. Example of Staining and Bat Guano Observed at Multiple Bridge Seams, Facing South, 14 April 2021



Photograph 2. Example of Staining Observed at Multiple Bridge Seams, 29 July 2021



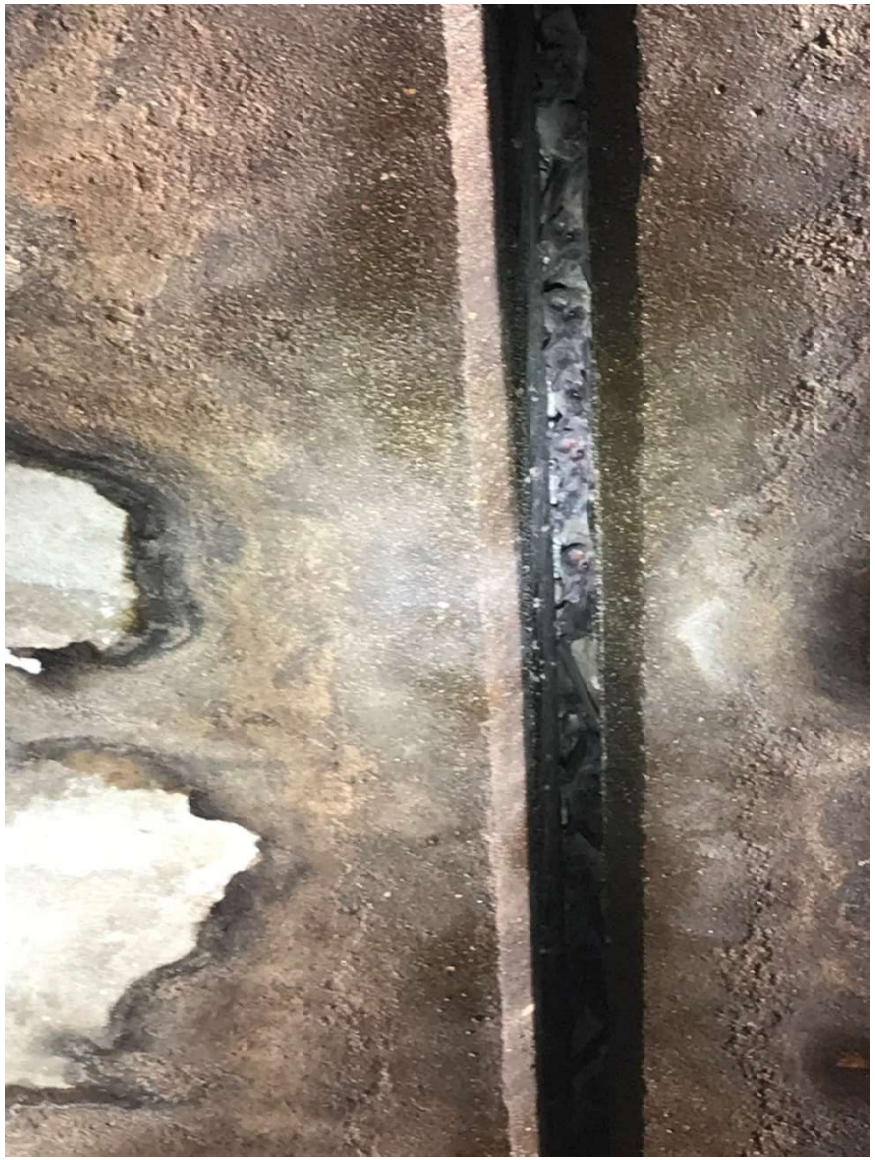
Photograph 3. Bat Guano Observed Below Seam in Bridge Section A, 29 July 2021



Photograph 4. Two Mexican Free-tailed Bats (*Tadarida brasiliensis*; right) and One Yuma Myotis (*Myotis yumanensis*; left) Observed Day-roosting in Bridge Seam, 14 April 2021



Photograph 5. Yuma Myotis (*Myotis yumanensis*; upper section of photograph) and Mexican Free-tailed Bats (*Tadarida brasiliensis*) Observed Day-roosting in Bridge Seam, 29 July 2021



Photograph 6. Mexican Free-tailed Bats (*Tadarida brasiliensis*) Observed Day-roosting in Bridge Seam, 29 July 2021

Appendix D:

Cultural Letter Report

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AECOM
401 West A Street
Suite 1200
San Diego, CA 92101
www.aecom.com

619.610.7600 tel
619.610.7601 fax

August 30, 2021

Brandon Miles
Associate Engineer
City of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92008

Subject: Letter Report: Cultural Resource Investigations for Roadway Widening to El Camino Real from Arenal Road to La Costa Avenue, #RFQ20-1118TRAN

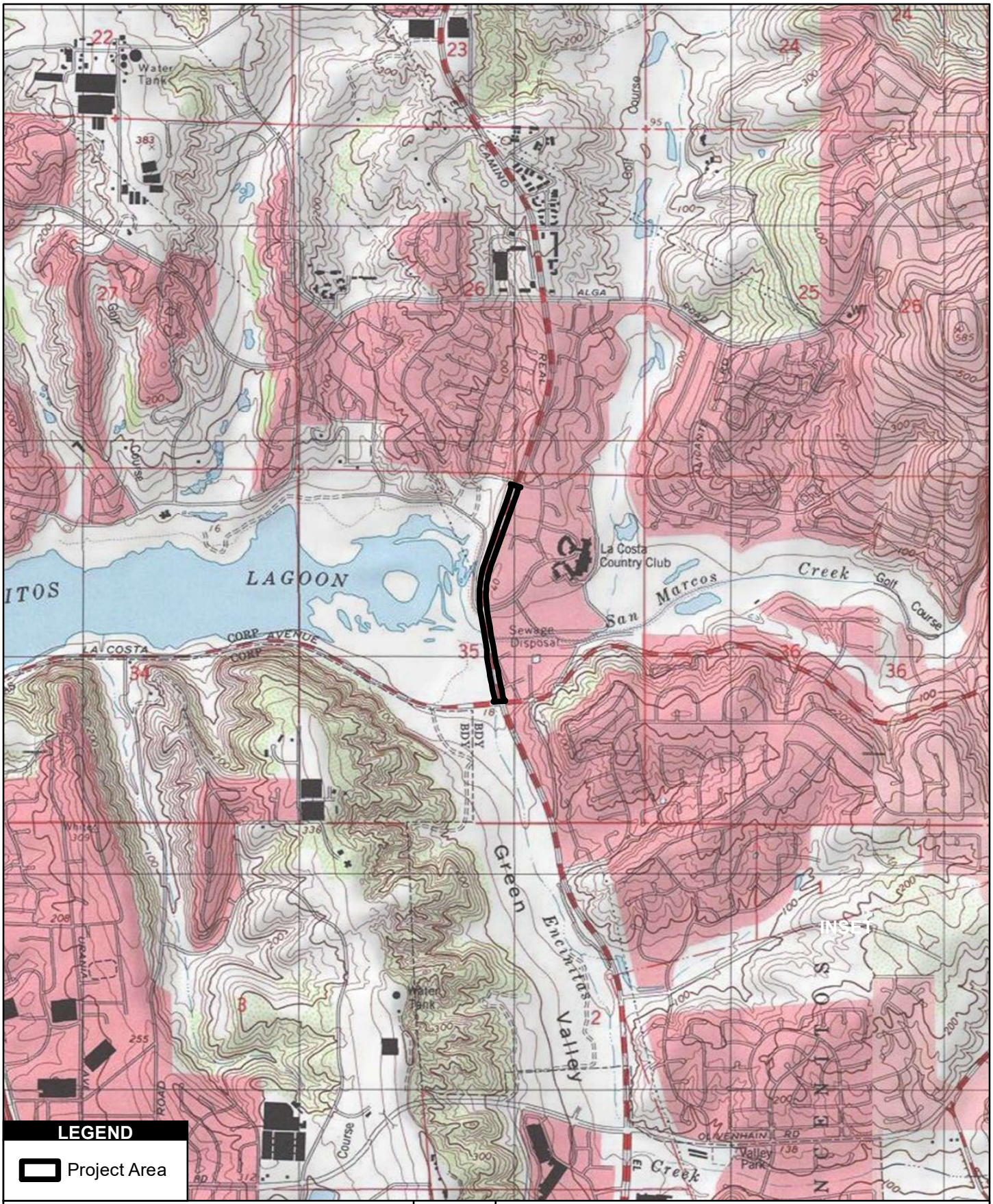
Dear Mr. Miles:

This letter report documents the results of cultural resources investigations conducted for the City of Carlsbad's (City) Roadway Widening to El Camino Real from Arenal Road to La Costa Avenue, #RFQ20-1118TRAN Project. The project extends approximately 0.65 miles along El Camino Real in the city of Carlsbad, San Diego County, California (Figure 1). This report contains the results of archival research, the Native American contact program, and the field survey. The investigation was conducted in compliance with the California Environmental Quality Act (CEQA) (California Public Resources Code 21000 et. seq.); Section 106 of the National Historic Preservation Act (54 U.S. Code [USC] 306108), as amended; and the City of Carlsbad Tribal, Cultural, and Paleontological Guidelines (ECORP 2017). The investigation included a records search at the South Coastal Information Center (SCIC); a field survey; and review and assessment of the built environment within the APE. No significant cultural resources were identified that would potentially be adversely affected by the proposed project. However, due to the high level of sensitivity for buried cultural resources within the project area, archaeological and Native American monitoring is recommended for all ground disturbance in contexts with potential to contain significant cultural resources associated with the project.

Project Description

The City has allocated local funds to provide complete street and bridge widening improvements matching adjacent, multi-modal roadway segments along El Camino Real, between La Costa Avenue on the south and Arenal Road to the north. The project site is surrounded by commercial development on the east and the Batiquitos Lagoon Ecological Reserve on the west. The Batiquitos Lagoon Ecological Reserve was established by the California Fish and Game Commission in 1983 and is owned and managed by the California Department of Fish and Wildlife. Batiquitos Lagoon was the first lagoon to undergo substantial restoration efforts in the mid-90s and is home to several threatened and endangered species. The existing El Camino Real bridge spans San Marcos Creek just prior to its confluence with the lagoon. The project involves road improvements and widening of the bridge to provide a third southbound travel lane, as well as pedestrian and bicycle facilities. Road and bridge improvements in this location will be beneficial for pedestrians and cyclists, nearby retail, as well as regional travelers. The project is located within the California Coastal Zone and due to the tidal influence in San Marcos Creek portions of the bridge work is under the retained permitting authority of the California Coastal Commission. Other surrounding areas near adjacent to the roadway are within the City of Carlsbad's Local Coastal Program (LCP) jurisdiction.

For the cultural resources investigations, an Area of Potential Effect (APE) was defined that included all areas subject to direct impacts. The APE ranges from 100 to 130 feet wide and extends approximately 0.65 miles between La Costa Avenue and Arenal Road.



CLIENT	City of Carlsbad
PROJ	El Camino Real Widening Project
SCALE	1:24,000
SOURCE	Esri 2018

N

TITLE
Project Location

AECOM
401 W. A St. #1200
San Diego, CA 92101

PROJ NO	60653767
FIGURE	1

Project Personnel

Andrew York, M.A., RPA, served as principal investigator and provided technical review. The archaeological survey was conducted by Jacqueline Mandler, B.A., of AECOM. Native American monitoring was provided by Aleshanee Ventura of Saving Sacred Sites. This letter report was completed by Jacqueline Mandler.

Archival Research

Prior to the cultural resources survey, AECOM performed a record search using files maintained at the South Coastal Information Center (SCIC). A review of the record search results identified 57 previously recorded cultural resources within a 0.5-mile of the project area (Confidential Attachment A, Figure 2). Fifty-one (51) of the previously recorded resources are prehistoric, two are historic-age, two have both prehistoric and historic-age components, and two are of unknown age. Two cultural resources are previously recorded within the APE (CA-SDI-608 and CA-SDI-609). Sites CA-SDI-608 and CA-SDI-609 are prehistoric sites that include midden, groundstone, and lithic tools (Warren 1959a-b). Site CA-SDI-608 was revisited in 2009 by ASM Affiliates as part of the SDG&E Encina-Peñasquitos 230 kV Transmission Line Guard Pole Installation Project. ASM did not observe cultural materials in the site area (Williams 2009). See Table 1 for resources within a 0.5-mile of the project area; resources within the project APE are bolded.

Table 1. Previously Recorded Cultural Resources Within 0.5-Mile of the Project Area

Primary Number	Trinomial	Resource Name/Other Identifier	Description	Most Recent Recordation	Evaluation/ CRHR Status Code*
P-37-000212	CA-SDI-212	n/a	Unknown	n.d.	Not evaluated
P-37-000213	CA-SDI-213	n/a	Unknown	n.d.	Not evaluated
P-37-000608	**CA-SDI-608**	**n/a**	**Prehistoric manos, metate fragments, scraper, sparse midden**	**2009**	**Not evaluated**
P-37-000609	**CA-SDI-609**	**n/a**	**Prehistoric midden, core tools and manos**	**1959**	**Not evaluated**
P-37-000610	CA-SDI-610	n/a	Prehistoric midden, core tools, scraper, metate, mano	1959	Not evaluated
P-37-000611	CA-SDI-611	Batiquitos Lag. #3	Extensive prehistoric habitation site	1959	Not evaluated
P-37-000688	CA-SDI-688	n/a	Prehistoric midden and lithic tools	1960	Not evaluated
P-37-000689	CA-SDI-689	n/a	Prehistoric shell and lithic tools	1960	Not evaluated
P-37-000694	CA-SDI-694	n/a	Prehistoric burials (disturbed from plowing)	1988	Not evaluated
P-37-000695	CA-SDI-695	n/a	Prehistoric midden	1960	Not evaluated
P-37-000696	CA-SDI-696	n/a	Prehistoric midden, lithic tools, pottery	1960	Not evaluated
P-37-000697	CA-SDI-697	n/a	Prehistoric midden and lithic tools	1960	Not evaluated
P-37-000698	CA-SDI-698	n/a	Prehistoric habitation area	1960	Not evaluated
P-37-000699	CA-SDI-699	n/a	Prehistoric lithic tool scatter	1960	Not evaluated
P-37-000700	CA-SDI-700	n/a	Prehistoric shell and lithic tools	1960	Not evaluated

Primary Number	Trinomial	Resource Name/Other Identifier	Description	Most Recent Recordation	Evaluation/ CRHR Status Code*
P-37-000701	CA-SDI-701	n/a	Prehistoric shell and lithic tools	1960	Not evaluated
P-37-000702	CA-SDI-702	n/a	Prehistoric shell and lithic tools	1960	Not evaluated
P-37-000763	CA-SDI-763	n/a	Prehistoric shell midden and artifacts	1961	Not evaluated
P-37-000764	CA-SDI-764	n/a	Prehistoric shell midden	1961	Not evaluated
P-37-000765	CA-SDI-765	n/a	Prehistoric artifact scatter and possible gravel pictographs	1960	Not evaluated
P-37-001015	CA-SDI-1015	n/a	Prehistoric shell midden	2009	Not evaluated
P-37-004358	CA-SDI-4358	SDM-W-954	Prehistoric shell midden and lithic artifacts	1976	Not evaluated
P-37-004391	CA-SDI-4391	n/a	Prehistoric campsite	n.d.	Not evaluated
P-37-004401	CA-SDI-4401	W-922	Prehistoric midden and lithic tools	1980	Not evaluated
P-37-004846	CA-SDI-4846	W-190	Prehistoric midden and lithic tools	1976	Not evaluated
P-37-004847	CA-SDI-4847	W-110	Prehistoric village site	2014	Not evaluated
P-37-004848	CA-SDI-4848	W-174A	Prehistoric midden, lithic artifacts, pottery	2018	Not evaluated
P-37-004849	CA-SDI-4849	W-147B	Prehistoric lithic tool and debitage scatter	1976	Not evaluated
P-37-004851	CA-SDI-4851	W-923	Prehistoric lithic artifact scatter	1980	Not evaluated
P-37-004865	CA-SDI-4865	W-975	Prehistoric midden and lithic tool and debitage scatter	1976	Not evaluated
P-37-004866	CA-SDI-4866	W-976	Prehistoric hell midden	1976	Not evaluated
P-37-004868	CA-SDI-4868	W-978	Prehistoric shell midden and lithic artifact scatter	1976	Not evaluated
P-37-004869	CA-SDI-4869	W-979	Prehistoric shell midden and lithic scatter	1976	Not evaluated
P-37-004870	CA-SDI-4870	W-980	Prehistoric lithic artifact scatter	1976	Not evaluated
P-37-006149	CA-SDI-6149	n/a	Prehistoric shell midden and lithic scatter	1978	Not evaluated
P-37-006822	CA-SDI-6822	W-1882	Prehistoric shell midden	1978	Not evaluated
P-37-006823	CA-SDI-6823	W-1883	Prehistoric shell midden	2014	Not evaluated
P-37-006824	CA-SDI-6824	W-1884	Prehistoric shell midden and lithic tool scatter	2014	Not evaluated
P-37-006825	CA-SDI-6825	W-1885	Prehistoric lithic artifact scatter	1978	Not evaluated
P-37-006868	CA-SDI-6868	W-1671; Batiquitos Bluffs farmstead	Historic-age artifact scatter and buildings	2020	6Z
P-37-008195	CA-SDI-8195	W-108	Prehistoric habitation area	2014	Not evaluated

Primary Number	Trinomial	Resource Name/Other Identifier	Description	Most Recent Recordation	Evaluation/ CRHR Status Code*
P-37-008701	CA-SDI-8701	F/M-7	Historic-age machinery and debris from oil well	1981	Not evaluated
P-37-009919	CA-SDI-9919	30216-4-18-84	Prehistoric shell midden	1984	Not evaluated
P-37-009973	CA-SDI-9973	G-1	Prehistoric lithic artifact scatter	1984	Not evaluated
P-37-010440	CA-SDI-10440	HP-2	Prehistoric lithic artifact scatter	1985	Not evaluated
P-37-011034	CA-SDI-11034	CS-S-1	Prehistoric lithic scatter	1988	Not evaluated
P-37-011035	CA-SDI-11035	CS-S-2	Prehistoric shell midden	1988	Not evaluated
P-37-011036	CA-SDI-11036	CS-S-3	Historic-age refuse scatter	1988	Not evaluated
P-37-011589	CA-SDI-11589	CB-1	Prehistoric bedrock milling and lithic scatter	1989	Not evaluated
P-37-013169	CA-SDI-13169	GV-1	Prehistoric shell midden and lithic scatter	2020	Not evaluated
P-37-013170	CA-SDI-13170	GV-2	Prehistoric shell midden and lithic scatter	1993	Not evaluated
P-37-013171	CA-SDI-13171	GV-3	Prehistoric shell midden and lithic scatter	1993	Not evaluated
P-37-013172	CA-SDI-13172	GV-4	Prehistoric campsite	1993	Not evaluated
P-37-013173	CA-SDI-13173	GV-5	Prehistoric shell midden and lithic scatter	1993	Not evaluated
P-37-013174	CA-SDI-13174	GV-6	Prehistoric shell midden and lithic scatter	1993	Not evaluated
P-37-026510	CA-SDI-17406	W-94	Prehistoric campsite	n.d.	Not evaluated
P-37-027635	CA-SDI-17952	BB Site #1	Prehistoric artifact scatter and historic-age buildings	2020	6Z

*6Z: Found ineligible for National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR) or local designation through survey evaluation.

AECOM reviewed the California Department of Transportation (Caltrans) Historical Bridges and Tunnels Inventory (Attachment B). San Marcos Creek Bridge, located within the APE, is listed as not eligible for the NRHP.

Native American Contact Program

AECOM conducted a Native American contact program that included a review of the Sacred Lands File (SLF) maintained by the California Native American Heritage Commission (NAHC) and a request for information from a list contacts provided by the NAHC. AECOM submitted a request for a SLF search to the NAHC on March 15, 2021. On March 25, the NAHC responded to the request indicating that the results of the SLF search were negative (Attachment C). The NAHC identified 27 Native American representatives that are culturally affiliated with the project area, and letters were sent to these representatives on April 27, 2021 (Attachment D, Table 2).

Responses to the initial letter were received from three Native American contacts (Attachment E). On behalf of Pala Band of Mission Indians, Alexis Wallick, Assistant Tribal Historic Preservation Officer (THPO), responded that the project is not within the Tribe's Traditional Use Area (TUA), but requested to be informed of any project updates, reports of investigations, or documentation regarding sites. Ms. Wallick also recommended that Approved Cultural Monitors be present during survey and ground disturbing activities. On behalf of Rincon Band of Luiseno Indians Cheryl Madrigal, THPO, recommended archaeological and tribal monitoring for ground disturbing activities, a monitoring report, and development of protocols for discovery of cultural material and human remains. On behalf of the Viejas Band of Kumeyaay Indians, Ernest Pingleton, Tribal Historic Officer, requested that a Kumeyaay Cultural Monitor be on site for ground disturbing activities and to inform of any new developments (inadvertent discovery of cultural artifacts, cremation sites, or human remains).

Follow-up phone calls were placed on May 6, 2021. Virgil Perez, of the Iipay Nation of Santa Ysabel, had no comment on the project (per his assistant). On behalf of the Soboba Band of Luiseno Indians, Joseph Ontiveros, Cultural Resource Department, said the Tribe defers to other tribes farther south. Angelina Gutierrez, Tribal Historic Preservation Office from the San Pasqual Band of Diegueno Mission Indians, responded that project area is within the Tribe's Traditional Use Area and the Tribe would like to engage in consultation and requests access to any cultural resource reports. To date, no response has been received from 17 of the tribal contacts (Table 2).

Table 2. Results of Native American Contact Program

Contact	Affiliation	Initial Letter Sent	Follow-Up Phone Call	Response
Edwin Romero, *Chairperson*	Barona Group of the Capitan Grande	4/27/2021	5/6/2021	No response to date.
Ralph Goff, *Chairperson*	Campo Band of Diegueno Mission Indians	4/27/2021	5/6/2021	No response to date.
Michael Garcia, *Vice Chairperson*	Ewiiaapaayp Band of Kumeyaay Indians	4/27/2021	5/6/2021	No response to date.
Robert Pinto, *Chairperson*	Ewiiaapaayp Band of Kumeyaay Indians	4/27/2021	5/6/2021	No response to date.
Clint Linton, *Director of Cultural Resources*	Iipay Nation of Santa Ysabel	4/27/2021	5/6/2021	No response to date.
Virgil Perez, *Chairperson*	Iipay Nation of Santa Ysabel	4/27/2021	5/6/2021	No comment (as per assistant).
Rebecca Osuna, *Chairperson*	Inaja-Cosmit Band of Indians	4/27/2021	5/6/2021	No response to date.
Erica Pinto, *Chairperson*	Jamul Indian Village	4/27/2021	5/6/2021	No response to date.
Lisa Cumper, *Tribal Historic Preservation Officer*	Jamul Indian Village	4/27/2021	5/6/2021	No response to date.
Carmen Lucas	Kwaaymii Laguna Band of Mission Indians	4/27/2021	5/6/2021	No response to date.

Contact	Affiliation	Initial Letter Sent	Follow-Up Phone Call	Response
Gwendolyn Parada, *Chairperson*	La Posta Band of Diegueno Mission Indians	4/27/2021	5/6/2021	No response to date.
Javaughn Miller, *Tribal Administrator*	La Posta Band of Diegueno Mission Indians	4/27/2021	5/6/2021	No response to date.
Angela Elliott Santos, *Chairperson*	Mananita Band of Kumeyaay Nation	4/27/2021	5/6/2021	No response to date.
Michael Linton, *Chairperson*	Mesa Grande Band of Diegueno Mission Indians	4/27/2021	5/6/2021	No response to date.
Shasta Gaughen, *Tribal Historic Preservation Officer*	Pala Band of Mission Indians	4/27/2021	n/a	Email response received 5/3/2021. The project is not within the Traditional Use Area, but requests to be informed of any project updates, reports of investigations, or documentation regarding sites. Recommend Approved Cultural Monitors be present during survey and ground disturbing activities.
Mark Macarro, *Chairperson*	Pechanga Band of Luiseno Indians	4/27/2021	5/6/2021	No response to date.
Paul Macarro, *Cultural Resources Coordinator*	Pechanga Band of Luiseno Indians	4/27/2021	5/6/2021	No response to date.
Bo Mazzetti, *Chairperson*	Rincon Band of Luiseno Indians	4/27/2021	n/a	See below.
Cheryl Madrigal, *Tribal Historic Preservation Officer*	Rincon Band of Luiseno Indians	4/27/2021	n/a	Email response received 5/3/2021. Recommends archaeological and tribal monitoring for ground disturbing activities, a monitoring report, and protocols for discovery of cultural material and human remains.
Allen Lawson, *Chairperson*	San Pasqual Band of Diegueno Mission Indians	4/27/2021	5/6/2021	Email response received 5/17/2021. The project area is within the Tribe's Traditional Use Area and the Tribe would like to engage in consultation. Request access to any cultural resource reports. (Angelina Gutierrez, Tribal Historic Preservation Office)
John Flores, *Environmental Coordinator*	San Pasqual Band of Diegueno Mission Indians	4/27/2021	5/6/2021	See above.
Isaiah Vivanco, *Chairperson*	Soboba Band of Luiseno Indians	4/27/2021	5/6/2021	See below.

Contact	Affiliation	Initial Letter Sent	Follow-Up Phone Call	Response
Joseph Ontiveros, *Cultural Resource Department*	Soboba Band of Luiseno Indians	4/27/2021	5/6/2021	Spoke with Mr. Ontiveros, who said the Tribe defers to other tribes further south.
Cody Martinez, *Chairperson*	Sycuan Band of the Kumeyaay Nation	4/27/2021	5/6/2021	No response to date.
Kristie Orosco, Kumeyaay Resource Specialist	Sycuan Band of the Kumeyaay Nation	4/27/2021	5/6/2021	No response to date.
Ernest Pingleton, *Tribal Historic Officer, Resource Management*	Viejas Band of Kumeyaay Indians	4/27/2021	n/a	Email response received 4/29/2021. Requests that a Kumeyaay Cultural Monitor be on site for ground disturbing activities and to inform of any new developments (inadvertent discovery of cultural artifacts, cremation sites, or human remains). Provided contact for Viejas cultural monitors (Ernest Pingleton, 619-655-0410, epingleton@viejas-nsn.gov).
John Christman, *Chairperson*	Viejas Band of Kumeyaay Indians	4/27/2021	n/a	See above.

Field Survey and Results

On April 27, 2021, AECOM conducted an intensive pedestrian survey of the project APE. The project area is located along El Camino Real between La Costa Avenue and Arenal Road. Although most of the project APE is paved, all areas where the ground was exposed were thoroughly examined. Visibility on the eastern portion of the APE was very poor (0-5%) while visibility on the western side was fair to good (50-80%). The eastern portion of the APE is landscaped with grass/turf and non-native ornamental vegetation (Plate 1). Exposed soil was examined, and no cultural material was observed. The western side of the APE was disturbed from the construction of the road shoulder (Plate 2). Soil consisted of light yellowish-brown sandy silt with gravel and stone inclusions. Weathered fragments of shell (*sp. Chione*) were observed but were in a clearly disturbed context. No midden soils were observed. Modern refuse (fragments of glass, plastic, beverage cans and bottles) was prevalent within the survey area. The previously recorded sites, CA-SDI-608 and CA-SDI-609, were not relocated. The current observations for these sites were recorded on Department of Parks and Recreation (DPR) Form Updates (Attachment F).

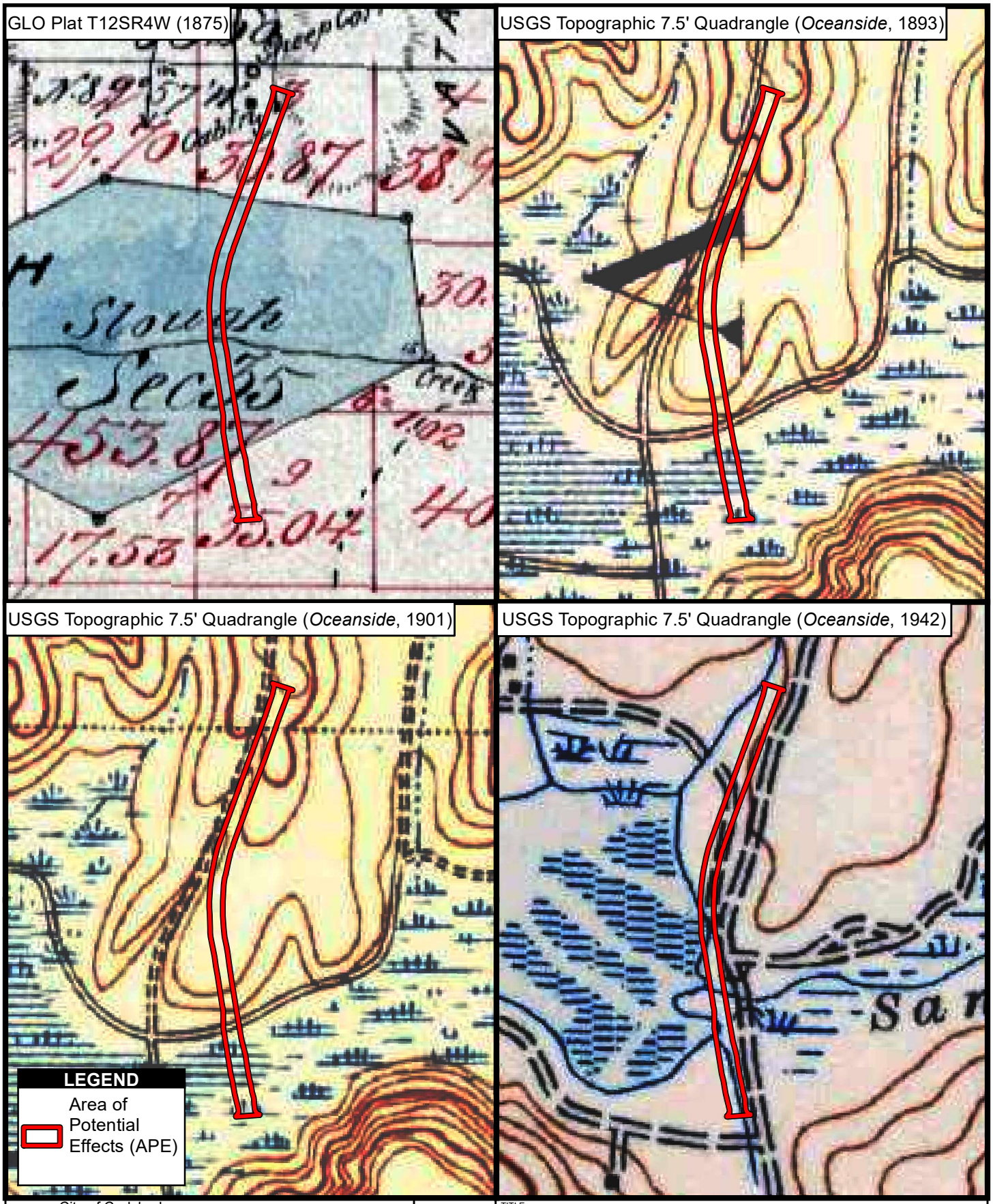
Additionally, El Camino Real is designated as California Historical Landmark #784 (OHP 2021). The northern portion of the project area aligns with the historical alignment of El Camino Real from at least 1893 (USGS 1893), while the southern portion of the project area aligns with the historical alignment of El Camino Real from at least 1942 (USGS 1942) (Figure 3). The current alignment of El Camino real borders Batiquitos Lagoon to the west, a shopping center and resort to the east, and is built with modern materials.



Plate 1. Overview of the project area from Arenal Road, view southwest.



Plate 2. Overview of the project area approximately 0.25 miles south of Arenal Road, view south.
Note: Exposed soil in the foreground is within the previously mapped location of site CA-SDI-608 (not relocated in 2009 and current survey effort).



CLIENT	City of Carlsbad
PROJ	El Camino Real Widening Project
SCALE	1:12,000
SOURCE	BLM (2021), USGS (2021)

N

TITLE

Historical Maps showing El Camino Real

AECOM
401 W. A St. #1200
San Diego, CA 92101

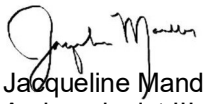
PROJ NO	60653767
FIGURE	3

Summary and Recommendations

Based on the archival research and the pedestrian survey conducted by AECOM, no cultural resources were observed within the survey areas. El Camino Real, the subject of this project, is a California Historical Landmark. Its character defining feature is its alignment (location), as it lacks setting, design, materials, workmanship, feeling, and association within the project area for its period of significance. The alignment of El Camino Real will remain intact resulting in no adverse effects to the resource. Two previously recorded sites, CA-SDI-608 and CA-SDI-609, were not relocated within the project area. However, due to the high level of sensitivity for buried cultural resources within the project area, archaeological and Native American monitoring is recommended for all ground disturbance in contexts with potential to contain significant cultural resources associated with the project. Although no surface manifestations of cultural resources were observed during the survey, the potential for the presence of buried deposits remains high due to the number and types of resources near the project area. Subsurface investigations have not occurred within the boundaries of the two previously recorded cultural resources within the project area (CA-SDI-608 and CA-SDI-609) and the potential for buried deposits within the project area cannot be ruled out. Section 106 and the City's Cultural Guidelines require cultural resources be identified, evaluated, and impacts assessed to determine whether a project will have adverse effects/significant impacts (ECORP 2017:89). Archaeological and Native American monitoring for ground disturbing activities are recommended to meet reasonable and good faith identification efforts, as required by Section 106.

If previously unidentified cultural resources are encountered during ground-disturbing activities, work in the immediate vicinity will be suspended until the discovery is assessed by a qualified archaeologist, the City and USACE archaeologist are contacted, and an impact assessment is conducted. If human remains are encountered during any ground-disturbing activities, all work will cease and the county coroner will be contacted, per the California Public Resources Code. Should the remains be identified as Native American, the NAHC will be contacted within 48 hours to provide an MLD to determine appropriate actions. A copy of this letter report will be sent to the SCIC.

Sincerely,



Jacqueline Mandler, B.A.
Archaeologist III
Jacqueline.Mandler@aecom.com

cc: J. Lennox (SCIC)

ATTACHMENTS:

A: (Confidential) Records Search Results:
- Summary
- Known Sites within 0.5 Mile of APE
- Previously Recorded Sites within APE

B: Caltrans Bridge Inventory for San Marcos Creek Bridge
C: Results of the NAHC SLF Search
D: Example Letter sent to Native American Contacts
E: Responses from Native American Contacts
F (Confidential): DPR Form Updates: P-37-000608 (CA-SDI-608) and P-37-000609 (CA-SDI-609)

REFERENCES:

ECORP Consulting, Inc.
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1893 Topographic 7.5-minute Quadrangle, Oceanside. https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=ee7c4efbd1ea4e76c57dd957380db952. Accessed April 29, 2021.
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Williams, Brian
2009 *DPR Site Form Update for P-37-000608 (CA-SDI-608)*. On file at the South Coastal Information Center at San Diego State University.

Warren, C.N.
1959a *DPR Site Form for P-37-000608 (CA-SDI-608)*. On file at the South Coastal Information Center at San Diego State University.
1959b *DPR Site Form for P-37-000609 (CA-SDI-609)*. On file at the South Coastal Information Center at San Diego State University.

Attachment A

Records Search Results

CONFIDENTIAL

Attachment B

Caltrans Bridge Inventory for San Marcos Creek Bridge

Structure Maintenance & Investigations



Historical Significance - Local Agency Bridges

March 2019

District 11

San Diego County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built
57C0172	S. CHOLLAS CRK (FEDERAL BLVD)	200 FT E/O STATE RTE 94	5. Bridge not eligible for NRHP	1930
57C0175L	SAN DIEGO RIVER (FRIARS RD)	0.7MI E/O I-15	5. Bridge not eligible for NRHP	1967
57C0175R	SAN DIEGO RIVER (FRIARS RD)	0.7MI E/O I-5	5. Bridge not eligible for NRHP	1967
57C0176	PALOMAR AIRPORT ROAD OH	0.25MI W/O ROUTE 1-5	5. Bridge not eligible for NRHP	1965
57C0177	BUENA VISTA CRK (EL CAMINO REAL)	50FT S/O RTE 78 OFFRAMP	5. Bridge not eligible for NRHP	1966
57C0178	BUENA VISTA CRK (S. VISTA WY)	50FT N/O HAYMAR DR	5. Bridge not eligible for NRHP	1966
57C0179	BUENA VISTA CRK (HAYMAR DR)	0.35MI E/O EL CAMINO REAL	5. Bridge not eligible for NRHP	1966
57C0183	TECOLOTE CREEK (E MISSION BAY DR)	0.3MI N/O SEA WORLD DR	5. Bridge not eligible for NRHP	1967
57C0184	ESCONDIDO CRK (VALLEY CNTR RD)	4.65 MI NE RTE FAI-15	5. Bridge not eligible for NRHP	1976
57C0186	VIEJAS CREEK (ALPINE BLVD)	0.45MI E/O I-8 EXIT 33	5. Bridge not eligible for NRHP	1969
57C0188	MURPHY CANYON RD UC (FRIARS RD)	0.15MI W/O RTE 15	5. Bridge not eligible for NRHP	1967
57C0189	ENCINITAS CREEK (EL CAMINO REAL)	AT OLIVENHAIN / LEUCADIA	5. Bridge not eligible for NRHP	1962
57C0190	SAN MARCOS CRK (EL CAMINO REAL)	0.16MI N/O LA COSTA AVE	5. Bridge not eligible for NRHP	1971
57C0191	AGUA HEDIONDA CRK (EL CAMINO REAL)	80FT S/O CANNON RD	5. Bridge not eligible for NRHP	1971
57C0194	32ND STREET POC	AT INTRSCTN OF HARBOR DR	5. Bridge not eligible for NRHP	1956
57C0195	CHOLLAS CREEK (HARBOR DR)	0.18MI N/O 32ND ST	5. Bridge not eligible for NRHP	1942
57C0196	HARBOR DRIVE OH	0.3 MI SE/O 5TH AVE	5. Bridge not eligible for NRHP	1943
57C0197	GENERAL DYNAMICS POC (PAC HWY)	470FT S/O SASSAFRAS ST.	5. Bridge not eligible for NRHP	1942
57C0198	MAIN STREET UC (WABASH BLVD)	0.25M N/O 32ND ST/N.SCOTT	5. Bridge not eligible for NRHP	1954
57C0205	CALLAN ROAD UC (N TORREY PINES RD)	1.0 MI N/O GENESEE RD	5. Bridge not eligible for NRHP	1943
57C0207	TORREY PINES ROAD OH (PCH)	250FT S/O CARMEL VALLEYRD	2. Bridge is eligible for NRHP	1933
57C0208	CAMINO DEL MAR OH	AT JIMMY DURANTE BLVD	5. Bridge not eligible for NRHP	1927
57C0209	SAN DIEGUITO RVR (CAMINO DEL MAR)	0.3MI S/O VIA DE LA VALLE	5. Bridge not eligible for NRHP	1932
57C0210	SAN ELIJO LAGOON (CAMINO DEL MAR)	1.8MI N/O LOMAS SANTA FE	5. Bridge not eligible for NRHP	1934
57C0212	PONTO DRIVE UC (CARLSBAD BLVD N/B)	0.1MI N/O AVENIDA ENCINAS	5. Bridge not eligible for NRHP	1952
57C0214R	LAS ENCINAS CREEK (CARLSBAD BLVD N/B)	0.6MI S/O PALOMAR AIRPORT	5. Bridge not eligible for NRHP	1951
57C0215	PALOMAR AIRPORT ROAD OC	0.35MI W/O ROUTE 5	5. Bridge not eligible for NRHP	1953
57C0217	UPAS STREET POC (PACIFIC HWY)	0.15MI N/O SASSAFRAS ST	5. Bridge not eligible for NRHP	1965
57C0218	PACIFIC HIGHWAY OH	0.16 W/O I 5	5. Bridge not eligible for NRHP	1958
57C0220	WITHERBY STREET UC (PAC HWY)	0.6 MI N/O WASHINGTON ST.	5. Bridge not eligible for NRHP	1943
57C0221	PACIFIC HWY RAMP (BARNETT)	PACIFIC HWY & BARNETT	5. Bridge not eligible for NRHP	1943
57C0222	GENERAL DYNAMICS POC (PAC HWY)	0.6MI S/O TAYLOR ST.	5. Bridge not eligible for NRHP	1942
57C0223	SAN CLEMENTE CYN CRK (GENESEE)	0.2 MI S/O OF SR 52	5. Bridge not eligible for NRHP	1966
57C0225	CUDAHY CHANNEL (ANNA AVE)	0.1MI N/O CHP STATION	5. Bridge not eligible for NRHP	1933
57C0226	JACUMBA OH (OLD HWY 80)	2.6MI W/O CARIZO GORGE RD	2. Bridge is eligible for NRHP	1931
57C0227	BOUNDARY CREEK (OLD HWY 80)	2.5MI W/O CARIZO GORGE RD	2. Bridge is eligible for NRHP	1931
57C0228	MEADOW CREEK (OLD HWY 80)	1.5MI W/O CARIZO GORGE RD	5. Bridge not eligible for NRHP	1932
57C0229	HORSE CREEK (OLD HWY 80)	1MI W/O CARRIZO GORGE RD	5. Bridge not eligible for NRHP	1932
57C0230	FLAT CREEK (OLD HWY 80)	1.0MI W/O CARIZO GORGE RD	5. Bridge not eligible for NRHP	1932
57C0233	MURRAY CANYON (FRIARS RD)	500FT E/O SR-163	5. Bridge not eligible for NRHP	1970
57C0234	LA POSTA CREEK (OLD HWY 80)	0.9M E/O KITCHEN CREEK RD	5. Bridge not eligible for NRHP	1973
57C0235	SWEETWATER RVR (N. 2ND ST.)	0.16 MI S/O E.30TH&SWTWTR	5. Bridge not eligible for NRHP	1990
57C0237	COTTONWOOD CRK (BUCKMAN SPRGS RD)	0.3MI S/O I-8	5. Bridge not eligible for NRHP	1975

Attachment C

Results of the NAHC SLF Search

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

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Karuk

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Paiute/White Mountain Apache

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Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

COMMISSIONER
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Pomo

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nahc@nahc.ca.gov
NAHC.ca.gov

March 25, 2021

Jacqueline Mandler
AECOM

Via Email to: Jacqueline.mandler@aecom.com

Re: El Camino Real Widening Project, San Diego County

Dear Ms. Mandler:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Diego County
3/25/2021

Barona Group of the Capitan Grande
Edwin Romero, Chairperson
1095 Barona Road — Diegueno
Lakeside, CA, 92040
Phone: (619) 443 - 6612
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Alpine, CA, 91901
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Fax: (619) 445-9126
wmicklin@leaningrock.net

Iipay Nation of Santa Ysabel
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Santa Ysabel, CA, 92070
Phone: (760) 765 - 0845
Fax: (760) 765-0320

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
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Santa Ysabel, CA, 92070
Phone: (760) 803 - 5694
cjlinton73@aol.com

Inaja-Cosmit Band of Indians
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2005 S. Escondido Blvd. — Diegueno
Escondido, CA, 92025
Phone: (760) 737 - 7628
Fax: (760) 747-8568

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Diegueno
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Phone: (619) 669 - 4785
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epinto@jiv-nsn.gov

Jamul Indian Village
Lisa Cumper, Tribal Historic Preservation Officer
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Jamul, CA, 91935
Phone: (619) 669 - 4855
lcumper@jiv-nsn.gov

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas,
P.O. Box 775 — Kwaaymii
Pine Valley, CA, 91962 — Diegueno
Phone: (619) 709 - 4207

La Posta Band of Diegueno Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

La Posta Band of Diegueno Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed El Camino Real Widening Project, San Diego County.

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Diegueno
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Mesa Grande Band of Diegueno Mission Indians
Michael Linton, Chairperson
P.O Box 270 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pechanga Band of Luiseno Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Pechanga Band of Luiseno Indians
Paul Macarro, Cultural Resources Coordinator
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6306
Fax: (951) 506-9491
pmacarro@pechanga-nsn.gov

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

Rincon Band of Luiseno Indians
Cheryl Madrigal, Tribal Historic Preservation Officer
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 297 - 2635
crd@rincon-nsn.gov

San Pasqual Band of Diegueno Mission Indians
John Flores, Environmental Coordinator
P. O. Box 365 — Diegueno
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

San Pasqual Band of Diegueno Mission Indians
Allen Lawson, Chairperson
P.O. Box 365 — Diegueno
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed El Camino Real Widening Project, San Diego County.

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Sycuan Band of the Kumeyaay Nation
Kristie Orosco, Kumeyaay Resource Specialist
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 6917

Viejas Band of Kumeyaay Indians
Ernest Pingleton, Tribal Historic Officer, Resource Management
1 Viejas Grade Road — Diegueno
Alpine, CA, 91901
Phone: (619) 659 - 2314
epingleton@viejas-nsn.gov

Viejas Band of Kumeyaay Indians
John Christman, Chairperson
1 Viejas Grade Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed El Camino Real Widening Project, San Diego County.

Attachment D

Example Letter sent to Native American Contacts

AECOM
401 West A Street
Suite 1200
San Diego, CA 92101
aecom.com

April 26, 2021

60653767
El Camino Real Widening Project

Edwin Romero
Chairperson
Barona Group of the Capitan Grande
1095 Barona Road
Lakeside, CA 92040

Subject: El Camino Real Widening Between Arenal Road and La Costa Avenue Project

Dear Mr. Romero:

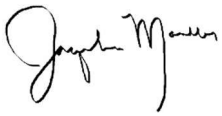
AECOM is conducting cultural resources investigations for the City of Carlsbad's El Camino Real Widening Between Arenal Road and La Costa Avenue Project. AECOM was retained by the City of Carlsbad to produce a cultural resources letter report that will support the U.S. Army Corps of Engineers' (USACE) Section 106 consultation and the environmental document. The project is located in the City of Carlsbad, San Diego County, California and stretches approximately 0.25-miles along El Camino Real between Arenal Road and La Costa Avenue. The City of Carlsbad proposes to provide complete street and bridge widening improvements matching adjacent, multi-modal roadway segments along El Camino Real, between La Costa Avenue on the south and Arenal Road to the north, within San Diego county. The project site is surrounded by commercial development on the east and the Batiquitos Lagoon Ecological Reserve on the west. The project involves road improvements and widening of the bridge to provide a third southbound travel lane, as well as pedestrian and bicycle facilities. Road and bridge improvements in this location will be beneficial for pedestrians and cyclists, nearby retail, as well as regional travelers.

Project Location
The proposed project is located on the Encinitas 1:24000 USGS Topographic Map. The site is located in Township 12S, Range 4W, Section 35 (please see enclosed map).

Cultural Resources
The purpose of this letter is to notify you of this project and to solicit your knowledge regarding any cultural resources of concern within the study area. The results from a records search by the Native American Heritage Comission (NAHC) of the Sacred Lands Files, based on the location information specified above, were negative. The NAHC suggested that AECOM solicit input from you regarding any traditional cultural places or sites that may be affected by the project. Additionally, a search of archaeological site records on file at the South Coastal Information Center indicated that two sites, 37-000608 and 37-000609, were recorded within or adjacent to the project area in 1959. However, recent surveys within the present project area have revealed no cultural materials associated with these sites.

Please contact us if you have knowledge that you would like to contribute about cultural resources in the project area. We would like to include your input in the cultural resources report produced for the City of Carlsbad. Providing comments now does not limit your ability to comment at a later time. Thank you for your consideration on this matter and please do not hesitate to contact me should you have any questions or need additional information.

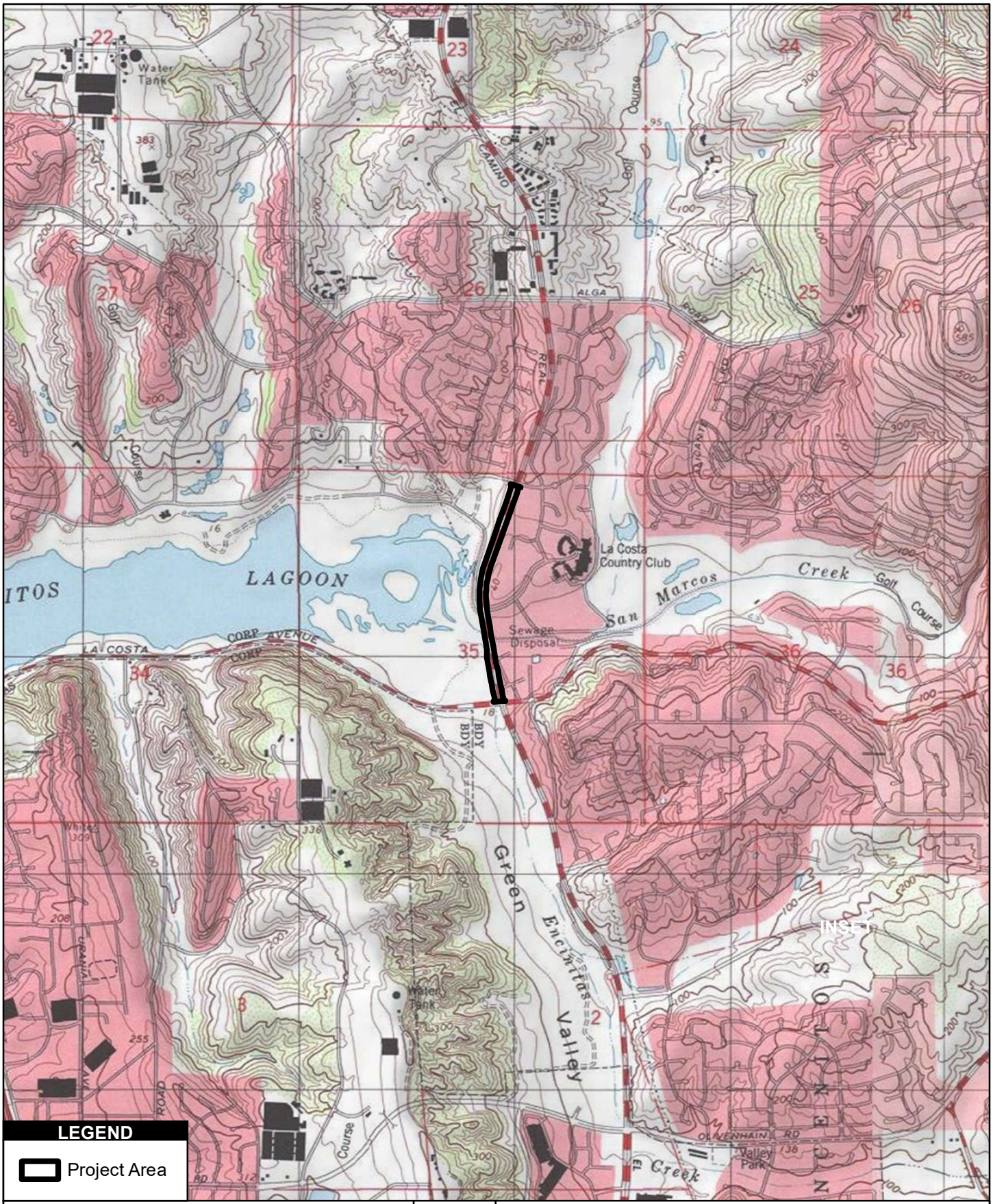
Very Respectfully,



Jacqueline Mandler
Archaeologist III

AECOM
T: 619.610.7600
E: jacqueline.mandler@aecom.com

Enclosure: Project Location map



CLIENT	City of Carlsbad
PROJ	El Camino Real Widening Project
SCALE	1:24,000
SOURCE	Esri 2018

N

TITLE
Project Location

AECOM
401 W. A St. #1200
San Diego, CA 92101

PROJ NO	60653767
FIGURE	1

Attachment E

Responses from Native American Contacts

Mandler, Jacqueline

From: Alexis Wallick <awallick@palatribe.com>
Sent: Monday, May 3, 2021 2:42 PM
To: Mandler, Jacqueline
Subject: [EXTERNAL] El Camino Real widening between Arenal and La Costa Ave Project
Attachments: AECOM- El Camino Real widening between Arenal Rd and La Costa Ave Project.pdf

Attached is the response to the request for comment on this project, sent on behalf of Shasta Gaughen.

Alexis Wallick
Pala Band of Mission Indians
Assistant Tribal Historic Preservation Officer
Pala Environmental Department, THPO
35008 Pala Temecula Road, Pmb 50; Pala, CA 92059
(760)891-3537
awallick@palatribe.com
ped.palatribe.com

Please consider the environment before printing this email.

THPO
Pala Band of Mission Indians

TRIBAL HISTORIC PRESERVATION OFFICE
PALA BAND OF MISSION INDIANS
PMB 50, 35008 Pala Temecula Road | Pala, CA 92059
Phone 760-891-3510 | www.palatribe.com

May 3, 2021

Jacqueline Mandler
AECOM
401 West A St. Suite 1200
San Diego, CA 92101

Re: El Camino Real widening between Arenal Rd. and La Costa Ave Project

Dear Jacqueline Mandler:

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). It is, however, situated in close proximity to the Reservation and information generated would likely be useful in better understanding regional culture and history. Therefore, we request as a courtesy to be kept in the information loop as the project progresses and would appreciate being maintained on the receiving list for project updates, reports of investigations, and/or any documentation that might be generated regarding previously reported or newly discovered sites. Further, if the project boundaries are modified to extend beyond the currently proposed limits, we do request updated information and the opportunity to respond to your changes.

Finally, we recommend that Approved Cultural Monitors be present on-site during all survey and all ground-disturbing activities. If you do not have access to an Approved Cultural Resource Monitor, contact us and we will work with you to identify appropriately trained individuals.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact Alexis Wallick by telephone at 760-891-3537 or by e-mail at awallick@palatribe.com. Pala is now offering tribal monitoring services. To arrange for Pala's cultural monitoring services, please contact Arthur Ayala by telephone at 760-891-3511 or by e-mail at aayala@palatribe.com.

Sincerely,

Shasta C. Gaughen, Ph.D.
Tribal Historic Preservation Officer
Pala Band of Mission Indians

Mandler, Jacqueline

From: Cheryl Madrigal <CMadrigal@rincon-nsn.gov>
Sent: Monday, May 3, 2021 8:33 AM
To: Mandler, Jacqueline
Cc: Deneen Pelton; Christina Bustamante
Subject: [EXTERNAL] FW: El Camino Real Widening Project
Attachments: El Camino Real Widening Project.pdf

Jacqueline,

Please see attached response letter in regards to your letter from April 26, 2021.

Thanks,

Cheryl

Cheryl Madrigal
Cultural Resources Manager
Tribal Historic Preservation Officer
Cultural Resources Department
Rincon Band of Luiseño Indians
1 West Tribal Road | Valley Center, CA 92082
Office:760-297-2635 ext. 323|Cell: 760-648-3000
Fax: 760-749-8901
Email: cmadrigal@rincon-nsn.gov

Rincon Band of Luiseño Indians
www.rincon-nsn.gov

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From: Cheryl Madrigal
Sent: Monday, May 3, 2021 8:31 AM
To: Christina Bustamante <Christina.Bustamante@carlsbadca.gov>
Cc: Deneen Pelton <DPelton@rincon-nsn.gov>
Subject: El Camino Real Widening Project

Christina,

Please see attached response letter to above mentioned project. If you have any questions or comments, please contact us.

Thank you for the opportunity to protect our cultural assets.

Cheryl

Cheryl Madrigal
Cultural Resources Manager
Tribal Historic Preservation Officer
Cultural Resources Department
Rincon Band of Luiseño Indians
1 West Tribal Road | Valley Center, CA 92082
Office:760-297-2635 ext. 323|Cell: 760-648-3000
Fax: 760-749-8901
Email: cmadrigal@rincon-nsn.gov



Rincon Band of Luiseño Indians
www.rincon-nsn.gov

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Rincon Band of Luiseño Indians
CULTURAL RESOURCES DEPARTMENT

One Government Center Lane | Valley Center | CA 92082
(760) 749-1051 | Fax: (760) 749-8901 | rincon-nsn.gov

April 30, 2021

Sent via email: Christina.Bustamante@carlsbadca.gov
City of Carlsbad
Christina Bustamante
1635 Faraday Avenue
Carlsbad, CA 92008-7314

Re: El Camino Real Widening Project

Dear Ms. Bustamante,

This letter is written on behalf of the Rincon Band of Luiseño Indians ("Rincon Band" or "Band"), a federally recognized Indian Tribe and sovereign government. We have received your notification regarding the above referenced project and we thank you for the opportunity to provide information pertaining to cultural resources. The location identified in the transmitted project documents is situated within the Traditional Use Area (TUA) of the Luiseño people and within the Band's specific Area of Historic Interest (AHI). As such, Rincon is traditionally and culturally affiliated to the project area.

After review of the provided documents and our internal information, the Band has specific concerns that the project has the potential to impact tangible Tribal Cultural Resources. Embedded in these resources and within the AHI are Rincon's history, culture, and continuing traditional identity. The project site is within a culturally-sensitive area as it is associated with traditional practices of the Luiseño people. The sensitivity of the area is further evident through the archaeological site records as one recorded site is within the APE, one is adjacent, and others are in close proximity to the project site. We understand that a recent foot survey of the area has not revealed any cultural materials on the surface that could be associated with these sites. However, the Rincon Band believes that potential exists for subsurface cultural deposits. The Rincon Band recommends archaeological and tribal monitoring for ground disturbing activities, a monitoring report, and protocols for discovery of cultural material and human remains.

We understand that other Tribes potentially have knowledge particular to this project site and may request additional measures. Please note that the Rincon Band supports all efforts to completely avoid cultural resources as preferred mitigation.

We do request that the Rincon Band be notified of any changes in project plans. In addition, we request a copy of the final monitoring report, when available and ask that Rincon be afforded the opportunity to monitor the ground disturbances associated with this project.

The Rincon Band reserves its right to continue to fully participate in the environmental review process and to review and submit additional information during the public review process. If you have additional questions or concerns,

Bo Mazzetti, Chairman | Tishmall Turner, Vice Chair | Laurie E. Gonzalez, Council Member | John Constantino, Council Member | Joseph Linton, Council Member

please do not hesitate to contact our office at your convenience at (760) 297-2635 or via electronic mail at cmadrigal@rincon-nsn.gov. We look forward to working together to protect and preserve our cultural assets.

Sincerely,



Cheryl Madrigal
Tribal Historic Preservation Officer
Cultural Resources Manager

Mandler, Jacqueline

From: Ray Teran <rteran@viejas-nsn.gov>
Sent: Thursday, April 29, 2021 1:39 PM
To: Mandler, Jacqueline
Cc: Ernest Pingleton
Subject: [EXTERNAL] FW: El Camino Real Widening Between Arenal Road and La Costa Avenue Project
Attachments: Viejas Band of Kumeyaay Indians 1.pdf

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has cultural significance or ties to Viejas. Cultural resources have been located within or adjacent to the APE-DE of the proposed project.

Viejas Band request that a Kumeyaay Cultural Monitor be on site for ground disturbing activities and to inform us of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains.

If you wish to utilize Viejas cultural monitors, please call Ernest Pingleton at 619-655-0410 or email, epingleton@viejas-nsn.gov, for contracting and scheduling. Thank you.

From: Ernest Pingleton
Sent: Thursday, April 29, 2021 1:35 PM
To: Ray Teran <rteran@viejas-nsn.gov>
Subject: Fwd: El Camino Real Widening Between Arenal Road and La Costa Avenue Project

Sent from my iPhone

Begin forwarded message:

> **From:** "Mandler, Jacqueline" <Jacqueline.Mandler@aecom.com>
> **Date:** April 29, 2021 at 1:18:48 PM PDT
> **To:** Ernest Pingleton <epingleton@viejas-nsn.gov>
> **Subject: El Camino Real Widening Between Arenal Road and La Costa Avenue Project**
>
> Good Afternoon, I am reaching out regarding the City of Carlsbad's El Camino Real Widening Between Arenal Road and La Costa Avenue Project located in San Diego County, California. Please see th
> Caution! This message was sent from outside your organization.
> sophospsmartbannerend
> Good Afternoon,
>
> I am reaching out regarding the City of Carlsbad's El Camino Real Widening Between Arenal Road and La Costa Avenue Project located in San Diego County, California. Please see the attached Project Notification Letter and Project Location map.
>
> Please let me know if I can provide any additional information.
>
> Thank you,

Jacqueline Mandler
Archaeologist III
D +1-619-610-7597
M +1-858-334-3552
jacqueline.mandler@aecom.com<mailto:jacqueline.mandler@aecom.com>

AECOM
401 West A Street, Suite 1200
San Diego, CA 92101, USA
T +1-619-610-7600

Mandler, Jacqueline

From: Angelina Gutierrez <angelinag@sanpasqualtribe.org>
Sent: Monday, May 17, 2021 1:11 PM
To: Mandler, Jacqueline
Cc: Desiree Morales Whitman; John Flores; THPO
Subject: [EXTERNAL] El Camion real Widening Arena Road and La Costa Ave. Project
Attachments: El Camino Real Widening Arenal Road and La Costa Avenue Project.pdf

Please see attach file thank you.

Regards

Angelina Gutierrez
THPO Monitor Supervisor
San Pasqual Environmental Department
angelinag@sanpasqualtribe.org
Phone (760) 651-5219
Cell: (760) 803-5648

IPAI

SAN PASQUAL BAND OF MISSION INDIANS

SAN PASQUAL RESERVATION

TRIBAL COUNCIL

Stephen W. Cope
Chairman

Justin Quis Quis
Vice Chairman

Jenny Alto
Secretary-Treasurer

Roberta Cameron
Councilman

Melody S. Arviso
Councilman

May 17, 2021

Jacqueline Mandler
Archaeologist lll
AECOM
401 West A Street
Suite 1200
San Diego Ca 92101

RE: El Camino Real Widening Arenal Road and La Costa Avenue Project

Dear Ms. Mandler,

The San Pasqual Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Desiree Morales Whitman THPO.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized San Pasqual Indian Reservation. It is, however, within the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Furthermore, we would like to engage in consultation. So that San Pasqual can have a voice in the developing the measures that will be taken to protect these sites and mitigate any adverse impacts. We would appreciate being given access to any cultural resource reports that have been or will be generated during the environmental review process so we can contribute most effectively to the consultation process.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone 760-803-5648 or by e-mail at Angelinag@sanpasqualtribe.org and THPO@sanpasqualtribe.org.

Respectfully,

Angelina Gutierrez

Angelina Gutierrez
Tribal Historic Preservation Office, Monitor Supervisor
San Pasqual Band of Mission Indians

Attachment F

DPR Form Updates
P-37-000608 (CA-SDI-608) and P-37-000609 (CA-SDI-609)

CONFIDENTIAL

Appendix E:

Floodplain Analysis

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TORY R. WALKER ENGINEERING

FLOODPLAIN ANALYSIS

FOR

EL CAMINO REAL WIDENING

BETWEEN ARENAL ROAD AND LA COSTA AVENUE

CITY OF CARLSBAD, CA

PREPARED FOR

Dokken Engineering
1450 Frazee Rd #100,
San Diego, CA 92108

JULY 2022

Prepared by:

Tory R. Walker, PE

R.C.E. 45005



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3.3. Proposed Condition Model 4
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Figure 2. HEC-RAS Cross Sections at Bridge 2
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ATTACHMENTS

ATTACHMENT 1 Effective Model and FIRM
ATTACHMENT 2 HEC-RAS Results
ATTACHMENT 3 Work Maps
ATTACHMENT 4 Scour Calculations

1. INTRODUCTION

The City of Carlsbad is proposing improvements to the existing El Camino Real bridge, which is located just north of La Costa Avenue, in the city of Carlsbad, CA. The proposed improvements include adding pedestrian bridges on both the east and west sides of the main bridge. The existing El Camino Real bridge crosses San Marcos Creek, which transitions into Batiquitos Lagoon (See **Figure 1**).

The purpose of this study is to demonstrate, through hydraulic analysis, that base flood elevations will not rise due to the proposed improvements.



Figure 1. Vicinity Map

2. DATA COLLECTION AND REVIEW

2.1. Topographic Data

Aerial topographic mapping (1-foot contours) and field survey data from January 6, 2021 in vertical datum NGVD 29 was obtained by Photo Geodetic Corporation for the subject area. A topographic survey was also prepared by Aguirre and Associates in January 2021. This topographic information was used to prepare the corrected effective model at the cross

sections surrounding the existing El Camino Real bridge. The topography extends from effective Cross Section 9734 downstream to 9741 upstream (See **Figure 2**).

2014 SanGIS topography with 2-foot contours for Carlsbad was used for remaining overbank areas. This topography comes in datum NAVD 88 and was therefore converted to NGVD 29 for this study.

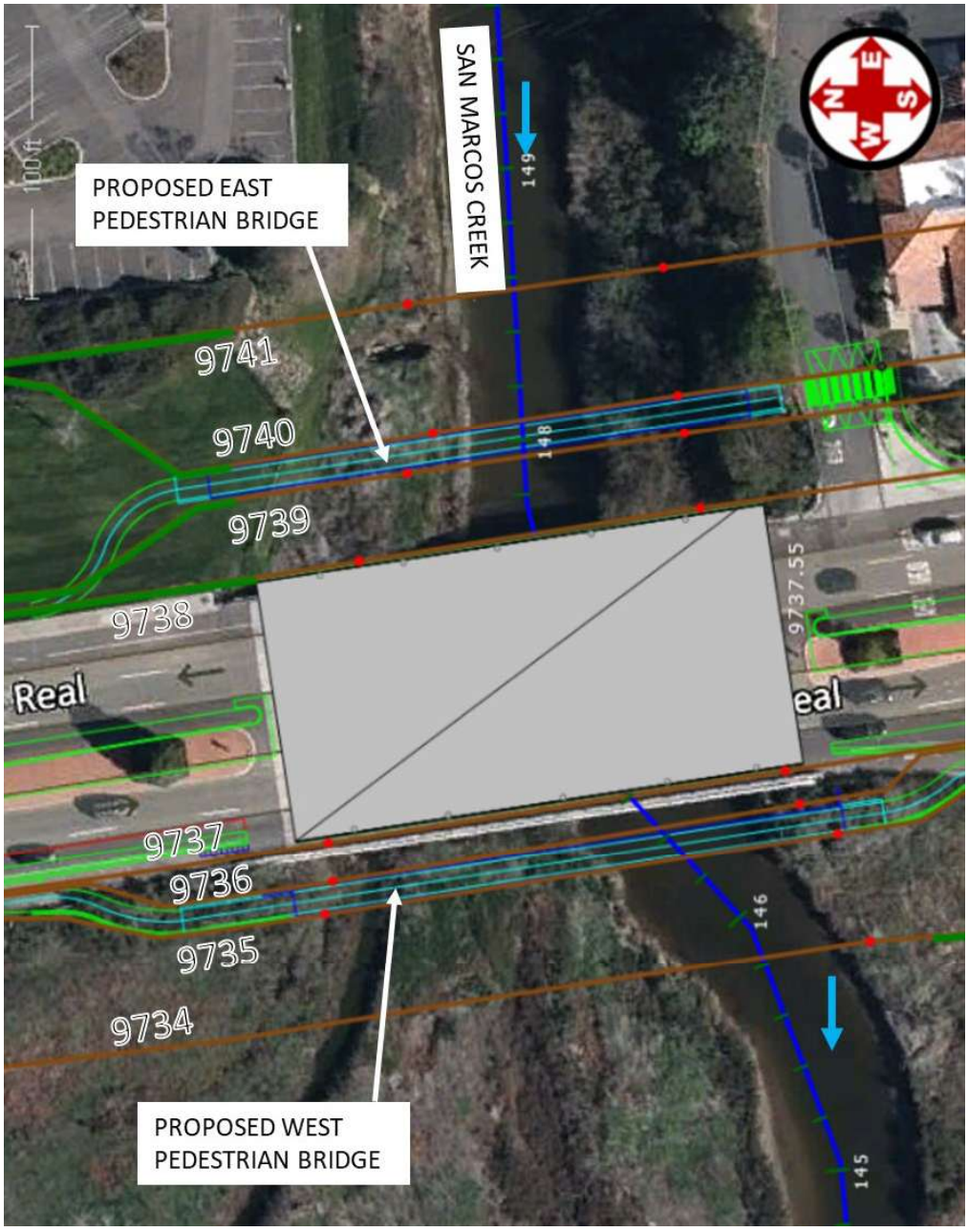


Figure 2. HEC-RAS Cross Sections at Bridge

2.2. Hydrologic Data

FEMA's December 20, 2019 Flood Insurance Study indicates that the 100-year flow rate in San Marcos Creek at Lake San Marcos is 15,700 cfs. This flow rate was used in this analysis. According to the existing FIRM (panel number 0602851033H), the 100-year water surface elevation at the upstream face of the Interstate 5 bridge is 5.8-feet (NGVD 29).

3. HYDRAULIC ANALYSIS

Water surface profiles for the effective, corrected effective, and proposed conditions were developed for the 100-year flood using HEC-RAS version 5.0.7 under subcritical flow conditions. This study was prepared using datum NGVD 29. The conversion between NGVD 29 and NAVD 88 along the study location is 2.2-feet.

3.1. Effective Model

According to coordination between Dokken Engineering (Dokken) and FEMA from February 2008, an effective hydraulic model was requested, which produced only HEC-2 output printouts. An attempt was made to create a HEC-2 model that duplicated the output, but it was determined that the model could not be properly calibrated. FEMA then approved a request by Dokken to recreate the existing condition in HEC-RAS, using the most current topographic data. Dokken therefore created the effective model, which is used for this project.

The effective model begins at the outlet at the Pacific Ocean at Cross Section 47 and ends upstream at Cross Section 9724 (see Dokken Effective HEC-RAS Workmap in **Attachment 1**). The model includes the main river channel and the floodplain area flanking the channel. Two bridges are included within the study reach: the bridge at Carlsbad Blvd. and the bridge at Interstate 5.

The Dokken floodplain study used the effective FIRM and FIS from 1997 to obtain the starting water surface elevation for the models. The effective downstream boundary condition 100-year water surface elevation was 7.17 (NAVD 88) or 4.97 (NGVD 29) just upstream of the I-5 bridge at Cross Section 47. Sea level rise was not accounted for, based on conversations with the City of Carlsbad. The Dokken Effective Model HEC-RAS results are included in **Attachment 2.**

3.2. Corrected Effective Model

The Dokken Effective Model was extended to include cross sections that continue approximately 5,600 feet upstream of El Camino Real ending at Cross Section 9750. All cross sections downstream of Interstate 5 at Cross Section 4209 were removed. This was based on discussions with the City of Carlsbad regarding using the most reliable downstream water surface elevation. The most recent FEMA FIRM map for the area is from 2019 and shows a 100-year water surface elevation at Cross Section 4209 of 5.8-feet (NGVD 29). This was therefore used as the new downstream boundary condition.

New cross sections were then created from Cross Sections 9275 to 9750 using various topographic sources. Dokken provided survey shots upstream and downstream of the El Camino Real bridge at Cross Sections 9734 and 9740. Cross Sections 9725 to 9729 were created using SanGIS topo converted to NGVD 29. The channel bottom elevations were revised, based on an interpolated value of the slope of channel inverts between Cross Sections 9724 and 9734. Cross Sections 9735 to 9739 were created using topography with 1-foot contours provided by Dokken . The channel invert elevations were determined by interpolating the values between Cross Sections 9734 and 9740. Cross Sections 9741 to 9750 were created using SanGIS topo converted to NGVD 29.

The channel bank stations for each cross section were set by using an iterative process of running the 10-year storm event and setting the bank stations along the intersection of the channel terrain and the resulting water surface elevation. Ineffective flow areas were placed over areas where flow is not part of active conveyance during the 100-year storm.

The geometry of the existing El Camino Real bridge input into the HEC-RAS model was created using the January 2021 topographic survey provided by Dokken as well as as-built drawings. This model represents the Corrected Effective condition. The Corrected Effective HEC-RAS results are included in **Attachment 2**.

3.3. Proposed Condition Model

The Corrected Effective Model was duplicated to provide the Proposed Condition Model. This model was updated to include the proposed pedestrian bridges upstream and downstream of the El Camino Real bridge (See Proposed Condition HEC-RAS Workmap in **Attachment 3**). The proposed pedestrian bridges are located east and west of the El Camino Real bridge. Cross sections were added immediately upstream and downstream of each of the pedestrian bridges

as well as approximately 40-feet upstream and 40-feet downstream of the El Camino Real bridge, to model the approximate locations of flow expansion and contraction in and out of the El Camino Real bridge. Manning's coefficients were added to all new cross sections based on the ground cover shown on aerial imagery and were confirmed by site visit. The proposed pedestrian bridges were modeled to include abutments and the bridge deck. Since no bridge lower decks were beneath the 100-year water surface elevation, specific design details related to the upper deck, rails, and additional features higher than the lower deck were not included in the model.

The addition of the proposed pedestrian bridges created instability in the HEC-RAS model resulting in illogical results. To stabilize the model, the pedestrian bridge decks were removed, and only the bridge abutments and grading were included in the model. This geometry still represents the proposed encroachments into the 100-year floodplain as the soffit of the bridge decks are higher than the resulting 100-year water surface elevation (See **Figure 3**). The pedestrian bridge lower decks have been designed to have enough clearance over the proposed 100-year water surface elevations to not create instabilities or water surface elevation increases in the model. The proposed condition HEC-RAS results are included in **Attachment 2**.

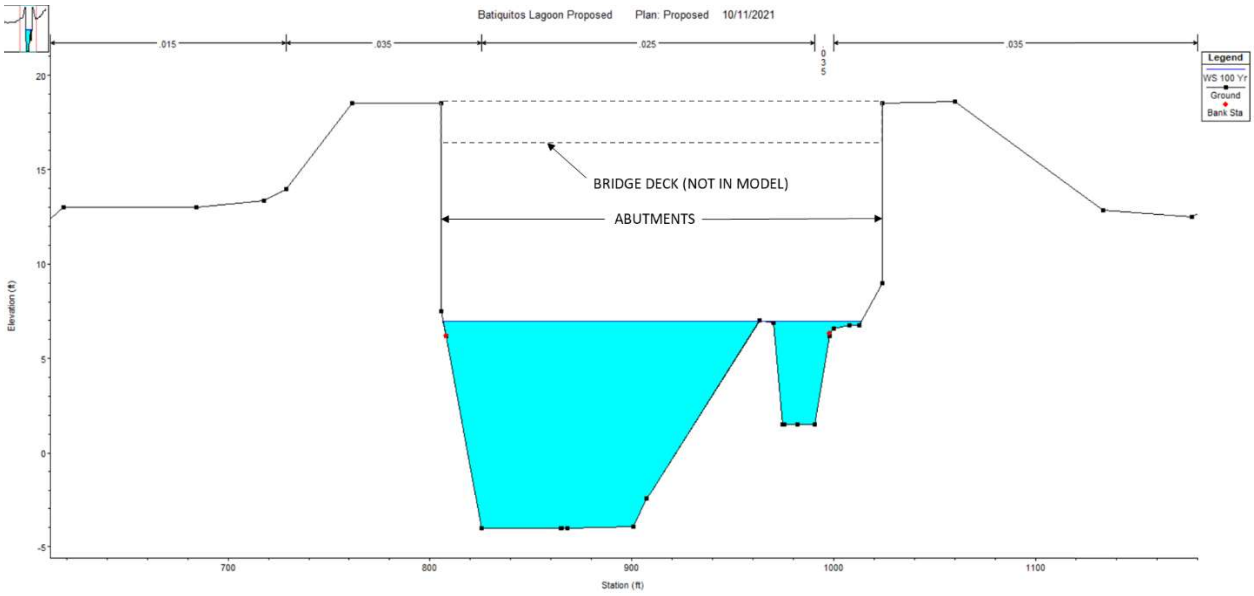


Figure 3. Pedestrian Bridge at Cross Section 9735

4. SCOUR ANALYSIS

The proposed pedestrian bridges are represented by four cross sections, as listed in **Table 1**.

There are essentially three types of scour: long-term degradation, general (contraction and bend), and local. Long-term degradation is associated with long-term riverbed lowering over a significant river length. General scour involves lowering of the riverbed across the river at the project site. It is typically associated with contraction of the flow but may also result from the presence of a bend in the river channel. Local scour involves scour around bridge piers and abutments and at toes of embankments.

There is no expected long-term scour at the proposed bridge location, primarily due to tidal influence from the ocean. The existing channel thalweg is at an elevation of approximately -4 feet (NGVD 29). The ocean water level is normally above the channel bottom, resulting in water moving in and out beneath the bridge during high and low tides, which prevents long-term degradation. General scour is not expected in the vicinity of the proposed bridge, as there are no contractions or bends in the river. At a more local scale, scour can occur around the proposed bridge piers and footings. However, the abutments and grading for the western bridge (Cross Sections 9735 and 9736) are completely above the 100-year floodplain. The southern abutment for the eastern pedestrian bridge (9739 and 9740) are also above the floodplain. The northern abutment for the eastern pedestrian bridge lies within the floodplain. However, this area consists of ineffective flow.

The ECR bridge has piers that lie within the floodplain. The 100-year velocities within the channel at the bridge range from 11 to 14 ft/s, and the 10-year velocities within the channel range from 9 to 11 ft/s. The local scour equation from HEC-18 Evaluating Scour at Bridges 5th Ed. (2012) was used with these velocities and results from HEC-RAS at the bridge. The results show that the ECR bridge piers may experience 6-feet of scour at the piers during a 10 year storm event and 7-feet of scour during a 100-year storm event (See **Table 1** and **Table 2**).

Velocity results are included in the proposed HEC-RAS calculations in **Attachment 2**.

Table 1. Velocity Scour Summary – 10 Year Proposed Condition

HEC-RAS CROSS SECTION	AVG. VELOCITY LEFT OVERBANK (ft/s)	CHANNEL VELOCITY (ft/s)	AVG. VELOCITY RIGHT OVERBANK (ft/s)
9735	0.25	6.13	0.19
9736	0.41	9.47	-
9737.55 (ECR BRIDGE DS)	-	11.09	-
9737.55 (ECR BRIDGE US)	-	9.14	-
9739	0.25	9.94	0.34
9740	-	11.64	0.2

Table 2. Velocity Scour Summary – 100 Year Proposed Condition

HEC-RAS CROSS SECTION	AVG. VELOCITY LEFT OVERBANK (ft/s)	CHANNEL VELOCITY (ft/s)	AVG. VELOCITY RIGHT OVERBANK (ft/s)
9735	1.13	11.34	1.05
9736	3.10	14.22	3.14
9737.55 (ECR BRIDGE DS)	-	14.41	-
9737.55 (ECR BRIDGE US)	2.62	11.43	4.57
9739	2.53	12.45	5.39
9740	3.89	14.38	5.72

5. RESULTS AND CONCLUSIONS

The corrected effective and proposed condition water surface elevations were compared to determine flooding-related impacts from the proposed project.

Table 3 provides a summary of 100-year water surface elevations for both the Corrected Effective and Proposed Condition models. The cross-section locations are shown on the HEC-RAS Work Maps in **Attachment 3**.

Table 3 shows that there is no increase in 100-year water surface elevations for the entire study reach between the Corrected Effective and Proposed Condition models. In addition, the floodplain boundaries and velocities remain essentially unchanged upstream and downstream of the project site. Therefore, no impacts to offsite properties upstream or downstream of the project are anticipated.

The analysis demonstrates that the proposed project, as designed, produces no increase in the water surface elevation for the 100-year storm.

The proposed pedestrian bridges and ECR bridge are not expected to experience long-term aggradation or contraction scour. The pedestrian bridges are not expected to experience local

scour, since the piers lie above the 100-year water surface elevation, or in an area of ineffective flow. The ECR bridge piers can expect up to 7-foot of local scour. However, this scour would occur without the construction of the pedestrian bridges, as the velocities at the bridge remain unchanged in the existing and proposed conditions.

Table 3. 100-Year Water Surface Elevation Comparison (NGVD 29)

HEC-RAS XS Station	Corrected Effective (ft)	Proposed Condition (ft)	Proposed – Corrected Effective (ft)
9750	23	23	0
9749	22.11	22.11	0
9748	21.29	21.29	0
9747	19.52	19.52	0
9746	18.3	18.3	0
9745	17.29	17.29	0
9744	16.7	16.7	0
9743	16.05	16.05	0
9742	13.42	13.42	0
9741	10.49	10.49	0
9740	10.45	10.45	0
9739	10.76	10.76	0
9738	10.94	10.94	0
9737.55	-	-	0
9737	7.92	7.92	0
9736	7.75	7.75	0
9735	6.97	6.97	0
9734	7.4	7.4	0
9729	6.28	6.28	0
9728	6.4	6.4	0
9727	6.36	6.36	0
9726	6.32	6.32	0
9725	6.24	6.24	0
9724	6.17	6.17	0
9162	6.12	6.12	0
8558	5.98	5.98	0
7922	5.91	5.91	0
7547	5.94	5.94	0
6962	5.93	5.93	0
6431	5.9	5.9	0
5864	5.86	5.86	0
5293	5.83	5.83	0
4871	5.82	5.82	0
4407	5.82	5.82	0
4209	5.8	5.8	0

ATTACHMENT 1

Effective Model and FIRM



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall
- 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)

OTHER FEATURES
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was derived from digital orthophotography collected by the U.S. Department of Agriculture Farm Service Agency. Department of Agriculture imagery was flown in 2016 and was produced with a 1-meter ground sample distance.

Coastal Base Flood Elevations shown on the map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Coastal flood elevations are also provided in the Coastal Transect Parameters table in the FIS Report for this jurisdiction. Elevations shown in the Coastal Transect Parameters table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on the FIRM.

SCALE

Map Projection:
Universal Transverse Mercator Zone 11N; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

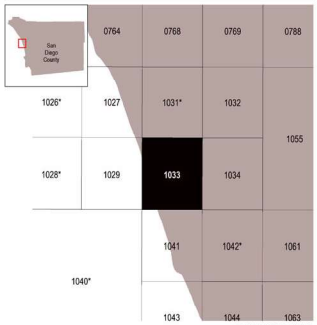
N

1 inch = 500 feet 1:6,000

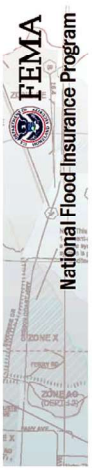
0 250 500 750 1,000 2,000 feet

0 125 250 500 meters

PANEL LOCATOR



*PANEL NOT PRINTED



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA and Incorporated Areas

PANEL 1033 OF 2375

FEMA

Panel Contains:

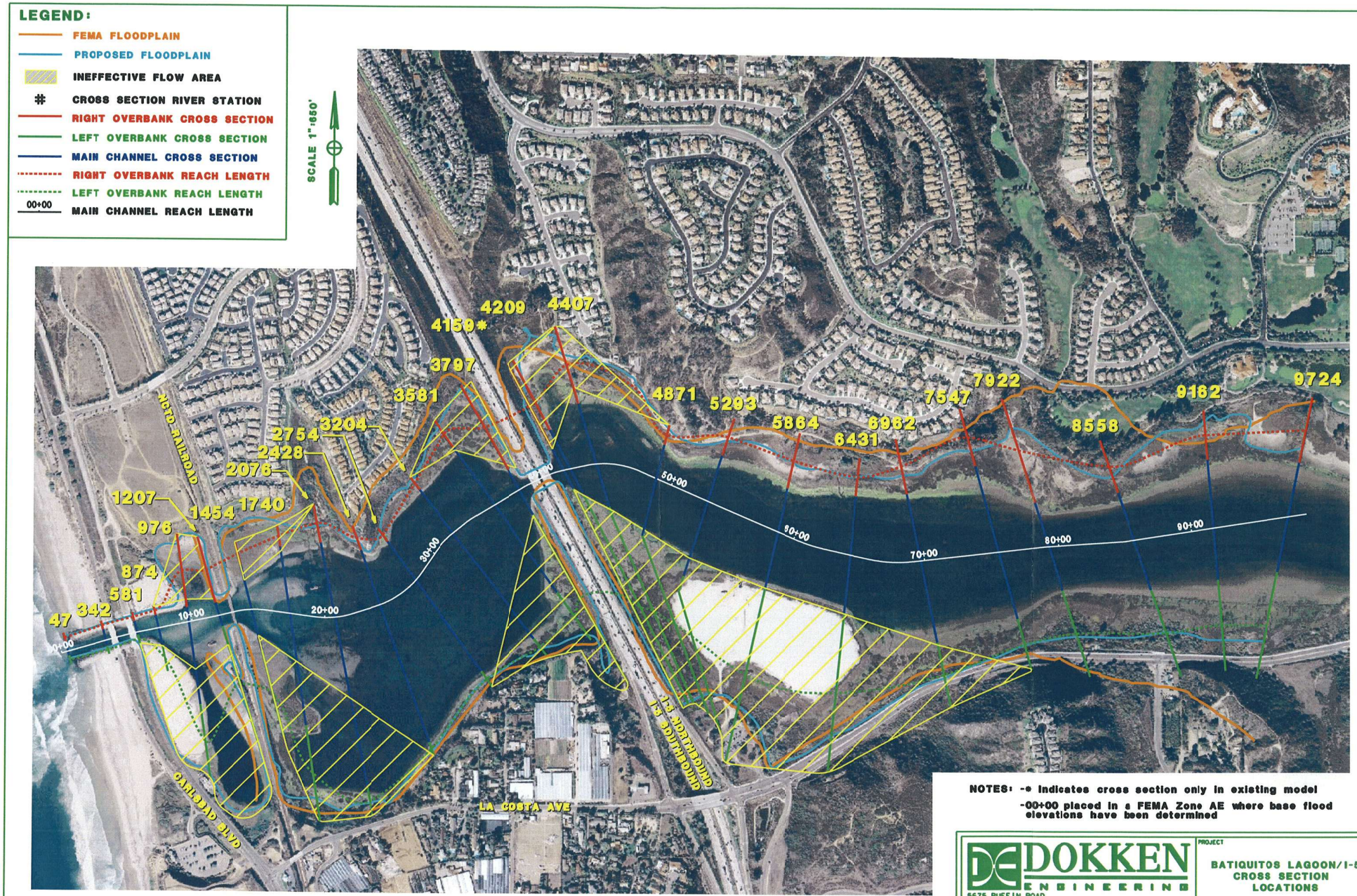
COMMUNITY	NUMBER	PANEL	SUFFIX
CARLSBAD, CITY OF	060285	1033	H
ENCINITAS, CITY OF	060726	1033	H

VERSION NUMBER
2.3.3.3

MAP NUMBER
06073C1033H

REVISED
DECEMBER 20, 2019

Esri, HERE, Garmin, USGS, NGA



NOTES: -* indicates cross section only in existing model

-00+00 placed in a FEMA Zone AE where base flood elevations have been determined

DOKKEN ENGINEERING
5675 RUFFIN ROAD
SUITE 250
SAN DIEGO, CA 92123
(858) 514-8377

PROJECT

BATIQUITOS LAGOON/I-5
CROSS SECTION
LOCATIONS

FEBRUARY 2008

HEC-RAS Plan: BL_Exist River: Batiquitos Reach: 1 Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	9724	PF 1	12000.00	-2.18	11.37		11.38	0.000024	1.12	12231.76	1526.92	0.06
1	9162	PF 1	12000.00	-2.18	11.36		11.37	0.000019	1.02	13538.79	1665.57	0.06
1	8558	PF 1	12000.00	-2.18	11.33		11.36	0.000035	1.36	9973.96	1298.03	0.08
1	7922	PF 1	12000.00	-2.18	11.32		11.34	0.000024	1.22	12244.24	1719.03	0.06
1	7547	PF 1	12000.00	-2.18	11.32		11.33	0.000008	0.76	16745.06	1528.84	0.04
1	6962	PF 1	12000.00	-3.18	11.31	-0.82	11.32	0.000008	0.79	15734.69	1572.21	0.04
1	6431	PF 1	12000.00	-3.18	11.30	-0.93	11.32	0.000011	0.94	13387.49	1967.00	0.05
1	5864	PF 1	12000.00	-3.18	11.29	-0.78	11.31	0.000015	1.10	11637.82	1911.35	0.05
1	5293	PF 1	12000.00	-3.18	11.29	-0.69	11.30	0.000014	0.98	12758.45	1993.45	0.05
1	4871	PF 1	12000.00	-3.18	11.28	-0.25	11.29	0.000015	1.04	12614.78	2173.11	0.05
1	4407	PF 1	12000.00	-4.18	11.27	-1.54	11.29	0.000010	0.92	13579.51	2898.08	0.04
1	4209	PF 1	12000.00	-4.18	11.23	0.85	11.28	0.000049	1.82	6582.54	3055.56	0.09
1	4159	PF 1	12000.00	-4.18	10.96	2.86	11.25	0.001048	4.34	2765.97	3067.71	0.22
1	4000		Bridge									
1	3797	PF 1	12000.00	-4.18	9.64	0.74	9.90	0.000213	4.08	2941.05	2200.43	0.20
1	3581	PF 1	12000.00	-5.18	9.80	-3.30	9.82	0.000010	0.95	12574.48	1907.17	0.04
1	3204	PF 1	12000.00	-5.00	9.80	-3.41	9.81	0.000006	0.74	16485.04	1594.47	0.03
1	2754	PF 1	12000.00	-5.18	9.80	-3.51	9.81	0.000007	0.73	16536.97	1270.86	0.03
1	2428	PF 1	12000.00	-5.18	9.80		9.81	0.000003	0.55	22514.18	1657.88	0.03
1	2076	PF 1	12000.00	-5.18	9.80	-3.65	9.81	0.000005	0.68	17987.88	2099.63	0.03
1	1740	PF 1	12000.00	-5.18	9.78	-2.73	9.80	0.000020	1.19	10060.15	2060.58	0.06
1	1454	PF 1	12000.00	-5.18	9.46	1.42	9.76	0.000321	4.42	2715.52	239.80	0.23
1	1300		Bridge									
1	1207	PF 1	12000.00	-5.18	8.76		9.04	0.000269	4.46	2978.39	278.54	0.22
1	976	PF 1	12000.00	-5.18	8.90	-2.33	8.95	0.000041	1.83	6710.87	1636.29	0.09
1	874	PF 1	12000.00	-5.18	8.72	-0.63	8.92	0.000162	3.60	3480.47	456.59	0.17
1	581	PF 1	12000.00	-5.18	8.26	1.86	8.82	0.002188	6.27	2123.91	232.83	0.31
1	400		Bridge									
1	342	PF 1	12000.00	-5.18	7.39		8.08	0.000736	6.93	1926.47	220.55	0.35
1	47	PF 1	12000.00	-5.83	7.17	0.79	7.87	0.000652	6.99	1881.59	170.28	0.34

HEC-RAS Plan: BL_Prop River: Batiquitos Reach: 1 Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	9724	PF 1	12000.00	-2.18	10.53		10.55	0.000032	1.24	10972.47	1482.77	0.07
1	9162	PF 1	12000.00	-2.18	10.52		10.54	0.000027	1.14	12147.54	1644.00	0.07
1	8558	PF 1	12000.00	-2.18	10.48		10.51	0.000048	1.51	8892.53	1246.88	0.09
1	7922	PF 1	12000.00	-2.18	10.46		10.48	0.000034	1.37	10802.49	1648.06	0.07
1	7547	PF 1	12000.00	-2.18	10.46		10.47	0.000010	0.82	15447.14	1506.62	0.04
1	6962	PF 1	12000.00	-3.18	10.46	-0.82	10.47	0.000011	0.85	14606.95	1548.45	0.04
1	6431	PF 1	12000.00	-3.18	10.45	-0.93	10.46	0.000014	1.01	12434.49	1945.40	0.05
1	5864	PF 1	12000.00	-3.18	10.43	-0.78	10.45	0.000019	1.19	10747.00	1886.70	0.06
1	5293	PF 1	12000.00	-3.18	10.42	-0.69	10.44	0.000017	1.06	11758.10	1591.98	0.05
1	4871	PF 1	12000.00	-3.18	10.41	-0.25	10.43	0.000020	1.13	11618.72	2167.86	0.06
1	4407	PF 1	12000.00	-4.18	10.41	-1.54	10.42	0.000013	0.98	12690.49	2780.56	0.05
1	4209	PF 1	12000.00	-4.18	10.19	1.15	10.40	0.000177	3.69	3255.50	3016.29	0.18
1	4000		Bridge									
1	3797	PF 1	12000.00	-4.18	9.67	0.58	9.88	0.000175	3.67	3268.60	2201.92	0.18
1	3581	PF 1	12000.00	-5.18	9.80	-3.30	9.82	0.000010	0.95	12574.54	1907.17	0.04
1	3204	PF 1	12000.00	-5.00	9.80	-3.41	9.81	0.000006	0.74	16485.11	1594.47	0.03
1	2754	PF 1	12000.00	-5.18	9.80	-3.51	9.81	0.000007	0.73	16537.05	1270.87	0.03
1	2428	PF 1	12000.00	-5.18	9.80		9.81	0.000003	0.55	22514.29	1657.88	0.03
1	2076	PF 1	12000.00	-5.18	9.80	-3.65	9.81	0.000005	0.68	17987.96	2099.64	0.03
1	1740	PF 1	12000.00	-5.18	9.78	-2.73	9.80	0.000020	1.19	10060.20	2060.58	0.06
1	1454	PF 1	12000.00	-5.18	9.46	1.42	9.76	0.000321	4.42	2715.54	239.80	0.23
1	1300		Bridge									
1	1207	PF 1	12000.00	-5.18	8.76		9.04	0.000269	4.46	2978.39	278.54	0.22
1	976	PF 1	12000.00	-5.18	8.90	-2.33	8.95	0.000041	1.83	6710.87	1636.29	0.09
1	874	PF 1	12000.00	-5.18	8.72	-0.63	8.92	0.000162	3.60	3480.47	456.59	0.17
1	581	PF 1	12000.00	-5.18	8.26	1.86	8.82	0.002188	6.27	2123.91	232.83	0.31
1	400		Bridge									
1	342	PF 1	12000.00	-5.18	7.39		8.08	0.000736	6.93	1926.47	220.55	0.35
1	47	PF 1	12000.00	-5.83	7.17	0.79	7.87	0.000652	6.99	1881.59	170.28	0.34

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
San Luis Rey River	Downstream of Palma	167.3	4,000[5]	*	18,000	30,000	78,000
San Luis Rey River	Downstream of Confluence with Puma Creek	126.7	4,000[5]	*	16,800	28,000	72,800
San Luis Rey River	Upstream of Confluence with Puma Creek	71.5	5,000	*	15,000	24,500	64,000
San Marcos Creek	Upstream of the San Marcos Dam (Lake San Marcos)	28.1	*	*	*	15,700	*
San Marcos Creek	Upstream of Discovery Street	*	7,400	*	13,300	14,700	19,350
San Marcos Creek	Upstream of Confluence with Las Posas Creek	*	6,450	*	11,650	13,150	16,950
San Marcos Creek	Upstream of Highway 78	*	6,200	*	11,000	12,450	16,000
San Marcos Creek	Upstream of Confluence with Twin Oaks Valley Creek	*	2,600	*	4,550	5,150	6,600
San Marcos Creek	Approximately 1,000 Feet Upstream of Confluence with Twin Oaks Valley Creek	*	2,200	*	3,900	4,400	5,600
San Vicente Creek	At Mouth	83.0	1,400	*	10,500	16,000	34,000

ATTACHMENT 2

HEC-RAS Results

HEC-RAS Plan: Corrected Effective River: Batiquitos Reach: 1

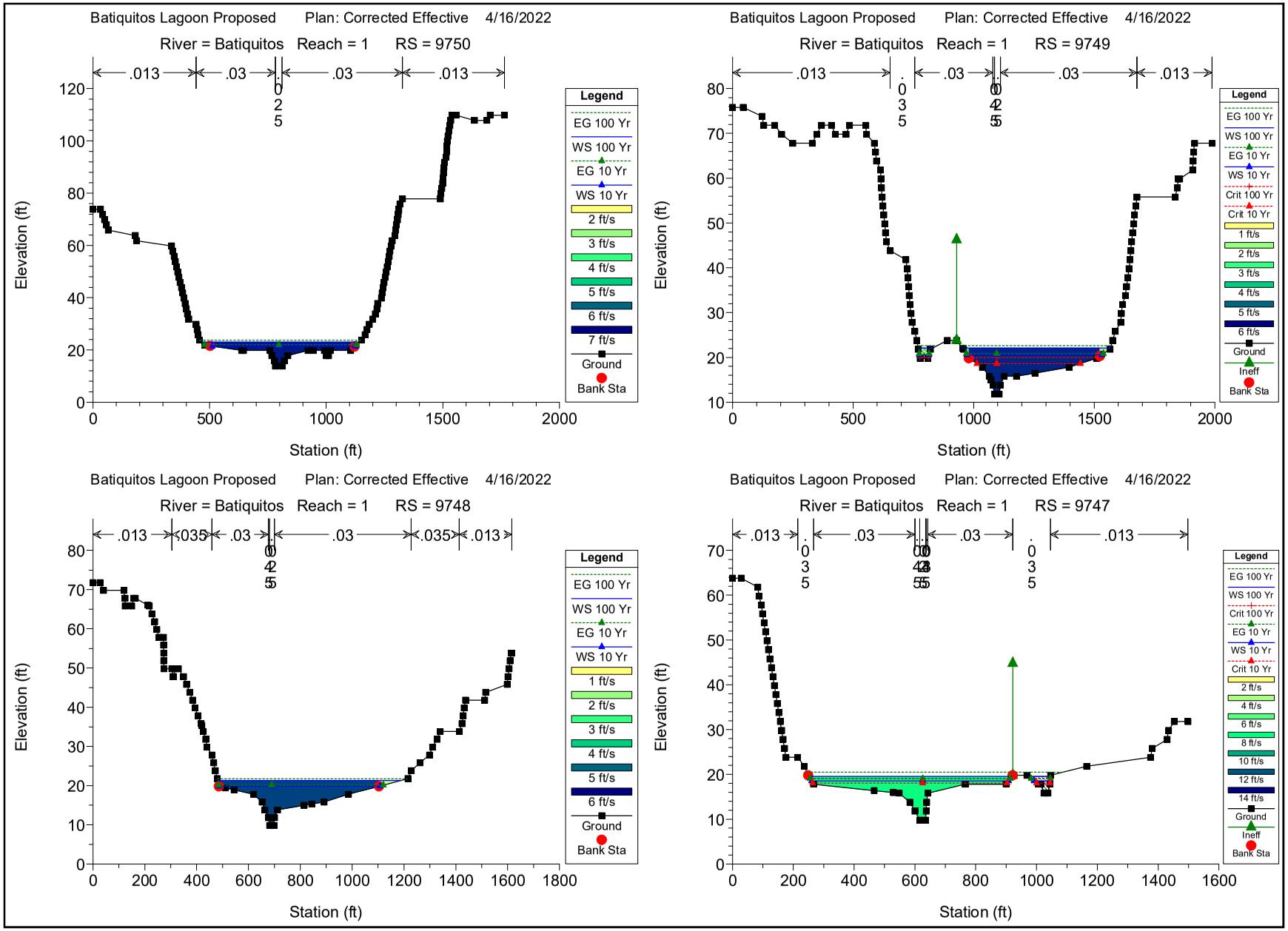
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	9750	100 Yr	15700.00	13.80	23.00		23.71	0.002681	6.76	2355.98	676.46	0.62
1	9750	10 Yr	7850.00	13.80	21.40		21.96	0.003410	5.99	1310.03	611.03	0.72
1	9749	100 Yr	15700.00	11.80	22.11	19.98	22.60	0.001496	5.65	2827.22	675.51	0.44
1	9749	10 Yr	7850.00	11.80	20.57	18.62	20.83	0.001270	4.09	1922.60	598.53	0.38
1	9748	100 Yr	15700.00	9.80	21.29		21.73	0.001488	5.36	2974.68	706.01	0.44
1	9748	10 Yr	7850.00	9.80	19.87		20.11	0.001240	3.86	2035.07	622.04	0.37
1	9747	100 Yr	15700.00	9.80	19.52	19.08	20.47	0.005913	7.81	2011.11	739.76	0.79
1	9747	10 Yr	7850.00	9.80	18.55	18.09	19.06	0.005102	5.73	1369.36	701.28	0.70
1	9746	100 Yr	15700.00	7.80	18.30	16.95	18.66	0.001558	4.81	3269.44	1104.74	0.48
1	9746	10 Yr	7850.00	7.80	17.03	16.14	17.27	0.001804	3.92	2001.51	945.38	0.48
1	9745	100 Yr	15700.00	3.80	17.29		17.51	0.001267	3.82	4197.49	1292.35	0.36
1	9745	10 Yr	7850.00	3.80	15.48		15.70	0.002195	3.76	2089.83	889.71	0.43
1	9744	100 Yr	15700.00	1.80	16.70		16.85	0.000488	3.67	5560.85	1525.07	0.25
1	9744	10 Yr	7850.00	1.80	14.17		14.41	0.001087	4.13	2263.69	1091.46	0.35
1	9743	100 Yr	15700.00	0.00	16.05		16.38	0.000844	4.74	3494.47	699.16	0.34
1	9743	10 Yr	7850.00	0.00	12.59		13.11	0.003469	5.75	1365.47	488.63	0.61
1	9742	100 Yr	15700.00	-2.00	13.42	10.83	15.24	0.002548	11.50	1586.83	633.48	0.59
1	9742	10 Yr	7850.00	-2.00	8.88	6.06	10.67	0.002907	10.74	730.86	82.71	0.64
1	9741	100 Yr	15700.00	-3.07	10.49	10.32	13.85	0.005241	15.06	1156.01	179.92	0.82
1	9741	10 Yr	7850.00	-3.07	7.07	5.88	9.26	0.005516	11.87	661.60	94.67	0.79
1	9740	100 Yr	15700.00	-3.25	10.45	10.00	13.43	0.004207	14.38	1243.87	204.38	0.76
1	9740	10 Yr	7850.00	-3.25	6.87	5.11	8.97	0.004609	11.64	674.67	92.13	0.75
1	9739	100 Yr	15700.00	-3.40	10.76	9.09	13.02	0.003078	12.45	1396.63	207.62	0.65
1	9739	10 Yr	7850.00	-3.40	7.10	4.38	8.64	0.003299	9.94	789.88	110.76	0.63
1	9738	100 Yr	15700.00	-3.50	10.94	7.58	12.69	0.002199	10.72	1537.22	171.21	0.56
1	9738	10 Yr	7850.00	-3.50	7.27	3.49	8.32	0.002180	8.20	958.00	132.73	0.53

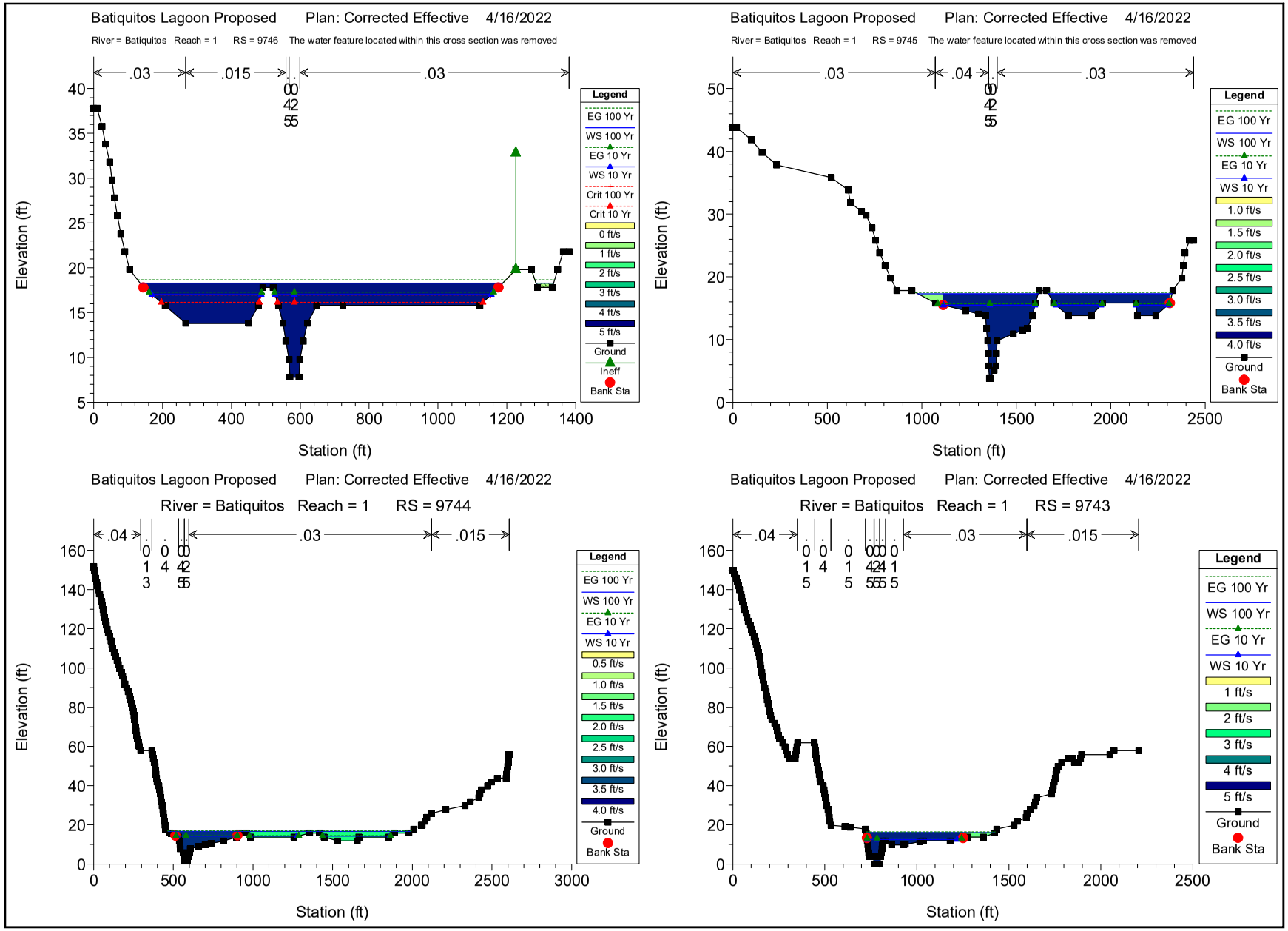
HEC-RAS Plan: Corrected Effective River: Batiquitos Reach: 1 (Continued)

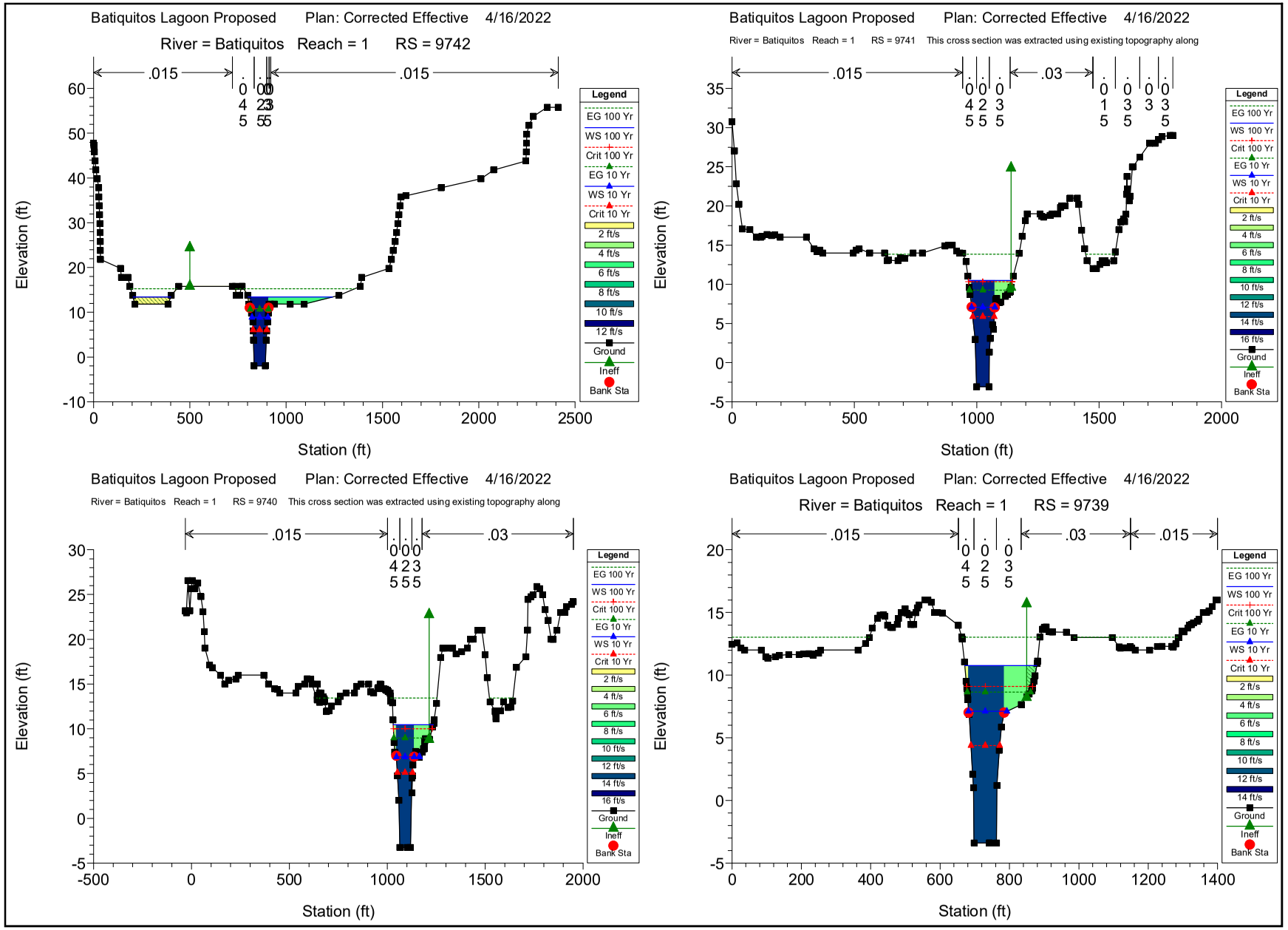
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	9737.55		Bridge									
1	9737	100 Yr	15700.00	-3.94	7.92	7.92	11.09	0.008275	14.30	1104.81	178.87	0.99
1	9737	10 Yr	7850.00	-3.94	5.99		7.51	0.003451	9.89	794.06	117.79	0.67
1	9736	100 Yr	15700.00	-3.98	7.75	7.75	10.89	0.007641	14.22	1111.59	184.73	0.99
1	9736	10 Yr	7850.00	-3.98	6.03		7.42	0.002955	9.47	829.27	126.66	0.65
1	9735	100 Yr	15700.00	-4.05	6.97		8.97	0.003055	11.34	1388.37	205.54	0.74
1	9735	10 Yr	7850.00	-4.05	6.41		6.99	0.000929	6.13	1281.18	180.32	0.40
1	9734	100 Yr	15700.00	-4.30	7.40	6.19	8.28	0.003865	7.55	2109.85	956.78	0.62
1	9734	10 Yr	7850.00	-4.30	6.47	4.16	6.83	0.002083	4.76	1650.68	568.93	0.44
1	9729	100 Yr	15700.00	-4.26	6.28	6.28	7.01	0.002487	10.94	3310.86	1579.07	0.67
1	9729	10 Yr	7850.00	-4.26	5.37	5.37	5.99	0.001961	8.98	1997.23	1240.19	0.58
1	9728	100 Yr	15700.00	-4.28	6.40		6.42	0.000020	1.18	14938.79	2574.42	0.07
1	9728	10 Yr	7850.00	-4.28	2.98		2.99	0.000024	0.96	8196.14	1365.40	0.07
1	9727	100 Yr	15700.00	-4.31	6.36		6.40	0.000036	1.64	11311.93	1962.46	0.09
1	9727	10 Yr	7850.00	-4.31	2.94		2.97	0.000041	1.34	5856.12	887.26	0.09
1	9726	100 Yr	15700.00	-4.33	6.32		6.36	0.000052	1.77	9107.85	1221.20	0.11
1	9726	10 Yr	7850.00	-4.33	2.89		2.92	0.000074	1.50	5225.69	1041.53	0.12
1	9725	100 Yr	15700.00	-4.36	6.24		6.30	0.000068	1.93	8504.40	1259.09	0.12
1	9725	10 Yr	7850.00	-4.36	2.77		2.82	0.000125	1.78	4422.47	1010.50	0.15
1	9724	100 Yr	15700.00	-4.38	6.17		6.23	0.000100	2.05	7891.39	1368.74	0.14
1	9724	10 Yr	7850.00	-4.38	2.57		2.66	0.000403	2.38	3302.34	1173.28	0.25
1	9162	100 Yr	15700.00	-4.38	6.12		6.18	0.000088	1.88	8637.36	1541.12	0.13
1	9162	10 Yr	7850.00	-4.38	2.31		2.40	0.000502	2.47	3182.13	1262.53	0.27
1	8558	100 Yr	15700.00	-4.38	5.98		6.10	0.000169	2.77	6180.75	1103.94	0.19
1	8558	10 Yr	7850.00	-4.38	1.73		1.95	0.001123	3.83	2051.07	769.81	0.41

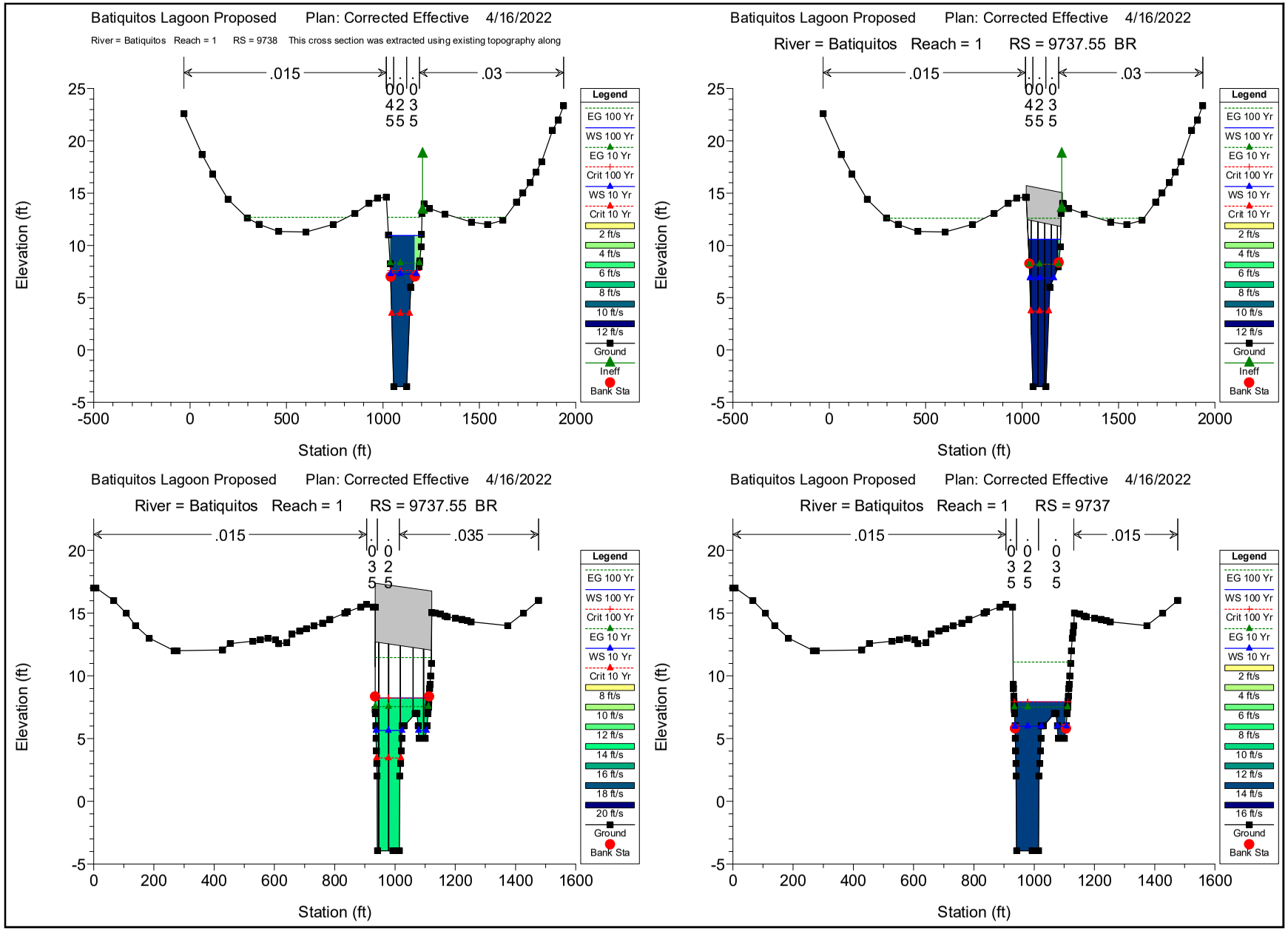
HEC-RAS Plan: Corrected Effective River: Batiquitos Reach: 1 (Continued)

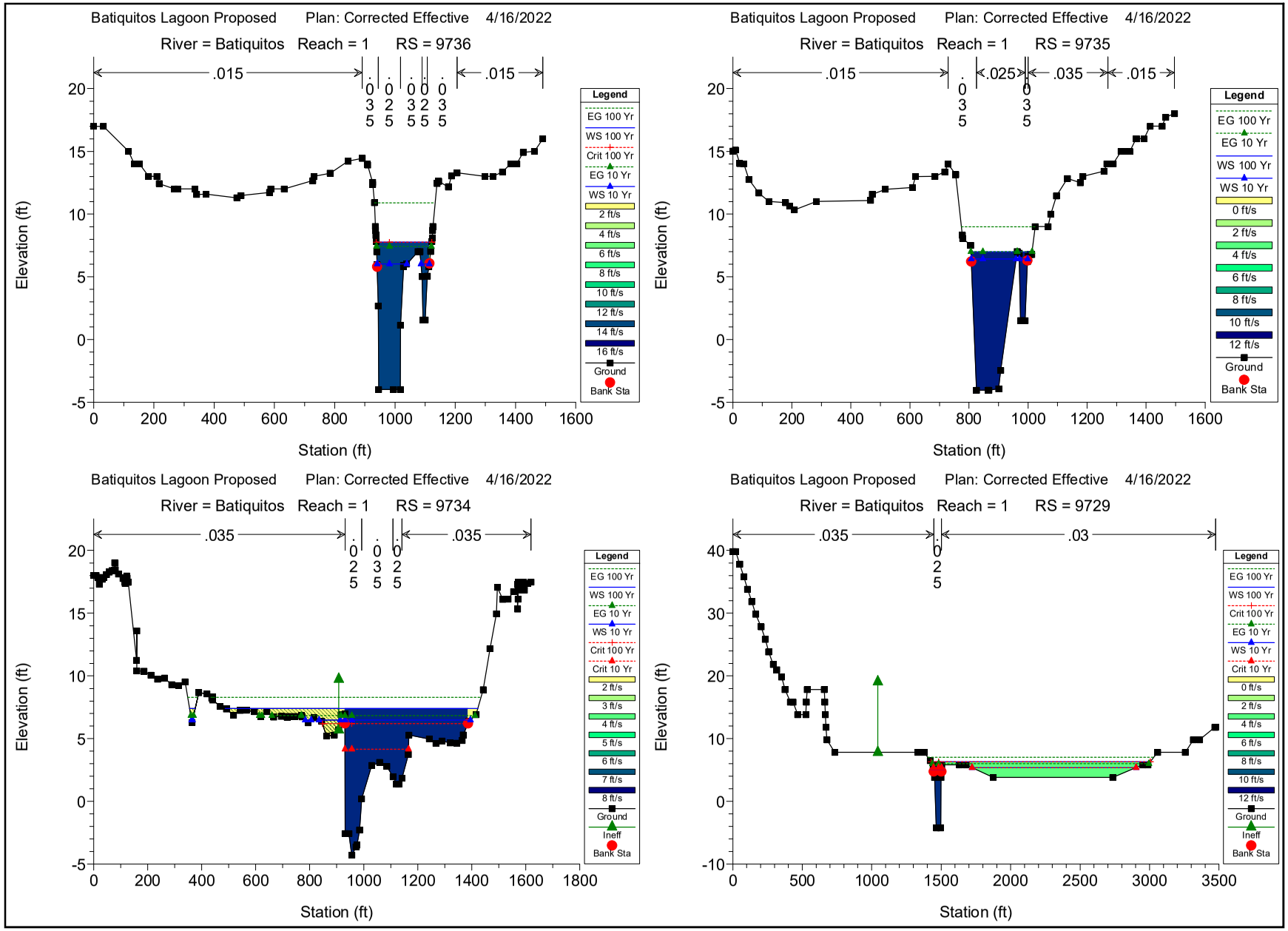
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	7922	100 Yr	15700.00	-4.38	5.91		6.01	0.000113	2.50	7248.23	1355.89	0.16
1	7922	10 Yr	7850.00	-4.38	1.25		1.42	0.000619	3.24	2420.60	744.95	0.32
1	7547	100 Yr	15700.00	-4.38	5.94		5.97	0.000027	1.36	12017.58	1446.27	0.08
1	7547	10 Yr	7850.00	-4.38	1.29		1.32	0.000062	1.39	5663.56	1204.68	0.11
1	6962	100 Yr	15700.00	-5.38	5.93		5.95	0.000025	1.32	12375.03	1483.83	0.08
1	6962	10 Yr	7850.00	-5.38	1.26		1.29	0.000058	1.35	5817.46	1257.82	0.11
1	6431	100 Yr	15700.00	-5.38	5.90	-2.73	5.94	0.000034	1.63	9876.42	1441.54	0.09
1	6431	10 Yr	7850.00	-5.38	1.22	-3.63	1.25	0.000064	1.52	5156.26	930.74	0.11
1	5864	100 Yr	15700.00	-5.38	5.86	-2.52	5.91	0.000047	1.93	8399.93	1169.19	0.11
1	5864	10 Yr	7850.00	-5.38	1.16	-3.56	1.21	0.000094	1.81	4341.25	779.16	0.14
1	5293	100 Yr	15700.00	-5.38	5.83	-2.42	5.88	0.000056	1.79	9084.20	1418.39	0.10
1	5293	10 Yr	7850.00	-5.38	1.09	-3.49	1.15	0.000139	1.81	4340.91	882.76	0.14
1	4871	100 Yr	15700.00	-5.38	5.82	-1.86	5.86	0.000042	1.49	10918.41	2122.28	0.09
1	4871	10 Yr	7850.00	-5.38	0.99	-3.15	1.06	0.000266	2.13	3692.37	1305.28	0.22
1	4407	100 Yr	15700.00	-6.38	5.82		5.84	0.000018	1.09	17189.85	2655.90	0.06
1	4407	10 Yr	7850.00	-6.38	0.97		1.00	0.000057	1.44	5458.28	1296.54	0.12
1	4209	100 Yr	15700.00	-6.38	5.80	-0.64	5.83	0.000048	1.82	13467.17	2921.42	0.11
1	4209	10 Yr	7850.00	-6.38	0.73	-2.30	0.96	0.000605	3.80	2064.92	492.39	0.33

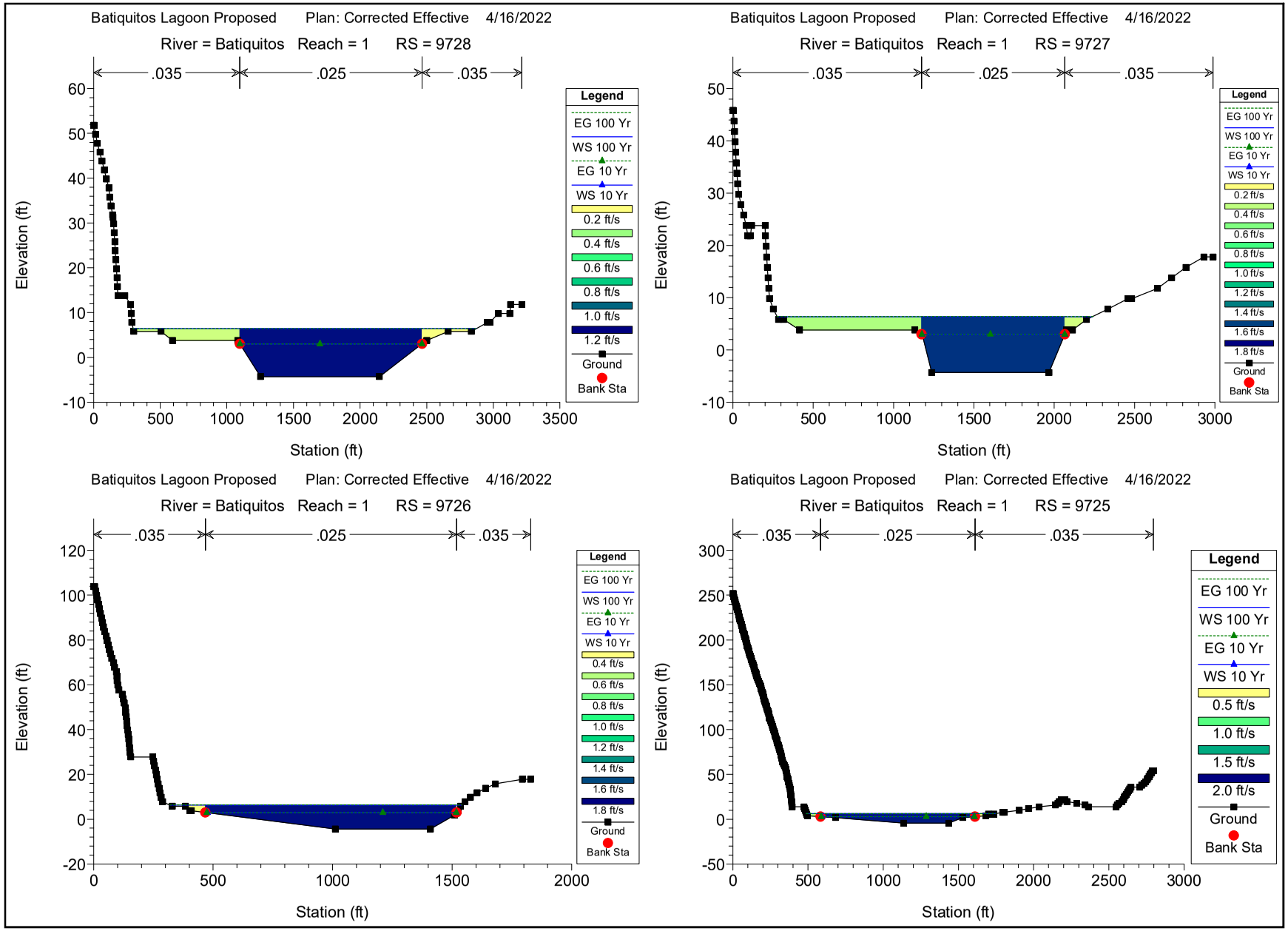

Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9750
.013 .03 .03 .013
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
2 ft/s
3 ft/s
4 ft/s
5 ft/s
6 ft/s
7 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9749
.013 .03 .03 .013
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
1 ft/s
2 ft/s
3 ft/s
4 ft/s
5 ft/s
6 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9748
.013 .035 .03 .03 .035 .013
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
1 ft/s
2 ft/s
3 ft/s
4 ft/s
5 ft/s
6 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9747
.013 .03 .03 .013
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
Crit 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
14 ft/s
Ground
Ineff
Bank Sta

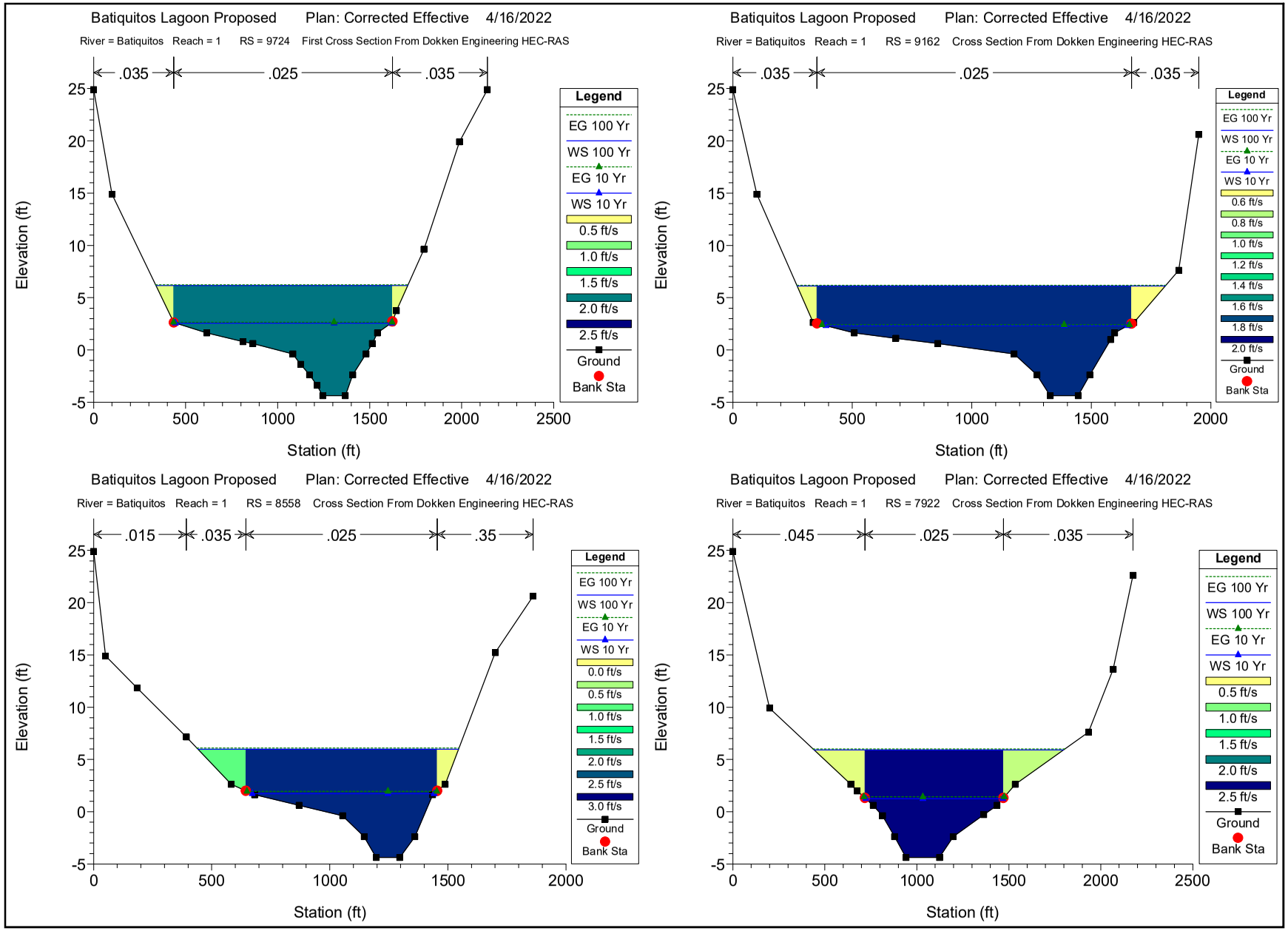

Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9746 The water feature located within this cross section was removed
.03
.015
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0 ft/s
1 ft/s
2 ft/s
3 ft/s
4 ft/s
5 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9745 The water feature located within this cross section was removed
.03
.04
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
3.0 ft/s
3.5 ft/s
4.0 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9744
.04
.03
.015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
3.0 ft/s
3.5 ft/s
4.0 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9743
.04
.03
.015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
1 ft/s
2 ft/s
3 ft/s
4 ft/s
5 ft/s
Ground
Bank Sta

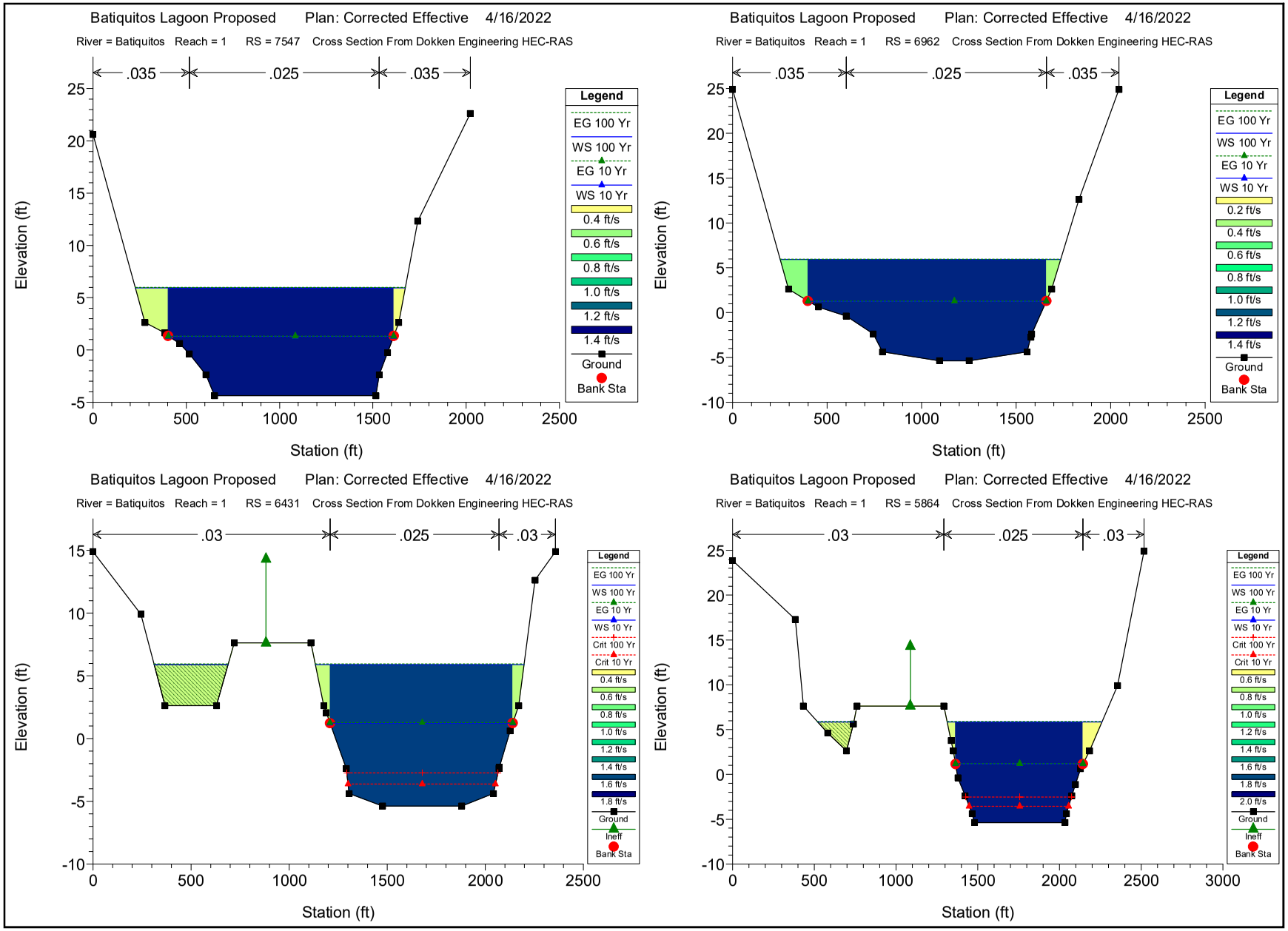

Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9742
.015
.015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
Crit 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9741 This cross section was extracted using existing topography along
.015
.03
Elevation (ft)
Station (ft)
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9740 This cross section was extracted using existing topography along
.015
.03
Elevation (ft)
Station (ft)
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9739
.015
.03
.015
Elevation (ft)
Station (ft)

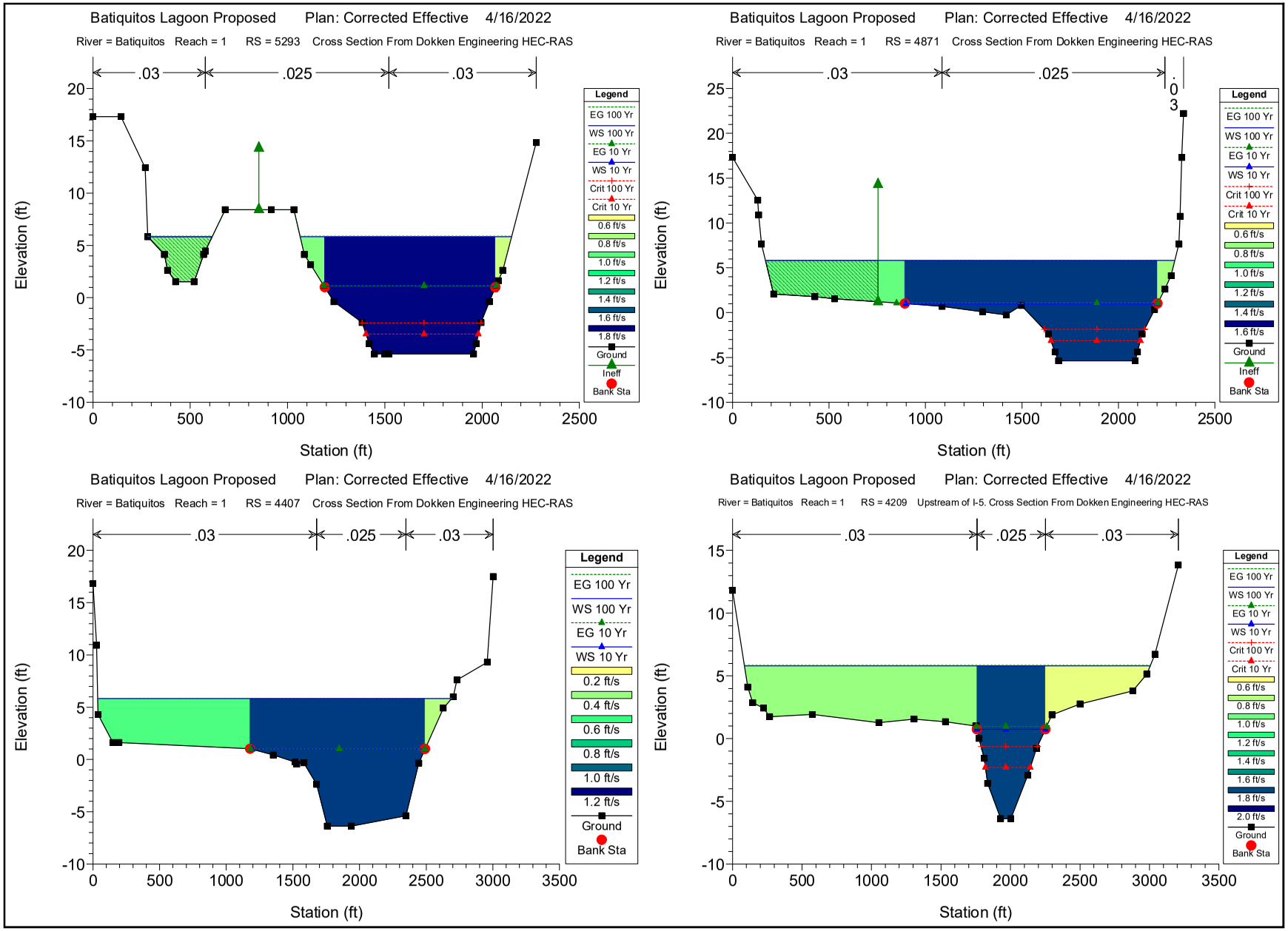

Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9738 This cross section was extracted using existing topography along
.015
.03
0 0 0
4 2 3
5 5 5
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
Crit 100 Yr
WS 10 Yr
Crit 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9737.55 BR
.015
.03
0 0 0
4 2 3
5 5 5
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
Crit 100 Yr
WS 10 Yr
Crit 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9737.55 BR
.015
.035
0 0
3 2
5 5
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
Crit 10 Yr
8 ft/s
10 ft/s
12 ft/s
14 ft/s
16 ft/s
18 ft/s
20 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9737
.015
.015
0 0 0
3 2 3
5 5 5
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
14 ft/s
16 ft/s
Ground
Bank Sta


Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9736
.015
.035
.025
.015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
14 ft/s
16 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9735
.015
.025
.035
.015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
EG 10 Yr
WS 100 Yr
WS 10 Yr
0 ft/s
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9734
.035
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
2 ft/s
3 ft/s
4 ft/s
5 ft/s
6 ft/s
7 ft/s
8 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9729
.035
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
Crit 10 Yr
0 ft/s
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Ineff
Bank Sta


Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9728
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.2 ft/s
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9727
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.2 ft/s
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9726
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9725
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
Ground
Bank Sta


Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9724 First Cross Section From Dokken Engineering HEC-RAS
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 9162 Cross Section From Dokken Engineering HEC-RAS
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
2.0 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 8558 Cross Section From Dokken Engineering HEC-RAS
.015
.035
.025
.35
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.0 ft/s
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
3.0 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 7922 Cross Section From Dokken Engineering HEC-RAS
.045
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
Ground
Bank Sta


Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 7547 Cross Section From Dokken Engineering HEC-RAS
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 6962 Cross Section From Dokken Engineering HEC-RAS
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.2 ft/s
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 6431 Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 5864 Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
2.0 ft/s
Ground
Ineff
Bank Sta


Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 5293 Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 4871 Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 4407 Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.2 ft/s
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Corrected Effective 4/16/2022
River = Batiquitos Reach = 1 RS = 4209 Upstream of I-5. Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
2.0 ft/s
Ground
Bank Sta

HEC-RAS Plan: Proposed River: Batiquitos Reach: 1

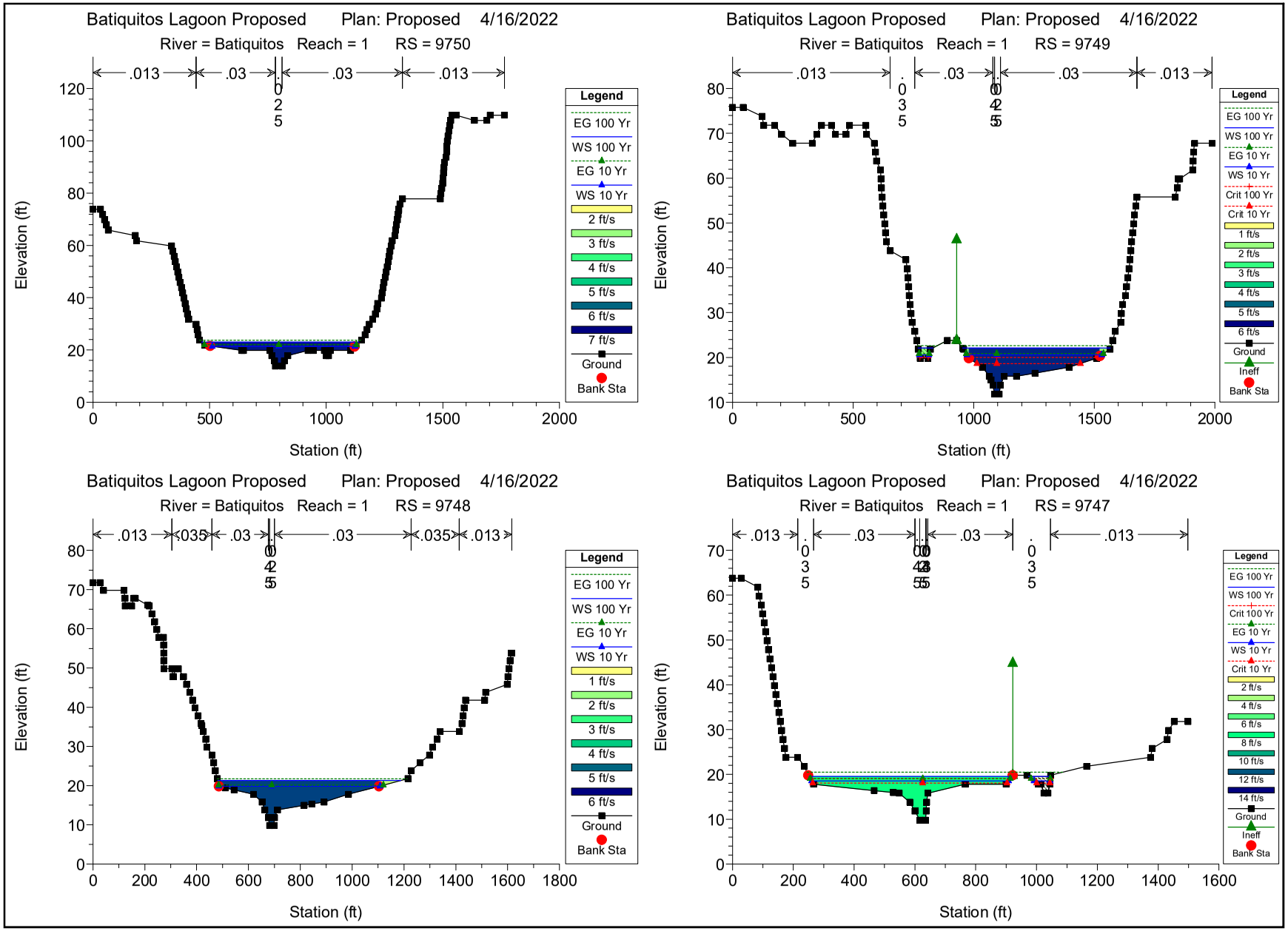
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	9750	100 Yr	15700.00	13.80	23.00		23.71	0.002681	6.76	2355.98	676.46	0.62
1	9750	10 Yr	7850.00	13.80	21.40		21.96	0.003410	5.99	1310.03	611.03	0.72
1	9749	100 Yr	15700.00	11.80	22.11	19.98	22.60	0.001496	5.65	2827.22	675.51	0.44
1	9749	10 Yr	7850.00	11.80	20.57	18.62	20.83	0.001270	4.09	1922.60	598.53	0.38
1	9748	100 Yr	15700.00	9.80	21.29		21.73	0.001488	5.36	2974.68	706.01	0.44
1	9748	10 Yr	7850.00	9.80	19.87		20.11	0.001240	3.86	2035.07	622.04	0.37
1	9747	100 Yr	15700.00	9.80	19.52	19.08	20.47	0.005913	7.81	2011.11	739.76	0.79
1	9747	10 Yr	7850.00	9.80	18.55	18.09	19.06	0.005102	5.73	1369.36	701.28	0.70
1	9746	100 Yr	15700.00	7.80	18.30	16.95	18.66	0.001558	4.81	3269.44	1104.74	0.48
1	9746	10 Yr	7850.00	7.80	17.03	16.14	17.27	0.001804	3.92	2001.51	945.38	0.48
1	9745	100 Yr	15700.00	3.80	17.29		17.51	0.001267	3.82	4197.49	1292.35	0.36
1	9745	10 Yr	7850.00	3.80	15.48		15.70	0.002195	3.76	2089.83	889.71	0.43
1	9744	100 Yr	15700.00	1.80	16.70		16.85	0.000488	3.67	5560.85	1525.07	0.25
1	9744	10 Yr	7850.00	1.80	14.17		14.41	0.001087	4.13	2263.69	1091.46	0.35
1	9743	100 Yr	15700.00	0.00	16.05		16.38	0.000844	4.74	3494.47	699.16	0.34
1	9743	10 Yr	7850.00	0.00	12.59		13.11	0.003469	5.75	1365.47	488.63	0.61
1	9742	100 Yr	15700.00	-2.00	13.42	10.83	15.24	0.002548	11.50	1586.83	633.48	0.59
1	9742	10 Yr	7850.00	-2.00	8.88	6.06	10.67	0.002907	10.74	730.86	82.71	0.64
1	9741	100 Yr	15700.00	-3.07	10.49	10.32	13.85	0.005241	15.06	1156.01	179.92	0.82
1	9741	10 Yr	7850.00	-3.07	7.07	5.88	9.26	0.005516	11.87	661.60	94.67	0.79
1	9740	100 Yr	15700.00	-3.25	10.45	10.00	13.43	0.004207	14.38	1243.87	191.09	0.76
1	9740	10 Yr	7850.00	-3.25	6.87	5.11	8.97	0.004609	11.64	674.67	92.13	0.75
1	9739	100 Yr	15700.00	-3.40	10.76	9.09	13.02	0.003078	12.45	1396.63	186.65	0.65
1	9739	10 Yr	7850.00	-3.40	7.10	4.38	8.64	0.003299	9.94	789.88	110.76	0.63
1	9738	100 Yr	15700.00	-3.50	10.94	7.58	12.69	0.002199	10.72	1537.22	171.21	0.56
1	9738	10 Yr	7850.00	-3.50	7.27	3.49	8.32	0.002180	8.20	958.00	132.73	0.53

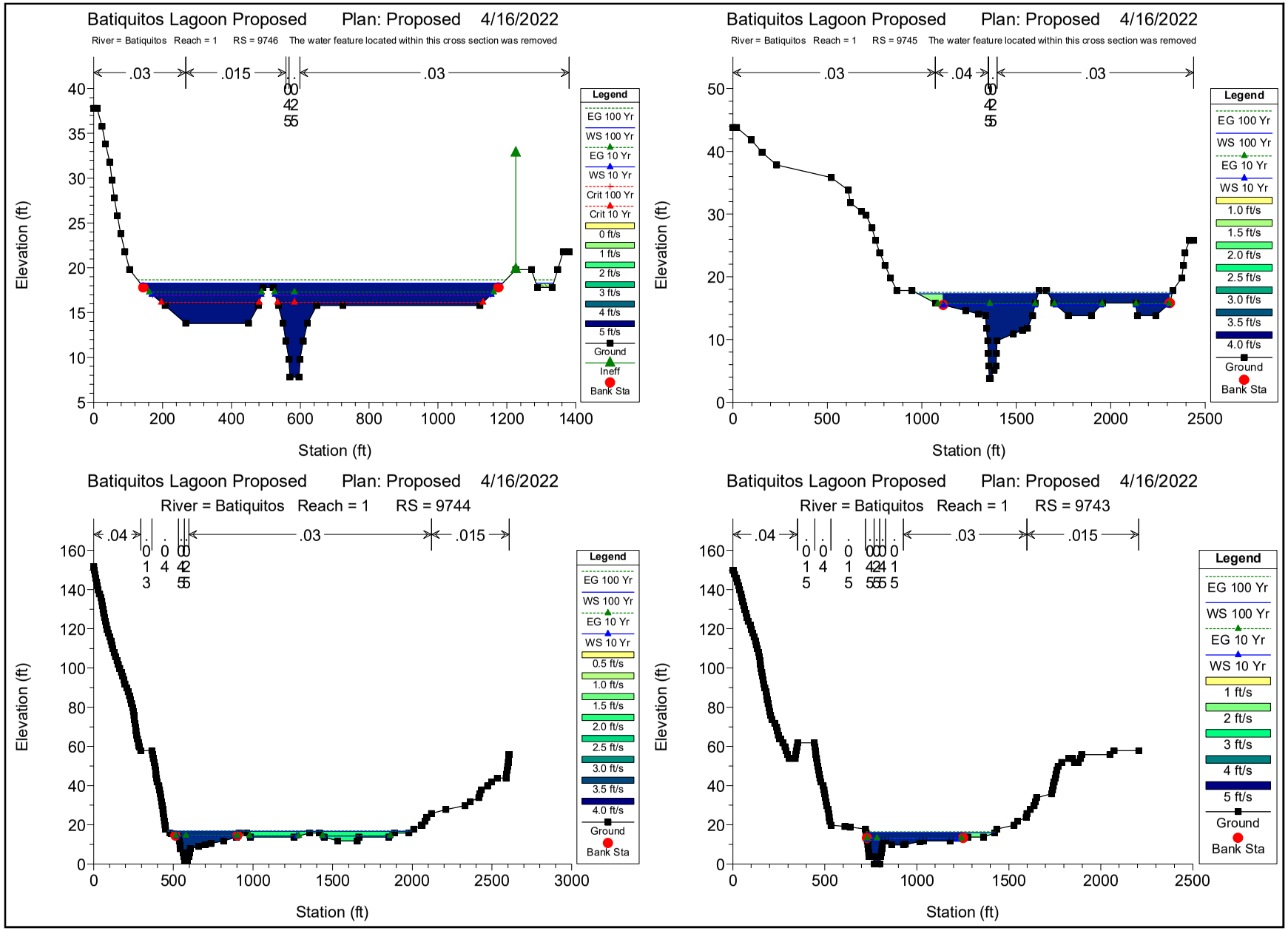
HEC-RAS Plan: Proposed River: Batiquitos Reach: 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	9737.55		Bridge									
1	9737	100 Yr	15700.00	-3.94	7.92	7.92	11.09	0.008275	14.30	1104.81	178.87	0.99
1	9737	10 Yr	7850.00	-3.94	5.99		7.51	0.003451	9.89	794.06	117.79	0.67
1	9736	100 Yr	15700.00	-3.98	7.75	7.75	10.89	0.007641	14.22	1111.59	184.73	0.99
1	9736	10 Yr	7850.00	-3.98	6.03		7.42	0.002955	9.47	829.27	126.66	0.65
1	9735	100 Yr	15700.00	-4.05	6.97		8.97	0.003055	11.34	1388.36	205.53	0.74
1	9735	10 Yr	7850.00	-4.05	6.41		6.99	0.000929	6.13	1281.18	180.32	0.40
1	9734	100 Yr	15700.00	-4.30	7.40	6.19	8.28	0.003865	7.55	2109.85	956.78	0.62
1	9734	10 Yr	7850.00	-4.30	6.47	4.16	6.83	0.002083	4.76	1650.68	568.93	0.44
1	9729	100 Yr	15700.00	-4.26	6.28	6.28	7.01	0.002487	10.94	3310.86	1579.07	0.67
1	9729	10 Yr	7850.00	-4.26	5.37	5.37	5.99	0.001961	8.98	1997.23	1240.19	0.58
1	9728	100 Yr	15700.00	-4.28	6.40		6.42	0.000020	1.18	14938.79	2574.42	0.07
1	9728	10 Yr	7850.00	-4.28	2.98		2.99	0.000024	0.96	8196.14	1365.40	0.07
1	9727	100 Yr	15700.00	-4.31	6.36		6.40	0.000036	1.64	11311.93	1962.46	0.09
1	9727	10 Yr	7850.00	-4.31	2.94		2.97	0.000041	1.34	5856.12	887.26	0.09
1	9726	100 Yr	15700.00	-4.33	6.32		6.36	0.000052	1.77	9107.85	1221.20	0.11
1	9726	10 Yr	7850.00	-4.33	2.89		2.92	0.000074	1.50	5225.69	1041.53	0.12
1	9725	100 Yr	15700.00	-4.36	6.24		6.30	0.000068	1.93	8504.40	1259.09	0.12
1	9725	10 Yr	7850.00	-4.36	2.77		2.82	0.000125	1.78	4422.47	1010.50	0.15
1	9724	100 Yr	15700.00	-4.38	6.17		6.23	0.000100	2.05	7891.39	1368.74	0.14
1	9724	10 Yr	7850.00	-4.38	2.57		2.66	0.000403	2.38	3302.34	1173.28	0.25
1	9162	100 Yr	15700.00	-4.38	6.12		6.18	0.000088	1.88	8637.36	1541.12	0.13
1	9162	10 Yr	7850.00	-4.38	2.31		2.40	0.000502	2.47	3182.13	1262.53	0.27
1	8558	100 Yr	15700.00	-4.38	5.98		6.10	0.000169	2.77	6180.75	1103.94	0.19
1	8558	10 Yr	7850.00	-4.38	1.73		1.95	0.001123	3.83	2051.07	769.81	0.41

HEC-RAS Plan: Proposed River: Batiquitos Reach: 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	7922	100 Yr	15700.00	-4.38	5.91		6.01	0.000113	2.50	7248.23	1355.89	0.16
1	7922	10 Yr	7850.00	-4.38	1.25		1.42	0.000619	3.24	2420.60	744.95	0.32
1	7547	100 Yr	15700.00	-4.38	5.94		5.97	0.000027	1.36	12017.58	1446.27	0.08
1	7547	10 Yr	7850.00	-4.38	1.29		1.32	0.000062	1.39	5663.56	1204.68	0.11
1	6962	100 Yr	15700.00	-5.38	5.93		5.95	0.000025	1.32	12375.03	1483.83	0.08
1	6962	10 Yr	7850.00	-5.38	1.26		1.29	0.000058	1.35	5817.46	1257.82	0.11
1	6431	100 Yr	15700.00	-5.38	5.90	-2.73	5.94	0.000034	1.63	9876.42	1441.54	0.09
1	6431	10 Yr	7850.00	-5.38	1.22	-3.63	1.25	0.000064	1.52	5156.26	930.74	0.11
1	5864	100 Yr	15700.00	-5.38	5.86	-2.52	5.91	0.000047	1.93	8399.93	1169.19	0.11
1	5864	10 Yr	7850.00	-5.38	1.16	-3.56	1.21	0.000094	1.81	4341.25	779.16	0.14
1	5293	100 Yr	15700.00	-5.38	5.83	-2.42	5.88	0.000056	1.79	9084.20	1418.39	0.10
1	5293	10 Yr	7850.00	-5.38	1.09	-3.49	1.15	0.000139	1.81	4340.91	882.76	0.14
1	4871	100 Yr	15700.00	-5.38	5.82	-1.86	5.86	0.000042	1.49	10918.41	2122.28	0.09
1	4871	10 Yr	7850.00	-5.38	0.99	-3.15	1.06	0.000266	2.13	3692.37	1305.28	0.22
1	4407	100 Yr	15700.00	-6.38	5.82		5.84	0.000018	1.09	17189.85	2655.90	0.06
1	4407	10 Yr	7850.00	-6.38	0.97		1.00	0.000057	1.44	5458.28	1296.54	0.12
1	4209	100 Yr	15700.00	-6.38	5.80	-0.64	5.83	0.000048	1.82	13467.17	2921.42	0.11
1	4209	10 Yr	7850.00	-6.38	0.73	-2.30	0.96	0.000605	3.80	2064.92	492.39	0.33


Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9750
.013 .03 .03 .013
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
2 ft/s
3 ft/s
4 ft/s
5 ft/s
6 ft/s
7 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9749
.013 .03 .03 .013
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
1 ft/s
2 ft/s
3 ft/s
4 ft/s
5 ft/s
6 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9748
.013 .035 .03 .03 .035 .013
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
1 ft/s
2 ft/s
3 ft/s
4 ft/s
5 ft/s
6 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9747
.013 .03 .03 .013
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
Crit 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
14 ft/s
Ground
Ineff
Bank Sta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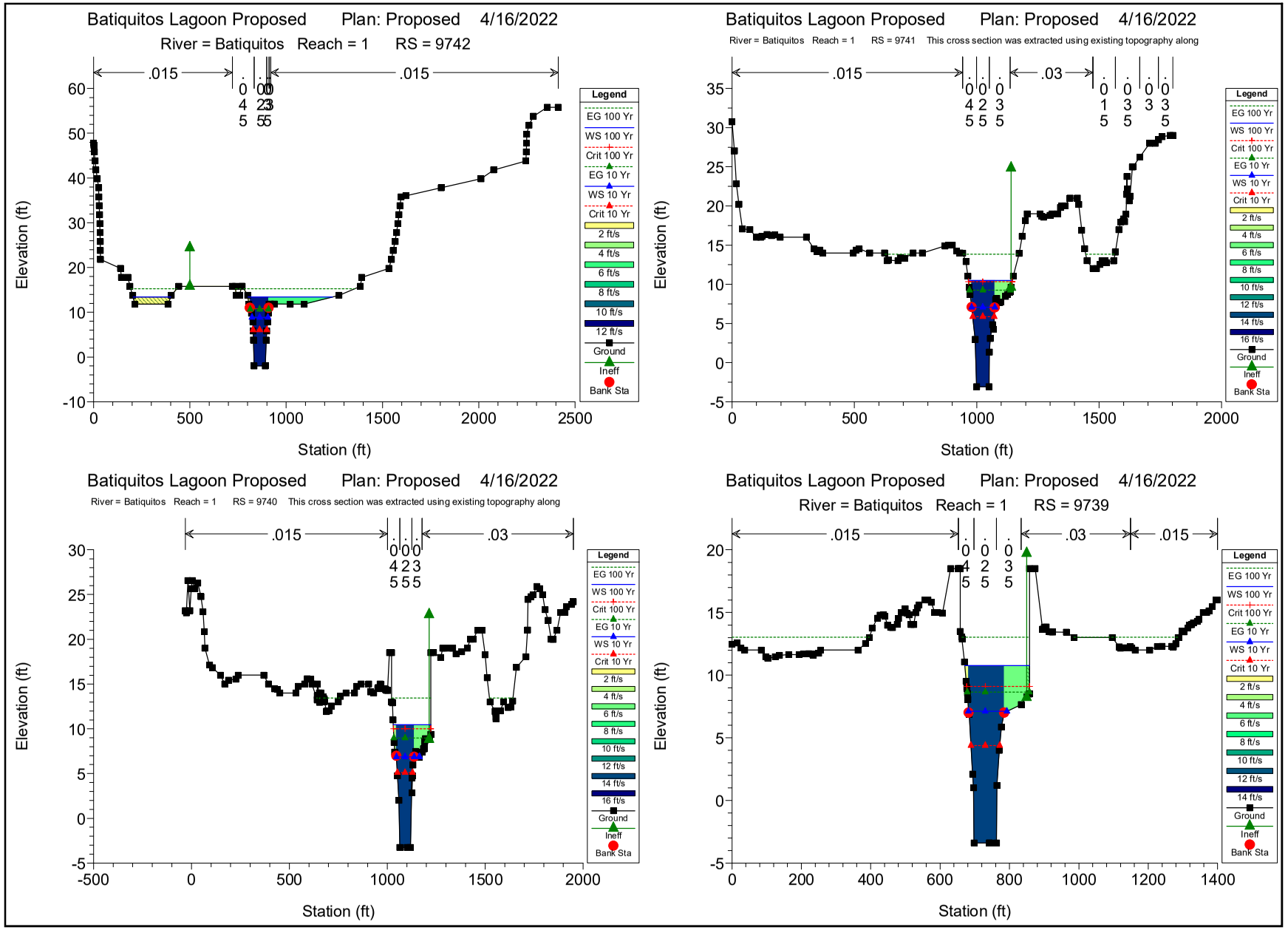
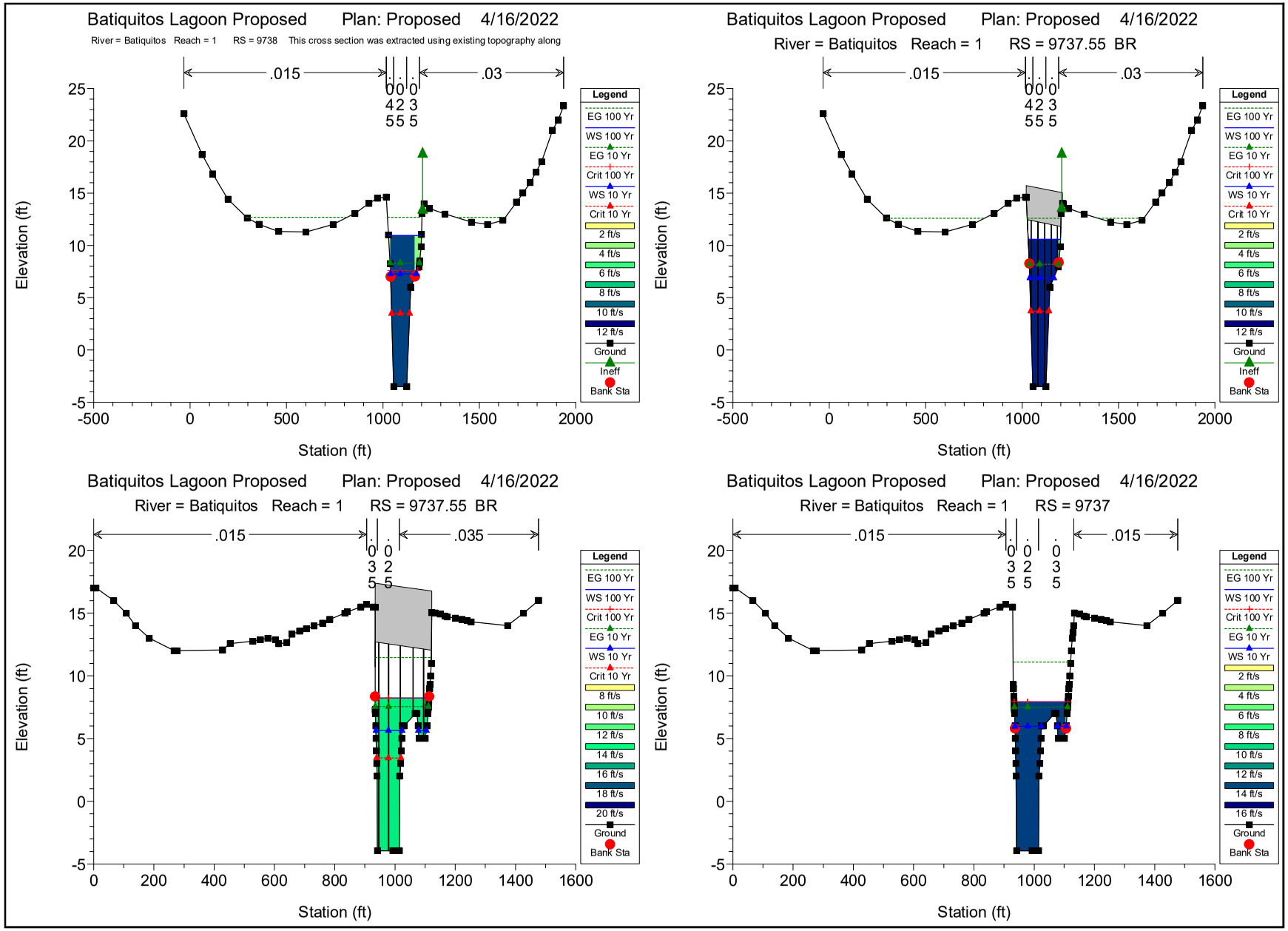
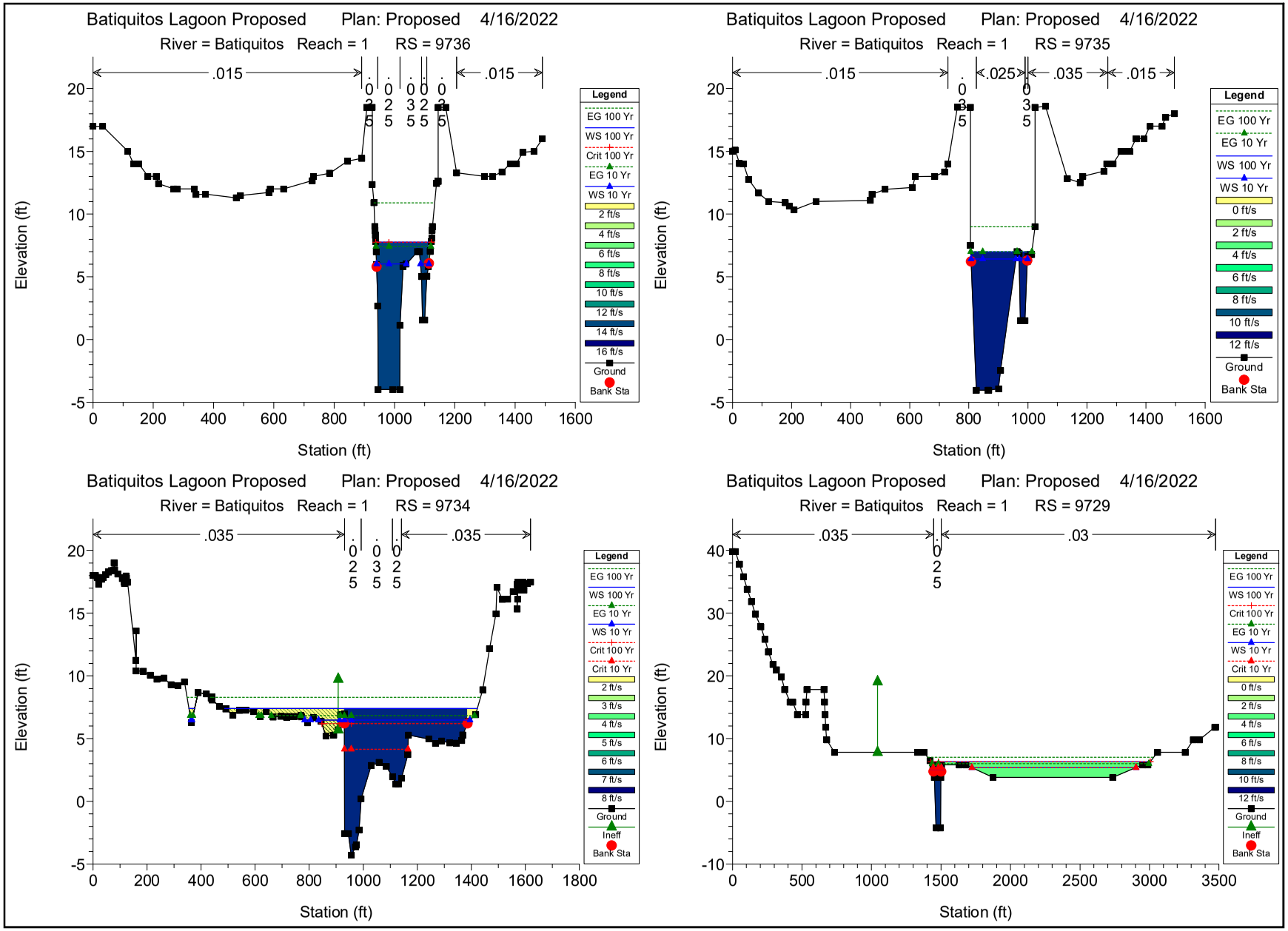
River = Batiquitos Reach = 1 RS = 9746 The water feature located within this cross section was removed
.03 .015 .03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0 ft/s
1 ft/s
2 ft/s
3 ft/s
4 ft/s
5 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9745 The water feature located within this cross section was removed
.03 .04 .03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
3.0 ft/s
3.5 ft/s
4.0 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9744
.04 .03 .015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
3.0 ft/s
3.5 ft/s
4.0 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9743
.04 .03 .015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
1 ft/s
2 ft/s
3 ft/s
4 ft/s
5 ft/s
Ground
Bank Sta


Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9742
.015
.015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
Crit 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9741 This cross section was extracted using existing topography along
.015
.03
Elevation (ft)
Station (ft)
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9740 This cross section was extracted using existing topography along
.015
.03
Elevation (ft)
Station (ft)
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9739
.015
.03
.015
Elevation (ft)
Station (ft)


Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9738 This cross section was extracted using existing topography along
.015
.03
0 0 0
4 2 3
5 5 5
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
Crit 100 Yr
WS 10 Yr
Crit 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9737.55 BR
.015
.03
0 0 0
4 2 3
5 5 5
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
Crit 100 Yr
WS 10 Yr
Crit 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9737.55 BR
.015
.035
0 0
3 2
5 5
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
Crit 10 Yr
8 ft/s
10 ft/s
12 ft/s
14 ft/s
16 ft/s
18 ft/s
20 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9737
.015
.015
0 0 0
3 2 3
5 5 5
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
14 ft/s
16 ft/s
Ground
Bank Sta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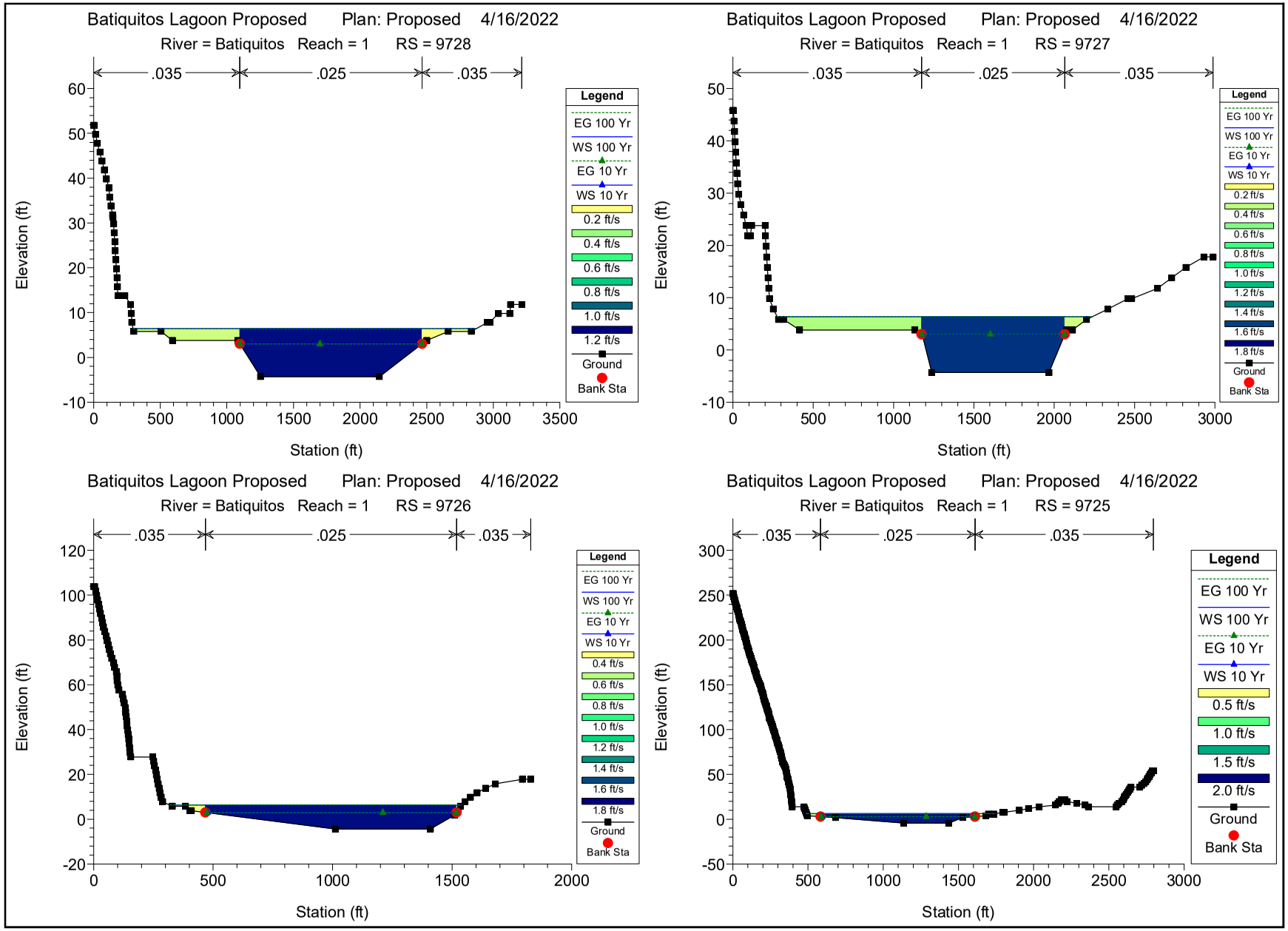
.015
.015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
14 ft/s
16 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9735
.015
.025
.035
.015
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
EG 10 Yr
WS 100 Yr
WS 10 Yr
0 ft/s
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9734
.035
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
2 ft/s
3 ft/s
4 ft/s
5 ft/s
6 ft/s
7 ft/s
8 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9729
.035
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
Crit 100 Yr
EG 10 Yr
WS 10 Yr
Crit 10 Yr
0 ft/s
2 ft/s
4 ft/s
6 ft/s
8 ft/s
10 ft/s
12 ft/s
Ground
Ineff
Bank Sta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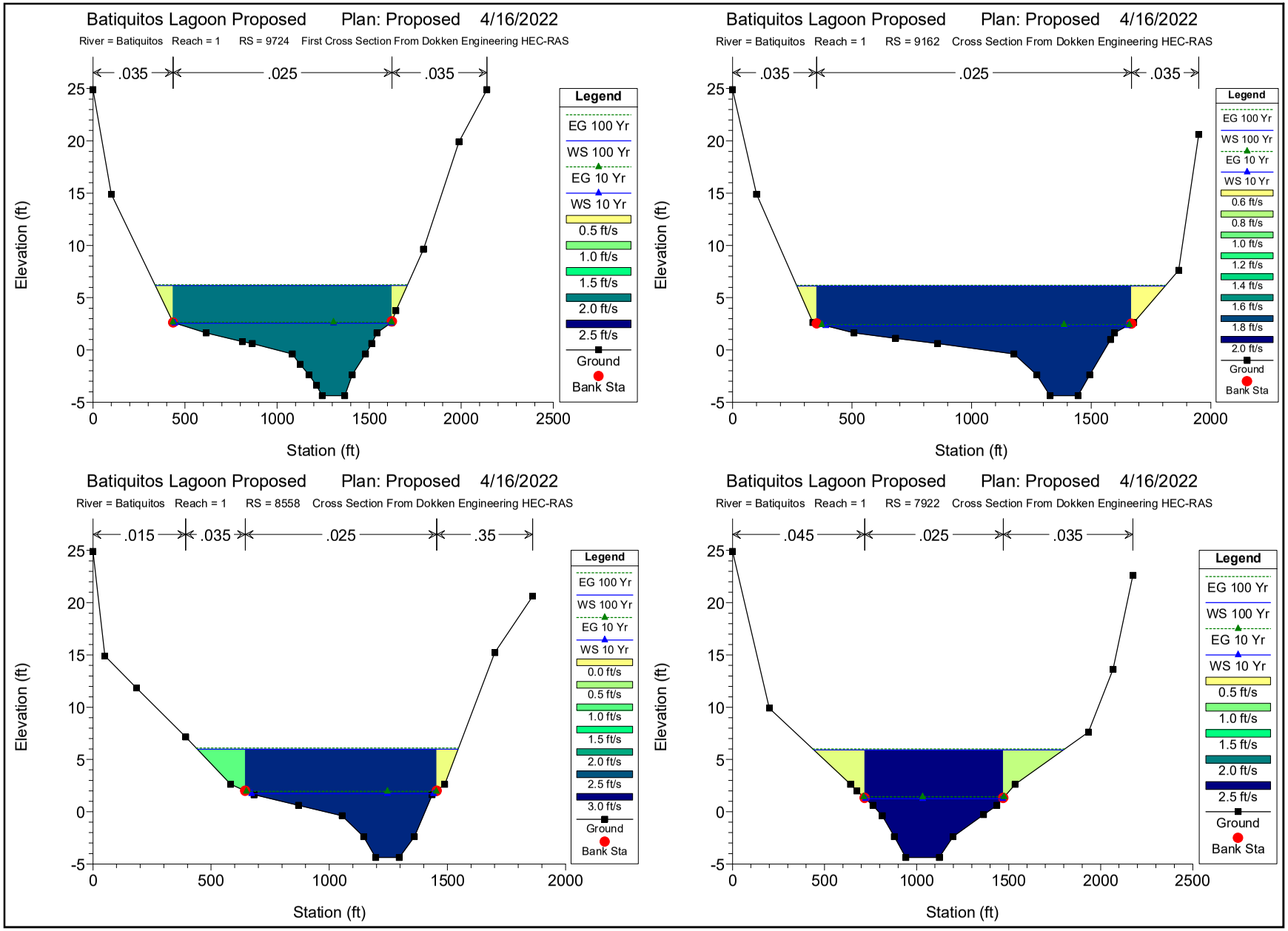
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.2 ft/s
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9727
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.2 ft/s
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9726
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9725
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
Ground
Bank Sta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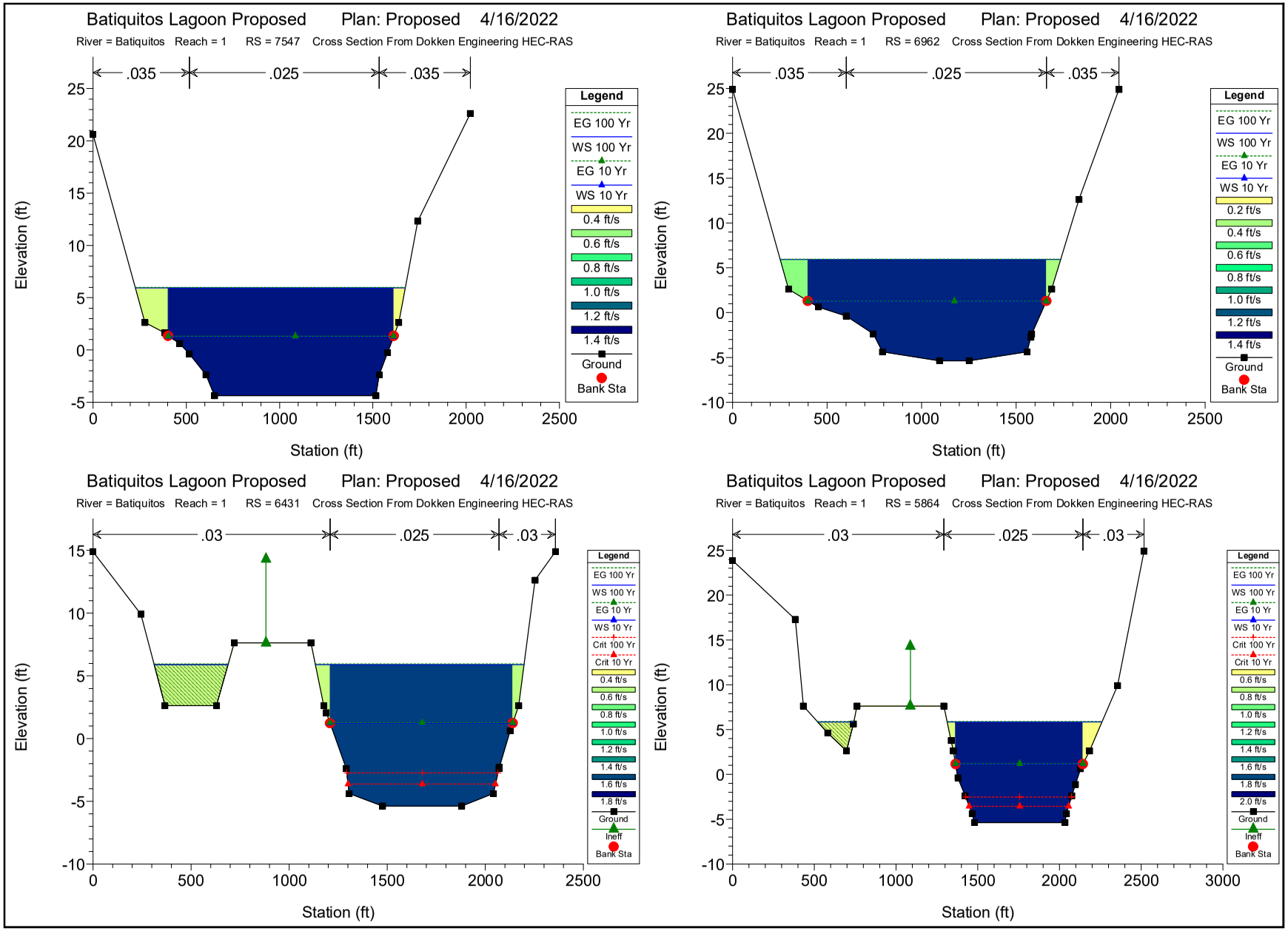
River = Batiquitos Reach = 1 RS = 9724 First Cross Section From Dokken Engineering HEC-RAS
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 9162 Cross Section From Dokken Engineering HEC-RAS
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
2.0 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 8558 Cross Section From Dokken Engineering HEC-RAS
.015
.035
.025
.35
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.0 ft/s
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
3.0 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 7922 Cross Section From Dokken Engineering HEC-RAS
.045
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.5 ft/s
1.0 ft/s
1.5 ft/s
2.0 ft/s
2.5 ft/s
Ground
Bank Sta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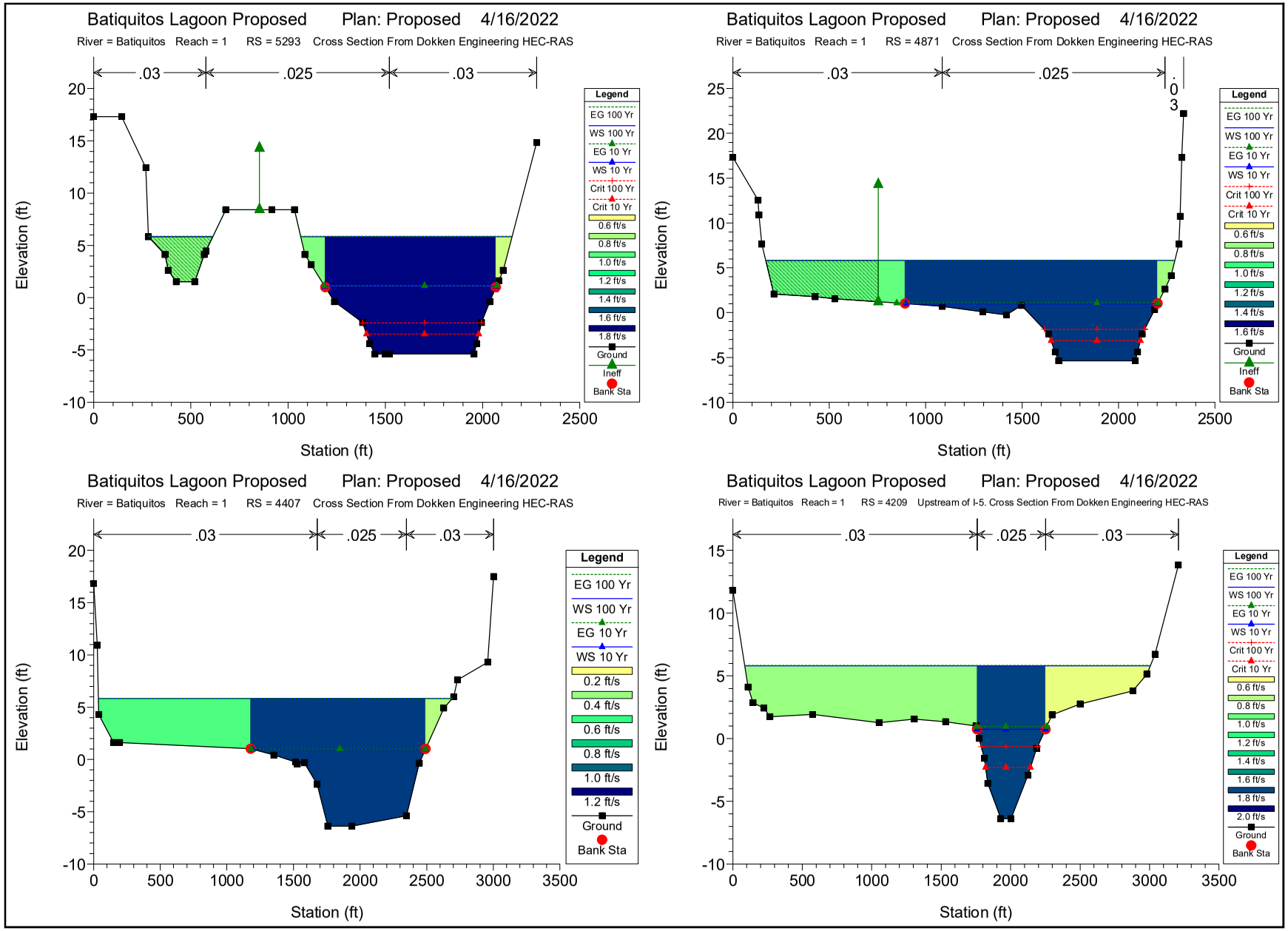
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 6962 Cross Section From Dokken Engineering HEC-RAS
.035
.025
.035
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.2 ft/s
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 6431 Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 5864 Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
2.0 ft/s
Ground
Ineff
Bank Sta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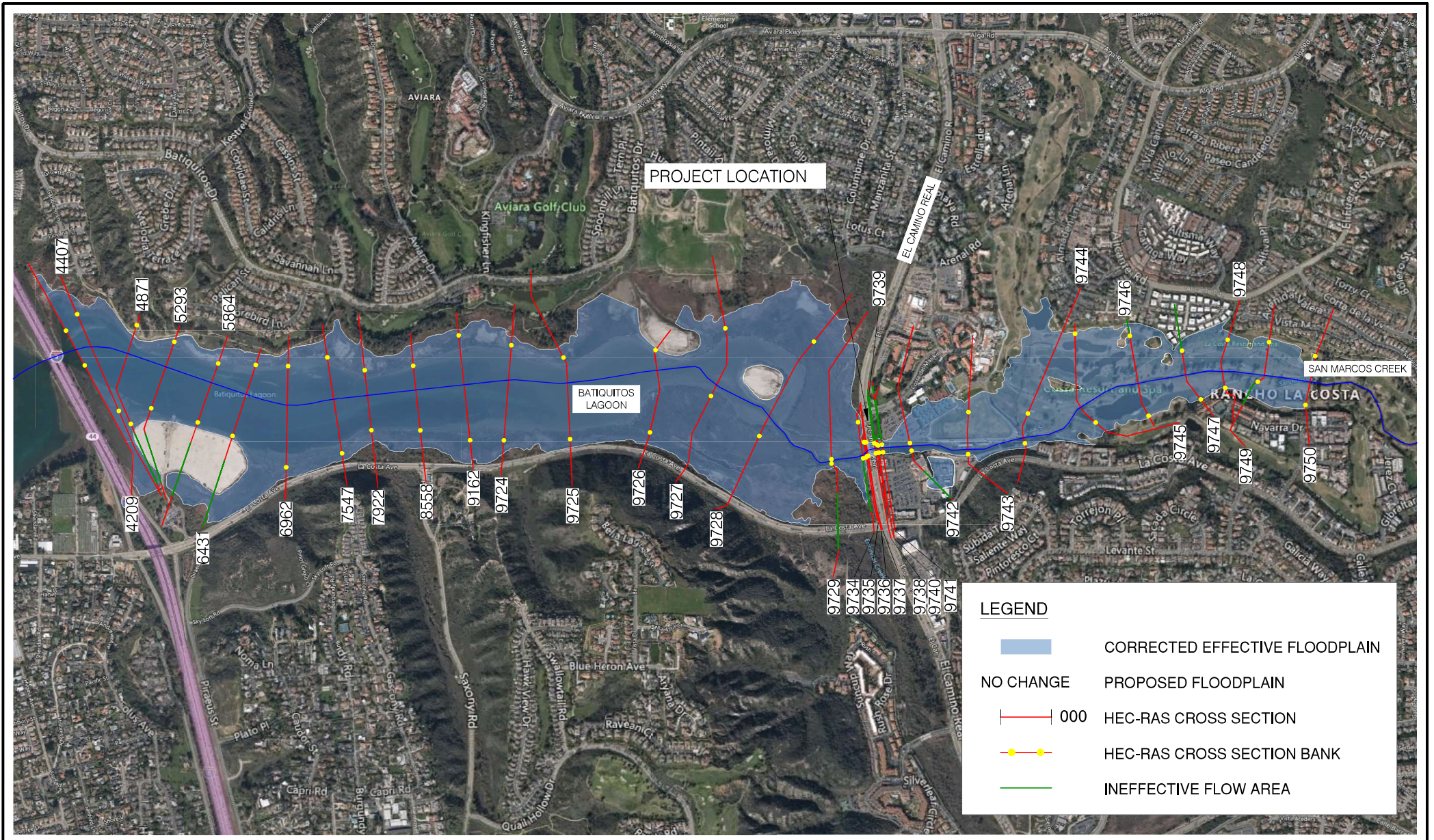
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 4871 Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
Ground
Ineff
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 4407 Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
0.2 ft/s
0.4 ft/s
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
Ground
Bank Sta
Batiquitos Lagoon Proposed Plan: Proposed 4/16/2022
River = Batiquitos Reach = 1 RS = 4209 Upstream of I-5. Cross Section From Dokken Engineering HEC-RAS
.03
.025
.03
Elevation (ft)
Station (ft)
Legend
EG 100 Yr
WS 100 Yr
EG 10 Yr
WS 10 Yr
Crit 100 Yr
Crit 10 Yr
0.6 ft/s
0.8 ft/s
1.0 ft/s
1.2 ft/s
1.4 ft/s
1.6 ft/s
1.8 ft/s
2.0 ft/s
Ground
Bank Sta

ATTACHMENT 3

Work Maps



TORY R. WALKER ENGINEERING
122 Civic Center Drive, Suite 206 Vista, CA 92084

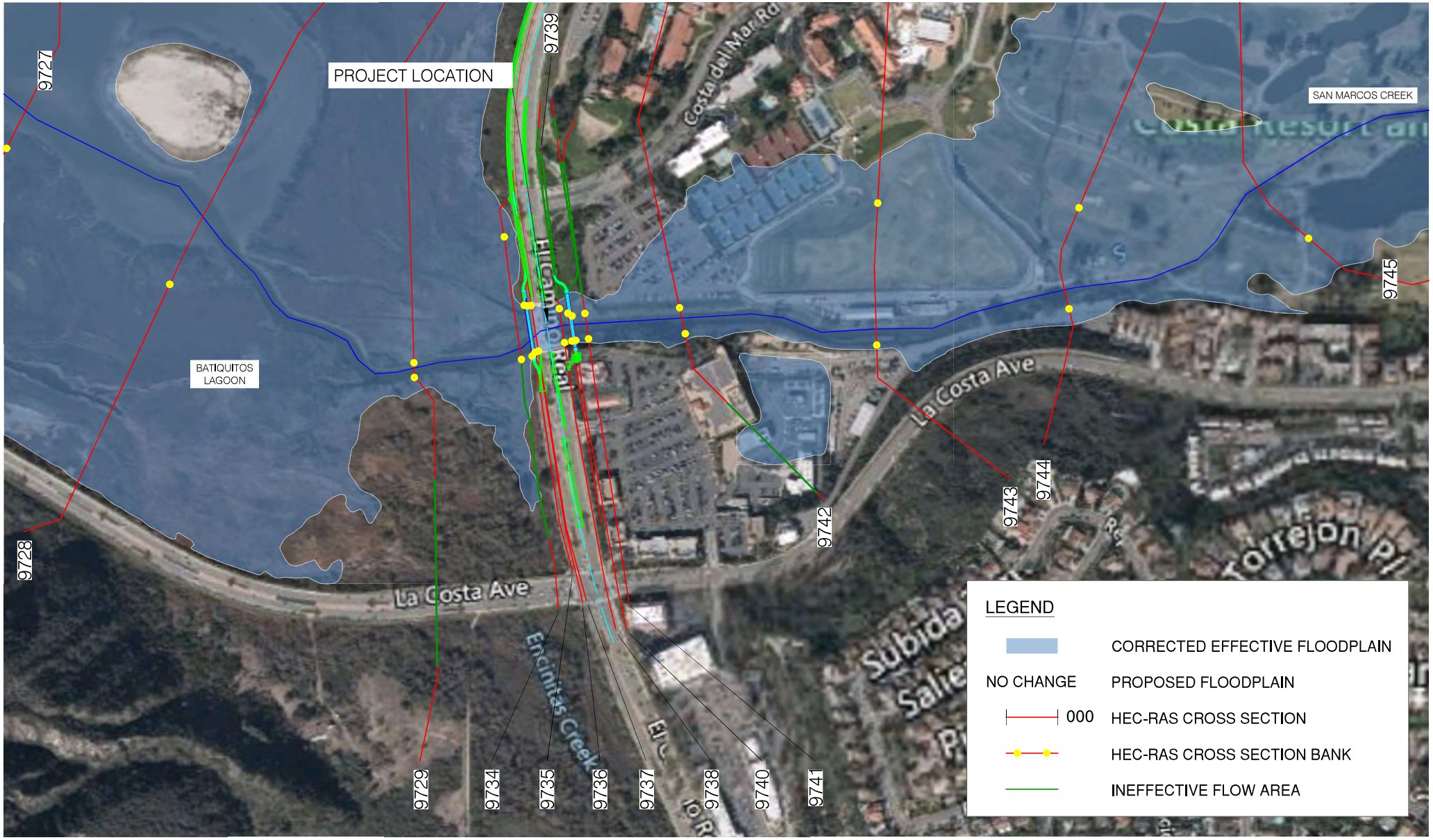
TOPO SOURCE:

- AERIAL TOPOGRAPHY MAPPING, JAN 2021
  1-FOOT CONTOURS
  PHOTO GEODETIC CORPORATION
- SURVEY
  AGUIRRE ASSOCIATES, JAN 2021
- SANGIS, 2014

0' 250' 500' 1000' 1500' 2000'
GRAPHIC SCALE IN FEET
1" = 500'
VERTICAL DATUM – NGVD 29

N

HEC-RAS Work Map
EL CAMINO REAL PEDESTRIAN BRIDGES
OCTOBER 2021



TORY R. WALKER ENGINEERING
122 Civic Center Drive, Suite 206 Vista, CA 92084

TOPO SOURCE:

- AERIAL TOPOGRAPHY MAPPING, JAN 2021
  1-FOOT CONTOURS
  PHOTO GEODETIC CORPORATION
- SURVEY
  AGUIRRE ASSOCIATES, JAN 2021
- SANGIS, 2014

0' 75' 150' 300' 450' 600'
GRAPHIC SCALE IN FEET
1" = 150'
VERTICAL DATUM – NGVD 29

N

Effective and Proposed HEC-RAS Work Map
EL CAMINO REAL PEDESTRIAN BRIDGES
OCTOBER 2021

ATTACHMENT 4

Scour Calculations

DETERMINATION OF SCOUR DURING PEAK FLOODFLOWS

10-yr Scour Design Flood

Pacific Coast Highway Bridge

TORY R. WALKER ENGINEERING
RELIABLE SOLUTIONS IN WATER RESOURCES
122 CIVIC CENTER DR, STE 206, VISTA, CA 92084 · 760-414-9212

GIVEN DATA:

Symbol	Description			Units	
Q	design discharge	=	7,850	ft^3/s	*computations
B	channel width	=	85	ft	*input
d_m	mean water depth	=	6.3	ft	
A	flow area	=	783	ft^2	
V_m	mean velocity	=	10.115	ft/s	
q	discharge per unit width	=	92	$ft^3/s/ft$	
D	bed material size				
		D_{50} =	0.36	mm	
		D_{85} =	0.88	mm	
		D_{90} =	1.52	mm	

Method based on HEC-18 Evaluating Scour at Bridges 5th Ed. (2012):

HEC-18 7.3

K_1 = 1.0 Correction factor for pier nose shape from Figure 7.3 and Table 7.1
Selected 1.0 for case (c) Circular cylinder

K_2 = 1.0 Correction factor for angle of attack of flow from Table 7.2 or Equation 7.4
Selected 1.0 (piers are cylindrical => L/a = 1.0 and angle of attack is not significant)

K_3 = 1.1 Correction factor for bed condition from Table 7.3
Selected 1.1 for plane bed flow

y_1 = 6.3 ft Flow depth directly upstream of the pier

a = 2.0 ft Pier width

L = 2.0 ft Length of pier

Fr_1 = 0.7 Froude Number directly upstream of the pier = $V_1/(gy_1)^{1/2}$

g = 32.2 ft/s^2 Acceleration of gravity

V_1 = 10.1 ft/s Mean velocity of flow directly upstream of the pier

$\frac{y_s}{a}$ = **2.8** Scour Depth / Pier Width

y_s = 5.7 ft Pier Scour Depth

The HEC-18 equation is:

$$\frac{y_s}{y_1} = 2.0\ K_1\ K_2\ K_3 \left(\frac{a}{y_1}\right)^{0.65} Fr_1^{0.43} \qquad (7.1)$$

As a Rule of Thumb, the maximum scour depth for round nose piers aligned with the flow is:

$y_s \leq 2.4$ times the pier width (a) for $Fr \leq 0.8$ (7.2)
$y_s \leq 3.0$ times the pier width (a) for $Fr > 0.8$

In terms of y_s/a, Equation 7.1 is:

$$\frac{y_s}{a} = 2.0\ K_1\ K_2\ K_3 \left(\frac{y_1}{a}\right)^{0.35} Fr_1^{0.43} \qquad (7.3)$$

DETERMINATION OF SCOUR DURING PEAK FLOODFLOWS

100-yr Scour Design Flood

Pacific Coast Highway Bridge

TORY R. WALKER ENGINEERING
RELIABLE SOLUTIONS IN WATER RESOURCES
122 CIVIC CENTER DR, STE 206, VISTA, CA 92084 · 760-414-9212

GIVEN DATA:

Symbol	Description			Units	
Q	design discharge	=	15,700	ft^3/s	*computations
B	channel width	=	85	ft	*input
d_m	mean water depth	=	9.4	ft	
A	flow area	=	1,300	ft^2	
V_m	mean velocity	=	12.92	ft/s	
q	discharge per unit width	=	185	$ft^3/s/ft$	
D	bed material size				
		D_{50} =	0.36	mm	
		D_{85} =	0.88	mm	
		D_{90} =	1.52	mm	

Method based on HEC-18 Evaluating Scour at Bridges 5th Ed. (2012):

HEC-18 7.3

K_1 = 1.0 Correction factor for pier nose shape from Figure 7.3 and Table 7.1
Selected 1.0 for case (c) Circular cylinder

K_2 = 1.0 Correction factor for angle of attack of flow from Table 7.2 or Equation 7.4
Selected 1.0 (piers are cylindrical => L/a = 1.0 and angle of attack is not significant)

K_3 = 1.1 Correction factor for bed condition from Table 7.3
Selected 1.1 for plane bed flow

y_1 = 9.4 ft Flow depth directly upstream of the pier

a = 2.0 ft Pier width

L = 2.0 ft Length of pier

Fr_1 = 0.7 Froude Number directly upstream of the pier = $V_1/(gy_1)^{1/2}$

g = 32.2 ft/s^2 Acceleration of gravity

V_1 = 12.9 ft/s Mean velocity of flow directly upstream of the pier

$\frac{y_s}{a}$ = **3.3** Scour Depth / Pier Width

y_s = 6.7 ft Pier Scour Depth

The HEC-18 equation is:

$$\frac{y_s}{y_1} = 2.0\ K_1\ K_2\ K_3 \left(\frac{a}{y_1}\right)^{0.65} Fr_1^{0.43} \qquad (7.1)$$

As a Rule of Thumb, the maximum scour depth for round nose piers aligned with the flow is:

$y_s \leq 2.4$ times the pier width (a) for $Fr \leq 0.8$ (7.2)
$y_s \leq 3.0$ times the pier width (a) for $Fr > 0.8$

In terms of y_s/a, Equation 7.1 is:

$$\frac{y_s}{a} = 2.0\ K_1\ K_2\ K_3 \left(\frac{y_1}{a}\right)^{0.35} Fr_1^{0.43} \qquad (7.3)$$

Appendix F:

Vehicle Miles Traveled Analysis

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TECHNICAL MEMORANDUM

Date: October 11, 2023

To: Brandon Miles, P.E., T.E - City of Carlsbad

Cc: Mark Tarrall, P.E. - Dokken Engineering

From: Philip Wragg, AICP - STC Traffic, Inc.

Subject: El Camino Real Widening Between Arenal Road and La Costa Avenue – VMT Analysis

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Background

El Camino Real is a regionally significant north-south arterial that carries over 50,000 vehicles a day between Oceanside (to the north) and Encinitas (to the south). El Camino Real provides local and regional transit service, bike lanes and sidewalks along most of the corridor. Just north of Arenal Road, the number of southbound travel lanes along El Camino Real drops from three to two due to right of way constraints further south. This lane drop creates a bottleneck that impacts traffic flow. The City of Carlsbad (City) proposes to widen El Camino Real between Arenal Road and La Costa Avenue to provide a 6-lane arterial roadway consistent with the City's General Plan Mobility Element to better facilitate multi-modal travel for vehicles, transit, bicycles and pedestrians. El Camino Real to the north and south of the project limits has already been built as a 6-lane arterial. Roadway and bridge widening (across San Marcos Creek) is required to add a third southbound travel lane, provide buffered bike lanes, and close gaps in the sidewalk network to improve access and connectivity for pedestrians. **Attachment A** provides the project location map and **Attachment B** provides an overview exhibit of proposed project improvements.

The project is required to comply with the California Environmental Quality Act (CEQA). Senate Bill 743 (SB 743), which was implemented throughout California on July 1, 2020, requires that transportation analysis performed under CEQA use Vehicle Miles Traveled (VMT) or other similar performance measures. SB 743 applies to both land development and transportation projects. In addition, it applies to projects initiated by public agencies as well as projects that are initiated by private companies and individuals. Per CEQA Section 15064.3, lead agencies have the discretion to continue using level of service and delay as the performance measure to determine the impacts of transportation projects or to choose a different performance measure. As recommended in the California Governor's Office of Planning and Research (OPR) Technical Advisory (December 2018), the City of Carlsbad has opted to use VMT as the performance measure for transportation projects. The City's VMT Analysis Guidelines (dated May 31, 2023) will be used as a basis for assessing the potential for VMT impacts for the project.

Existing Conditions

The project corridor of El Camino Real between Arenal Road and La Costa Avenue contains three northbound travel lanes and two southbound travel lanes separated by a raised median. El Camino Real widens just south of the San Marcos Creek bridge to provide a third southbound travel lane. The posted speed limit is 55 mph. Class II bike lanes, ranging in width from 5 feet to 10 feet, are provided along both sides of the roadway. Contiguous sidewalk is available along the east side of the roadway except for a gap along the San Marcos Creek bridge. Pedestrians are required to walk in the bike lane to cross the bridge. Conversely, only a few short segments of contiguous sidewalk exist along the west side of the roadway – approximately 650 feet of sidewalk approaching La Costa Avenue and approximately 160 feet of sidewalk at the intersection of Costa Del Mar Road. North County Transit District Bus Route #309 operates along the entire corridor with stops at Arenal Road, Costa Del Mar Road, and La Costa Avenue.

El Camino Real to the north and south of the project limits is constructed as a 6-lane arterial roadway. Just north of Arenal Road, southbound traffic is required to merge as the outside travel lane is dropped to allow for a transition to two travel lanes south of the intersection. This transition from three to two southbound travel lanes results in a bottleneck, which impedes traffic flow. The existing right of way constraints along the west side of the project corridor also impede pedestrian access and connectivity.

Proposed Project

The City proposes to widen El Camino Real between Arenal Road and La Costa Avenue to provide a 6-lane arterial roadway consistent with the City's General Plan Mobility Element to better facilitate multi-modal travel for vehicles, transit, bicycles and pedestrians.

Notable project improvements include:

- Widen San Marcos Creek bridge;
- Construct a third southbound travel lane;
- Construct eight-foot wide bike lanes with three-foot wide buffers for both directions of travel;
- Construct new sidewalk to close gaps along the west side of the roadway;
- Construct new pedestrian bridges across San Marcos Creek;
- Restripe the southbound approach at Arenal Road to provide one left turn lane, two through lanes, and one shared through-right lane;
- Restripe the southbound approach at Costa Del Mar Road to include one left turn lane and three through lanes;
- Construct ADA compliant curb ramps.

Anticipated project benefits include:

- Reduce traffic congestion caused by the southbound lane drop;
- Improve travel time along the corridor;
- Improve traffic flow, thereby reducing greenhouse gas emissions;
- Satisfy level of service performance standards required by the City's Growth Management Plan and Traffic Monitoring Program;

- Enhance safety and access for bicycles and pedestrians;
- Improve bicycle and pedestrian connections to transit, shopping, employment centers, and the Batiquitos Lagoon wildlife viewing and recreation areas.

VMT Screening Evaluation

The City's VMT Analysis Guidelines includes a list of project types that are considered to have a less than significant CEQA impact based on their characteristics. Widening projects that propose to construct additional travel lanes for through traffic are not included on the list and therefore, do not "screen out" from needing to perform a VMT analysis. Since the project proposes to add a new southbound travel lane, a VMT analysis is required.

Analysis Methodology

This section provides the context for performing a qualitative assessment of VMT, along with the results of the analysis. Since the project will construct less than 3,000 linear feet of new travel lane for southbound through traffic, use of a regional travel model for evaluating VMT is inappropriate. For example, considering the large population (greater than 4 million) and extent of the roadway network in the San Diego Region (thousands of miles), the potential changes in VMT due to implementation of such a small segment of new travel lane would be indistinguishable. Other quantitative models currently available for VMT analysis of transportation projects, such as the National Center for Sustainable Transportation (NCST) Induced Travel Calculator (https://ncst.ucdavis.edu/researchproduct/induced-travel-calculator), are more appropriate for State highways or larger geographic areas. For example, the following studies used in developing the NCST calculator analyzed geographical areas significantly larger than the proposed project:

- *The Fundamental Law of Road Congestion: Evidence from US Cities (American Economic Review, Duranton and Turner, 2011)*. This study analyzed VMT increases in Metropolitan Statistical Areas (MSA) throughout the United States. MSA are urban areas surrounding a major city that can include one or more counties. For example, the San Diego Region is an MSA.
- *Induced Travel Demand and Induced Road Investment: A Simultaneous Equation Analysis (Journal of Transport Economics and Policy, Cervero and Hansen, 2002)*. This study analyzed VMT increases on California roadways at the County-wide level.
- *Induced Travel in the Environmental Review Process (Transportation Research Board, Volker, Lee, and Handy, 2020)*. This study evaluated induced travel for five roadway widening projects on California State Highways ranging in length from 7 to 32 miles.

Another option considered was performing manual calculations to assess changes in VMT attributable to the proposed project. After conducting comprehensive research, we were unable to identify an applicable methodology for manually calculating changes in VMT for a small-scale transportation project such as El Camino Real Widening between Arenal Road and La Costa Avenue.

CEQA Section 15064.3 describes specific considerations for evaluating a project's transportation impacts, such as the effects of the project on transit and non-motorized travel. Regarding analysis methodology, CEQA Section 15064.3(b)(3) states, "If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc." Based on the research completed, the City has the authority to consider a qualitative assessment of VMT for the proposed project.

VMT Analysis

CEQA Section 15064.3 defines VMT, for the purpose of evaluating a project's transportation impacts, as "the amount and distance of automobile travel attributable to a project." The distinguishing factor here is VMT "attributable to a project," which is different than an increase in VMT related to ambient growth, for example. As such, the qualitative assessment needs to consider whether the small section of roadway widening for one direction of travel will "induce" VMT. Induced VMT is the propensity to encourage new trips to be made that would not have existed otherwise.

Since no parallel circulation element roadways are in proximity to the project corridor, it is highly unlikely that drivers will divert from their current routes to use this small segment of new travel lane. As such, the project is unlikely to release additional capacity on other routes. Furthermore, the project provides significant enhancements and connectivity for pedestrians and bicyclists to key destinations and transit stops (see previous discussion on project improvements and benefits). Consequently, it is very likely that the proposed project improvements will result in an increase in the number of people who choose to walk, bike or use transit as an alternative to driving, "inducing" alternative modes of travel. Therefore, it is reasonable to conclude that the project will have a net reduction in VMT.

Conclusion

Research of available methodologies for quantitatively calculating VMT are deemed to be inappropriate for small-scale transportation projects such as El Camino Real Widening between Arenal Road and La Costa Avenue. As supported by CEQA, since models or other methods for calculating VMT are not available or appropriate for this type of small-scale transportation project, a qualitative assessment of VMT would be acceptable. Given the extent of capacity enhancing project improvements (less than 3,000 linear feet of new travel lane for one direction of travel) compared to multi-modal improvements (corridor wide), lack of parallel travel routes, and improved access to transit and key destinations for pedestrians and bicyclists, implementation of the project is anticipated to have a net reduction in VMT. Therefore, the project is considered to have a less than significant transportation impact for CEQA purposes.

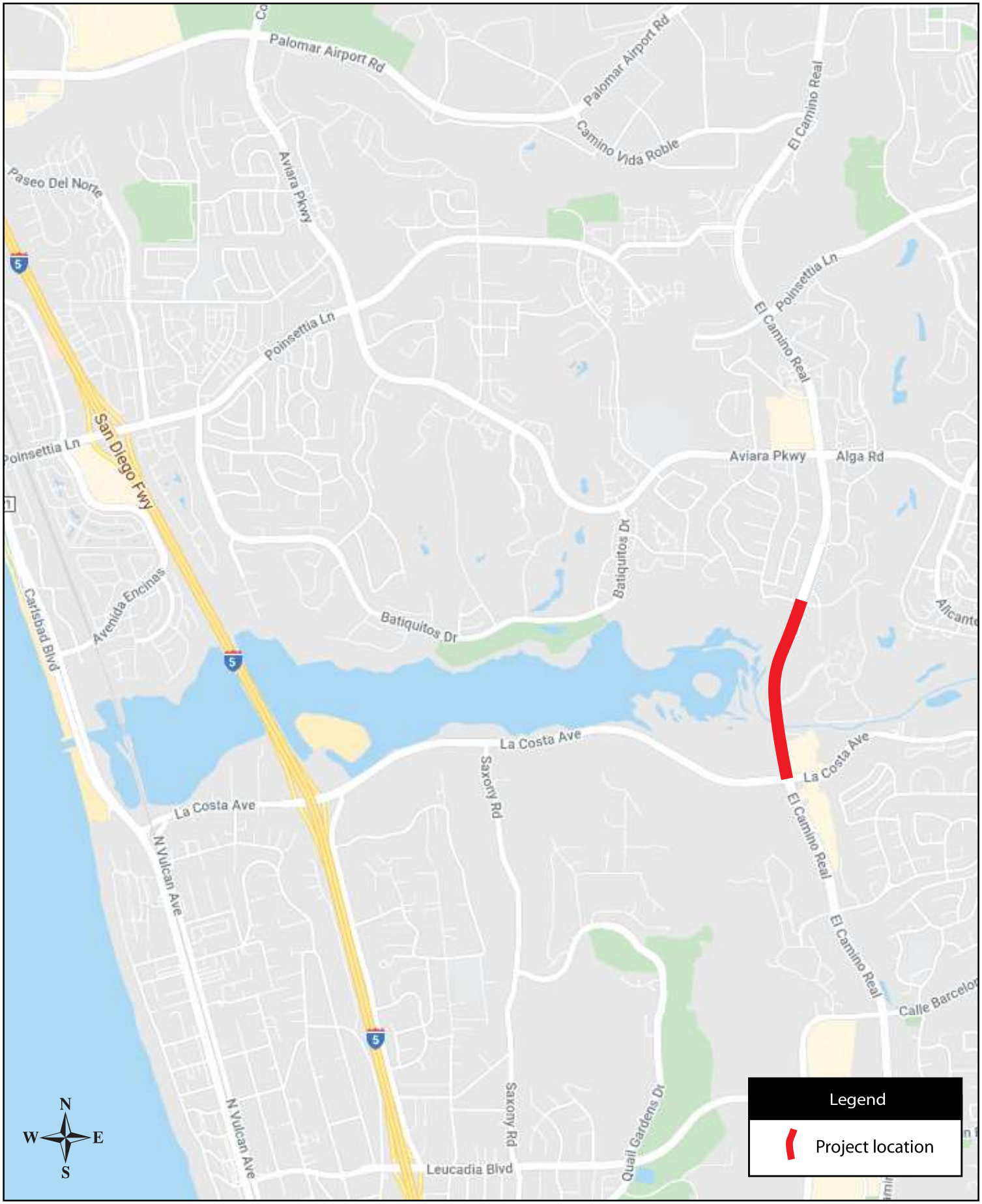
Feel free to contact me with any questions or comments regarding this study.

Sincerely,

Philip Wragg, AICP
Planning Group Manager, STC Traffic, Inc.

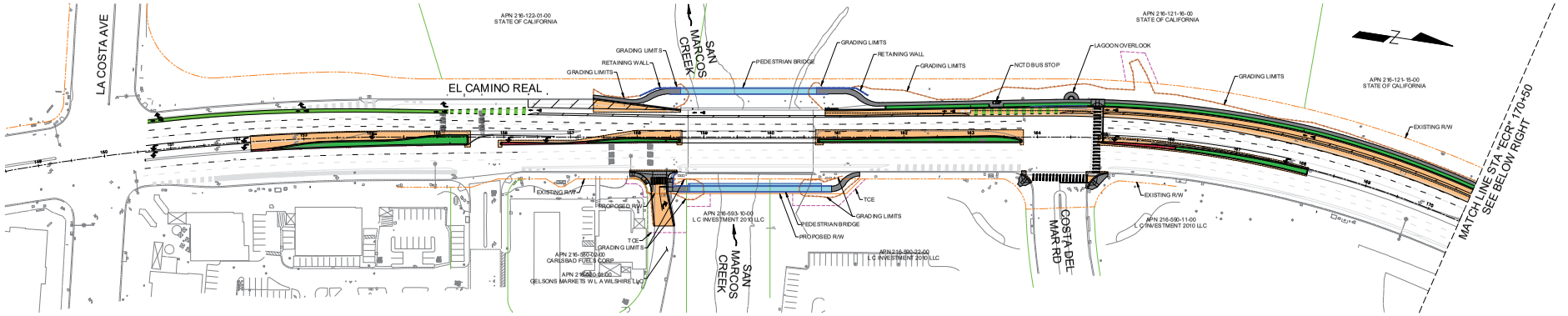
Attachment A – Project Location Map
Attachment B – Project Overview Exhibit

El Camino Real Widening - Arenal Road to La Costa Avenue



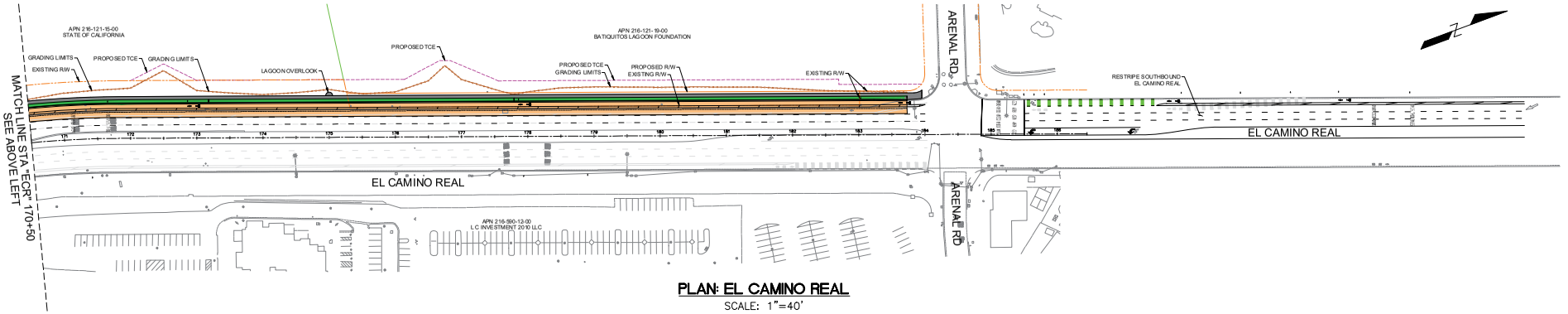
TRAFFIC

Attachment A
Project Site Location



PLAN: EL CAMINO REAL

SCALE: 1"=40'

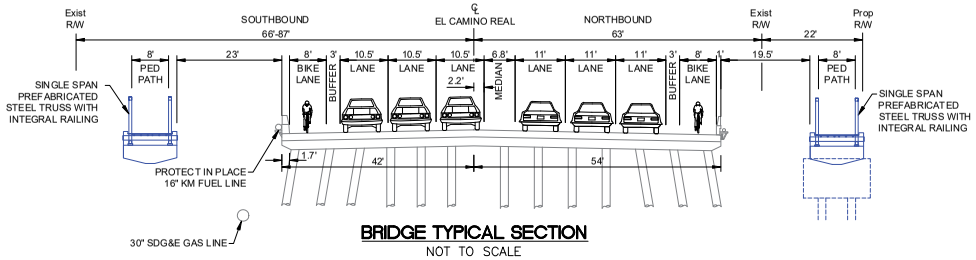


PLAN: EL CAMINO REAL

SCALE: 1"=40'

LEGEND

- EXISTING R/W
- PROPOSED R/W
- PROPOSED TCE
- PROPOSED RETAINING WALL
- PROPOSED GRADING LIMITS
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED PEDESTRIAN BRIDGE
- PROPOSED LANDSCAPING



BRIDGE TYPICAL SECTION

NOT TO SCALE

40 0 40 80 160

GRAPHIC SCALE
1 INCH = 40 FEET

EL CAMINO REAL
BETWEEN ARENAL Rd TO LA COSTA Ave
PROJECT No. 6051
OVERVIEW EXHIBIT

DOKKEN ENGINEERING
1400 FRAZEE ROAD, SUITE 100, SAN DIEGO, CA 92108 619-614-6977

EL CAMINO REAL
ROADWAY WIDENING

CITY OF CARLSBAD
OCTOBER 2023

Appendix G:

Noise Table

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AECOM

Appendix G
Noise Modeling Inputs, Assumptions, and Calculations

Construction Equipment Roster and Reference Noise Levels

Equipment Description	Acoustical Usage Factor (%)[1]	Lmax at 50 feet (dBA)[1]	Hourly Leq at 50 feet (dBA)	Attenuation from Distance to Nearest Receptor – 160 feet (dBA)	Hourly Leq at Nearest Receptor - 160 feet (dBA)
Bobcat	0.4	79	75	10	65
Bulldozer	0.4	82	78	10	68
Concrete Pump	0.2	81	74	10	64
Concrete Truck	0.4	79	75	10	65
Crane	0.16	81	73	10	63
Drill Rig	0.2	84	77	10	67
Dump Truck	0.4	76	73	10	63
Excavator	0.4	81	77	10	67
Flat Bed	0.4	74	70	10	60
Loader	0.4	79	75	10	65
Milling Machine	0.2	90	83	10	73
Roller	0.2	80	73	10	63
Sawcut	0.2	90	83	10	73
Sweeper	0.1	82	72	10	62

1. Based on the Federal Highway Administration's Roadway Construction Noise Model User Guide - Table 1 Noise Emission Reference Levels and Usage Factors.

Appendix H:

Mitigation, Monitoring, and Reporting Program

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Appendix H
El Camino Real Roadway Widening Project, Arenal Road to La Costa Avenue Mitigation, Monitoring, and Reporting Program

The California Environmental Quality Act (CEQA; Pub. Res. Code Section 21081.6), requires that a Mitigation, Monitoring, and Reporting Program (MMRP) be adopted upon certification of a Mitigated Negative Declaration to ensure that the mitigation measures are implemented. The MMRP specifies what the mitigation is, the entity responsible for monitoring the program, and when in the process it should be accomplished. This MMRP is designed to ensure compliance with Pub. Res. Code Section 21081.6 during implementation of mitigation measures identified in **Section XXII**, List of Mitigation Measures of the Mitigated Negative Declaration.

The MMRP table below, **Table A**, lists the required mitigation measures and monitoring efforts, timing, and responsible party necessary to ensure that the measures are properly implemented. Project-specific mitigation measures identified in the Mitigated Negative Declaration are stated herein.

Table A. Mitigation Required by the Mitigation, Monitoring, and Reporting Program

Mitigation Measure Number	Resource Area	Mitigation Measure	Timeframe of Mitigation	Implementation Responsibility	Monitoring, Enforcement, and Reporting Responsibility
BIO-1	Biological Resources	Prior to issuance of a grading permit or the commencement of construction, whichever first occurs, and to accommodate the project footprint and increase to the city's ROW, the city will process a Habitat Management Plan hardline boundary adjustment (Minor Amendment to the Habitat Management Plan) per Carlsbad Municipal Code Section 21.210.080 A.1. A total of 0.201 acre will be removed from the Habitat Management Plan hardline preserve area along the western edge of the project boundary on land currently owned by the Batiquitos Lagoon Foundation and replaced with at least 0.201 acre of Habitat Management Plan hardline preserve on the city-owned Crossings Golf Course property adjacent to Existing Hardline. The adjustment will result in equal or more than equal acres in the hardline preserve area consisting of vegetation communities of equal or better biological value. To formally amend the Habitat Management Plan hardline boundary, the city shall process a Habitat Management Plan Minor Amendment by providing written notice of the Equivalency Findings to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. Unless the agencies object within 30 days of notification, the change shall be considered automatically approved. If objections are raised, the city shall meet with the agencies to resolve the objection and written approval of the change from the agencies shall be required.	Prior to construction	City of Carlsbad	City of Carlsbad
BIO-2	Biological Resources	The potential for significant indirect impacts during construction shall be mitigated through implementation of the standard measures stated in the city's Guidelines for Biological Studies (2022), as revised below. a) A qualified biologist shall conduct a training session for project personnel before project activities. At a minimum, the training shall include a description of the target species of concern and its habitats; the general provisions of the federal and state Endangered Species Acts and the Habitat Management Plan; the need to adhere to the provisions of the act and the Habitat Management Plan; the penalties associated with violating the provisions of the act; and the general measures that are being implemented to conserve the target species of concern as they relate to the project, access routes, and project site boundaries within which the project activities must be accomplished. b) The footprint of disturbance shall be specified in the construction plans. Before construction, the project's limits of disturbance shall be delineated with orange fencing, and in areas potentially subject to project-related runoff, silt fencing will be used to delineate the impact footprint consistent with the project's Stormwater Pollution Prevention Plan. All fencing shall be reviewed by the project biologist before the initiation of the work. All fencing shall be maintained until the completion of project construction activities, at which time all fencing will be removed. Construction personnel and associates shall be instructed that their activities, vehicles, equipment, and construction materials are restricted to the project footprint, designated staging areas, and routes of travel. If any impacts occur beyond the approved impact footprint, work in the immediate vicinity shall cease until the disturbance limit breach has been addressed to the satisfaction of the City of Carlsbad and the resource agencies.	Prior to construction	Contractor	City of Carlsbad

Mitigation Measure Number	Resource Area	Mitigation Measure	Timeframe of Mitigation	Implementation Responsibility	Monitoring, Enforcement, and Reporting Responsibility
		c) A water pollution and erosion control plan shall be developed that describes sediment and hazardous materials control, fueling and equipment management practices, and other factors deemed necessary by reviewing agencies. Erosion control measures shall be monitored on a regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures shall be implemented in the event that the erosion control strategies are inadequate. Sediment/erosion control measures shall be continued at the project site until such time as the revegetation efforts are successful at soil stabilization. d) The qualified project biologist shall review grading plans (e.g., the access routes and staging areas) and monitor construction activities throughout the duration of the grading/ground disturbance associated with the project to ensure that all practicable measures are being employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint. e) Construction monitoring reports that summarize how the project is in compliance with applicable conditions shall be completed and provided to the city. The project biologist shall halt work activity if necessary and confer with city staff to ensure the proper implementation of species and habitat protection measures. f) Any habitat that is impacted that is not in the identified project footprint shall be disclosed immediately to the city, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and California Coastal Commission and shall be compensated at a ratio to be negotiated with the agencies. g) Construction access to and from the site shall be located along existing access routes or disturbed areas to the greatest extent possible. All access routes outside of existing roads or construction areas shall be clearly marked. h) Construction employees shall limit activities and storage of vehicles, equipment, and construction materials to the fenced project footprint. i) Equipment storage, fueling, and staging areas shall be located on disturbed upland sites at least 100 feet from waters of the U.S. and with minimal risk of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project-related spills of hazardous materials shall be reported to the city and shall be cleaned up immediately, and contaminated soils shall be moved to approved disposal areas. j) Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks. k) Fugitive dust shall be avoided and minimized through watering and other appropriate measures.			
BIO-3	Biological Resources	To avoid spreading nonnative invasive species, construction vehicles will be contained within the delineated work limits, and avoid staging, turning around, or driving in habitat in Batiquitos Lagoon as restricted by delineated work limits.	During construction	Contractor	City of Carlsbad
BIO-4	Biological Resources	Impacts to sensitive habitats shall be mitigated based on habitat and impact type in accordance with Habitat Management Plan Table 11 and Habitat Management Plan coastal zone standards (Habitat Management Plan Section D.7), as shown in the table below. Temporary impacts to sensitive habitats shall be revegetated in place at a 1:1 ratio after construction is complete.	Prior to, during, and after construction	City of Carlsbad	City of Carlsbad

<table>
<tr><th>Mitigation Measure Number</th><th>Resource Area</th><th>Mitigation Measure</th><th>Timeframe of Mitigation</th><th>Implementation Responsibility</th><th>Monitoring, Enforcement, and Reporting Responsibility</th></tr>
<tr><td></td><td></td><td>
Permanent and Temporary Impacts to Vegetation Communities and Required Mitigation
<table>
<tr><th>Vegetation Community/ Land Cover Type</th><th>Permanent Impacts (acres)</th><th>Mitigation Ratio – Permanent Impacts</th><th>Total Permanent Mitigation Impacts (acres)</th><th>Temporary Impacts (acres)[1, 2]</th></tr>
<tr><td colspan="5">Riparian and Wetlands</td></tr>
<tr><td>Southern coastal salt marsh – Non-tidal</td><td>0.000</td><td>4:1</td><td>0.000</td><td>0.027</td></tr>
<tr><td>Coastal brackish marsh</td><td>0.000</td><td>4:1</td><td>0.000</td><td>0.001</td></tr>
<tr><td>Open water</td><td>0.000</td><td>0:0</td><td>0.000</td><td>0.000</td></tr>
<tr><td>Nonnative riparian</td><td>0.000</td><td>3:1</td><td>0.000</td><td>0.010</td></tr>
<tr><td>Disturbed[3]</td><td>0.000</td><td>0:0</td><td>0.000</td><td>0.001</td></tr>
<tr><td colspan="5">Uplands</td></tr>
<tr><td>Coastal sage scrub</td><td>0.407</td><td>2:1</td><td>0.814[4]</td><td>1.173</td></tr>
<tr><td>Total</td><td>0.407</td><td>N/A</td><td>0.814</td><td>1.212</td></tr>
</table>
[1] Totals may not sum due to rounding after summation.
[2] Temporary impacts will be restored at a 1:1 ratio by revegetating impacted areas in place. Temporary impacts include areas where recontouring will occur.
[3] Disturbed habitat is included within this table only where it is considered to be jurisdictional and will be restored to match adjacent native habitat.
[4] Permanent impacts to coastal sage scrub will be mitigated at a 2:1 ratio and include 1:1 creation or substantial restoration to ensure no net loss.

Permanent coastal sage scrub habitat impacts will be mitigated through the use of Tier II upland (i.e., coastal sage scrub) mitigation credits at the Sage Hill Mitigation Parcel, located in unincorporated San Diego County, east of Rancho Santa Fe Road. The Sage Hill Mitigation Parcel was established by San Diego Association of Governments as part of an advance mitigation program for local streets and road projects pursuant to a Memorandum of Understanding between San Diego Association of Governments, Caltrans and the Wildlife Agencies, and a Conservation Credit Agreement, executed November 25, 2014. The no net loss requirement for impacts to coastal sage scrub will be met at the city-owned Crossings Golf Course property, which will include at least 1:1 coastal sage scrub in the form of creation or substantial restoration.
</td><td></td><td></td><td></td></tr>
<tr><td>BIO-5</td><td>Biological Resources</td><td>On-site and off-site creation, substantial restoration, restoration, and enhancement to mitigate impacts to sensitive native habitats will be included within the Habitat Mitigation and Monitoring Plan, a restoration plan that will outline restoration species for each habitat type, as described under BIO-4, timelines, success criteria, maintenance and monitoring protocols. The restoration plan will be consistent with the Multiple Habitat Conservation Program, Appendix C (Revegetation Guidelines), and Volume III; Habitat Management Plan for Natural Communities in the City of Carlsbad (City of Carlsbad 2004, pp. F-8 to F-11); and the Components of a Conceptual Mitigation/Restoration Plan (City of Carlsbad 2008). The HMMP will be reviewed/approved by the city, California Department of Fish and Wildlife, California Coastal Commission, and other applicable agencies before proposed project initiation</td><td>After construction</td><td>City of Carlsbad</td><td>City of Carlsbad</td></tr>
<tr><td>BIO-6</td><td>Biological Resources</td><td>Due to impacts to jurisdictional resources, the proposed project will obtain permits from U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife, and California Coastal Commission in compliance with the Clean Water Act, California Fish and Game Code 1600, and the California Coastal Act. Impacts to jurisdictional resources will be mitigated through implementation of Mitigation Measures BIO-4 and BIO-5.</td><td>Prior to construction</td><td>City of Carlsbad</td><td>City of Carlsbad</td></tr>
</table>

Mitigation Measure Number	Resource Area	Mitigation Measure	Timeframe of Mitigation	Implementation Responsibility	Monitoring, Enforcement, and Reporting Responsibility
BIO-7	Biological Resources	To avoid impacts to listed avian species (coastal California gnatcatcher, least Bell's vireo, Belding's savannah sparrow, light-footed Ridgway's rail, California least tern, western snowy plover), and non-listed special-status avian species (yellow-breasted chat, yellow warbler, white-tailed kite, and black skimmer), the following measures will apply: • Project implementation should occur outside of the bird nesting season, if feasible (February 15 through September 15). • To avoid impacts to coastal California gnatcatcher, clearing and grubbing of coastal sage scrub shall not be conducted from March 1 through August 15, per the conditions of coverage for this species. • If vegetation disturbance or construction outside of the nesting season is not feasible, a qualified biologist shall perform a preconstruction nesting bird survey within the proposed construction area plus a 500-foot buffer no more than 72 hours before vegetation disturbance or construction is initiated during the nesting season. The area will be resurveyed if the planned activities do not occur within 72 hours of the nesting bird survey. • If active nests are found, then the qualified biologist shall establish an adequate protective buffer around the nest in which vegetation removal and construction activities are prohibited until the nest is no longer active (i.e., all nestlings have successfully fledged). A nest buffer of 300-500 feet will be established around the nest of listed species and raptors, and the buffer width for other species will be determined by the Project Biologist based on species biology. The size of the nest buffers may be adjusted by a qualified biologist in coordination with the city based on the species, and type, intensity, and duration of the planned construction activities.	During and after construction	Contractor and City of Carlsbad	City of Carlsbad
BIO-8	Biological Resources	If a nest buffer is not sufficient to avoid and minimize impacts to the nest, noise barriers (e.g., walls, blankets, or other noise attenuation measures) may be required, or the contractor may delay work near the nest until the nest is no longer active.	Prior to and during construction	Qualified Biologist and Contractor	City of Carlsbad
BIO-9	Biological Resources	To avoid impacts to special-status avian species, construction lighting will be shielded and pointed downward and away from Batiquitos Lagoon on the west side and from San Marcos Creek on the east side. Lighting of the pedestrian bridges will be limited to that required for safety and be directed away from the lagoon.	During and after construction	Contractor	City of Carlsbad
BIO-10	Biological Resources	To avoid and minimize impacts to bats, the following measures will apply: • A biological monitor shall provide contractor education specific to bats. • Surface treatments on the existing bridge structure shall be completed between December 1 and January 31, when the bat population is at its lowest numbers. Surface treatments shall be applied to avoid leakage through to the seams to the underside of the bridge. • Pedestrian bridge construction shall be timed to occur in the winter (between October 15 and March 15) to the maximum extent practicable, when roosts are in their lowest numbers. • No construction activities shall occur within 50 feet of the existing bridge between June 1 and September 1, which is bat pupping season. • Construction personnel shall not be present under the colony, especially during the evening exodus. • Lights shall not be used under the existing bridge structure. Lighting of the pedestrian bridges shall be limited to that required for safety and shall not deter continued roosting under the existing bridge. • Vehicles and equipment with internal combustion engines shall not be operated under the existing bridge structure, unless otherwise directed by the on-site biological monitor. • During roadway construction activities, where possible, the contractor shall follow recommended noise buffers in the table below. If noise buffers cannot be maintained, noise attenuation measures shall be recommended by the monitoring biologist and implemented by the contractor. For construction activities in the immediate vicinity of the existing bridge where buffer distances cannot be maintained (e.g., pedestrian bridge construction), noise attenuation measures shall be applied in a way so	Prior to, during, and after construction	Qualified Biologist and Contractor	City of Carlsbad

<table>
<tr><th>Mitigation Measure Number</th><th>Resource Area</th><th>Mitigation Measure</th><th>Timeframe of Mitigation</th><th>Implementation Responsibility</th><th>Monitoring, Enforcement, and Reporting Responsibility</th></tr>
<tr><td></td><td></td><td>as not to substantially restrict airspace access (e.g., placed around stationary equipment only, limited to active work areas) and be removed promptly when work is complete.
• Work shall be planned in a way that does not to restrict bat airspace access to the existing bridge structure (e.g., no blankets, walls, or other barriers shall be placed between the existing bridge and pedestrian bridges

Recommended Disturbance Buffer Zones for Day and Night Roosts [1]
<table><tr><th>Bat Species</th><th>Construction Trucks and Heavy Mobile Equipment[2]</th><th>Drilling, Trenching, and Small Stationary Equipment[2]</th><th>Stationary Diesel/Gasoline Exhaust Sources >2 minutes[2]</th></tr><tr><td>Yuma myotis, Mexican free-tailed bat</td><td>90</td><td>150</td><td>250</td></tr></table>[1] Distance (in feet) between activity/equipment and roosts
[2] See Technical Guidance for Assessment and Mitigation of the Effects of Traffic Noise and Road Construction Noise on Bats (Caltrans 2016) for detailed discussions of noise impacts to bats at transportation projects and specific decibel levels of low frequency values for construction trucks and heavy equipment.</td><td></td><td></td><td></td></tr>
<tr><td>CR-1</td><td>Cultural Resources</td><td>An archaeological sensitivity training program will be developed in consultation with the TCA Tribe retained to monitor and delivered by a qualified professional archaeologist prior to the beginning of ground-disturbing work for construction crews working within the project area. The cultural awareness and sensitivity training shall provide notification procedures if potential archaeological material is discovered, procedures for coordination between construction and monitoring personnel, and information about other situations that may arise if cultural resources, including human remains, are discovered during construction. This training and communication protocol shall be communicated to all new construction personnel prior to construction crews beginning ground-disturbing work on the project, and on a poster that is placed in a visible location inside the construction job trailer.</td><td>Prior to and during construction</td><td>Qualified Archaeologist, Contractor, and City of Carlsbad</td><td>City of Carlsbad</td></tr>
<tr><td>GEO-1</td><td>Geology and Soils</td><td>A Paleontological Mitigation and Monitoring Plan in accordance with the Carlsbad Tribal, Cultural, and Paleontological Resources Guidelines (2017) would be prepared prior to the issuance of a grading permit or commencement of construction, whichever first occurs. The Paleontological Mitigation and Monitoring Plan shall address the following information, as applicable and appropriate:

a. The level of monitoring (spot checks, part time or full time), protocols and authorization for work stoppages, and safety procedures
b. The need for Contractor Awareness Training for all earth-moving personnel for any projects where a monitor will not be present full time
c. A research design listing the research questions and the data requirements for those questions
d. The level and type of assistance from the contractor needed by the paleontologist to take bulk samples and place them into a safe area for processing
e. The methods for fossil collection, fossil preparation, fossil identification, stratigraphic profiles, and curation
f. The types of progress reports that will be provided to the city (weekly or monthly)
g. The schedule for reporting
h. A recommendation for the updating of the paleontology sensitivity model, which takes into consideration the presence or absence of paleontological resources, the amount of ground disturbance, and the potential for future discoveries
i. The identity of the financially-responsible party</td><td>Prior to and during construction</td><td>Qualified Paleontologist and Contractor</td><td>City of Carlsbad</td></tr>
</table>

Mitigation Measure Number	Resource Area	Mitigation Measure	Timeframe of Mitigation	Implementation Responsibility	Monitoring, Enforcement, and Reporting Responsibility
GEO-2	Geology and Soils	The city shall retain a professional paleontologist for the project prior to the issuance of grading permits or commencement of ground disturbing activities, whichever occurs first. The task of the paleontologist shall be to monitor ground disturbance within the project site for the unearthing of previously unknown paleontological resources. Selection of the paleontologist shall be subject to the approval of the city, and no grading activities shall occur within the project site until the paleontologist has been approved by the city. The paleontologist shall be responsible for maintaining daily field notes and a photographic record and for reporting all finds to the city in a timely manner. The paleontologist shall be equipped to record and salvage paleontological resources that may be unearthed during grading activities. The paleontologist shall be empowered to temporarily halt or divert grading equipment to allow recording and removal of the unearthed resources. In the event that potential paleontological resources are discovered during ground-disturbing activities, work shall stop in that area and within 30 feet of the find until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Specimens shall be curated into a professional, accredited museum repository with permanent retrievable storage such as the San Diego Natural History Museum. A report of findings, with an appended itemized inventory of specimens, shall be prepared and shall signify completion of the mitigation. The paleontologist shall retain the option to reduce monitoring, with concurrence from the city, if it is determined that the sediments were previously disturbed. Monitoring may also be reduced with concurrence from the city if potentially fossiliferous units are not present or, if present, are determined to have a low potential to contain fossil resources.	During construction	Qualified Paleontologist	City of Carlsbad
TCR-1	Tribal Cultural Resources	Tribal Monitoring. Prior to the commencement of ground-disturbing activities, the project developer shall: a. Retain the services of a qualified archaeologist, defined as one either meeting the Secretary of the Interior's 1997 Professional Qualification Standards for Archeology or working under the supervision of a qualified archaeologist, who shall be on-site during ground-disturbing activities. In the event cultural material is encountered, the archaeologist is empowered to temporarily divert or halt grading to allow for coordination with the Luiseño Native American monitor, or other Traditionally and Culturally Affiliated Luiseño Tribes ("TCA Tribe"), and to determine the significance of the discovery. The archaeologist shall follow all standard procedures for cultural materials that are not tribal cultural resources. b. Enter into a Pre-Excavation Agreement, otherwise known as a Tribal Cultural Resources Treatment and Tribal Monitoring Agreement, with a TCA affiliated consulting tribe. This agreement shall meet all standard requirements of the tribe for such agreements, in accordance with applicable laws and regulations, including but not limited to the City of Carlsbad's 2017 Tribal, Cultural and Paleontological Resources Guidelines. This agreement will also contain provisions of a Luiseño Native American monitor and will also contain provisions to address the proper treatment of any Tribal Cultural Resources. The agreement shall outline the roles and powers of the Luiseño Native American monitors and the archaeologist and shall include the following provisions. i. A Luiseño Native American monitor shall be present during ground-disturbing activities. Ground-disturbing activities may include, but are not limited to, archaeological studies, clearing, grubbing, trenching, excavation, preparation for other infrastructure, and grading activities. ii. Any and all uncovered artifacts of Luiseño Native American cultural importance shall be returned to the San Luis Rey Band of Indians and/or the Most Likely Descendant for later reburial on the project site, if applicable, and shall not be curated, unless ordered to do so by a federal agency or a court of competent jurisdiction.	Prior to and during construction	Qualified Archaeologist, Native American Monitor, and City of Carlsbad	City of Carlsbad

Mitigation Measure Number	Resource Area	Mitigation Measure	Timeframe of Mitigation	Implementation Responsibility	Monitoring, Enforcement, and Reporting Responsibility
		iii. The Luiseño Native American monitor shall be present at the project's preconstruction meeting to discuss with grading and excavation contractors excavation schedules and safety issues, as well as to discuss with the archaeologist PI (principal investigator) concerning the proposed archaeologist techniques and/or strategies for the project. iv. Luiseño Native American monitors and archaeological monitors shall have joint authority to temporarily divert and/or halt construction activities. If tribal cultural resources are discovered during construction, earth-moving activity within and around the immediate discovery area will be diverted until the Luiseño Native American monitor and the archaeologist can assess the nature and significance of the find. v. If a significant tribal cultural resource(s) and/or unique archaeological resource(s) are discovered during ground-disturbing activities for this project, San Luis Rey Band of Mission Indians and other TCA tribes shall be notified and consulted regarding the respectful and dignified treatment of those resources. Pursuant to California PRC Section 21083.2(b), avoidance is the preferred method of preservation for archaeological and tribal cultural resources. If, however, the applicant is able to demonstrate that avoidance of a significant and/or unique cultural resource is infeasible and a data recovery plan, or other culturally-appropriate mitigation measure, is authorized by the City of Carlsbad as the lead agency, the San Luis Rey Band of Mission Indians and other TCA tribes shall be consulted regarding the drafting and finalization of such recovery plan. vi. If suspected Native American human remains are encountered, California Health and Safety Code Section 7050.5(b) states that no further disturbance shall occur until the San Diego County Medical Examiner has made the necessary findings as to origin. Further, pursuant to California PRC Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. Suspected Native American remains shall be examined in the field and kept in a secure location at the site. A Luiseño Native American monitor shall be present during the examination of the remains. If the San Diego County Medical Examiner determines the remains to be Native American, the NAHC will be contacted by the Medical Examiner within 24 hours. The NAHC will then immediately notify the "Most Likely Descendant" about the discovery. The Most Likely Descendant shall then make recommendations within 48 hours and engage in consultation concerning treatment of remains as provided in PRC Section 5097.98. vii. In the event that fill material is imported into the project area, the fill shall be clean of tribal cultural resources and documented as such. Commercial sources of fill material are already permitted as appropriate and will be culturally sterile. If fill material is to be utilized and/or exported from areas within the project site, then that fill material shall be analyzed and confirmed by an archeologist and Luiseño Native American monitor that such fill material does not contain tribal cultural resources. viii. No testing, invasive or non-invasive, shall be permitted on recovered tribal cultural resources without the written permission of the San Luis Rey Band of Mission Indians and other TCA tribes.			
TCR-2	Tribal Cultural Resources	Prior to the completion of project construction, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis, and conclusions of the monitoring program shall be submitted by the Project Archaeologist, along with the Luiseño Native American monitor's notes and comments, to the City of Carlsbad for approval and shall be submitted to the South Coastal Information Center. Said report shall be subject to confidentiality as an exception to the Public Records Act and will not be available for general public distribution.	Prior to and during construction	Qualified Archaeologist, Native American Monitor, and City of Carlsbad	City of Carlsbad

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Appendix I:

Habitat Mitigation and Monitoring Plan

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El Camino Real Widening Project
Arenal Road to La Costa Avenue
City of Carlsbad, California

Project No. 6051

Habitat Mitigation and Monitoring Plan

Prepared for:

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January 2025

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ACRONYMS AND ABBREVIATIONS

Batiquitos Lagoon	Batiquitos Lagoon Ecological Reserve
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
City	City of Carlsbad
DCSS	Diegan coastal sage scrub
HMMP	Habitat Mitigation and Monitoring Plan
HMP	Habitat Management Plan
IPMP	Integrated Pest Management Plan
LCP	Local Coastal Program
MLLW	Mean Lower Low Water
PEP	plant establishment period
project	El Camino Real Widening Project, Arenal Road to La Costa Avenue
SANDAG	San Diego Association of Governments
SCSM	southern coastal salt marsh
the Crossings	The Crossings Golf Course

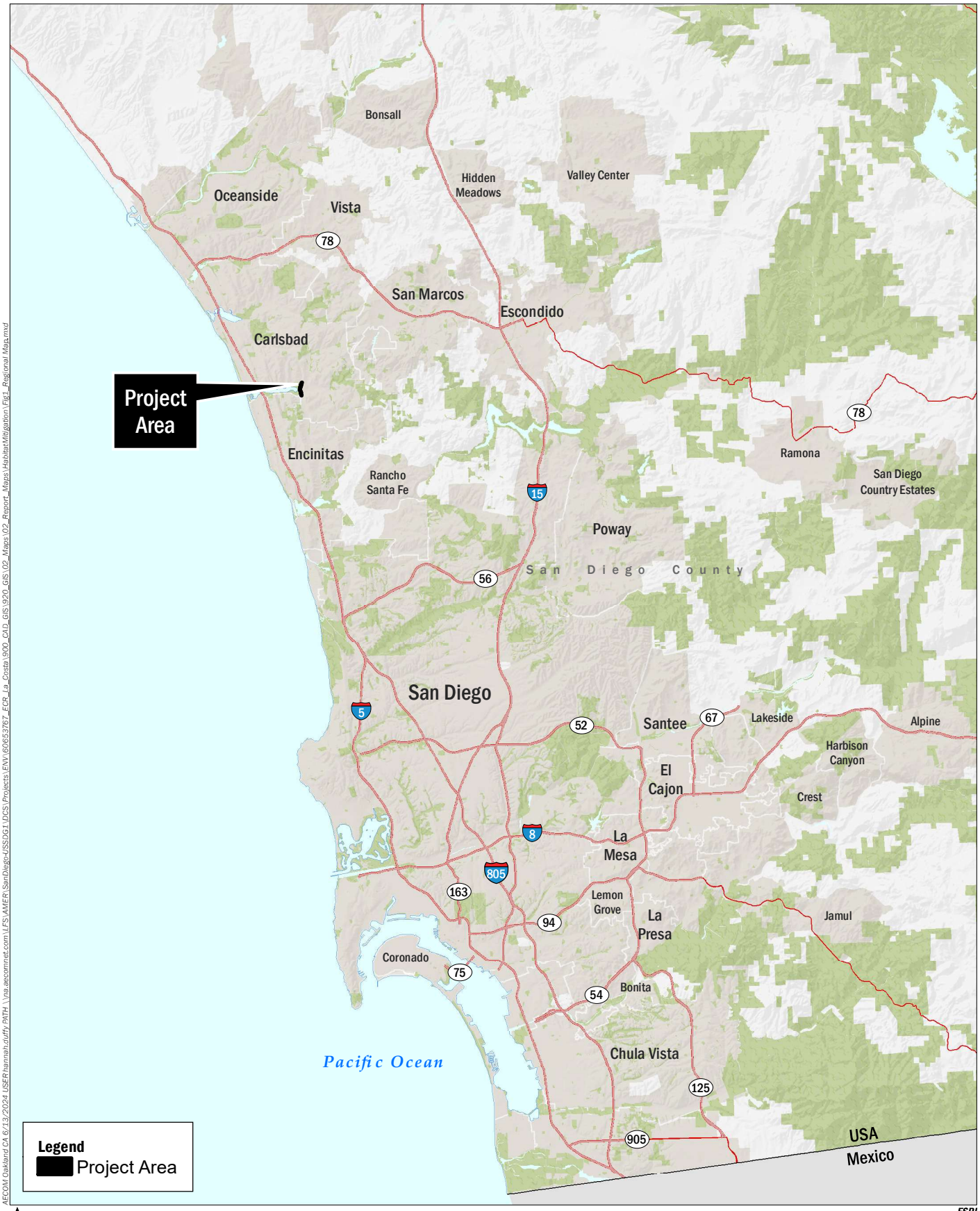
1. Introduction

This Habitat Mitigation and Monitoring Plan (HMMP) describes the proposed compensatory mitigation that will be provided by the City of Carlsbad (City) in San Diego County, California for impacts associated with the El Camino Real Widening Project, Arenal Road to La Costa Avenue (project), which will involve adding a vehicle travel lane in the southbound direction; bike and pedestrian facilities, including sidewalks and pedestrian bridges; and street improvements, including curb ramps and additional street lighting. The widening of the existing roadway and installation of the pedestrian bridges will require expanding the current footprint outside the existing right-of-way in some locations and expanding the right-of-way itself on the northern end, west side of the project area. A map of the regional location is provided on Figure 1.

The project area is on the eastern edge of Batiquitos Lagoon Ecological Reserve (Batiquitos Lagoon), with development proposed to the north, east, and south. Batiquitos Lagoon is within the city's Habitat Management Plan (HMP) hardline preserve (Carlsbad 2004). The project will impact 1.58 acres of Diegan coastal sage scrub (DCSS), of which 0.407 acre will have permanent impacts and 1.173 acres will have temporary impacts. The project also will temporarily impact 0.039 acre of aquatic resources, which will include 0.027 acre of non-tidal southern coastal salt marsh, 0.001 acre of coastal brackish marsh, 0.010 acre of nonnative riparian, and 0.001 acre of disturbed wetland habitats. As aquatic resources are protected under the federal Clean Water Act, mitigation will be required, pursuant to Compensatory Mitigation for Losses of Aquatic Resources, Final Rule (33 Code of Federal Regulations [CFR] 332). The requirements in Parts 332.4 (c)(2) through (c)(14) under Title 33 of the CFR are addressed specifically in each section of this HMMP. Although upland habitats, such as DCSS, are not protected under the Clean Water Act, this HMMP includes mitigation measures for temporary and permanent impacts on DCSS.

This HMMP describes the methods for the rehabilitation and enhancement of aquatic resources to mitigate for the temporary loss of habitat during project construction. This HMMP also includes the methods for the rehabilitation of upland resources to mitigate for the temporary (onsite) and permanent (offsite) loss of DCSS. This HMMP has been prepared prior to obtaining permits, and thus should be considered conceptual and is a draft until all details have been finalized during the permitting process. After permits have been completed, this HMMP will be updated to incorporate additional information or requirements from the individual permits. This HMMP also is intended to fulfill the City's requirement for a Conceptual Mitigation/Restoration Plan (Carlsbad 2024).

The proposed mitigation for temporary impacts on 0.039 acre of aquatic resources will occur at a 1:1 ratio through the revegetation of the temporary impact areas. Where impacts on disturbed wetlands or nonnative riparian habitats occur, these will be revegetated and enhanced with native vegetation that is appropriate for the local ecology and, when possible, will match the adjacent habitat. Temporary impacts on uplands also will occur at a 1:1 ratio, while permanent impacts on uplands will occur at a 2:1 ratio and will be provided off-site.



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City of Carlsbad

El Camino Real Roadway Widening Project Habitat Mitigation and Monitoring Plan

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 1
REGIONAL MAP

January 2025

2. Objectives

Part 332.2 under Title 33 of the CFR defines the following four methods of compensatory mitigation:

- **Restoration**: the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into the following two categories:
    - ***Re-Establishment***: the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.
    - ***Rehabilitation***: the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.
- **Establishment** (creation): the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.
- **Enhancement**: the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.
- **Preservation**: the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

The objective will be to provide mitigation for 0.039 acre of planned temporary impacts on aquatic resources because of project impacts as well as to provide mitigation for 1.58 acres of planned impacts on uplands. To satisfy the mitigation requirements, 0.039 acre of rehabilitation of aquatic resources, 1.173 acres of rehabilitation of DCSS, and 0.814 acre of establishment or substantial restoration of DCSS are proposed, as summarized in Table 1. The impact locations and vegetation communities are shown on Figure 2.

Table 1. Permanent and Temporary Impacts on Vegetation Communities and Required Mitigation

Vegetation Community/ Land Cover Type	Permanent Impacts (acres)	Mitigation Ratio–Permanent Impacts	Total Mitigation Required for Permanent Impacts (acres)	Temporary Impacts (acres) [1, 2]
Riparian and Wetlands				
Southern coastal salt marsh–non-tidal	0.000	4:1	0.000	0.027
Coastal brackish marsh	0.000	4:1	0.000	0.001
Open water	0.000	0:0	0.000	0.000
Nonnative riparian	0.000	3:1	0.000	0.010
Disturbed [3]	0.000	0:0	0.000	0.001
Uplands				
Diegan coastal sage scrub	0.407	2:1	0.814 [4]	1.173
Total	**0.407**	**N/A**	**0.814**	**1.212**

Notes:

[1] Totals may not sum because of rounding after summation.

[2] Temporary impacts will be restored at a 1:1 ratio by revegetating impacted areas in place.

[3] Disturbed habitat is included in this table only where it is considered to be jurisdictional and will be restored to match adjacent native habitat.

[4] Permanent impacts on Diegan coastal sage scrub will be mitigated at a ratio of 2:1 through the purchase of mitigation credits at a ratio of 1:1 from the Sage Hill Preserve and through the substantial restoration of DCSS habitat at the Crossings, at a ratio of 1:1.

Areas proposed for rehabilitation are considered rehabilitation areas because they currently are wetland and will lose their function, and the physical and biological characteristics will be repaired/returned to the original state or better (enhanced) through the proposed actions. Temporary impacts on DCSS will be rehabilitated and will continue to provide buffer habitat to Batiquitos Lagoon.

Permanent Diegan coastal sage scrub habitat impacts will be mitigated by using mitigation credits and through creation or substantial restoration of DCSS (referred to in this plan as substantial restoration). Credits for 1:1 (0.407 acre) of the DCSS mitigation requirement will be obtained from the Sage Hill Mitigation Parcel located in unincorporated San Diego County, east of Rancho Santa Fe Road. The Sage Hill Mitigation Parcel was established by SANDAG for the advance mitigation of local roadway projects. The no net loss requirement (0.407 acre) for permanent impacts to DCSS will be met through substantial restoration on the city-owned Crossings Golf Course (the Crossings) property, which is located within the coastal zone. In addition to the substantial restoration to meet the no net loss requirement, HMP Hardline replacement consisting of 0.201 acre of DCSS will also occur on the Crossings for the project, adjacent to the restoration site (Figure 3). Because the quality of the habitat on the Crossings may be lower than the quality of the habitat on the project site, this area will be enhanced or restored. Total acreage of substantial restoration (for impact mitigation) plus enhancement/restoration (for HMP Hardline replacement) on the Crossings property will be 0.79 acre, which exceeds the required amount by 0.182 acre.

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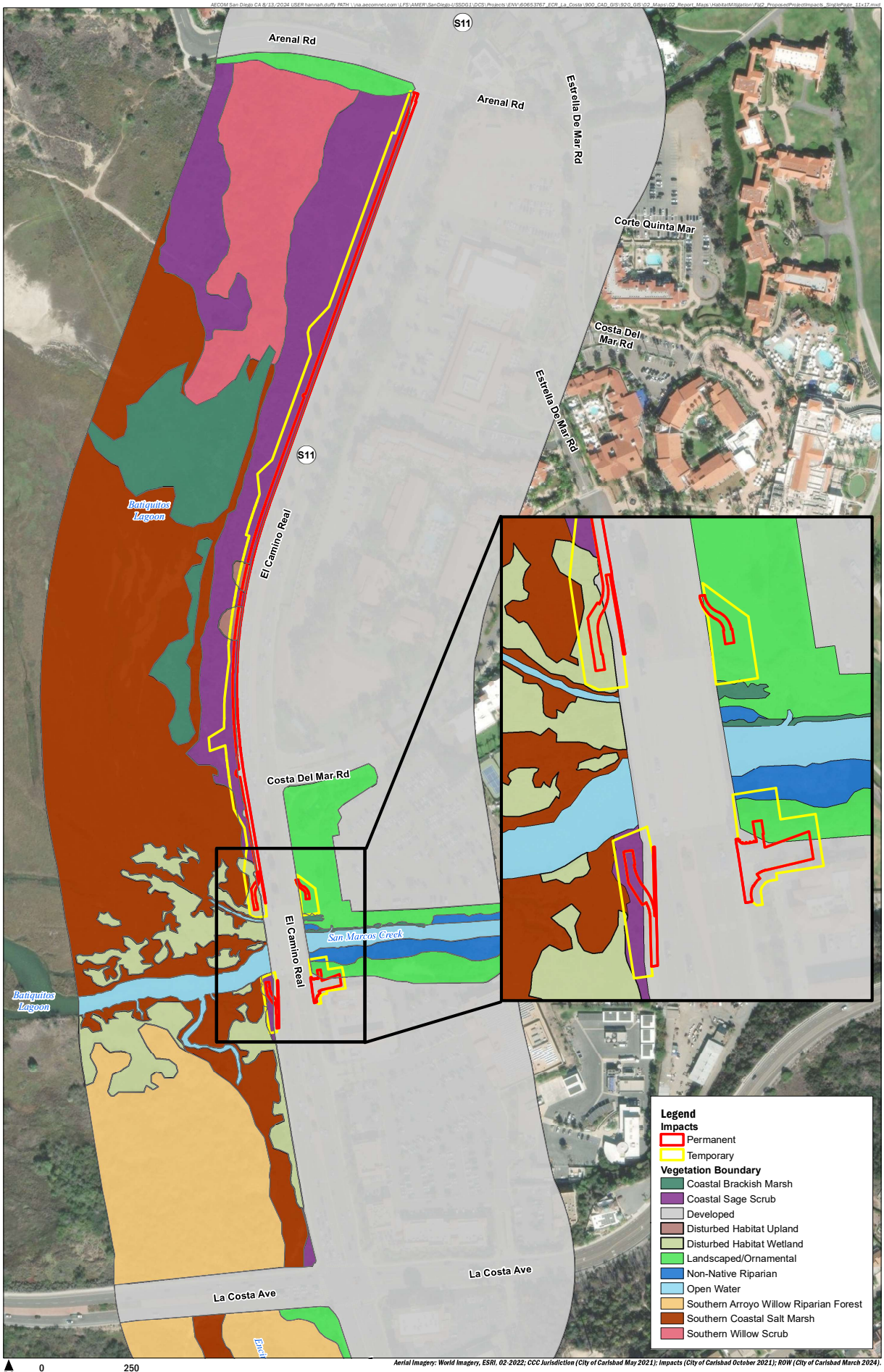

Aerial Imagery: World Imagery, ESRI, 02-2022; CCC Jurisdiction (City of Carlsbad May 2021); Impacts (City of Carlsbad October 2021); ROW (City of Carlsbad March 2024).

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City of Carlsbad

El Camino Real Roadway Widening Project Habitat Mitigation and Monitoring Plan

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 2 - PROPOSED PROJECT IMPACTS

January 2025

Table 2. Mitigation for Permanent Impacts to DCSS and HMP Hardline Replacement

DCSS Habitat Type	Required (Acres)	Sage Hill Mitigation Parcel Credit (Acres)	The Crossings Property (Acres)	Total (Acres)
Mitigation for Permanent Impacts	0.814	0.407	0.407[1]	0.814
HMP Replacement	0.201	0.000	0.201[2]	0.201
Excess for flexibility	0.000	0.000	0.182[1]	0.182
Total	**0.608**	**0.407**	**0.079**	**1.197**

[1] Substantial restoration
[2] Enhancement/restoration

3. Site Selection

3.1 On-Site Mitigation of Temporary Impacts on Aquatic Resources and Upland Habitats

Temporary impacts on sensitive habitats will be rehabilitated in place at a 1:1 ratio as detailed in Table 1, after construction is completed. Restoration will occur in within all areas temporarily impacted shown on Figure 2 to return temporary impact areas to existing conditions or better.

3.2 Off-site Mitigation of Permanent Impacts on Diegan Coastal Sage Scrub

Project mitigation for permanent Diegan coastal sage scrub habitat impacts will occur at a 2:1 ratio. As described above, these impacts will be mitigated (a) with mitigation credits from the Sage Hill Mitigation Parcel, at a ratio of 1:1 (0.407 acre) and (b) through substantial restoration at the Crossings, at a ratio of 1:1 (0.407 acre) or greater to meet the no net loss requirement. An area has been identified at the Crossings that is 0.589 acre, which is 0.182 acre more than required. This site has incorporated a 20-foot buffer between the restoration area and developed areas (e.g., roads, golf cart paths), as required by the California Coastal Commission (CCC).

3.3 Hardline Preserve Replacement

To accommodate the project footprint and increase to the City's right-of-way, the City will process an HMP hardline boundary adjustment (processed as a Minor Amendment to the Habitat Management Plan), per Carlsbad Municipal Code Section 21.210.080 A.1. A total of 0.201 acre will be removed from the HMP hardline preserve area along the western edge of the project boundary, on land currently owned by the Batiquitos Lagoon Foundation, and will be replaced with 0.201 acre of HMP hardline preserve area at the Crossings adjacent to the mitigation site and Existing Hardline. The adjustment will result in an equal or greater acreage in the hardline preserve area, consisting of vegetation communities of equal or better biological value. To formally amend the HMP hardline boundary, the City will process an HMP Minor Amendment by providing written notice of the Equivalency Findings to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife (CDFW). Unless the agencies object within 30 days of



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Source: AECOM 2023, Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community; Coastal Zone Boundary, California Coastal Commission, 2023; Existing Hardline, City of Carlsbad, 2023; Original Voluntary Revegetated Areas, City of Carlsbad, 2023.

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El Camino Real Roadway Widening Project

Habitat Mitigation and Monitoring Plan

ARENAL ROAD TO LA COSTA AVENUE

PROJECT NO. 6051

FIGURE 3 - HARDLINE REPLACEMENT AND COASTAL SAGE SCRUB MITIGATION AREA

notification, the change will be considered automatically approved. If an objection is raised, the City will meet with the agencies to resolve the objection and written approval of the change will be required from the agencies.

Table 3. Vegetation Communities and Land Cover Types within HMP Hardline to be Replaced

Vegetation or Land Cover Type	HMP Hardline to be Removed[1]	HMP Hardline to be Replaced[2]
Coastal Sage Scrub	0.182	0.201
Developed	0.019	0
Total	**0.201**	**0.201**

[1] On the project site to accommodate expanded right-of-way
[2] On city-owned The Crossings Golf Course property, located within the coastal zone, adjacent to Existing Hardline

4. Mitigation Funding

The City will be responsible for financing the on-site rehabilitation project, the hardline replacement at the Crossings, and substantial restoration of DCSS at the Crossings, from the start of site activities through completion of the 5-year maintenance and monitoring program, or until the success criteria have been achieved. The City also will obtain SANDAG credits at Sage Hill, to mitigate for permanent impacts on DCSS.

5. Baseline Information

5.1 Project Site Description

The project area mainly is within the California Coastal Zone; but some of the project area is under the City's Local Coastal Program (LCP) jurisdiction, and areas underneath the existing bridge structure remain under the retained permitting authority of the CCC. The project area is on the eastern edge of Batiquitos Lagoon, with development proposed to the north, east, and south. Batiquitos Lagoon is within the City's HMP hardline preserve. The project footprint consists of an approximately 0.65-mile segment of El Camino Real between Arenal Road to the north and La Costa Avenue to the south.

Currently, the project site contains a mosaic of nonnative and native plants. The existing habitats in the project area include southern coastal salt marsh (SCSM), coastal brackish marsh, nonnative riparian, disturbed (wetland), open water, and DCSS. With the exception of open water, the different habitats exist with varying levels of disturbance, and the disturbed habitats are dominated by nonnative and invasive plant species.

5.1.1 Hydrology and Topography

Within Batiquitos Lagoon, the project site is along the western edge of El Camino Real between Arenal Road to the north and La Costa Avenue to the south. Toward the south end of the project area, the El Camino

Real bridge crosses San Marcos Creek, where the water flows from east to west into Batiquitos Lagoon west of the bridge.

5.1.2 Vegetation and Habitats

The existing vegetation communities at the project site that will be affected by project activities are made up of a mix of native and nonnative species encompassing 1.98 acres. The vegetation can be classified into the following five general communities, using the Vegetative Communities of San Diego County (Oberbauer et al. 2008):

- 52120 Southern Coastal Salt Marsh–Nontidal (0.027 acre)
- 52200 Coastal Brackish Marsh (0.001 acre)
- 65000 Nonnative Riparian (0.01 acre)
- 11300 Disturbed Habitat (0.001 acre)
- 32500 Diegan Coastal Sage Scrub, Coastal Form (1.173 acres)

These existing communities are shown on Figure 2 as well as other vegetation communities in the vicinity to provide context of the area. Detailed descriptions of each community to be impacted in their current conditions are described next.

Southern Coastal Salt Marsh–Nontidal

Currently, the SCSM habitat contains a mosaic of both native salt marsh plants and up to 40 percent nonnative and invasive plant species that, in some cases, overlap native species. This area contains native salt marsh plant species, including Pacific pickleweed (*Salicornia pacifica*), alkali heath *(Frankenia salina*), saltgrass (*Distichlis spicata*), and Parish's glasswort (*Arthrocnemum subterminale*). Intermixed with the native species are numerous invasive plant species, including iceplant (*Carpobrotus edulis*), black mustard (*Brassica nigra*), short-pod mustard (*Hirschfeldia incana*), and ripgut brome (*Bromus diandrus*). These nonnative plant species typically do not exist within salt marsh habitat because the tidal regime and saline water create an environment in which non-halophytic vegetation cannot survive. The areas of SCSM are non-tidal because the elevations exceed 7.5 feet Mean Lower Low Water (MLLW). To apply different datums for surveying or coastal management, the various data must be reduced to MLLW, which is the reference datum for predictions, benchmark publication, and nautical charting (NOAA 2024). King tides, which typically are the highest tide of the year, can reach up to 7.5 feet in elevation.

Coastal Brackish Marsh

Coastal brackish marsh is a wetland plant community, dominated by perennial, emergent, herbaceous monocots measuring roughly 2 meters in height. Cover often is complete and dense. Coastal brackish marsh is similar to coastal salt marsh (52100) and to freshwater marsh (52400), with some plants characteristic of each. This community is similar to SCSM, but is from freshwater input. Salinity may vary considerably and may increase at high tide or during seasons of low freshwater runoff or both. Coastal brackish marsh is on the western edge of Batiquitos Lagoon, across from the Omni La Costa Resort entrance in a remnant secondary channel of San Marcos Creek. Coastal brackish marsh in Batiquitos Lagoon is characterized by

areas of brackish water that are ringed with salt pannes (shallow depressions in a salt marsh where the marsh is poorly drained), alkali bulrush (*Bolboschoenus maritimus*), Pacific pickleweed (*Salicornia pacifica*), and salty Susan (*Jaumea carnosa*), as well as assorted species of bulrush (*Schoenoplectus* sp.) and rush (*Juncus* sp.).

Nonnative Riparian

Nonnative riparian communities are densely vegetated riparian thickets, dominated by nonnative, invasive species. This designation is applied where nonnative, invasive species account for greater than 50 percent of the total vegetative cover within a mapping unit. Nonnative riparian habitat is found along the banks of San Marcos Creek east of El Camino Real and consists of a variety of nonnative tree, shrub, and herbaceous species that include black mustard, fennel (*Foeniculum vulgare*), poison hemlock (*Conium maculatum*), and tree tobacco (*Nicotiana glauca*).

Disturbed Habitat

Disturbed habitats are areas that have been physically disturbed (by previous legal human activity) and no longer are recognizable as a native or naturalized vegetation association, though they continue to retain a soil substrate. Typically, vegetation, if present, is composed nearly exclusively of nonnative plant species, such as ornamentals or ruderal exotic species that take advantage of disturbance or shows signs of past or present animal use that removes any capability of providing viable natural habitat for uses other than dispersal. Characteristic species typically include invasive, nonnative forb species, such as thistles (*Centaurea*, *Carduus*, and *Cynara* spp.), Russian thistle (*Salsola tragus*), mustards (*Brassica* spp. and *Hirschfeldia* spp.), wild radish (*Raphanus* spp.), iceplant (*Carpobrotus edulis*), and fennel (*Foeniculum vulgare*). In the project area, several places were mapped as being disturbed habitat; they occur north and south of San Marcos Creek, under the El Camino Real Bridge, and primarily consist of mustard, wild radish, iceplant, and other nonnative grasses.

Diegan Coastal Sage Scrub, Coastal Form

DCSS is characterized by low, soft-woody subshrubs (to 1 meter high) that are most active in winter and early spring. Many taxa are facultatively drought deciduous. DCSS in the project area occurs along the sides of roads and slopes, down to where the land flattens out into coastal salt marsh; it also occurs on the north side of the site at the higher elevations of Batiquitos Lagoon. The on-site DSCC is dominated by California sage brush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and spreading goldenbush (*Isocoma menziesii*), with occasional lemonade berry (*Rhus integrifolia*), black sage (*Salvia mellifera*), California encelia (*Encelia californica*), chaparral broom (*Baccharis pilularis*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Much of the sagebrush community present along El Camino Real appears to have been created mainly during installation of the raised roadways; a small portion in the northwest corner appears to be naturally occurring.

6. Determination of Credits

6.1 Temporary Impacts

Temporary impacts on sensitive habitats will be rehabilitated in place at a 1:1 ratio. A total of 1.212 acres will be rehabilitated to existing conditions prior to impacts.

6.2 Permanent Impacts

Project mitigation for permanent DCSS habitat impacts will occur at a 2:1 ratio and include 1:1 creation or substantial restoration to ensure no net loss. Permanent DCSS habitat impacts will be mitigated by obtaining SANDAG credits from the Sage Hill Mitigation Parcel, at a ratio of 1:1 (0.407 acre). Permanent impacts also will be mitigated through substantial restoration at the Crossings property, located inside the coastal zone, at a ratio of 1:1 or greater so that no net loss of DCSS occurs.

6.3 Hardline Boundary Adjustment

The project would expand into the Existing Hardline area through expansion of the existing right-of-way. This would be a permanent impact, which is not allowed within a hardline. Therefore, a formal HMP boundary adjustment is required, which would remove a 0.201-acre portion of the Existing Hardline onsite and replace it on the Crossings property adjacent to the mitigation site and Existing Hardline on that property. Because the quality of habitat on the Crossings property may be lower than that of the project site, enhancement and/or restoration may be required.

7. Mitigation Work Plan

7.1 Overview

Three main components of the project will require some level restoration work; this will involve rehabilitation and/or enhancement of areas temporarily impacted during construction, enhancement and/or restoration within the hardline replacement site at the Crossings, and substantial restoration of DCSS at the Crossings.

7.2 On-Site and Off-site Restoration Sites

The project will rehabilitate all temporary impacts on the project site as well as enhance the nonnative riparian and disturbed habitats. The impacts will include 0.027 acre of SCSM, 0.001 acre of coastal brackish marsh, 0.01 acre of nonnative riparian, 0.001 acre of disturbed, and 1.173 acres of DCSS habitat, for 1.212 total acres of rehabilitated habitat at the project site. Habitat rehabilitation and enhancement will be achieved by demarcation of the project limits, recontouring impacts post-construction, removing and disposing nonnative and invasive plant species, and a combination of seeding and planting within the individual habitats.

The project also will include the substantial restoration and enhancement/restoration of at approximately 0.79 acre of DCSS off-site at the Crossings. This will be achieved by demarcation of the project limits, soil sampling to determine the significant soil issues, removing and disposing nonnative and invasive plant

species, soil decompaction, addition of soil amendments, and a combination of seeding and container plant installation.

7.2.1 Responsible Parties

The City will obtain the services of a restoration contractor that has at least 5 years of demonstrated experience with successful native habitat restoration in similar habitats. The selected contractor will be responsible for oversight of all aspects of the mitigation work, including implementation, maintenance, and monitoring. As part of the maintenance and monitoring, a restoration ecologist will be responsible for monitoring and providing remedial recommendations for ongoing maintenance activities following installation, as well as for data collection, progress reporting, and providing a final assessment to the City of the restoration success at the end of the monitoring period. The CCC, CDFW, U.S. Army Corps of Engineers, and Regional Water Quality Control Board will be responsible for the approval and sign-off of the project after the success criteria have been achieved.

7.2.2 Schedule

The mitigation activities will include demarcation of the project limits, recontouring post-construction, removal and disposal of nonnative and invasive plant species, soil stabilization, and installation of native container plants and seed. The plant installation will occur during the winter months, to take advantage of winter rains and maximize germination success. After the container plants and seed have been installed, the 120-day plant establishment period (PEP) will begin. After the 120-day PEP has been accepted by the City as completed, the 5-year maintenance and monitoring period will begin. The implementation schedule is shown in Table 4.

Table 4. Proposed Project Implementation Schedule

Task	Phasing
Demarcation of project limits	Prior to construction
Recontouring rehabilitation areas	Post-construction
Nonnative and invasive removal	Post-construction restoration
Erosion control and irrigation system installation	Post-construction restoration
Initial plant installation and seeding	Post-construction restoration
Conduct 120-day plant establishment period	Plant establishment
Conduct 5-year maintenance and monitoring program	Restoration maintenance and monitoring years 1–5

Note:
The schedule is intended to address the approximate sequencing requirement prescribed in 33 CFR Part 332.4(c)(7) and is estimated based on current projections. The final schedule for both on-site rehabilitation and off-site substantial restoration at the Crossings, and implementation of the hardline replacement will be subject to receipt of all necessary permits from the jurisdictional resource agencies.

7.2.3 Demarcation of Project Limits

The project limits will be marked with construction fencing and reinforced silt fence. Furthermore, the project limits will be identified in the construction drawings. After construction is completed and recontouring of temporary impacts has been completed, the temporary impact areas to be rehabilitated will be marked with t-stakes and rope, at a minimum, and these areas will be discussed in the first annual report.

7.2.4 Nonnative and Invasive Species Removal

The removal of nonnative and invasive species will be performed by hand or mechanical means. Nonnative vegetation biomass within the restoration footprint will be disposed appropriately off-site, to prevent nonnative propagules (i.e., seed or vegetative material) from spreading to adjacent areas. The project will follow the guidance provided by the City's Integrated Pest Management Plan (IPMP) (Carlsbad 2017) if nonnative and invasive species within the rehabilitation areas are determined to not be able to be controlled by hand or mechanical means, and other methods (e.g., use of herbicide) are necessary.

7.2.5 Soil Sampling and Analysis

Soil sampling is recommended at the Crossings DCSS site and also may be determined to be beneficial within some or all of the on-site mitigation areas. Soil samples will be taken within the top 6 to 8 inches of the soil surface and sent to a reputable soils laboratory for analysis and recommendations. The planned planting palette, planned habitat type, and soil sample locations will be provided to the laboratory at the time of samples delivery. The soils will be analyzed for agronomic purposes, and recommendations for soil amendments and other treatments will be used to determine how to treat the soils before plant or seed installation.

7.2.6 Soil Decompaction Addition of Soil Amendments

After the soil analysis is completed and the recommendations are received from the soils laboratory, specific quantities and types of soil amendments will be added to the soil. For the off-site DCSS mitigation at the Crossings, soils amendments will be incorporated into the top 12 inches of soil, using a walk-behind, gas-powered tiller. This will allow for decompaction and soil amendment incorporation to occur between existing shrubs, where container plants and seed will be installed.

7.2.7 Soil Stabilization

The soil stabilization is expected to begin after the nonnative vegetation is removed and native plants are salvaged and or protected, if possible. Soil stabilization and erosion control likely will be a combination of methods, such as installation of coconut coir mesh and/or fiber rolls. All soil stabilization materials will be made from biodegradable material.

7.2.8 Irrigation Installation

After the soils have been treated and stabilized, irrigation system installation will begin. The irrigation system in the temporary impact areas and for the off-site DCSS restoration will be temporary and on-grade

where possible, to allow for removal after the project has been completed. Irrigation controllers and delivery components will be identified on the construction drawings and also may be "field fit," but will be designed to provide maximum overlapping coverage where possible. If an irrigation system cannot be installed in a discrete area, a separate plan for irrigation will be provided by the contractor. Irrigation or watering will be applied in a way to reduce the potential for runoff or erosion, and will be aimed at providing water to supplement natural rainfall. Irrigation will be tapered off over the second to third year after plant installation, with the goal to have the sites be self-sustaining without irrigation for 2 years.

7.2.9 Plant and Seed Installation

After the specific restoration sites have been prepared, native planting will begin. The container plant and seed palettes have been created based on an existing plant list and knowledge of the different habitats and site-specific conditions. The plant list was based on surrounding habitat and modified slightly to include plants more successful for establishment. Native plant species will be propagated from plant material that is obtained in San Diego County. To reduce the potential for genetic contamination, all seeds and container plans shall be locally sourced (within approximately 25 miles from the project site). The contractor will provide proof of the source material before installation. Before container planting and seeding, the soil will be moistened from irrigation or rainfall. Container plants will be installed to mimic natural plant distributions, similar to those found in high functioning systems. To accomplish a semi-natural plant distribution, most of the plantings will be installed in groupings of eight to ten plants of a single species; some groupings of different species will be planted with slight overlap of a similar sized grouping of another species. Seeding will be performed after container plant installation, by broadcasting the seed over the soil and then raking the seed into the soil surface approximately 1 to 2 inches. If necessary at the time of seed installation, a light compost may be added to provide additional soil nutrients to the seeded areas. The seed to be installed may vary, based on availability, and appropriate native species may be substituted. After the seed has been installed, a short letter report will be provided to the City that includes a request to start the 120-day PEP. Seed will be procured from a local supplier of native seed, and the quantity of pure live seed will be provided to help determine the final quantity of each species. The proposed container plants and seed for each on-site habitat that will have temporary impacts is shown in Table 5. The proposed container plants and seed for the off-site DCSS habitat is shown in Table 6.

Table 5. Plant Species to Be Installed within Each Habitat for Temporary Impacts

Scientific Name	Common Name	Container Size	Container Spacing	Total Containers	Seed Quantity per Acre (pounds)	Total Seed Quantity (pounds)
Southern Coastal Salt Marsh Plant Palette (0.27 acre)						
Arthrocnemum subterminale	Parish's glasswort	1 gallon	3 feet on center	75	-	-
Cressa truxillensis	alkali weed	-	-	-	4	1.1
Distichlis littoralis	shoregrass	1 gallon	2 feet on center	450	1	0.3
Distichlis spicata	saltgrass	1 gallon	2 feet on center	450	1	0.3

Scientific Name	Common Name	Container Size	Container Spacing	Total Containers	Seed Quantity per Acre (pounds)	Total Seed Quantity (pounds)
Frankenia salina	alkali heath	1 gallon	1.5 feet on center	725	5	1.4
Jaumea carnosa	marsh jaumea	1 gallon	3 feet on center	75	-	-
Limonium californicum	marsh rosemary	1 gallon	4 feet on center	125	-	-
Salicornia pacifica	Pacific pickleweed	1 gallon	3 feet on center	75	-	-
			Total	**1975**	**11**	**2.97**
Coastal Brackish Marsh Plant Palette (0.001 acre)*						
Bolboschoenus maritimus	alkali bulrush	-	-	-	4	0.4
Juncus acutus ssp. *leopoldii*	spiny rush	-	-	-	3	0.3
Juncus bufonius	toad rush	-	-	-	5	0.5
Salicornia pacifica	Pacific pickleweed	-	-	-	5	0.5
				Total	**17**	**1.7**
Riparian Plant Palette (0.01 acre)*						
Ambrosia psilostachya	western ragweed	-	-	-	2	0.2
Anemopsis californica	yerba mansa	-	-	-	1	0.1
Artemisia douglasiana	Douglas mugwort	-	-	-	0.5	0.05
Artemisia dracunculus	tarragon	-	-	-	1.5	0.15
Baccharis pilularis	coyote bush	1 gallon	4 feet on center	12	2	0.2
Baccharis salicifolia	mulefat	1 gallon	4 feet on center	14	-	-
Rosa californica	California wildrose	1 gallon	4 feet on center	5	-	-
			Total	**31**	**5**	**0.5**
Disturbed Wetland Habitat Seed Palette (0.001 acre)*						
Arthrocnemum subterminale	Parish's glasswort	-	-	-	3	0.3
Cressa truxillensis	alkali weed	-	-	-	2	0.2
Distichlis littoralis	shoregrass	-	-	-	3	0.3
Distichlis spicata	saltgrass	-	-	-	4	0.4
Frankenia salina	alkali heath	-	-	-	8	0.8
Juncus acutus ssp. *leopoldii*	spiny rush	-	-	-	6	0.6
Juncus bufonius	toad rush	-	-	-	8	0.8
Salicornia pacifica	Pacific pickleweed	-	-	-	6	0.6
				Total	**40**	**2.8**

Scientific Name	Common Name	Container Size	Container Spacing	Total Containers	Seed Quantity per Acre (pounds)	Total Seed Quantity (pounds)
Diegan Coastal Sage Scrub Plant Palette (1.173 acre)						
Acmispon glaber	California sagebrush	1 gallon	4 feet on center	425	-	-
Ambrosia psilostachya	western ragweed	-	-	-	2	0.2
Artemisia californica	California sagebrush	1 gallon	2 feet on center	875	2	2.3
Baccharis sarothroides	broom baccharis	1 gallon	2 feet on center	875	0.5	0.6
Deinandra fasciculata	tarweed	-	-	-	5	0.5
Encelia californica	bush sunflower	1 gallon	1.5 feet on center	1000	3	3.5
Eriogonum fasciculatum	California buckwheat	1 gallon	1.5 feet on center	1000	-	-
Eriogonum parvifolium	sea cliff buckwheat	1 gallon	3 feet on center	700	2	2.3
Eriophyllum confertiflorum	golden yarrow	1 gallon	3 feet on center	700	1	1.2
Heliotropium curassavicum	salt heliotrope	-	-	-	2	0.2
Isocoma menziesii	coastal goldenbush	1 gallon	3 feet on center	700	1	1.2
Lasthenia glabrata	yellow rayed goldfields	-	-	-	2	2.3
Lycium californicum	California boxthorn	1 gallon	4 feet on center	425	-	-
Rhus integrifolia	lemonadeberry	1 gallon	4 feet on center	425	-	-
			Total	**7125**	**18.5**	**14.2**

Note:
*Quantity per acre multiplied by 0.1, as quantities from vendors typically are to the tenth pound.

Table 6. Plant Species to Be Installed at the Crossings DCSS Site

Scientific Name	Common Name	Container Size	Container Spacing	Total Containers	Seed Quantity per Acre (pounds)	Total Seed Quantity (pounds)
The Crossings Diegan Coastal Sage Scrub Plant Palette (0.61 ac)						
Acmispon glaber	California sagebrush	1 gallon	4 feet on center	225	-	-
Artemisia californica	California sagebrush	1 gallon	2 feet on center	450	2	0.9
Baccharis sarothroides	broom baccharis	1 gallon	4 feet on center	225	0.5	0.2
Deinandra fasciculata	tarweed	-	-	-	5	2.3
Encelia californica	bush sunflower	1 gallon	1.5 feet on center	650	3	1.4
Eriogonum fasciculatum	California buckwheat	1 gallon	1.5 feet on center	650	-	-
Eriophyllum confertiflorum	golden yarrow	1 Gallon	3 feet on center	325	1	0.5
Eschscholzia californica	California poppy	-	-	-	1	0.5
Isocoma menziesii	coastal goldenbush	1 Gallon	3 feet on center	325	1	0.5
Lasthenia californica	goldfields	-	-	-	2	0.9
Lupinus succulentus	arroyo lupine	-	-	-	0.5	0.2
Rhus integrifolia	lemonadeberry	1 Gallon	4 feet on center	225	-	-
			Total	**3075**	**16**	**7.2**

Note:
*Quantity per acre multiplied by 0.1, as quantities from vendors typically are to the tenth pound.

7.2.10 Irrigation Schedule

During the first 1 to 3 years following plant installation and seeding, the preference will be to supplement natural precipitation. The schedule for watering will be adjusted accordingly during the maintenance period, depending on factors such as climate conditions and plant size and health. Watering generally will be used to supplement rainfall (to simulate an average to above-average rainfall year), and will be used as conservatively as possible during the summer months. After the first annual quantitative monitoring is completed, how well the seed has germinated and how the container plants have performed will be assessed to help determine subsequent the irrigation schedule. As the habitats become established, the restoration ecologist will create a watering schedule that is reduced over time and eventually will phase out the irrigation.

7.3 Hardline Replacement Site

The project will provide enhancement and/or restoration of a 0.201-acre site at the Crossings for hardline replacement, by conducting weed control for 5 years as well as planting and seeding if necessary. The hardline replacement will follow the same schedule as the on-site rehabilitation sites and the off-site substantial restoration in terms of maintenance.

8. Maintenance Plan

8.1 On-Site and Off-site Restoration Sites

Maintenance will be conducted by a landscape contractor who is familiar with native habitats and has local experience in the same or similar habitats, for the 120-day PEP and the scheduled 5-year maintenance and monitoring period. Maintenance activities will include nonnative species control, supplemental seeding, pest control, and trash inspections and removals. Maintenance of the rehabilitation areas is expected to include inspections two times per month for the 120-day PEP and monthly during the first year of the monitoring. After the first year, maintenance will be conducted every 2 months during year 2, and quarterly during years 3, 4, and 5. Maintenance may be needed more frequently if remedial measures, such as supplemental watering and erosion control, are required. The primary maintenance obligations are described in the following subsections.

8.1.1 Weed Control

Throughout the duration of maintenance activities, nonnative plant control will be achieved through physical means. Nonnative plants will be removed either before they become 12 inches tall or before they set seed. Herbicides will not be applied unless the proper steps have been followed, in accordance with the City's IPMP (Carlsbad 2017). If chemical control is determined to be necessary, herbicide will be applied by personnel with a current California Department of Pesticide Regulation Qualified Applicator's Certificate or under the supervision of a person with a current California Department of Pesticide Regulation Qualified Applicator's License, and will be applied in accordance with herbicide labels, in compliance with State and federal regulations. All weed debris will be disposed appropriately off-site.

8.1.2 Supplemental Seeding

Supplemental seeding is expected to be required for the first 2 years after the initial installation. The seeding rates and seed species may be adjusted from the initial seeding that is shown in Tables 5 and 6. Supplemental seeding will occur in the late fall or early winter months and will follow the methodology described in Section 7.2.9. Supplemental seeding also may be adjusted based on recommendations from the restoration ecologist, as identified in the annual reports.

8.1.3 Irrigation System Maintenance

The temporary irrigation system will be intended to help deliver water to the newly installed container plants and support the growth of installed seed. After 2 to 3 years, the system is not expected to be required, but it may be kept on site for the duration of the project. The irrigation system typically will be checked

and maintained during regular maintenance events but may require occasional repairs outside the scheduled maintenance events. After the project has been accepted by the regulatory agencies as completed, the aboveground components of the irrigation system will be removed.

8.1.4 Pest Control

The restoration ecologist will inspect native plants for evidence of insect damage and diseases during the required site monitoring visits, as discussed in Section 10. Only minor pest control efforts are likely to be required to achieve mitigation success. Severely diseased plants will be removed and replaced to prevent the spread of disease and insect infestations. Use of pesticides is not expected to be necessary to control rodents.

8.1.5 Trash Inspections and Removals

The restoration ecologist will ensure that all trash and debris are removed from the mitigation site during regular maintenance visits and will see that it is disposed appropriately off-site. Trash removal activities will be conducted in a manner that minimizes and/or avoids impacts on plantings. Organic debris, such as dead limbs, will be left in place, to provide habitat for wildlife.

8.2 Hardline Replacement Site

Maintenance at the hardline replacement site will follow the same maintenance schedule.

9. Performance Standards and Success Criteria

9.1 On-Site and Off-site Restoration Sites

Success criteria have been developed to verify whether the rehabilitation areas will have achieved the desired native habitat characteristics after the 5-year maintenance and monitoring program. Table 7 shows the criteria that must be met for the project to be considered successful. The success criteria were developed based on the composition of the different habitats, experience on similar projects, and reasonable expectations regarding the condition of rehabilitated/enhanced habitats after 5 years.

Attainment of the final success standards is expected to result in the rehabilitation and enhancement of aquatic resource areas, DCSS on site, and DCSS off-site at the Crossings (including the hardline replacement site). Annual success criteria also will serve as milestones to help determine whether the mitigation site is on an adequate trajectory, and to aid in adaptive management decisions, including the need for planting and/or seeding or other remedial measures. A combination of qualitative and quantitative monitoring will be used to determine whether the success criteria are met, and if management measures will need to be adjusted or implemented to meet final success criteria. A detailed discussion of qualitative and quantitative monitoring is presented in Section 10.1.2 and Section 10.1.3, respectively.

Based on the monitoring results, the City will determine when success standards have been achieved during the milestone periods. This will be communicated to the regulatory agencies in annual reports that will document the qualitative and quantitative survey results.

Table 7. Performance Standards and Success Criteria

	Success Criterion	120-day PEP	Year 1[2]	Year 2[2]	Year 3[2]	Year 4[2]	Year 5[5]
Aquatic Resource Areas[1]	Total Native Cover	NA	10%	20%	45%	60%	>70%
	Invasive Species Cover (Cal-IPC listed threat of Moderate or High)	<10%	<10%	<10%	<5%	0%	0%
	Nonnative Cover	<20%	<20%	<20%	<15%	<10%	<10%
	Species Composition[4]	Germination of 25% of the species from the seed mix	25% of the seed mix species	50% of the seed mix species	50% of the seed mix species	50% of the seed mix species	50% of the seed mix species
	Container Plants	100% survival	90% survival	80% survival	80% survival	80% survival	80% survival
Diegan Coastal Sage Scrub[2]	Total Native Cover	NA	15%	25%	40%	50%	>60%
	Invasive Species Cover (Cal-IPC listed threat of Moderate or High)	<15%	<15%	<10%	<5%	0%	0%
	Nonnative Cover	<20%	<20%	<20%	<15%	<10%	<10%
	Species Composition[4]	Germination of 50% of the species from the seed mix	50% of the seed mix species	75% of the seed mix species	75% of the seed mix species	75% of the seed mix species	75% of the seed mix species
	Container Plants	100% survival	90% survival	80% survival	80% survival	80% survival	80% survival

Notes:
[1] The aquatic resource areas are inclusive of SCSM, brackish marsh, nonnative riparian, and disturbed wetland habitats.
[2] Diegan coastal sage scrub includes both temporary impact on site and off-site at the Crossings.
[3] Success criteria for years 1 through 4 are targets to help track progress and inform adaptive management toward the year 5 (final) success criteria.
[4] Species composition requirements may be replaced by native species natural recruitment.
[5] In order to meet Year 5 success and ensure self-sustaining habitat, the habitat will have had no irrigation for the final two consecutive years.
Source: Cal-IPC 2024

9.2 Hardline Replacement Site

The hardline replacement site will be monitored and compared to the performance standards and success criteria for Diegan Coastal Sage Scrub (Table 7).

10. Monitoring Requirements

10.1 On-Site and Off-site Restoration Sites

Monitoring will be conducted throughout the duration of the mitigation activities8 shows the schedule for implementing the monitoring. Monitoring activities will consist of qualitative monitoring, quantitative monitoring, and photographic documentation. Qualitative monitoring will include investigation of characteristics, such as soil conditions, container plant health and growth, and any significant disease or pest problems. Quantitative monitoring will include measuring statistics, such as native cover, nonnative

cover, and species richness across the mitigation site. Each of these monitoring activities is discussed in greater detail in the following sections.

Table 8. Monitoring and Reporting Schedule

Task	Timing
Qualitative monitoring during installation	Weekly during installation
Qualitative monitoring	Monthly during the 120-day PEP and year 1, quarterly in years 2 and 3, and semi-annually in years 4 and 5 (late winter and late summer)
Quantitative monitoring	Annually in years 1 through 5 (early summer)
Photographic documentation	Annually in years 1 through 5
Performance standards and success criteria	Annually in years 1 through 5 (early summer)
Reporting	Quarterly in year 1, with a summary year 1 annual report Annual reports for years 2 through 5

10.1.1 Qualitative Monitoring

The restoration ecologist will perform qualitative monitoring throughout the installation period and the 5-year maintenance and monitoring program. Each qualitative visit will focus on soil conditions (e.g., moisture and fertility), container plant health and growth, seed germination rates, presence of native and nonnative plant species, any significant disease or pest problems, and any erosion problems.

During installation, the restoration ecologist will inspect progress on a weekly basis. After plant installation is completed, the restoration ecologist will monitor the mitigation site monthly during the 120-day PEP and year 1. Qualitative monitoring will be conducted quarterly in years 2 and 3 of the 5-year maintenance and monitoring program, and semi-annually in years 4 and 5. During each qualitative site visit, the restoration ecologist will conduct a site overview to evaluate the following:

- overall site conditions
- general condition of plants, including plant health/vigor and mortality
- seed germination rates
- native plant recruitment

Furthermore, the restoration ecologist will evaluate potential issues, including hydrology, irrigation problems (e.g., too much or too little), invasive nonnative species of concern (e.g., tree tobacco and iceplant), vandalism, and other problems that may need to be addressed during regular maintenance visits.

During each annual late summer site visit, the restoration ecologist will assess the need for supplemental seeding during the winter months. Remedial recommendations will be provided as necessary, and recommendations may include additional irrigation or broadcast seeding.

In years 1 through 3, the restoration ecologist will prepare a short memorandum, summarizing the findings of the qualitative visits on a quarterly basis and submit these to the City. In years 4 and 5, qualitative monitoring will be reported semi-annually. Annual reports, summarizing the findings of the qualitative site

visits and quantitative monitoring, will be completed each year and submitted to the regulatory agencies, as described in Section 10.1.4. In addition, the restoration ecologist will coordinate the following activities:

- Schedule upcoming maintenance based on the maintenance needs and priorities at the mitigation site.
- Walk the mitigation site to identify any problem issues, including erosion, irrigation damage, the occurrence of invasive nonnative species, and potential human impacts, such as trespassing and vandalism.
- Provide support to the field maintenance crew in identification of common native and nonnative species.
- Determine an irrigation schedule based on seasonal and annual variation in rainfall, native plant water requirements, and site-specific conditions (i.e., soil condition and slope).

10.1.2 Quantitative Monitoring–Relevé

Because of the size of the small, local impact areas, quantitative monitoring in the form of point intercept transects or quadrats will be difficult and impracticable for the onsite locations. The California Native Plant Society recognizes a simple method to visually estimate plant cover, called the Relevé Protocol. This method is considered to be useful when making estimations over areas with variable shapes or sizes. Because this method uses visual estimates of cover, it is considered semi-quantitative rather than counting the number of times a species occurs along a transect, for example. When using this method, it also is beneficial to use a range or cover class in the estimation. Table 9 shows the cover classes proposed for the project. Data will be collected each year during the early summer (i.e., June/July), and sampling times will be consistent from year to year, to minimize variation in the data. The offsite location shall use the standard point intercept methodology for quantitative monitoring.

Table 9. Proposed Cover Classes

Cover Class
0% to 1%
>1% to 5%
>5% to 15%
>15% to 25%
>25% to 45%
>45% to 60%
>60% to 70%
>70%

10.1.3 Photographic Documentation

Five fixed-photo stations will be set up at representative points for onsite mitigation areas and five stations will be set up in the offsite location. These photo stations will be established during the implementation phase and used to document the installation process. After installation, photos will be collected once per year for the 5-year maintenance and monitoring program, concurrent with quantitative monitoring.

Representative photos that are taken from these points will be included in the annual reports to document the progress of the mitigation site. All photo stations will be marked using GPS units and displayed on a site map in the annual report.

10.1.4 Reporting

Annual Report

The restoration ecologist will prepare annual reports that will include qualitative and quantitative methods and monitoring results, photographic documentation, an assessment of rehabilitation progress relative to the success standards, and a review of maintenance activities and any remedial measures that have occurred (e.g., supplemental planting), as well as other specific requirements as specified in project permits. A draft of the annual report will be submitted to the City for review 90 days from the end of the project year. After the report has been reviewed and approved by the City, the final report will be submitted to the respective regulatory agencies.

Project Release

If the restoration ecologist and the City concur that the mitigation site has met its success standards ahead of, or on schedule, the City will prepare a notification letter to the respective agencies, documenting the successful completion of the restoration program and requesting final approval. If the success standards have not been met after 5 years, maintenance and monitoring may be extended beyond 5 years or until standards are met. After the mitigation site has met the success standards, and the city has conducted a final site inspection, the City will prepare a notification letter to the respective agencies, documenting the successful completion of the restoration program and requesting final approval.

10.2 Hardline Replacement Site

Monitoring at the hardline replacement site will be quantitative and used to inform maintenance activities.

11. Long-Term Management Plan

A long-term management plan currently is not planned for the onsite mitigation areas. Because of the limited and small impacts that rehabilitation of the impact areas are expected to accomplish within the 5-year time frame, no further maintenance or monitoring are anticipated to be required. As discussed in Section 10.1.4, if the site does not achieve the success standards, maintenance and monitoring will be extended until the success standards have been achieved.

A long-term management plan already is in place for the Crossings Preserve and the hardline replacement site, and the off-site DCSS substantial restoration site will become part of that plan after the sites have been accepted.

12. Adaptive Management Plan

Unexpected events—such as flood events, drought, wildfire, and/or infestation by nonnative vegetation—may cause damage that could adversely affect the rehabilitation areas. During the installation phase and 5-year maintenance and monitoring program, the City will be responsible for the management of the mitigation site, as described in Section 7, and will address unforeseen changes in the site condition following the goals and guidelines in this HMMP. Data obtained during maintenance and monitoring activities will provide the information necessary to confirm that the objectives of the management actions are being achieved, or that changes through adaptive management will be necessary to achieve the desired habitat objectives. For example, if vandalism impacts the vegetation within a rehabilitation area, the damage will be repaired, the site will be reseeded, and further protective measures will be added to the site to reduce vandalism potential in the future.

13. Financial Assurances

The City will be responsible for financing the project, from the start of site activities through completion of the 5-year maintenance and monitoring program, or until the success criteria have been achieved.

14. Other Information

No additional information has been identified to be included.

15. References

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