

CARMEL AREA WASTEWATER DISTRICT



**CALLE LA CRUZ PIPELINE REPLACEMENT
PROJECT**

SCH #

**Draft Initial Study and
Mitigated Negative Declaration**

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Mitigated Negative Declaration**

**Prepared for:
Carmel Area Wastewater District
P.O. Box 221428
3945 Rio Road
Carmel, CA 93922**

**Prepared by:
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April 2018

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CHAPTER 1. INTRODUCTION

The Carmel Area Wastewater District (CAWD) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of construction and operation of the proposed Calle la Cruz Pipeline Replacement Project (Proposed Project). The Proposed Project and its location are described in depth in Chapter 2. This document was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) of 1970 (as amended) and the CEQA Guidelines (14 California Code of Regulations [CCR] § 15000 et seq.).

Intent and Scope of this Document

This IS/MND has been prepared in accordance with CEQA, under which the Proposed Project is evaluated at a project level (CEQA Guidelines § 15378). The CAWD, as the Lead Agency under CEQA, will consider the Proposed Project's potential environmental impacts when considering whether to approve the project. This IS/MND is an informational document to be used in the planning and decision-making process for the Proposed Project and does not recommend approval or denial of the Proposed Project. The site plans for the Proposed Project included in this IS/MND are conceptual. The CAWD anticipates that the final design for the Proposed Project would include some modifications to these conceptual plans, and the environmental analysis has been developed with conservative assumptions to accommodate some level of modification. This IS/MND describes the Proposed Project; its environmental setting, including existing conditions and regulatory setting, as necessary; and the potential environmental impacts of the Proposed Project on or with regard to the topics on the CEQA Initial Study checklist, in Chapter 3.

Public Involvement Process

Public disclosure and dialogue are priorities under CEQA. CEQA Guidelines §15073 and §15105(b) require that the lead agency designate a period during the IS/MND process when the public and other agencies can provide comments on the potential impacts of the Proposed Project. Accordingly, the CAWD is now circulating this document for a 30- day public and agency review period.

All comments received before 5:00 p.m. from the date identified for closure of the public comment period in the Notice of Intent will be considered by the CAWD during its deliberations on whether to approve the Proposed Project. To provide input on this project, please send comments to the following contact:

Drew Lander
Principal Engineer
Carmel Area Wastewater District
P.O. Box 221428
3945 Rio Road
Carmel, CA 93922
lander@cawd.org

Organization of this Document

This IS/MND contains the following components:

Chapter 1, *Introduction*, provides a brief description of the intent and scope of this IS/MND, the public involvement process under CEQA, and the organization of and terminology used in this IS/MND.

Chapter 2, *Project Description*, describes the Proposed Project, including its objectives, the project site where the Proposed Project would be constructed, the construction approach and activities, operation-related activities, and related permits and approvals.

Chapter 3, *Environmental Checklist*, presents the environmental checklist used to assess the Proposed Project's potential environmental effects, which is based on the model provided in Appendix G of the CEQA Guidelines. This chapter also includes a brief environmental setting description for each resource topic and identifies the Proposed Project's anticipated environmental impacts, as well as any mitigation measures that would be required to reduce potentially significant impacts to a less than-significant level.

Chapter 4, *References*, provides a bibliography of printed references, websites, and personal communications used in preparing this IS/MND.

Appendices

- Appendix A. Air Quality Calculations
- Appendix B. Biological Resource Study
- Appendix C: Hydrology Report
- Appendix D: Noise Appendix
- Appendix E. Mitigation Monitoring and Reporting Program

CHAPTER 2. PROJECT DESCRIPTION

1. Background and Need for the Project

CAWD proposes to replace an existing aboveground, 24-inch diameter by 330-foot long treated wastewater outfall and a temporary 6-inch diameter by 330-foot long sewage force main that currently span the Carmel River Lagoon. The pipelines, metal supporting beams and other supporting structure have degraded (rusted) to an unsafe condition. Flood surge and floating debris passing down the southern finger of the lagoon could break the pipes off the 12-inch concrete-filled pile supports. The steel piles have corroded and, in some places, only the concrete in compression is holding up the pipes (concrete originally poured into the pile). In addition, the interior mortar lining of the 24-inch diameter treated wastewater pipe is currently the last barrier to a potential spill in the Carmel Lagoon. Also, the six-inch diameter sewage force main developed a seven-foot long crack over the length of pipe crossing the lagoon. The force main was bypassed with a temporary high-density polyethylene (HDPE) pipe in 2014; this temporary pipeline was anticipated to last for a few years, while a long-term solution is planned, permitted, and constructed. The proposed project would be the long-term replacement for the degraded pipelines and support piles.

2. Project Purpose and Objectives

The purpose of the project is to replace a damaged sewage force main and treated wastewater outfall that currently span the south arm of the Carmel Lagoon with new pipelines undergrounded below the lagoon that would not interfere with, or be subject to damage by, flows in the lagoon.

3. Project Location and Setting

The project area is located within the south arm of the Carmel Lagoon north of Calle la Cruz, within unincorporated Carmel, Monterey County, California (Figure 1). The CAWD Carmel Meadows Pump Station is located in the southwestern end of the project area and the CAWD Wastewater Treatment Plant is located directly north of the eastern end of the Project area. The outfall and force main follow a parallel alignment from the CAWD Wastewater Treatment Plant to the west bank of the Carmel Lagoon. There, the pipelines diverge; the force main connects to the Carmel Meadows Pump Station and the outfall continues west to the Pacific Ocean.

The northern portion of the project area bounds an approximately 2,480-foot long unpaved access road (northern access road) that would be used to access the work area from the north. The southern portion of the project area includes an approximately 250-foot long road and an approximately 120-foot long footpath (southern access road) that would be used to access the work area from the south.

The Project site is partially within the Carmel River State Beach, owned and operated by California State Parks, and a portion of the Caltrans' Carmel River Mitigation Bank.



Figure 1
Project Location

Source: Grassetti Environmental and TomTom Maps

4. Proposed Project Characteristics

CAWD proposes to replace an existing aboveground, 24-inch diameter by 330-foot long treated wastewater outfall pipeline and temporary 6-inch diameter by 330-foot long HDPE sewage force main. Both pipelines are undergrounded on either side of the south arm of the lagoon and are pile-supported aboveground over the lagoon. The undergrounded portion of the pipelines have been determined to be in serviceable good condition and do not require replacement, while the portion of the pipelines spanning the lagoon are in deteriorated condition and need to be replaced. The portions of the pipelines spanning the lagoon would be replaced with a buried 24-inch outfall pipeline and an 8-inch sewage force main pipeline. In order to install the new pipes under the lagoon bed, construction would necessitate trenching across the south arm of the Carmel Lagoon, resulting in temporary impacts to both navigable waters and associated wetlands.

In addition to pipeline replacement, this project also involves the improvement of access roads and creation of temporary staging areas to the north and south of the lagoon. This is because the pipeline replacement location is located primarily in a heavily vegetated riparian area that can only be accessed from the north by an existing dirt road and from the south by a foot trail. Access road improvements would be limited to temporary improvements and no permanent improvements would be required. Existing roads to the north and south of the lagoon would be cleared of vegetation, grubbed, and stabilized to widen the road to 15-feet to facilitate construction vehicle and crane access. Temporary rubber mats, or steel plates, or wood plates / crane mats would be placed over the existing dirt access road to allow construction vehicle access. Access roads would also be stabilized with filter fabric and 12 inches of clean crushed gravel, as necessary. Staging areas for construction access, construction equipment, and soil stockpiles would be located directly north and south of the lagoon. These areas would be created by clearing and grubbing existing stands of vegetation. Following vegetation removal, staging areas would be graded level to accommodate large construction equipment and materials (e.g., cranes, trucks, pipes, sheet piles, dewatering equipment). In two locations, wetlands could be temporarily filled to facilitate construction access. Project construction areas are shown in Figure 3.

Construction areas consist of the following (all dimensions are approximate):

- 4,300-square feet of trenching area (area to be trenched to place new pipeline);
- 3000-square feet of in-water work area (area to be isolated with sheet piles to reduce impact of trenching and stabilize trench walls);
- 0.1 acre staging area south of the lagoon arm
- 0.80 acre staging area north of the lagoon arm;
- 370-foot long by 15-foot wide Southern Access Road
- 2,235-foot long by 15-foot wide Northern Access Road



Figure 2
Project Site and Surrounding Area

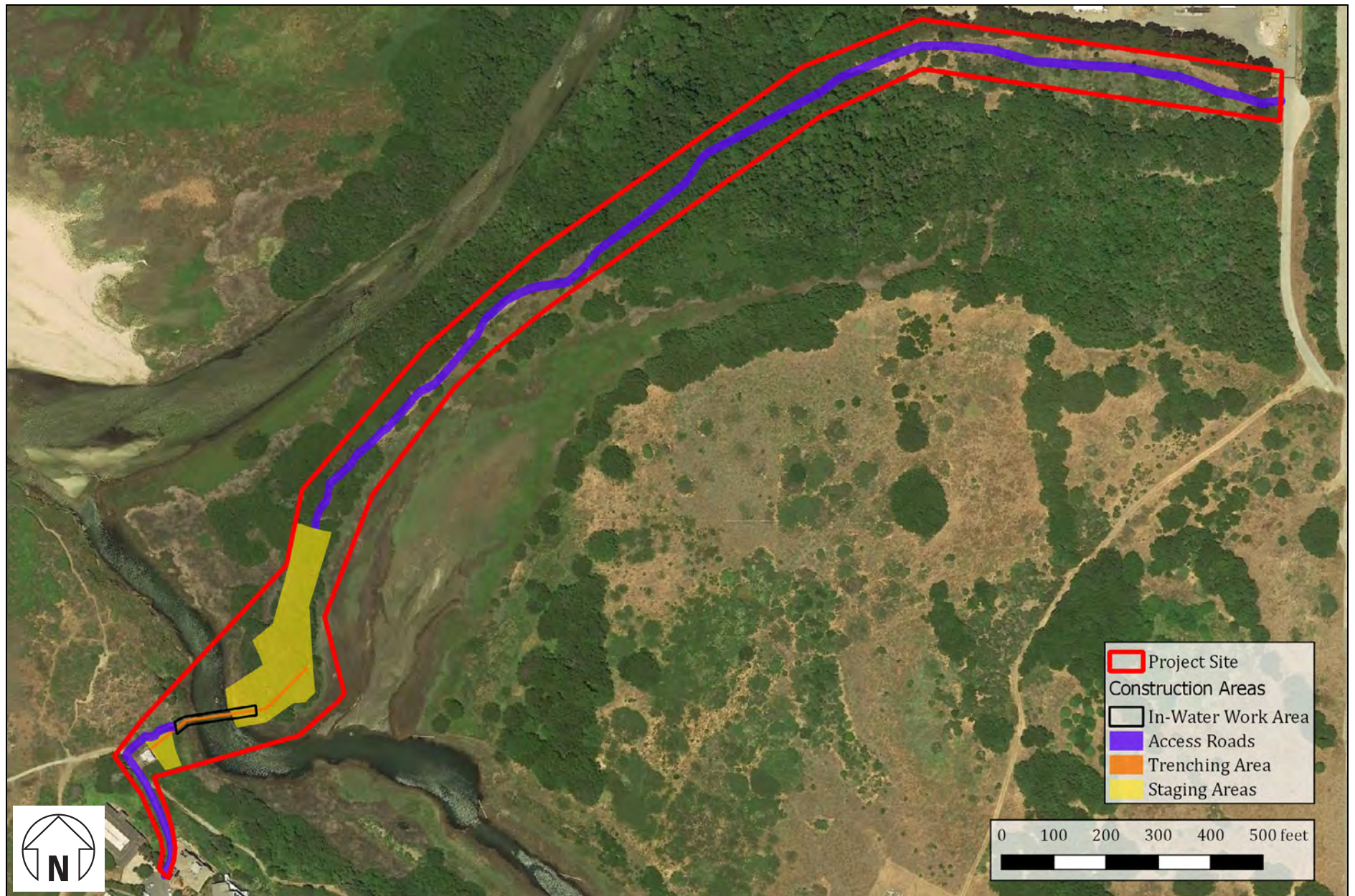


Figure 3
Proposed Locations of Work Areas

4.1 Construction

The project proposes undergrounding the replacement pipelines using a trenching methodology. In order to install the new pipes under the bed of the lagoon, construction would necessitate installation of sheet piles across the south arm of the Carmel Lagoon, trenching, and pipeline installation and connection to the existing underground pipelines. Specific construction activities are described below.

Site Preparation

Staging areas would be needed to store pipe, construction equipment, spoils stockpiles, and other construction-related material. The project would include a 0.1-acre staging area at the southern end of the lagoon and a 0.8-acre staging area at the northern end of the lagoon (see Figure 3).

To construct the project, staging areas and a 10 to 15-foot-wide by approximately 2,235-foot long existing access road from the treatment plant to the northern staging area also would be cleared of vegetation, as needed, and widened to 10 to 15-feet to facilitate vehicular access and accommodate equipment and construction material storage. There is one location on the northern access road where a seasonal wetland and drainage may not be avoided. Appropriate BMPs (e.g., filter fabric and gravel) would be placed over the wetland at this location. To level the northern staging area, the embankment that is currently in the staging area would be temporarily lowered.

A temporary sediment basin for construction-related water treatment would be installed in one of the staging areas, and a crane pad would be placed at the southwestern edge of the northern staging area to accommodate a construction crane. The crane would be used to remove the existing pipelines and assist in the installation of the new pipes. Leveling and stabilizing the northern staging area would include grading 0.21 acre of perennial wetland. A 50-foot by 30-foot crane pad would be constructed at the southwestern edge of the northern staging area that would necessitate import of clean fill. All access road and staging area improvement would occur from the top of bank and there would be no requirement to place heavy equipment within the open water of the lagoon. It would also be necessary to conduct grading work to widen a portion of the southern access road and level the southern staging area. The staging areas would be used for construction activities such as temporary infiltration, baker tank staging, and dredge spoils stockpile. Trenching activities would result in the excavation of 1,000-2,500 cubic yards of native soil; the excavated soil would be used as backfill material.

The anticipated site preparation activities include:

- i. Clearing and grubbing the access roads to the staging areas.
- ii. Stabilization of the access roads through wetland and drainage with filter fabric and gravel.
- iii. Delineation of the access roads with wildlife exclusion fencing (orange silt fence).

- iv. Clearing, grubbing, and stabilization of the staging area with crane pads and possibly clean imported gravel fill.

Trenching and Pipeline Placement

Trenching necessitates installing steel sheet piles to isolate the trenching and backfilling activities from the adjacent bodies of water. Prior to trench construction, two rows of sheet piles would be installed six to ten feet apart across the southern arm of the Carmel Lagoon, to isolate the trenching area, control water quality, and to ensure trench stability, where trenching would occur. The sheet piles (65-feet long by 3-feet wide) would be installed with a vibratory hammer upstream (north) and downstream (south) of the trenching area. Trenching would then occur between two rows of sheet piles. Dewatering is not proposed during in-water trenching (see Figure 4). To ensure water quality within the lagoon is not adversely affected, turbidity curtains would be installed immediately outside of the sheet piles.

Steel sheet piles could be installed with a vibratory hammer, or similar method, on both sides of the trenching area across the southern arm of the Carmel Lagoon, to allow for isolation of the portion of the lagoon. Depending on the construction sequencing by the contractor, the sheet piles may be installed all at one time, or in segments. The reach of the existing 24-inch outfall pipeline crossing the lagoon would then be isolated with a bypass pipe.

Prior to installation of the steel sheet piles, fish would be excluded from approximately 20 linear feet of the lagoon encompassing the work areas. To exclude fish from the work area, two permeable curtains (e.g., turbidity curtains) of a sufficient length to reach the bottom elevation of the southern arm of the lagoon would be placed immediately outside of the work area (one upstream and one downstream), parallel with the existing pipelines. The curtains would first be installed together and then gradually be pulled apart to exclude fish from the work area. Seine nets would also be used to ensure all fish have been removed from this fish exclusion area. This fish exclusion area would remain in place for the duration of sheet pile installation, trenching, pipe installation and backfilling activities. Lastly, a fish passage way between the upper and lower portions of the south arm of the lagoon would be installed and maintained. The fish passageway would be a pipe (likely 12" diameter) which would connect to the main body of the lagoon to the south arm. The fish passageway would provide an unobstructed passageway for fish.

In addition to installation of fish bypass pipes, measures would be implemented to help maintain good rearing conditions for steelhead during construction. The existing agricultural well adjacent to Highway 1 is in close proximity to the upper reaches of the south arm of the lagoon and would be used, as needed, to provide a cold oxygenated water to the lagoon during construction. This would serve the purpose of ensuring the lagoon water quality stratification remains intact and of preventing adverse water quality for salmonids. The existing well would be retrofitted with a working lower flow pump. Water would be supplied to two or three locations along the south arm to prevent fish aggregating and potential predation. Finally, to maintain adequate oxygenation, solar bees would be placed within the lagoon during construction.

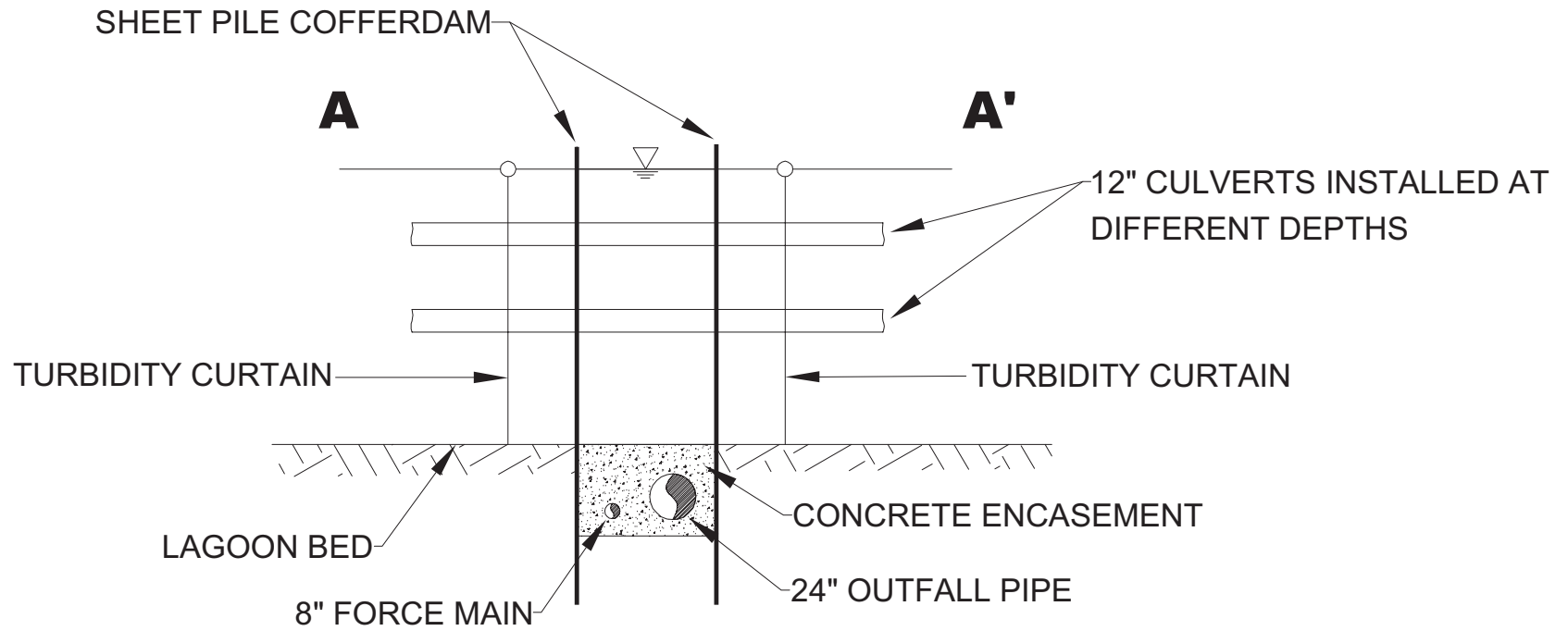


Figure 4
Carmel Meadows Sewer Cross-Section

After steel sheet piles and the bypass line are installed, and while maintaining water level between the sheet piles, an excavator or a clam-shell excavating bucket mounted on a crane would first remove the isolated 24-inch outfall pipeline, the 6-inch sewer force main and the existing concrete piers; then the contractor would start excavating the lagoon bed. Excavated spoils would be stockpiled within one of the staging areas, within a constructed sediment basin. Excess water from the spoils would be filtered through sediment controls and either discharged back into the lagoon or let to infiltrate through the porous on-site soil material.

After the trenching activities are complete, two pre-assembled HDPE pipes would be installed inside the trench. The contractor would then connect both new pipes to the existing 24-inch outfall and the existing 6-inch sewer force main. Localized short-duration groundwater dewatering would be required at the tie-in points of new pipes, which are to the east and west sides of the trenching area. After the pipes are installed in place, the pipelines would be backfilled with concrete slurry to just above the pipeline top. After the concrete cures, the trench backfill would then continue with material previously excavated from the lagoon bed. During concrete work, pH would be carefully monitored. The trenched area in the upland portions of the new pipelines would also be covered with clean aggregate and native soil.

It is anticipated that the water confined inside the steel sheet piles would be turbid due to excavation and backfilling activities. At the end of the backfilling process, the water inside the sheet piles would be treated such that the water quality is returned to pre-construction conditions. After the water inside the steel sheet piles is treated and returned to its preconstruction quality, the steel sheet piles would be removed and then the turbidity curtains would be removed as well.

All sediment would be stored in a sediment basin located in either of the two staging areas. Some of the graded material would be removed, and some would be used as backfill. Typically, excess fill material is sent to a sanitary land fill. Any imported material will be certified clean and weed free. It is anticipated that the project would require the following import and export of fill-related materials:

- Export 1,000-2,500 cubic yards of sediment from trench and 1000 CY of construction debris and,
- Import: 200 CY clean sand and 180 CY of concrete

Post-Construction Activities

Upon completion of construction activities, temporary fill would be removed from the wetlands, pre-construction grades would be restored, and the impacted areas would be replanted with appropriate native vegetation. Site restoration would generally involve overall clean up, grading, and installing erosion controls, as necessary. Revegetation work would

be consistent with a Revegetation Plan to be submitted to and approved by appropriate agencies prior to commencement of project activities.

Construction Equipment and Workers

To complete construction, the project would implement the use of vibratory hammers, water trucks, scrapers, compactors, bull-dozers, caterpillars, back-hoes, excavators, cranes, augers, concrete trucks, water pumps, and assorted other hand tools and equipment. Construction vehicles would only access the project site from the designated access roads. No additional improvements or off-site staging would be allowed.

Work would be completed by five to ten construction workers at any given time during construction.

Construction Schedule

Construction is planned for June through October. It is anticipated that the project field work would take approximately four months to complete, with two months of work directly within the lagoon. This includes 2 weeks to install sheet piles, 4 weeks to install pipe and backfill, and 2 weeks to remove the sheet piles and restore the channel.

In-water work is proposed to occur during the months of August to October to avoid migrating steelhead. Crews would typically work from approximately 6:00 a.m. to 5:00 p.m., Monday through Friday. These dates and times are subject to change, pending issuance of project permits and agency authorizations.

5. Best Management Practices

Project construction would include a range of environmental commitments, otherwise known as best management practices (BMPs), to avoid adverse effects on people and the environment. BMPs are developed to address anticipated effects from various construction activities and would be implemented pre-construction, during construction, and post construction, as specified in Table 1. All BMPs will be regularly monitored for effectiveness using appropriate methods (visual observation, sampling) at appropriate intervals (e.g., daily or weekly) and corrected immediately if determined to not be effective.

Table 1. Best Management Practices to be Implemented for the Proposed Project

Number	Title	BMP Description
BMP-1	Best Management Practices for Construction Air Quality	The contractor will use construction equipment that minimizes air emissions, to the extent feasible. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit

technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.

BMP-2 Best Management Practices for Construction Emissions, Including Fugitive Dust Emissions

Implementation of construction BMPs to limit construction emissions, particularly fugitive dust emissions, as follows:

- All exposed areas of bare soil should be watered twice per day to minimize fugitive dust emissions.
- All haul trucks transporting soil, sand, or other loose material off-site should be covered or maintain at least two feet of free board space. Any haul trucks traveling along freeways or major roadways should be covered.
- All vehicle speeds on unpaved roads should be limited to 15 miles per hour (mph).
- All visible mud or dirt track-out onto roads in the Carmel Meadows neighborhood should be removed using wet power-vacuum street sweepers at least once per day. The use of dry power sweeping should be prohibited.

Idling times should be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13 CCR § 2485). Clear signage regarding this requirement should be provided for construction workers at all access points.

BMP-3 Best Management Practices for Sediment Control

Site specific BMPs to control sediments during construction activities, which may include but not be limited to:

- Install, implement, and maintain BMPs consistent with the California Storm Water Quality Association Best Management Practice Handbook (California Storm Water Quality Association [CASQA] 2015) or equivalent to minimize the discharge of pollutants.

- Implement practices to reduce erosion of exposed soil, including stabilization of soil stockpiles, watering for dust control, establishment of perimeter silt fences, and/or placement of fiber rolls.
- Minimize soil disturbance area.
- Implement other practices to maintain water quality, including use of silt fences, stabilized construction entrances, and storm-drain inlet protection.
- Where feasible, limit construction to dry periods.
- Revegetate disturbed areas.

BMP-4 Best Management Practices for Hazardous Materials

Site-specific hazardous materials BMPs during construction activities, which may include but not be limited to:

- Develop (before initiation of construction activities) and implement (during construction and operational activities) a spill prevention and emergency response plan to handle potential spills of fuel or other pollutants.
- Install, implement, and maintain BMPs consistent with the California Storm Water Quality Association Best Management Practice Handbook (CASQA 2015) or equivalent to minimize the discharge of pollutants to the MS4s, consistent with the requirements of the construction site stormwater and hazardous materials control requirements of the County of Monterey, in compliance with Central Coast RWQCB Orders.
- Implement practices to minimize the contact of construction materials, equipment, and maintenance supplies with stormwater.
- Limit fueling and other activities involving hazardous materials to designated areas only; provide drip pans under equipment and conduct daily checks of vehicle condition.

- Require the proper disposal of trash and any other construction-related waste.

Ensure, through the enforcement of contractual obligations, that all contractors transport, store, handle, and dispose of construction-related hazardous materials consistent with relevant regulations and guidelines, including those recommended and enforced by Caltrans; the Central Coast RWQCB; the applicable county department; and the applicable local fire department. Recommendations may include minimizing the amount of hazardous materials/waste stored on-site at any one time, transporting, and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials using the applicable federal, state, and/or local regulatory agency protocols. In addition, all precautions required by the County of Monterey pursuant to the Central Coast RWQCB Orders, if applicable, will be taken to ensure that no hazardous materials enter any storm drainages.

BMP-5 Best Management Practices for Biological Resources

Site specific BMPs to control sediments during construction activities, which may include but not be limited to:

- Install, implement, and maintain BMPs consistent with the California Storm Water Quality Association Best Management Practice Handbook (California Storm Water Quality Association [CASQA] 2015) or equivalent to minimize the discharge of pollutants;
- Implement practices to reduce erosion of exposed soil, including stabilization of soil stockpiles, watering for dust control, establishment of perimeter silt fences, and/or placement of fiber rolls;
- Minimize soil disturbance area;

- Implement other practices to maintain water quality, including use of silt fences, stabilized construction entrances, and storm-drain inlet protection;
- Where feasible, limit construction to dry periods; and
- Revegetate disturbed areas.

CHAPTER 3. ENVIRONMENTAL CHECKLIST

A. Summary of Project Information:

1. Project Title: Calle la Cruz Pipeline Replacement Project

2. Lead Agency Name and Address:

Carmel Area Wastewater District
P.O. Box 221428
3945 Rio Road
Carmel, CA 93922

3. Contact Person, Email, and Phone Number:

Drew Lander, Principal Engineer
(831) 624-1248
lander@cawd.org

4. Project Location:

The proposed project is located at the mouth of the Carmel River, just south of the town of Carmel, in unincorporated Monterey County (see Figure 1); it is located within and adjacent to the south arm of the Carmel Lagoon, north of Calle La Cruz.

5. Property Owner(s): California Department of Parks and Recreation

6. General Plan Designation: Wetlands and Coastal Strand, Agricultural Preservation¹

7. Zoning: RC-D CZ, (Resources Conservation, Coastal Zone) CAP-D (CZ) (Coastal Agricultural Preserve, Coastal Zone)²

8. Project Description: See Chapter 2 for detailed project description.

9. Surrounding Land Uses and Setting:

The project pipelines would run from the Calle la Cruz pump station, in the Carmel Meadows residential development, through the southern arm of the Carmel River Lagoon, to connect with existing pipelines extending to the CAWD's sewage treatment plant. Nearby uses include residential, wetland preserve, mitigation bank, and recreation/open space uses. Carmel River State Beach lies to the west of the site.

¹ Monterey County Land Use Plan, Carmel Area, as amended, March 9, 1995

² Monterey County Zoning, Coastal Implementation Plan – Title 20 (accessed October 19, 2017)

10. Other Public Agencies whose Approval or Input May Be Needed

- US Fish and Wildlife Service (Section 7 Consultation with USFWS)
- National Marine Fisheries Service (Section 7 Consultation with NMFS)
- California Regional Water Quality Control Board #3 (SWPPP, NOI for Water Quality Order No. 2004-004 DWQ)
- State of California Department of Parks and Recreation (Right of Entry permit)
- California Department of Fish and Wildlife (Streambed Alteration Agreement [Section 1602], Notice of Intent)
- US Army Corps of Engineers, Section 404 of the Clean Water Act (33 U.S.C. Section 1344)
- US Army Corps of Engineers, Section 10 of the Rivers and Harbors Act (33 U.S.C. Section 403).
- California Coastal Commission (Coastal Development Permit)
- California Department of Transportation (Encroachment Permit)

B. Environmental Factors Potentially Affected:

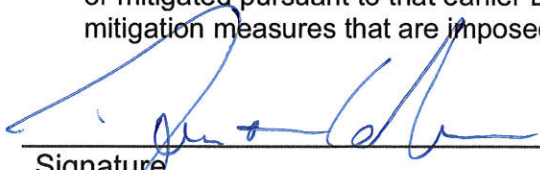
The environmental factors checked below would be potentially affected by this project as indicated by the checklists and responses contained on the following pages:

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture & Forest Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology & Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology & Water Quality |
| <input type="checkbox"/> Land Use & Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population & Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation & Traffic | <input type="checkbox"/> Utilities & Services Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

C. Determination:

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 revisions in the project have been made by or agreed to by the project proponent. 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” or “potentially significant unless mitigated” impact on the environment, but at least one effect 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 on attached sheets. 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, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project; nothing further is required.



Signature

3/29/2018

Date

Drew Lander, Principal Engineer

Printed name

D. Evaluation of Environmental Impacts:

Evaluation of Environmental Impacts

The following checklist is formatted consistent with CEQA Guidelines, Appendix G. A “***no impact***” response indicates that the project would not result in an environmental impact in a particular area of interest, either because the resource is not present, or the project does not have the potential to cause an effect on the resource.

A “***less than significant***” response indicates that, while there may be potential for an environmental impact, the significance of the impact would not exceed established thresholds and/or that there are standard procedures or regulations in place that would apply to the project and hence no mitigation is required.

Responses that indicated that the impact of the project would be “***less than significant with mitigation***” mean that, although there is the potential for a significant impact, feasible mitigation measures would become conditions of approval for the project if it receives approval by the City Planning Commission.

A “***potentially significant impact***” response indicates that the impact would exceed established thresholds and that the impact could not be avoided by utilizing standard operating procedures and regulations, program requirements, or design features incorporated into the project or that additional analysis is required in an EIR.

Public comments on this Initial Study should focus on the accuracy and completeness of the analysis contained herein.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
--	--------------------------------	---------------------------------------	------------------------------	-----------

I. AESTHETICS – Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Background:

The project pipelines would be placed underground across a narrow arm of the Carmel River Lagoon. The project area’s aesthetics are characterized by views of riparian vegetation, open waters of the Carmel River and Carmel River Lagoon, open agricultural fields, and single-family residences (on the Carmel Meadows ridgeline). Those residences would have the most prominent views of aesthetic alterations associated with the project (see Figure 4). The project site is shielded from public views from Highway 1 and other local roadways outside of Carmel Meadows.

Discussion:

a. Scenic Vista - *Less than Significant Impact.* The project area is designated as visually “Sensitive” in the Monterey County General Plan (see Figure 14, Scenic Highway Corridors and Visual Sensitivity Map, January 26, 2010). However, most of the project would be subsurface, and not visible in any local views. Access roads and staging areas would be cleared of vegetation, creating temporary aesthetic impacts. However, this localized clearing of vegetation would not significantly alter the visual quality of the area, and the cleared areas would be allowed to revegetated after project construction is complete. Views of the cleared areas would be limited to eastward facing houses in Carmel Meadows (see Figure 4). In the longer term, removal of the above-ground pipelines would improve views of the lagoon

by eliminating an intrusive visual element from those views. Therefore, the project’s impact on scenic vistas and views would be **less than significant**.



Figure 4. View of Project Area from Calle la Cruz Pump station.

b. Scenic Highway – Less Than Significant Impact. Highway 1 in the project area is a designated Scenic Highway (see Figure 14, Scenic Highway Corridors and Visual Sensitivity map, Monterey County General Plan, January 26, 2010). In addition, Caltrans has designated Highway 1 from the San Luis Obispo County Line to State Route 68, just north of the project area, as a State Scenic Highway (http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/route1.htm). As described in Item a), above, most of the project would be subsurface, and the surface elements would be limited to temporary vegetation clearing and staging during construction, with limited visibility to the general public. Therefore, the project would have a **less-than-significant impact** on scenic highways.

c. Visual Quality – Less than Significant Impact. As described in Item a) above, impact on the proposed project on visual quality of the area would be **less than significant**.

d. Light and Glare – No Impact. The project would not include any lighting and no nighttime construction would occur. Therefore, the proposed project would have no impact on light and glare.

II. AGRICULTURE AND FOREST RESOURCES:

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 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 on the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zone Timberland Production (as defined by Government Code Section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Background:

The project access road runs adjacent to an area designated for agricultural use in the Monterey County General Plan Land Use Element. However, that area is currently managed by Caltrans (biological mitigation bank) and owned by the California Department of Parks and Recreation (wetlands preserve) and is no longer in agricultural use. In addition, no construction or other disturbance is proposed. The project construction area is not in agricultural use and is not under a California Land Conservation (Williamson Act) contract. No forest resources exist on the site.

Discussion:

a, b. Farmland, Williamson Act - *No Impact*. The project site is located in open water and heavily vegetated riparian areas. The project would have no impact on conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program because no such designated lands are mapped on the corridor. No portions of the site are not under a Williamson Act Contract. Therefore, the project would result in ***no impact*** on farmland, land zoned for agricultural use, and/or Williamson Act contracts.

c, d. Forest Lands – *No Impact*. The project would not affect forest land or forest zoning because no such lands or zoning exist or are proposed on the site.

e. Conversion of Farmland – *No Impact*. The proposed project would not involve changes in the existing environment that could result in any conversion of Farmland to a non-agricultural use.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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III. AIR QUALITY:

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Background:

The analysis was completed in accordance with the Monterey Bay Unified Air Pollution Control District's (MBUAPCD's) *CEQA Air Quality Guidelines* (dated February 2008).³ The air quality analysis includes the estimation of construction emissions such as volatile organic compounds (VOC) as reactive organic gases (ROG)⁴, nitrogen oxides (NOx), particulate

³ MBUAPCD, *CEQA Air Quality Guidelines*, dated February 2008, [http://mbuapcd.org/pdf/CEQA_full%20\(1\).pdf](http://mbuapcd.org/pdf/CEQA_full%20(1).pdf)

⁴ VOC means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and thus, a precursor of ozone formation. ROG are any reactive compounds of carbon, excluding methane, CO, CO₂

matter less than 10 micrometers (coarse particulate or PM₁₀), and particulate matter less than 2.5 micrometers (fine particulate or PM_{2.5})⁵.

The project site is in unincorporated Monterey County, south of the City of Carmel. Monterey County is located within the North Central Coast Air Basin (NCCAB), which also encompasses Santa Cruz and San Benito County. The MBUAPCD is responsible for air monitoring, permitting, enforcement, long-range air quality planning, regulatory development, as well as education and public information activities related to air pollution, as required by the California Clean Air Act and Amendments and the Federal Clean Air Act and Amendments. In 2016, the MBUAPCD changed its name to the Monterey Bay Air Resources District (MBARD). The Air District is referred to as the MBARD for the rest of this section.

The northwest sector of the NCCAB is dominated by the Santa Cruz Mountains. The generally northwest-southeast orientation of mountainous ridges tends to restrict and channel the summer onshore air currents. Surface heating in the interior portion of the Salinas and San Benito Valleys creates a weak low pressure which intensifies the onshore air flow during the afternoon and evening.

In the fall, the surface winds become weak, and the marine layer grows shallow, dissipating altogether on some days. The air flow is occasionally reversed in a weak offshore movement, and the relatively stationary air mass is held in place by the Pacific high-pressure cell, which allows pollutants to build up over a period of a few days. It is most often during this season that the north or east winds develop to transport pollutants from either the San Francisco Bay area or the Central Valley into the NCCAB.

During the winter, the Pacific High migrates southward and has less influence on the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito Valleys, especially during night and morning hours. Northwest winds are nevertheless still dominant in winter, but easterly flow is more frequent. The general absence of deep, persistent inversions and the occasional storm systems usually result in good air quality for the NCCAB as a whole in winter and early spring.⁶

Existing Setting

The California Air Resources Board (CARB) maintains air quality monitoring data for the MBARD-operated Carmel Valley monitoring station, which is the closest monitoring station

carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds. The terms VOC and ROG are often used interchangeably.

⁵ *PM₁₀ and PM_{2.5} consists of airborne particles that measure 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM₁₀ and PM_{2.5} represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects.*

⁶ *MBUAPCD, CEQA Air Quality Guidelines, dated February 2008, [http://mbuapcd.org/pdf/CEQA_full%20\(1\).pdf](http://mbuapcd.org/pdf/CEQA_full%20(1).pdf)*

to the project site. The monitoring station is located at 35 Ford Road in Carmel Valley, which is approximately 11 miles southeast of the project site. The monitoring station currently measures the ambient concentrations of ozone and PM2.5. Eight-hour and hourly ozone measurements show no exceedances of California Ambient Air Quality Standards (CAAQS) or the National Ambient Air Quality Standards (NAAQS) between 2014 and 2016. PM2.5 measurements show no exceedances of the 24-hour NAAQS in 2014, one exceedance in 2015, and 11 exceedances in 2016. PM2.5 measurements show no exceedances of the annual CAAQS or NAAQS between 2014 and 2016.⁷

The Monterey County portion of the NCCAB is designated as a non-attainment-transitional area for CAAQS for ozone and as a non-attainment area for CAAQS for PM10. All other pollutants are in attainment or unclassified for all other State and federal standards.⁸

Sensitive Receptors

The MBARD's *CEQA Air Quality Guidelines* define a sensitive receptor as "Any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirements and nursing homes." For the proposed project, the closest sensitive receptors are homes in the Carmel Meadows neighborhood as close as 150 feet southwest of the project site. No other sensitive receptors exist within 1,000 feet of the project site.

Significance Criteria

The MBARD has developed a threshold of significance for PM10 emissions during construction activities of 82 pounds per day for CEQA purposes.⁹ In regards to ozone and ozone precursors (ROG and NOx), the MBARD states that construction emissions from construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors and front-end loaders that temporarily emit precursors of ozone are accommodated in the emission inventories of State- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone State and federal standards. For the purposes of the proposed project, construction emissions would have a potentially significant air quality impact if they exceed the daily PM10 threshold of 82 pounds per day. Emissions of ozone precursors (ROG and NOx) and PM2.5 emissions are estimated for informational purposes.

⁷ California Air Resources Board, *ADAM: Air Quality Data Statistics*, <http://www.arb.ca.gov/adam/topfour/topfourdisplay.php>

⁸ California Air Resources Board, *Area Designation Maps/State and National*, <https://www.arb.ca.gov/desig/adm/adm.htm>

⁹ MBUAPCD, *CEQA Air Quality Guidelines*, February 2008, [http://mbuapcd.org/pdf/CEQA_full%20\(1\).pdf](http://mbuapcd.org/pdf/CEQA_full%20(1).pdf)

Discussion:

a) Conflict with or obstruct implementation of the applicable air quality plan – *No Impact.*

The MBARD's 2012-2015 Air Quality Management Plan¹⁰ is the seventh update to the 1991 Air Quality Management Plan and is the applicable air quality plan to the project site. The MBARD uses population and vehicle miles traveled (VMT) projections from the Association of Monterey Bay Area Governments (AMBAG) as the basis for air quality planning and develops an emissions inventory for the NCCAB from AMBAG population forecasts. The proposed project would not result in increases in population, housing, or other development and therefore would not increase the AMBAG population forecast. Thus, the proposed project would not conflict with or obstruct the MBARD's 2012-2015 Air Quality Management Plan and would have *no impact*.

b, c) Violate any air quality standard or contribute substantially to an existing or projected air quality violation or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment – *Less than Significant Impact*

Although temporary in duration, potential construction impacts would occur as a result of the proposed project. The proposed project is a replacement project and would not result in an operational emissions increase.

Construction activities would include site clearing of staging areas and access roads, installation of sheet piles, trenching, removal of existing wastewater outfall and sewage force main, installation of new wastewater outfall and sewage force main, removal of the cofferdam sheets piles, and restoration. Construction activities would occur over a four-month period, planned for the months of June through October 2018. Construction equipment is estimated to include a crane, excavator, dump truck, loader, bulldozer, concrete truck, concrete pumping truck, air compressor, generator, water truck and worker pickup trucks. Up to ten haul truck trips per day would be needed to export soil material, existing pipeline materials and structures, and to import clean sand and concrete. Approximately five to 10 workers would be on site per day, which would generate approximately 20 worker trips per day.

The proposed project would temporarily generate combustion emissions of criteria air pollutants from construction equipment, haul trucks, and worker automobiles. Construction emissions were estimated with the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Road Construction Emissions Model (Version 8.1.0).¹¹ See Appendix A of this IS/MND for calculations. The Road Construction Emissions Model is recommended for linear construction projects such as roadways, bridges, pipelines, transmission lines and

¹⁰ MBUAPCD, 2012-2015 Air Quality Management Plan, March 15, 2017, http://mbard.org/wp-content/uploads/2017/03/2012-2015-AQMP_FINAL.pdf

¹¹ SMAQMD Road Construction Emissions Model Version 8.1.0, May 2016, <http://www.airquality.org/businesses/ceqa-land-use-planning/ceqa-guidance-tools>

levees. Estimated construction emissions from the proposed project are displayed in **Table AQ-1**.

Table AQ-1: Estimated Maximum Daily Construction Emissions

Phase	ROG	NOx	PM10	PM2.5
Maximum Daily Emissions (pounds)	4.84	49.41	12.39	4.25
MBARD Daily Threshold (pounds)	--	--	82.0	--
Significant?	No	No	No	No

Source: SMAQMD Road Construction Emissions Model Version 8.1.0
 Note: See **Air Quality Appendix** for detailed emission estimates and assumptions

As shown in **Table AQ-1**, estimated maximum daily construction emissions of PM10 are below the MBARD’s daily significance threshold. In regard to ozone precursors (ROG and NOx), the MBARD states that construction emissions from construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors and front-end loaders that temporarily emit precursors of ozone are accommodated in the emission inventories of State- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone State and federal standards. The proposed project would not require the use of unusual construction equipment and construction would be temporary (four months). Therefore, construction emissions would be **less than significant**.

Poor construction practices could result in substantial emissions of fugitive dust that would be a nuisance and could create localized health impacts. The MBARD requires construction projects to comply with the fugitive dust prohibitions identified in Rule 403 (Particulate Matter). In order to prevent and control fugitive dust emissions and ensure compliance with MBARD rules, construction activities associated with the proposed project would adhere to the following best management practices:

- All exposed areas of bare soil should be watered twice per day to minimize fugitive dust emissions.
- All haul trucks transporting soil, sand, or other loose material off-site should be covered or maintain at least two feet of free board space. Any haul trucks traveling along freeways or major roadways should be covered.
- All vehicle speeds on unpaved roads should be limited to 15 miles per hour (mph).
- All visible mud or dirt track-out onto roads in the Carmel Meadows neighborhood should be removed using wet power-vacuum street sweepers at least once per day. The use of dry power sweeping should be prohibited.
- Idling times should be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California

airborne toxics control measure Title 13 CCR § 2485). Clear signage regarding this requirement should be provided for construction workers at all access points.

With implementation of the BMPs, the project's impact on fugitive dust would be ***less than significant***.

d) Expose sensitive receptors to substantial pollutant concentrations - *Less than Significant Impact*

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. The CARB has identified the following people as most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive population groups.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. The closest residences to the project site are in the Carmel Meadows neighborhood and construction activities could occur as close as approximately 150 feet away from the closest residence. However, most of the construction activities would occur in the lagoon, which is approximately 250 feet away from the closest residence. Approximately seven residences are within 500 feet of the lagoon. No schools, day care centers or other types of sensitive receptors exist within 1,000 feet of the project site.

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TAC that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

The proposed project would constitute a new emission source of DPM¹² due to construction activities. Studies have demonstrated that DPM from diesel-fueled engines is a human

¹² In August of 1998, CARB identified particulate emissions from diesel-fueled engines as a toxic air contaminant. CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. The document represents a proposal to reduce diesel particulate emissions, with the goal to reduce emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low sulfur diesel fuel on diesel-fueled engines.

carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. The proposed project is a short-term (four-month) construction project that would use diesel construction equipment intermittently and would not generate substantial TAC emissions. The general wind flow is from the west to east, which is not in alignment with the nearby sensitive receptors and the project site. The project site is located to the east of the receptors and thus, the general wind flow is from the receptors towards the project site. Implementation of the BMPs listed above would reduce the potential for localized health impacts from fugitive dust. Therefore, this impact would be **less than significant**.

e) Create objectionable odors affecting a substantial number of people - *Less than Significant Impact*

The MBARD's Rule 402 (Nuisances) prohibits the discharge of air contaminants which cause injury, detriment, nuisance, or annoyance to any considerable number of persons. Construction of the proposed project could potentially generate some temporary odors from diesel exhaust emissions, however odors would be minimally perceptible. Odors would be temporary as construction equipment would operate intermittently over the four-month construction period. The proposed project would be required to comply with MBARD's Rule 402 Nuisance. Therefore, the proposed project would have a ***less-than-significant*** impact on odors.

Diesel particulate matter (DPM) is the most complex of diesel emissions. Diesel particulates, as defined by most emission standards, are sampled from diluted and cooled exhaust gases. This definition includes both solid and liquid material that condenses during the dilution process. The basic fractions of DPM are elemental carbon; heavy hydrocarbons derived from the fuel and lubricating oil and hydrated sulfuric acid derived from the fuel sulfur. DPM contains a large portion of the polycyclic aromatic hydrocarbons found in diesel exhaust. Diesel particulates include small nuclei particles of diameters below 0.04 micrometers (μm) and their agglomerates of diameters up to 1 μm .

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

g) Results in a conversion of Oak Woodlands that will have a significant effect on the environment

Background:

Studies Conducted

A Revised Biological Resource Analysis was prepared for the project by Johnson Marigot Consulting, LLC (JMC) in January 2018. Revisions were made to the proposed project and report in March 2018 in response to comments provided by the Regulatory Agencies. This section of the Initial Study is based entirely on the findings of that report, which is included as Appendix B to this IS/MND.

Site surveys were conducted on the project site on November 10, 2014 and September 13 and 14, 2017. Surveys included walking the project site to characterize current site conditions including vegetation, topography, and the presence of suitable resting, nesting, and/or roosting wildlife habitat. In addition, general current and historic uses of the site were noted, as well as general observations of neighboring property uses. On September 13, 2017, JMC biologists conducted a field survey to determine the location and extent of potential waters of the U.S. within the project site. The wetland delineation was conducted using the methods described in the *Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), supplemented with guidance as directed by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2008).

Prior to site investigations, literature reviews were conducted of known and potential special-status species, including analysis of the California Natural Diversity Database (CNDDDB) and a query of the Inventory of Rare, Threatened, and Endangered Plants of California (California Native Plant Society; CNPS), and review of the on-site soils pursuant to the US Department of Agriculture (USDA).

Existing Site Conditions

The project site consists of undeveloped land surrounding a rarely maintained access road. The project site occurs primarily on the former northern levee of the former Odello family artichoke farm; the western portion of the project site was re-graded approximately 13 years ago to match the surrounding floodplain elevations. The project site occurs on a gentle south and southwestern facing slope, with elevations ranging between approximately 20 feet above mean sea level (AMSL) at the northeastern portion of the site and approximately 8 feet AMSL at the western portion of the site (adjacent to the lagoon).

The project site is dominated by riparian woodland and ruderal habitat, as well as seasonal and perennial wetland; a small area of coastal sage scrub occurs at the southwestern corner of the project site (see Figure 1). These habitats are described below.

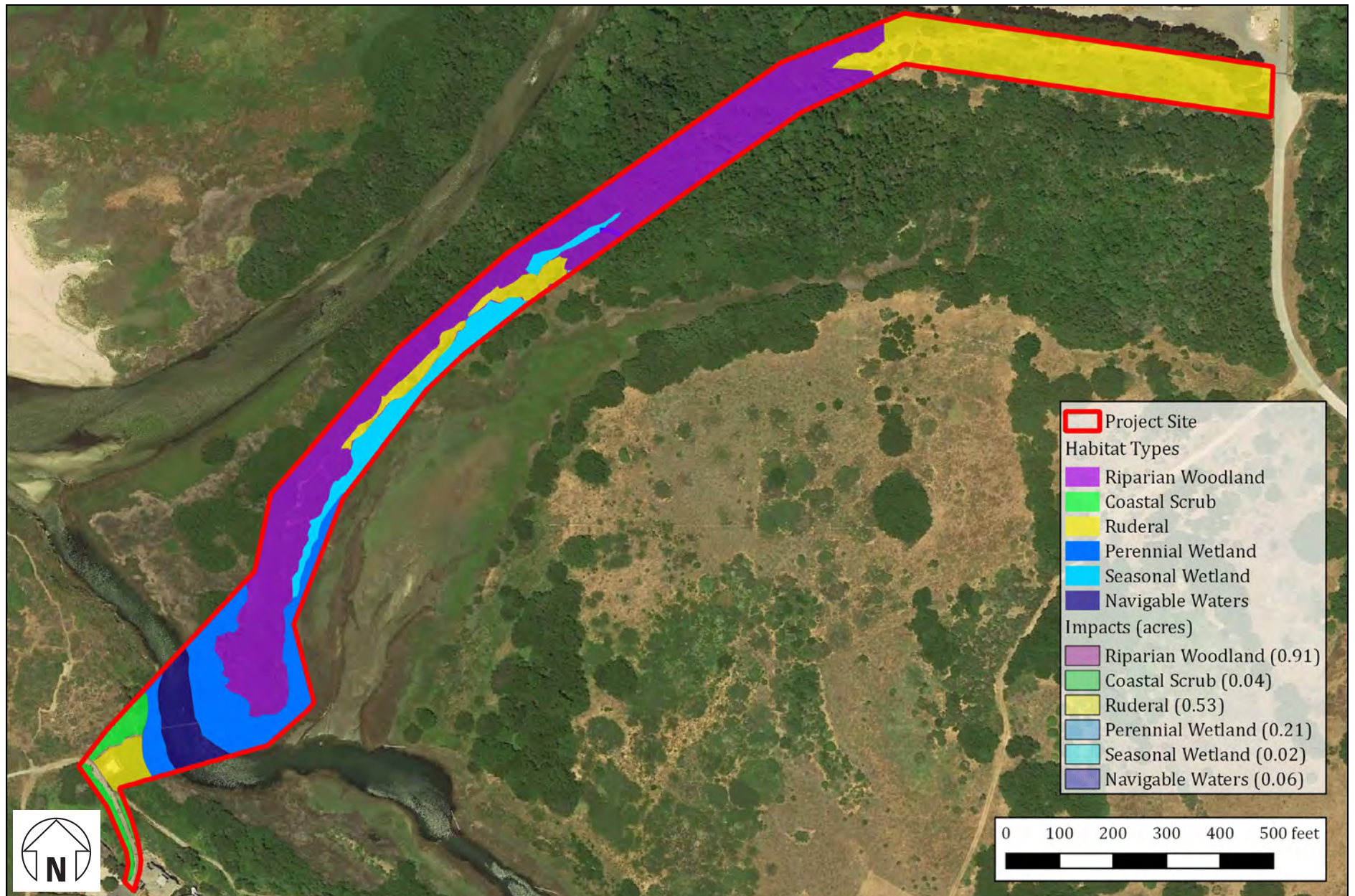


Figure 5
Project Site Habitat Areas

Riparian Woodland

A majority of the project site is comprised of riparian woodland, which dominates the northern and central portions of the project site. The fairly dense canopy (70-100% canopy cover) is dominated by willows (*Salix* spp.), coast live oak (*Quercus agrifolia*), and cottonwood (*Populus fremontii*), with sub-dominant species including elderberry (*Sambucus nigra*), and dogwood (*Cornus sericea*). The understory is fairly densely vegetated and is dominated by California blackberry (*Rubus ursinus*) and poison oak (*Toxicodendron diversilobum*).

Ruderal Vegetation

The northeastern portion of the project site is dominated by ruderal vegetation. These species may be native or non-native but are often thought of as “weedy” species. Dominant species in this area include non-native herbaceous species such as Italian thistle (*Carduus pycnocephalus*), poison hemlock (*Conium maculatum*), bristly ox-tongue (*Helminthotheca echioides*), and Canada horseweed (*Erigeron canadensis*), as well as non-native grasses such as Italian wildrye (*Festuca perennis*), slender wild oat (*Avena barbata*), and rip-gut brome (*Bromus diandrus*). A small native contingent occurs within the shrub layer and includes species such as coyote brush (*Baccharis pilularis*), California blackberry, and California sage (*Artemisia californica*).

Coastal Sage Scrub

The southwestern portion of the project site is dominated by a small area of coastal sage scrub. The onsite scrub habitat is densely vegetated and is dominated by Monterey cypress (*Hesperocyparis macrocarpa*), California sage, poison oak, coyote brush, poison hemlock, and black mustard (*Brassica nigra*).

Wetlands

Seasonal Wetland. Seasonal wetlands occur throughout the central portion of the project site. These wetlands are dominated by brown-headed rush (*Juncus phaeocephalus*), hardstem bulrush (*Schoenoplectus acutus*), and salt grass (*Distichlis spicata*), with lesser common species including cutleaf plantain (*Plantago coronopus*) and seaside barley (*Hordeum marinum*).

Perennial Wetland. The southwestern portion of the project site is dominated by perennial wetland. This wetland area is clearly subjected to greater periods of inundation than the seasonal wetlands due to closer proximity to the topographic low portions of the adjacent lagoon. At the time of the September site visit, some portions of this wetland were still inundated with several inches of water. Dominant species in the perennial wetland included Santa Barbara sedge (*Carex barbarae*), fleshy jaumea (*Jaumea carnosa*), spotted ladies thumb (*Persicaria maculosa*), dotted smartweed (*Persicaria punctata*), and hardstem bulrush.

Aquatic Resources

Approximately 1.813 acres of potential waters of the U.S. have been mapped on the project site, including 0.352 acre of seasonal wetland, 0.95 acre of perennial wetland, 0.33 acre of navigable waters, and 0.001 acre of drainages. A wetland delineation was conducted on September 13, 2017, and JMC submitted a Request for Preliminary Jurisdictional Determination to the Corps on December 14, 2017. To date, the Corps has not determined the extent of waters of the U.S./State on the project site.

Discussion:

a. Effect on Protected Species – *Less than Significant Impact with Mitigation.*

Special-status species include species considered to be rare by federal and/or state resource agencies (USFWS, NMFS, CDFW) and/or the scientific community (CNPS) and are accordingly legally protected via the federal, state, and/or local laws defined below.

Endangered Species Act (ESA): The USFWS and NMFS (Resource Agencies), with regulatory authority over listed plants, wildlife, and fish, oversee the ESA (50 CFR § 402.7, Section 305(b)(4)(B)). The ESA prohibits the “take” of any wildlife species listed as threatened or endangered, by the Resource Agencies, including the destruction of habitat that could hinder species recovery. The Resource Agencies administer the ESA and authorize take through issuance of Biological Opinions in consultation with the federal action agency (e.g. Corps or FEMA).

Migratory Bird Treaty Act (MBTA): The MBTA of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755; as amended in 1936; 1960, 1968, 1969, 1974, 1978, 1986, and 1998) prohibits the take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of any migratory bird or any part, nest, or egg of any such bird.

California Endangered Species Act (CESA): CESA prohibits the “take” of any wildlife species listed as endangered and threatened by the state of California. Section 2090 of the CESA requires state agencies to comply with regulations for protection and recovery of listed species and to promote conservation of these species. The CDFW administers the act and authorizes “take” through section 2081 agreements (except for designated “fully protected species”). Regarding rare plant species, the CESA defers to the California Native Plant Protection Act of 1977.

California Native Plant Protection Act & California Fish and Game Code (Plants): The California Native Plant Society (CNPS) designates California Rare Plants through a ranking system. Rank 1A, 1B, and 2 meet the definitions established in Sec. 1901, Chapter 10 (Native Plant Protection Act of 1977) or Secs. 2062 and 2067 of the CESA and are eligible for state listing (CNPS Inventory, 2015).

California Fish and Game Code (Fully Protected Species): To provide additional protections for wildlife that is rare or faces potential extinction, California Fish and Game Code Sections 3511, 4700, 5050, and 5515 designates “fully protected” status for specific birds, mammals, reptiles and amphibians, and fish. Fully protected species cannot be taken or possessed at any time and no licenses or permits can be issued for their take. Exceptions are established for scientific research collection, relocation of the bird species for the protection of livestock, and take resulting from recovery activities for state-listed species.

California Fish and Game Code (Birds): California Fish and Game Code (Section 3503) prohibits the take of nest or eggs of any bird. Raptors and other fully protected bird species are further protected in Sections 3503.5 and 3511, which states that raptors/fully protected birds or parts thereof may not be taken or possessed at any time.

California Fish and Game Code (Species of Special Concern): A species of special concern is a designation given by the state to a native species that meets one or more of the following criteria: extirpated for the state; federally (but not state) listed; experiencing, or formerly experienced, population declines or range restrictions; has naturally small populations at high risk of declines.

A search of the CNDDDB and the CNPS Inventory of Rare, Threatened, and Endangered Plants of California was conducted for state and federally listed and candidate species, as well as CNPS-ranked species known to occur in the vicinity of the property. The species identified in this search were compiled in tables (Tables 1 and 2) and evaluated for likelihood of occurrence on the project site. The potential for species to be adversely affected by the proposed project was classified as high, moderate, or low, using the definitions provided below. When a species was not expected to occur on or adjacent to the project site, the potential for adverse effects was identified as “none.”

High: The potential for a species to occur was considered high when the project site was located within the range of the species, recorded observations were identified within known dispersal distance of the project site, and suitable habitat was present on the project site.

Moderate: The potential for a species to occur was considered moderate when the project site was located within the range of the species, recorded observations were identified nearby but outside known dispersal distance of the project site, and suitable habitat was present on the project site. A moderate classification was also assigned when recorded observations were identified within known dispersal distance of the project site but habitat on the project site was of limited or marginal quality.

Low: The potential for a species to be adversely affected was considered low when the project site was within the range of the species, but no recorded observations within known dispersal distance were identified, and habitat on the project site was limited or of marginal quality. The potential for adverse effects was also classified as low when the project site was located at the edge of a species’ range and recorded observations were extremely rare, but habitat in the project site was suitable.

Special-Status Plants

According to the CNDDDB and the CNPS Inventory of Rare, Threatened, and Endangered Plants of California, a total of 36 special-status plant species are known to occur in the vicinity of the project site (Table 1). The closest of these recorded occurrences of special-status plant species (according to the CNDDDB and CNPS databases) is approximately 0.7-mile northeast of the project site. Eleven of these species require specialized habitats that do not occur on the project site (coniferous forest, broadleaved upland forest, cismontane woodland, chaparral, coastal prairie, coastal dunes, and valley and foothill grassland).

While no occurrences of special-status plant species have been documented on or adjacent to the project site, the project site provides suitable habitat for the 25 remaining species. A brief description of each of these species is included below, including the species' distribution, habitat, life cycle, threats to the species, and potential impacts to the species resulting from development of the proposed project.

Hickman's Onion (Allium hickmanii)

Hickman's onion is a small, white to pale-pink-flowered perennial bulbiferous herbaceous member of the onion family (Alliaceae), that blooms between March and May. Hickman's onion is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by urbanization, grazing, non-native plants, trampling, road construction, and military activities.

A 1985 occurrence of this species was recorded on grassy slopes in coastal prairie approximately 0.7-mile northeast of the project site (CNDDDB Occurrence No. 5). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Hickman's onion. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Hooker's Manzanita (Arctostaphylos hookeri ssp. hookeri)

Hooker's manzanita is a white to pink-flowered shrub member of the heather family (Ericaceae), that blooms between February and April. This species is endemic to California and is known to occur in closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub habitats. Hooker's manzanita is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by agriculture, development, fire suppression, and competition with non-native *Eucalyptus*.

A 2005 occurrence of this species was recorded in maritime chaparral on a west-facing ridgeline approximately 1.2 miles south of the project site (CNDDDB Occurrence No. 15). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While no manzanita species were observed during site surveys, the surveys conducted on the project site were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of

protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Hooker's manzanita. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Toro manzanita (Arctostaphylos montereyensis)

Toro manzanita is a white to pink-flowered perennial evergreen shrub member of the heather family, that blooms between February and March. This species is endemic to California and is known to occur in maritime chaparral, cismontane woodland, and coastal scrub. Toro manzanita is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by development.

An historic record for this species is documented approximately 0.9 mile north of the project site (CNDDDB Occurrence No. 25), however, that occurrence is presumed extirpated. The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While no manzanita species were observed during site surveys, the surveys conducted on the project site were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Toro manzanita. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Sandmat Manzanita (Arctostaphylos pumila)

Sandmat manzanita is a white to pink-flowered perennial evergreen shrub member of the heather family, that blooms between February and May. This species is endemic to California and is known to occur in closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub. Sandmat manzanita is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by urbanization and military activities.

An historic record for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 12), however, that occurrence is considered possibly extirpated. The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While no manzanita species were observed during site surveys, the surveys conducted on the project site were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to sandmat manzanita. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Coastal Dunes Milk-Vetch (Astragalus tener var. titi)

Coastal dunes milk-vetch is a purple-flowered annual herbaceous member of the pea family (Fabaceae), that blooms between March and May. This species is endemic to California and is known to occur in sandy coastal bluff scrub, coastal dunes, and mesic coastal prairie. Coastal dunes milk-vetch is state and federally endangered, and is a CNPS Rank 1B.1 species, threatened by urbanization, recreational activities, and non-native plants.

This species is known to occur near the project site. The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to coastal dunes milk-vetch. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Pink Johnny-Nip (Castilleja ambigua ssp. insalutata)

Pink Johnny-nip is a pink, yellow, and white-flowered hemiparasitic annual herbaceous member of the broomrape family (Orobanchaceae), that blooms between May and August. This species is endemic to California and is known to occur in coastal prairie and coastal scrub. Pink Johnny-nip is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by development and non-native plants.

An historic record for this species is documented approximately 1.5 miles southwest of the project site (CNDDDB Occurrence No. 6). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to pink Johnny-nip. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Monterey Spineflower (Chorizanthe pungens var. pungens)

Monterey spineflower is a white-flowered annual herbaceous member of the buckwheat family (Polygonaceae), that blooms between April and August. This species is endemic to California and is known to occur in sandy-soiled maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland. Monterey spineflower is federally threatened, and is a CNPS Rank 1B.2 species, threatened by urbanization, recreational development and activities, agriculture, military activities, and non-native plants.

The closest record for this species occurs approximately 1.5 miles southwest of the project site (CNDDDB Occurrence No. 45). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Monterey spineflower. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Jolon Clarkia (Clarkia jolonensis)

Jolon clarkia is a pale lavender-flowered annual herbaceous member of the evening primrose family (Onagraceae), that blooms between April and June. This species is endemic to California and is known to occur in chaparral, cismontane woodland, coastal scrub, and riparian woodland. Jolon clarkia is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by grazing, foot traffic, and non-native plants.

An historic record for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 15). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to jolon clarkia. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

San Francisco Collinsia (Collinsia multicolor)

San Francisco collinsia is a white and purple-flowered annual herbaceous member of the plantain family (Plantaginaceae), that blooms between February and May. This species is endemic to California and is known to occur in closed-cone coniferous forest and coastal scrub. San Francisco collinsia is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by urbanization, foot traffic, and non-native plants.

This species is known to occur on near the project site. The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to San Francisco collinsia. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Seaside Bird's-Beak (Cordylanthus rigidus ssp. littoralis)

Seaside bird's-beak is a yellow-flowered hemiparasitic annual herbaceous member of the broomrape family, that blooms between April and October. This species is endemic to California and is known to occur in sandy closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub. Seaside bird's-beak is state-listed as endangered, and is a CNPS Rank 1B.1 species, threatened by development, energy projects, road widening, vehicles, military operations, and non-native plants.

This species is known to occur near the project site. The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species.

While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to seaside bird's-beak. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Hutchinson's Larkspur (Delphinium hutchinsoniae)

Hutchinson's larkspur is a blue-purple-flowered perennial herbaceous member of the buttercup family (Ranunculaceae), that blooms between March and June. This species is endemic to California and is known to occur in broadleafed upland forest, chaparral, coastal prairie, and coastal scrub. Hutchinson's larkspur is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by foot traffic, non-native plants, recreational activities, grazing, and trampling.

This species is known to occur near the project site. The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Hutchinson's larkspur. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Eastwood's Goldenbush (Ericameria fasciculata)

Eastwood's goldenbush is a yellow-flowered perennial evergreen shrub member of the sunflower family (Asteraceae), that blooms between July and October. This species is endemic to California and is known to occur in sandy openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub in the Monterey Bay area. Eastwood's goldenbush is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by development.

Multiple historic observations (1889-1913) of Eastwood's goldenbush are documented in the vicinity of the project site (exact locations are unknown) (CNDDDB Occurrence No. 8). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Eastwood's goldenbush. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Fragrant Fritillary (Fritillaria liliacea)

Fragrant fritillary is a white-flowered perennial bulbiferous herbaceous member of the lily family (Liliaceae), that blooms between February and April. This species is endemic to California and is known to occur in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland. Fragrant fritillary is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by grazing, agriculture, urbanization, and non-native plants. An historic record (1940) for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 5). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species.

While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Fragrant fritillary. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Monterey Gilia (Gilia tenuiflora ssp. arenaria)

Monterey gilia is a purple and pink-flowered annual herbaceous member of the phlox family (Polemoniaceae), that blooms between April and June. This species is endemic to California and is known to occur sandy openings in maritime chaparral, cismontane woodland, coastal dunes, coastal scrub. Monterey gilia is federally listed as endangered, state-listed as threatened, and is a CNPS Rank 1B.2 species, threatened by development, sand mining, vehicles, recreational activities, foot traffic, and non-native plants.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Monterey gilia. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Kellogg's Horkelia (Horkelia cuneata ssp. sericea)

Kellogg's horkelia is a white-flowered perennial herbaceous member of the rose family (Rosaceae), that blooms between April and September. This species is endemic to California and is known to occur in sandy or gravelly openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub. Kellogg's horkelia is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by coastal development.

An historic record (1896) for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 15). The southwestern portion of the

project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Kellogg's horkelia. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Beach Layia (Layia carnosa)

Beach layia is a white and yellow-flowered annual herbaceous member of the sunflower family, that blooms between March and July. This species is known to occur coastal dunes and coastal scrub in California and Oregon. Beach layia is state and federally endangered, and is a CNPS Rank 1B.1 species, threatened by coastal development, foot traffic, vehicles, and non-native plants.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to beach layia. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Carmel Valley Bush-Mallow (Malacothamnus palmeri var. involuocratus)

Carmel Valley bush-mallow is a white to pale-pink-flowered perennial deciduous shrub member of the hibiscus family (Malvaceae), that blooms between April and October. This species is endemic to California and is known to occur in chaparral, cismontane woodland, and coastal scrub. Carmel Valley bush-mallow is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by development.

An historic record (1955) for this species is documented approximately 2.6 miles east of the project site (exact location is unknown) (CNDDDB Occurrence No. 30). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Carmel Valley bush-mallow. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Carmel Valley Malacothrix (Malacothrix saxatilis var. arachnoidea)

Carmel Valley malacothrix is a white-flowered perennial rhizomatous herbaceous member of the sunflower family, that blooms between March and December. This species is endemic to California and is known to occur in rocky chaparral and coastal scrub. Carmel Valley malacothrix is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by road maintenance.

This species is known to occur near the project site. The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Carmel Valley malacothrix. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Oregon Meconella (Meconella oregana)

Oregon meconella is a white-flowered annual herbaceous member of the poppy family (Papaveraceae), that blooms between March and April. This species is known to occur in coastal prairie and coastal scrub in California, Oregon, and Washington. Oregon meconella is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by alteration of fire regimes.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Oregon meconella. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Marsh Microseris (Microseris paludosa)

Marsh microseris is a yellow-flowered perennial herbaceous member of the sunflower family, that blooms between April and July. This species is endemic to California and is known to occur in closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland. Marsh microseris is not state or federally listed, but is a CNPS Rank 1B.2 species.

An historic record (1901) for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 30). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not

sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to marsh microseris. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Northern Curly-Leaved Monardella (Monardella sinuata ssp. nigrescens)

Northern curly-leaved monardella is a lavender to purple-flowered annual herbaceous member of the mint family (Lamiaceae), that blooms between April and September. This species is endemic to California and is known to occur in sandy chaparral, coastal dunes, coastal scrub, and lower montane coniferous forest. Northern curly-leaved monardella is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by on-native plants, development, habitat loss, habitat fragmentation, and climate shifts.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to northern curly-leaved monardella. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Yadon's Rein Orchid (Piperia yadonii)

Yadon's rein orchid is a green and white-flowered perennial herbaceous member of the orchid family (Orchidaceae), that blooms between February and August. This species is endemic to California and is known to occur in sandy coastal bluff scrub, closed-cone coniferous forest, maritime chaparral. Yadon's rein orchid is federally endangered, and is a CNPS Rank 1B.1 species, threatened by urbanization, recreational development, non-native plants, road maintenance, and herbivory.

The closest record for this species occurs in a Monterey pine/coast live oak woodland approximately 0.7-mile northeast of the project site (CNDDDB Occurrence No. 24) The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Yadon's rein orchid. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Hickman's Cinquefoil (Potentilla hickmanii)

Hickman's cinquefoil is a yellow-flowered perennial herbaceous member of the rose family, that blooms between April and August. This species is endemic to California and is known

to occur in coastal bluff scrub, closed-cone coniferous forest, vernal mesic meadows and seeps, and freshwater marshes and swamps. Hickman's cinquefoil is state and federally endangered, and is a CNPS Rank 1B.1 species, threatened by urbanization, recreational activities, non-native grasses, and grazing.

This species is known to occur on the project site. The coastal sagebrush scrub and the wetland habitat that occur on the project site provide suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Hickman's cinquefoil. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Saline Clover (Trifolium hydrophilum)

Saline clover is a white, pink, red, and/or purple-flowered annual herbaceous member of the pea family (Fabaceae), that blooms between April and June. This species is endemic to California and is known to occur in marshes and swamps, mesic and alkaline valley and foothill grassland, and vernal pools. Saline clover is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by development, trampling, road construction, and vehicles.

This species is known to occur on the same quad as the project site (Monterey Quad). The onsite wetlands provide suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to saline clover. These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Pacific Grove Clover (Trifolium polyodon)

Pacific Grove clover is a pink to white and purple-flowered annual herbaceous member of the pea family, that blooms between April and July. This species is endemic to California and is known to occur in mesic closed-cone coniferous forest, coastal prairie, meadows and seeps, and valley and foothill grassland. Pacific Grove clover is a state-listed rare species, and is a CNPS Rank 1B.1 species, threatened by urbanization, recreation, foot traffic, trampling, and non-native plants.

This species is known to occur in the project area. The project site provides marginal habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Pacific Grove clover.

These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

State and Federally Listed Wildlife

A total of 11 special-status wildlife species are known to occur in the vicinity of the project site (Table 2): black legless lizard (*Anniella pulchra* ssp. *nigra*), California red-legged frog (*Rana draytonii*), black swift (*Cypseloides niger*), California brown pelican (*Pelecanus occidentalis* ssp. *californicus*), California tiger salamander (*Ambystoma californiense*), coast range newt (*Taricha torosa* ssp. *torosa*), monarch butterfly (*Danaus plexippus* ssp. *plexippus*), Smith's blue butterfly (*Euphilotes enoptes* ssp. *smithi*), steelhead (*Oncorhynchus mykiss* ssp. *irideus*), western pond turtle (*Emys marmorata*), white-tailed kite (*Elanus leucurus*). Four of these species require specialized habitats that do not occur on the project site, such as steep, rocky cliffs (black swift), offshore islands (California brown pelican); grasslands adjacent to sufficiently deep freshwater seasonal wetlands and ponds (California tiger salamander); tall stands of eucalyptus (*Eucalyptus* sp.), Monterey cypress, Monterey pine (*Pinus radiata*), and western sycamore trees (*Platanus racemosa*) [monarch butterfly].

Of the 10 special-status wildlife species known to occur in the vicinity of the project site, four have been recorded on the project site (California red-legged frog, steelhead, western pond turtle, and white-tailed kite). While not detected on the project site, the site provides suitable habitat for black legless lizard and coast range newt, and potentially suitable habitat for Smith's blue butterfly. A description of these species is included below, including the species' distribution, habitat, life cycle, threats to the species, current habitat conservation efforts, and potential impacts to the species resulting from implementation of the proposed project.

Black Legless Lizard (Anniella pulchra ssp. nigra)

The black legless lizard (BLL) is a small, slender lizard, with smooth, shiny scales, a blunt tail, and no legs. The BLL burrows in loose, sandy soils, and is known to occupy sand dunes as well as other sandy-soiled areas such as oak or pine-oak woodland, chaparral, wooded stream edges, and desert-scrub.

BLL is known only from the Monterey Bay area and is a state Species of Special Concern. Major threats to this species include habitat loss due to agriculture, development, sand mining, recreation, and the introduction of exotic plants such as ice plant.

The closest record for this species occurs in the immediate vicinity of the project (the exact location is suppressed by CNDDDB and is unavailable for public viewing) (CNDDDB Occurrence No. 22). The project site provides suitable habitat for this species, and as such, the implementation of the proposed project has the potential to result in adverse impacts to BLL, both directly (physical impacts to individual BLL) and indirectly (temporary alteration of suitable habitat). These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

California Red-legged Frog (Rana draytonii)

The California red-legged frog (CRLF) has coarsely granular skin, with coloring that ranges from brown, to grey, to olive, to reddish, with dark, irregular blotches. CRLF is a highly

aquatic species, generally staying close to their aquatic habitat: streams and creeks, ponds, marshes, seeps, and springs. Ideal CRLF habitat includes aquatic breeding areas embedded within a matrix of riparian and upland dispersal habitats. Dispersal habitat generally includes moist, shaded areas with vegetation that provides cover as a protection from predators and to prevent desiccation; these frogs often travel along riparian corridors and can be found adjacent to aquatic habitats (USFWS 2002).

CRLF has sustained a 70 percent reduction in its geographic range as a result of degradation and loss of its habitat through agriculture, urbanization, mining, overgrazing, recreation, timber harvesting, non-native plants, impoundments, water diversions, degraded water quality, use of pesticides, and introduced predators (Jennings et al. 1992). CRLF was listed as federally threatened in 1996 (Federal Register 61:25813-25833), with critical habitat originally designated for this species in 2001 (Federal Register 66:14626-14674). RLF is currently state-listed as a Species of Special Concern.

A 2001 record for this species documented CRLF at multiple sites throughout the project site (CNDDDB Occurrence No. 472). The implementation of the proposed project has the potential to result in adverse impacts to CRLF, both directly (physical impacts to individual CRLF) and indirectly (temporary alteration of habitat). These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Coast Range Newt (Taricha torosa ssp. torosa)

The coast range newt (CRN) is a stocky, medium-sized newt with rough, granular skin. CRN is a largely fossorial species, spending much of the year in underground refugia in upland mesic woodlands, but can be found travelling overland in moist conditions year-round. Migration to/from breeding areas is generally initiated by the first rains of fall, with many individuals migrating from their upland habitat as far as 2 miles to breeding areas. Breeding occurs in ponds, reservoirs, and streams. CRN is known to occur in scattered populations along the coast from Monterey County southward through southern California. It is a state Species of Special Concern, threatened by habitat loss and degradation, and predation by non-native introduced fish and crayfish.

The closest record for this species occurs approximately 2.4 miles southeast of the project site (CNDDDB Occurrence No. 70). The project site provides suitable habitat for this species, and as such, the implementation of the proposed project has the potential to result in adverse impacts to CRN, both directly (physical impacts to individual CRN) and indirectly (temporary alteration of suitable habitat). These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Monterey Dusky-Footed Woodrat (Neotoma macrotis ssp. luciana)

The Monterey dusky-footed woodrat (MDFW) is a large-sized wood rat with a blunt nose, long whiskers, and a scantily haired tail. MDFW build large houses of sticks, leaves, and other debris on the ground or in trees; with the exception of females with young, each stick house generally supports just one adult. MDFW is known to occur in dense oak woodlands, riparian woodlands, and cooler chaparral habitats in coastal California from Monterey Bay

to Morrow Bay. It is a state Species of Special Concern, threatened by habitat loss and degradation due to coastal development.

While no records for MDFW occur within 3 miles of the project site, several woodrat nests were observed on the project site during the September 2017 site investigations. As such, the implementation of the proposed project has the potential to result in adverse impacts to MDFW, both directly (physical impacts to individual CRN) and indirectly (temporary alteration of occupied habitat). These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Smith's Blue Butterfly (Euphilotes enoptes ssp. smithi)

Smith's blue butterfly (SBB) is a small-sized butterfly with a wing span of just under 1 inch. SBB's life history is tied to its host plant(s): seacliff buckwheat (*Eriogonum parvifolium*) and seaside buckwheat (*Eriogonum latifolium*). Larvae feed on the flowers of these host plants, adults feed on the nectar and use them as mating sites (Black and Vaughn 2005). Adult SBBs can be seen between late mid-June through early September (this timing is synchronized with the flowering of their host plants). Historically, SBB occurred in scattered populations along the California coast from Monterey Bay to Point Gorda. However, this range has been greatly reduced due to habitat loss from development and recreation, and invasion of exotic plants introduced for beach stabilization purposes.

SBB was listed as federally endangered in 1976 (Federal Register 41:22041-22044). Critical habitat was proposed for SBB in 1977 (Federal Register 42:7972-7976), but was never designated. The *Smith's Blue Butterfly Recovery Plan* (SBB Recovery Plan) was approved and published in 1984 (USFWS 1984). The SBB Recovery Plan identifies existing populations and strategies to preserve and protect the species. Specifically, when the 18 existing population locations (or 18 equivalent sites) listed in the SBB Recovery Plan are protected, managed, and appear to support healthy populations of SBB, the species can be determined "recovered," and be delisted. The project site does not occur within any of the 18 identified sites and does not provide the quality of coastal dune or cliff/chaparral habitat necessary to be considered an equivalent site.

SBB is not known to occur on or adjacent to the project site, however four records for this species occur within 3 miles of the project site. The closest record of SBB is for individuals observed approximately 1.3 miles east of the project site on preserved land within the Palo Corona Regional Park. Dune buckwheat, one of SBB's host plant species, has been observed in close proximity to the project site (0.3-mile north of the project site, adjacent to the Carmel River State Beach parking lot). While the project site provides marginal habitat for SBB, no buckwheat species of any kind were observed on the project site during the September 2017 site investigation. The presence of SBB is correlated with the presence of their host plant. The presence of the host plant, however, is not indicative of presence of SBB, as the range of the host plant species is much larger than the range of the butterfly. Regardless, in the absence of thorough botanical surveys, the presence of SBB host plants and the presence of SBB cannot be ruled out. The potential for this species to occur on the project site is low. As such, the implementation of the proposed project has the potential to result in adverse impacts to SBB, both directly (physical impacts to individual SBB) and

indirectly (temporary alteration of occupied habitat). These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Steelhead (South-Central California Coast DPS) (Oncorhynchus mykiss ssp. irideus)

In North America, steelhead are found in the Pacific Ocean and associated tributaries from southern California to Alaska. Steelhead are anadromous, with two-year-old smolts generally migrating from freshwater to sea and returning to freshwater after two years to spawn. The steelhead species is divided into 10 Distinct Population Segments (DPSs) based on location. The locally occurring population is the South-Central California Coast DPS (SCCC Steelhead). Steelhead utilize the Carmel River Lagoon throughout the year. In the Carmel River, adult migration in the river is delayed until the sandbar at the mouth of the Carmel River is breached in January to April but may start as early as December and extend into May. The fish then travel upstream to spawning habitat in the Carmel River and peak spawning occurs from December through April. After spawning, eggs incubate 3 weeks to 2 months and fry emerge post-hatch 2 to 6 weeks in spring or early summer. Juvenile steelhead rear in the Carmel River and Carmel River Lagoon for 1 to 2 years before smolting and entering the ocean (Alley 2013). The southern arm of the lagoon is usually the deepest portion of the lagoon during the summer months, thus the area is likely to provide refuge for juvenile steelhead when the river flows cease and the lagoon size decreases. Following smolt migration, the Carmel River Lagoon provides steelhead rearing habitat from March to early June and primarily in April and May. Smolts reside in the lagoon approximately 2-3 weeks or more before entering the ocean (Alley 2014). Juvenile steelhead continued to enter the lagoon after the March to June period as long as there is stream flow connecting the lower river to the lagoon. These fish rear in the lagoon through the summer-fall period and utilize the south arm particularly when volume and depth in the main embayment is limited in late summer (Casagrande, NMFS, personal observations, 2001 -2006).

Threats to SCCC steelhead include the loss of fresh water and estuarine habitat, periodic poor ocean conditions, and land-use practices impacting watershed processes. The SCCC steelhead was listed as federally threatened in 2006 (Federal Register 71:834-862), with critical habitat designated for the species in 2005 (Federal Register 70:69348-69350).

The species has been well documented within the Carmel River and within the Carmel River Lagoon. SCCC steelhead smolt migrate downstream from the Carmel River to the Carmel River Lagoon where they reside prior to entering the ocean; this migration is heaviest from March to May. As the proposed project will temporarily impact the south arm of the Carmel River Lagoon, implementation of the proposed project has the potential to result in adverse impacts to SCCC steelhead, both directly (physical impacts to individual fish) and indirectly (temporary alteration of occupied habitat and acoustic impacts). These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Western Pond Turtle (Emys marmorata)

The western pond turtle (WPT) is a small, fairly flat-bodied turtle, with an olive, brown, or black carapace (dorsal “shell”) with yellow dots, splotches, or lines and a plastron (ventral

“shell”) that is generally yellow with dark splotches. WPT generally overwinter in upland habitats near permanent or intermittent waters such as rivers, creeks, small lakes/ponds, marshes, and reservoirs. WPT is a state Species of Special Concern and was petitioned for federal listing in 2012. Threats to the species include habitat loss and degradation, competition with non-native invasive turtle species (red-eared sliders and painted turtles), and predation by bullfrogs.

A 2001 record for this species documented two individuals on the project site (CNDDDB Occurrence No. 1108). The project site provides suitable habitat for this species, and as such, the implementation of the proposed project has the potential to result in adverse impacts to WPT, both directly (physical impacts to individual WPT and their nests) and indirectly (temporary alteration of suitable habitat). These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

White-tailed Kite (Elanus leucurus)

The white-tailed kite (WTK) is a medium-sized raptor with a wing span of approximately 39 inches. This species is easily identified by its primarily white body with a grey back and wings and red eyes. WTK forage predominantly in open grasslands, agricultural fields, and emergent wetlands. It is a state Fully Protected species, threatened by habitat loss and degradation due to development and agriculture.

Several WTK were observed on the project site during the September 2017 site investigations. While no nesting WTK or active or abandoned raptor nests were observed onsite during these surveys, the surveys were not conducted during the nesting season and were not sufficiently thorough to be considered protocol-level nesting raptor surveys. The project site provides suitable nesting habitat for this species, and as such, the implementation of the proposed project has the potential to result in adverse impacts to nesting WTK, both directly (physical impacts to individual WTK) and indirectly (disturbances that would cause abandonment of eggs or young). These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

Other Nesting Birds

The trees, shrubs, and bulrush on the project site provide suitable nesting habitat for a variety of raptors and passerines. As such, the implementation of the proposed project has the potential to result in adverse impacts to MBTA protected- and California Fish and Game Code protected-species, both directly (physical impacts to individuals) and indirectly (disturbances that would cause abandonment of eggs or young). These impacts can be reduced to a **less-than-significant** level with implementation of the mitigation measures presented below.

b. Riparian or Other Habitats - *Less than Significant with Mitigation.*

The proposed project would require work within the Carmel River Lagoon and associated riparian habitat and would accordingly result in impacts to waters/habitats regulated by CDFW. As such, it is assumed that project authorization from CDFW pursuant to section 1602 of the California Fish and Game Code would be required.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) (50 CFR § 600.920(b)), requires all federal agencies to consult on activities or proposed activities that may adversely affect Essential Fish Habitat (EFH) of federally managed marine and anadromous fish species. EFH is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (Magnuson-Stevens Act: 16 U.S.C. 1802 (10)).

The waters of Carmel Lagoon are designated as EFH. The fish species using the lagoon are both resident and anadromous species and therefore year-round utilization is expected. The southern arm of the lagoon is usually the deepest portion of the lagoon during the summer months, thus the area is likely to provide refuge for fish species when the river flows cease and the lagoon size decreases. The lagoon is utilized as a forage area for juveniles and adults and nursery area for larvae and juveniles. As the project includes construction activities that would temporarily impact EFH, it is likely that NMFS would include provide conservation recommendations on minimizing impacts to EFH as part of consultation.

The State Water Resources Control Board (SWRCB) and its nine regional water boards (Regional Water Quality Control Boards) have been charged with the protection and enhancement of water quality in the state of California. Pursuant to Section 401 of the CWA and the Porter Cologne Water Quality Control Act (Porter Cologne), the Regional Water Quality Control Board (RWQCB) has authority to regulate discharges of fill and dredged material into Waters of the State. Pursuant to Porter Cologne, waters of the State are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” This is generally taken to include all waters of the U.S., all surface waters not considered to be waters of the U.S. (non-jurisdictional wetlands), groundwater, and territorial seas (with territorial boundaries extending 3.0 nautical miles beyond outermost islands, reefs, and rocks and includes all waters between the islands and the coast).

The project site contains approximately 1.813 acres of waters that would be regulated by the state government, including five wetland features (totaling 1.482 acres) and two linear features (totaling 266 linear feet, 0.331 acre). The implementation of the proposed project would result in temporary impacts to a total of approximately 0.29 acre of waters of the State. As such, it is assumed that project authorization from the RWQCB pursuant to Section 401 of the CWA would be required. With compliance with State and Federal requirements, and mitigation measures presented below these impacts would be reduced to a **less-than-significant** level.

c. Wetlands - Less than Significant Impact with Mitigation.

Section 404 Clean Water Act (CWA): Section 404 of the Clean Water Act (CWA), administered by the Corps, establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Per Section 404, a permit is required prior to discharge of fill material into waters of the United States, unless the activity is exempt from Section 404 regulation.

Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands. Wetlands are “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [33 C.F.R. 328.3(b), 51 F.R. 41250, November 13, 1986]. Wetlands can be perennial or intermittent, and isolated or adjacent to other waters.

Other waters are non-tidal, perennial, and intermittent watercourses and tributaries to such watercourses [33 C.F.R. 328.3(a), 51 F.R. 41250, November 13, 1986].

The project site contains approximately 1.813 acres of waters that would be regulated by the federal government, including five wetland features (totaling 1.482 acres) and two linear features (totaling 266 linear feet, 0.331 acre). With compliance with State and Federal requirements, and mitigation measures presented below these impacts would be reduced to a **less-than-significant** level.

d. Wildlife Movement Corridors – *Less than Significant Impact.*

A wildlife corridor is an area of habitat adjoining two or more larger areas of similar wildlife habitat, often connecting wildlife populations separated by natural or created activities, disturbances, or structures. Wildlife corridors are used by individuals and populations for dispersal and migration, allowing for genetic exchange, population growth, and access to larger stretches of suitable habitats, and functionally reduce fragmentation.

The majority of the project site does not represent a regional or local migration corridor for any common or special-status wildlife species. However, the Carmel River Lagoon represents a significant part of the SCCC steelhead Carmel River migration route, with smolt residing in the lagoon (specifically in the southern arm of the lagoon which is usually the deepest portion of the lagoon during the summer months) after their Carmel River downstream migration and prior to entering the ocean.

While the sheet piles are installed to isolate the work area, they would act as a barrier to SCCC steelhead movement to/from the lagoon to/from the south arm during construction, this isolation would be temporary in nature, and would not impact SCCC steelhead migration to the ocean as the construction work window would occur during the period of time prior to the sandbar at the mouth of the Carmel River being breached (i.e., outside of the migration season for the local population of SCCC steelhead). Also, fish passage pipes would be installed to allow migration through the work area. Therefore, the project’s impacts to wildlife movement and migration would be **less than significant**.

e. Local Policies/Ordinances; g. Results in a conversion of Oak Woodlands that will have a significant effect on the environment - *Less than Significant Impact with Mitigation.*

State and local natural resource ordinances and laws, as well as local land use plans, are applicable to the proposed project; these ordinances, laws, and plans are discussed below.

Coastal Zone Management Act (CZMA) of 1972: The U.S. Congress addressed the regulation of development in the coastal zone by passing the CZMA in 1972. This act, administered by NOAA, provides for the management of the nation's coastal resources. The goal is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." The CZMA outlined the National Coastal Zone Management Program, of which 34 states including California participate. Section 307 of the CZMA, called the "federal consistency" provision, gives states a role in the federal agency decision making process for activities that may affect a state's coastal uses or resources. The CZMA encourages states to develop coastal management programs and implement the federal consistency procedures of the CZMA. Upon certification of a state's coastal management program, all federal agency activities (including federal development projects, permits and licenses, and assistance to state and local governments) affecting the coastal zone must be consistent with the enforceable policies of the state's certified program.

Coastal Act of 1976: The federal government certified the California Coastal Management Program in 1977. The enforceable policies of that document are Chapter 3 of the California Coastal Act of 1976; these policies address public access, recreation, the marine environment, land resources, development, and industrial development.

The Federal Consistency Unit of the California Coastal Commission (CCC) implements the CZMA and the Coastal Act, however, the Coastal Act was designed to be carried out by local governments through the creation and implementation of Local Coastal Programs (LCPs). The preparation of an LCP (comprised of a Land Use Plan and an Implementation Plan and certified by the CCC) is required from all coastal counties and cities for the portion of their jurisdiction that falls within the coastal zone.

In 1988, the LCP created by and for Monterey County was certified by the CCC. The LCP divided Monterey County's coastal zone into four land segments for the purposes of adequately addressing these different areas' differing characteristics and needs; the four segments are North County, Big Sur, Carmel, and Del Monte. The project area occurs in the Carmel coastal zone land segment.

Carmel Land Use Plan: The project site is located within the Carmel Coastal Segment of the Monterey County LCP. The Carmel Coastal Segment extends from Pescadero Canyon in the north to Malpaso Creek in the south. Pursuant to the Coastal Act, development within the Carmel Coastal Segment must comply with the Carmel Area Land Use Plan and the Monterey County Coastal Implementation Plan.

Only policy measures and recommendations regarding impacts to natural resources and deemed pertinent to the proposed project are addressed in this section. Policies regarding specific project requirements such as County implementation of the review process and specific action recommendations for local, state, or federal agencies are not addressed below. Similarly, policy measures and recommendations that are clearly referring to projects

or activities that are not related to the proposed project (e.g., residential, commercial, and recreational development projects) are not addressed below.

Environmentally Sensitive Habitats

General Policy 1: General Policy 1 states that “Development, including vegetation removal, excavation, grading, filling, and the construction of roads and structures, shall be avoided in critical and sensitive habitat areas, riparian corridors, wetlands, sites of known rare and endangered species of plants and animals, rookeries and major roosting and haul-out sites, and other wildlife breeding or nursery areas identified as critical. Resource-dependent uses, including nature education and research, hunting, fishing, and aquaculture, shall be allowed within environmentally sensitive habitats only if such uses will not cause significant disruption of habitat values. Only small-scale development necessary to support the resource-dependent uses may be located in sensitive habitat areas if they cannot feasibly be located elsewhere.”

The proposed project consists of preemptive work to underground the sewer and outfall pipes in order to prevent future impediments to flow within the Carmel River Lagoon as well as potential damage to pipes by floating debris within the lagoon. This work would require vegetation removal, excavation, and other temporary disturbances to riparian and wetland habitat, as well as the south arm of the Carmel River Lagoon. This development within the environmentally sensitive habitats within the project site cannot be feasibly located elsewhere as the work is location-dependent. As such, the development avoidance recommendation presented within this general policy measure does not apply to the proposed project.

General Policy 2: General Policy 2 states that “Land uses adjacent to locations of environmentally sensitive habitats shall be compatible with the long-term maintenance of the resource. New land uses shall be considered compatible only where they incorporate all site planning and design features needed to prevent habitat impacts and where they do not establish a precedent for continued land development which, on a cumulative basis, could degrade the resource.”

The proposed project consists of preemptive work to underground the sewer and outfall pipes in order to prevent future impediments to flow within the Carmel River Lagoon as well as potential damage to pipes by floating debris within the lagoon. This project would result in temporary impacts to environmentally sensitive habitats in order to maintain and improve the sustainability of the pipeline within the Carmel River Lagoon area, which is compatible with and beneficial to long-term maintenance of the Carmel River Lagoon habitat.

General Policy 5: General Policy 5 states that “Where private or public development is proposed in documented or expected locations of environmentally sensitive habitats - particularly those habitats identified in General Policy No. 1 - field surveys by qualified individuals or agency shall be required in order to determine precise locations of the habitat and to recommend mitigating measures to ensure its protection. This policy applies to the entire segment except the internal portions of Carmel Woods, Hatton Fields, Carmel Point

(Night heron site excluded), Odello, Carmel Meadows, and Carmel Riviera. If any habitats are found on the site or within 100 feet from the site, the required survey shall document how the proposed development complies with all the applicable habitat policies.”

As detailed in the sections above, field surveys conducted by JMC personnel Ms. McGarvey and Ms. Bingham (trained biologists and ecologists) were conducted on the project site to document natural resources present on and adjacent to the project site. The results of these surveys are included within this report. Mitigation measures are presented below that would ensure the protection of sensitive natural resources found on the project site. In addition, a certified arborist, approved by the County of Monterey, will conduct a tree survey and prepare their findings in a tree survey report to document impacts to trees associated with project implementation. This tree report will be provided to the County upon completion.

General Policy 6: General Policy 6 states that “The County shall require deed restrictions or dedications of permanent conservation easements in environmentally sensitive habitat areas where development is proposed on parcels containing such habitats. Where development has already occurred in areas supporting sensitive habitat, property owners should be encouraged to voluntarily establish conservation easements or deed restrictions.”

The establishment of conservation easements or deed restrictions within the project site is not necessary as the project site occurs within land owned and managed by State Parks. The proposed project would result in temporary impacts within this protected land.

Riparian Corridors and Other Terrestrial Wildlife Habitats Policy 1: Riparian Corridors and Other Terrestrial Wildlife Habitats Policy 1 states that “Riparian plant communities shall be protected by establishing setbacks consisting of a 150-foot open space buffer zone on each side of the bank of perennial streams and 50 feet on each side of the bank of intermittent streams, or the extent of riparian vegetation, whichever is greater. No new development, including structural flood control projects, shall be allowed within the riparian corridor. However, improvements to existing dikes and levees shall be allowed if riparian vegetation damage can be minimized and at least an equivalent amount and quality of replacement vegetation is planted. In addition, exceptions may be made for carefully sited recreational trails. The setback requirement may be modified if it can be demonstrated that a narrower corridor is sufficient to protect existing riparian vegetation. Riparian vegetation is an association of plant species which typically grows adjacent to freshwater courses and needs or tolerates a higher level of soil moisture than dryer upland vegetation.”

Due to the location of the proposed project, impacts to riparian habitat would be necessary in order to establish a staging area for construction equipment and temporary spoils piles necessary for project implementation. Upon completion of the project, riparian vegetation would be replanted as required by state and local permits to be issued for the project.

Riparian Corridors and Other Terrestrial Wildlife Habitats Policy 4: Riparian Corridors and Other Terrestrial Wildlife Habitats Policy 4 states that “To protect important wildlife habitat, all off-road recreational vehicle activity should be discouraged within riparian

corridors and public access should be limited to designated areas. Accordingly, roads and trails should be sited to avoid impacts to riparian habitat.”

The access road to be cleared/constructed as part of project-related activities, would be used in order for construction crews and equipment to access the pipeline replacement/undergrounding portion of the project site, and would not constitute a road or trail open for public use. As such, the avoidance recommendation presented within this general policy measure does not apply to the proposed project.

Wetlands and Marine Habitats Policy 1: Wetlands and Marine Habitats Policy 1 states that “A setback of 100 feet from the edge of all coastal wetlands shall be provided and maintained in open space use. No new development shall be allowed in this setback area.”

Unavoidable temporary impacts would be incurred to portions of three wetlands as a part of project-related activities. Restoration plantings and monitoring would be conducted within these temporarily disturbed wetlands as required by local, state, and federal project authorizations. All wetlands adjacent to project work that are not scheduled for disturbance would be protected from incidental disturbances via intervening barriers to placement of fill such as silt fencing. Setbacks around wetlands are not appropriate for this project.

Water and Marine Resources

Water Availability Policy 5: Water Availability Policy 5 states that “Any diversion of surface sources of water shall be required to submit an approved water appropriation permit from the SWRCB prior to approval of any coastal development permit except where such water appropriation permit is not required by applicable State law.”

Project implementation would require the installation of a wet cofferdam and short term, localized dewatering when the new pipeline is connected to the old pipeline. Project authorizations would be obtained from the RWQCB and the Corps prior to commencement of project-related activities that would impact surface sources of water.

Water Pollution Control Policy 1: Water Pollution Control Policy 1 states that “All dumping of spoils (dirt, garbage, refuse, etc.) into riparian corridors and other drainage courses should be prohibited.”

Project implementation would require that spoils taken from the south arm of the Carmel River Lagoon be temporarily placed within the staging areas. A plastic or wooden barrier would be in place between these spoil piles and the staging area substrate in order to protect keep these substrate materials separate. The wetland and riparian habitats to be temporarily impacted by the staging areas would be revegetated with wetland and riparian species and monitored, as required by local, state, and federal project authorizations. Revegetation work would be consistent with a Revegetation Plan to be submitted to and approved by appropriate agencies prior to commencement of project activities.

Oak Trees

Pursuant to the Monterey County Oak Protection Ordinance, the removal of trees that have been designated as “protected” requires a permission from the County Planning Department. With regard to the proposed project, protected trees include oak trees that are six inches or more in diameter at two feet above ground level. While a tree survey has not been conducted on the project site to date, and as such, impacts to protected trees have not been calculated, as the dominant habitat type on the project site is riparian woodland, it is assumed that implementation of the proposed project would result in unavoidable impacts to trees protected either by the County’s tree ordinance or CDFW policy. Impacts to protected trees would be considered a significant adverse impact, pursuant to the CEQA. The mitigation measures presented below would reduce these impacts to a **less-than-significant** level.

f. Habitat Conservation Plan/Natural Communities Conservation Plan – No Impact

No habitat conservation plans or natural community conservation plans apply to the project site. There would be **no impact** on such plans.

Mitigation Measures

Mitigation Measure BIO-1: General Avoidance and Minimization Measures

- a) Prior to project-implementation, all construction personnel working on vegetation removal, earthmoving, and/or construction activities shall attend a mandatory environmental education program, led by an approved biologist.
- b) All staging, maintenance, and storage of construction equipment will be performed in a manner to preclude any direct or indirect discharge of fuel, oil, or other petroleum products into waters of the U.S./State. No other debris, rubbish, creosote-treated wood, soil, silt, sand, cement, concrete or washings thereof, or other construction-related materials or wastes will be allowed to enter into or be placed where they may be washed by rainfall or runoff into waters of the U.S./State. All such debris and waste shall be picked-up daily and properly disposed of at an appropriate site.
- c) All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a day from the project site.
- d) Firearms shall not be allowed on the project site except for those carried by authorized security personnel, or local, state, or federal law enforcement officials.
- e) Project personnel shall not be permitted to smoke in the project area.
- f) Project personnel shall not be permitted to have dogs or cats in the project area.

- g) Pesticides of any kind shall not be used on the project site at any time during project implementation, with the exception of pre-authorized herbicide application to prevent the spread of the invasive pampas grass currently occurring on the project site.
- h) Equipment shall not be operated in areas of flowing or standing water. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to waters of the U.S./State waters may occur.
- i) All equipment including excavators, trucks, hand tools, etc., that may have come in contact with invasive plants or the seeds of these plants, shall be carefully cleaned before arriving on the site and shall also be carefully cleaned before removal from the site to prevent spread of these plants.
- j) Prior to commencement of vegetation removal or ground disturbance, invasive plant species (as identified by the California Invasive Plant Council [Cal-IPC] and the California Department of Parks and Recreation) occurring on and/or adjacent to the project site will be identified and marked with construction flagging. These plants will be removed
- k) Disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction.
- l) To minimize harassment, injury, death, and harm in the form of temporary habitat disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, equipment staging, parking, and stockpile areas.
- m) The work area shall be delineated with orange wildlife exclusion fencing in order to minimize impacts to habitat beyond the work limit. A biological monitor shall supervise the installation of protective fencing and shall conduct preconstruction inspections of the fencing daily until construction is complete to ensure that the protective fencing remains intact. Orange cyclone fencing, or other materials that can entrap small amphibians and reptiles and other special-status species, shall not be used.
- n) Wetlands temporarily impacted by construction activities shall be protected with a layer of filter fabric and clean crushed gravel to prevent unnecessary adverse effects to vegetation or wetland hydrology. This temporary fill shall be removed at the end of construction activities.
- o) Prior to any instream work, sheet piles shall be installed both up- and downstream from the area to be trenched in order to isolate the work area from the flowing stream. Any water removed from within the in-water work area shall be filtered through sediment controls and either discharged back into the lagoon (e.g., after treatment in Baker tanks) or let to infiltrate through the porous on-site soil material. At the completion of instream work, all water-diversion systems shall be removed from the work area.

- p) After construction completion, any installed by-pass pipe, sheet piles, or other related construction materials installed within the project boundary shall be removed in its entirety.
- q) Site conditions shall be returned to pre-construction contours and shall be revegetated with native habitat-appropriate species.
- r) Prior to commencement of work each day, the biological monitor shall check for animals under any equipment such as vehicles and stored pipes. In order to prevent inadvertent entrapment of terrestrial wildlife during the proposed project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials. Alternatively, an additional 2-foot high vertical barrier, independent of exclusionary fences, may be used to further prevent the inadvertent entrapment of terrestrial wildlife. If it is not feasible to cover an excavation or provide an additional 2-foot high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. Similarly, in order to prevent inadvertent entrapment of special-status aquatic wildlife during the dewatering of the work area, the intake of all pumps shall be installed outside of emergent vegetation and shall be screened.
- s) An approved biologist(s) shall be onsite during all work within the south arm of the Carmel River Lagoon and during all activities that could result in impacts to special-status species. The approved biologist shall have the authority to stop any work that may result in adverse impacts to special-status species. If determined to be necessary for project implementation and wildlife safety, only approved biologists shall capture, handle, and monitor special-status species observed onsite. Otherwise, all wildlife shall be allowed to leave the site of their own accord.
- t) All project-related ground moving activities shall be restricted to between June 15 and November 1 in order to avoid the time period when locally occurring special-status species are most likely to be migrating through the project site and the immediately surrounding area.

Mitigation Measure BIO-2: Special-Status Plants

In the Spring and Summer immediately prior to project implementation, protocol-level rare plant surveys will be conducted on the project site. Rare plant surveys will be conducted by a qualified botanist, in accordance with all applicable survey guidelines including those published by USFWS (USFWS 1996), CDFW (CDFW 2000, 2009) and CNPS (CNPS 2001). If determined to be necessary, reference site surveys will be conducted to confirm plant phenology (flowering periods).

Mitigation Measure BIO-3: Special Status Amphibians and Reptiles

The following measures are standard avoidance measures prescribed for special-status amphibians and reptiles by state and federal agencies and have been deemed appropriate to protect special-status amphibian and reptile species potentially occurring on the project site:

Within 48 hours prior to the initiation of work that may impact special-status amphibians and reptiles, a preconstruction survey for special-status amphibians and reptiles will be conducted by an approved biologist within the boundaries of the project site. The approved biologist shall investigate all areas that could be used by the special-status amphibians and reptiles for feeding, breeding, sheltering, movement, and other essential behaviors. This survey shall be likewise conducted immediately prior to commencement of project-related work that may impact special-status amphibians and reptiles. If any adults, sub adults, juveniles, tadpoles, or eggs are found, the approved biologist will contact the appropriate agencies to determine next steps.

Mitigation Measure BIO-4: Monterey Dusky-footed Woodrats

Within 30 days prior to project-related activities that could impact MDFW, an approved biologist shall conduct a preconstruction survey to locate and map the locations of all existing MDFW nests. As all of the MDFW nests on the project site are in areas that cannot be avoided by project-related activities, they shall be relocated according to standard woodrat nest relocation procedures.

Active nests shall be sufficiently disturbed to cause individual woodrats to leave the nest and seek refuge elsewhere. After nests have been thus disturbed, they shall be dismantled and reassembled outside of the project site at a sufficient distance to proposed impact areas to remain undisturbed by project-related activities. Due to work-window constraints imposed on the project by hydrologic and federal-listed species concerns, nest dismantling will take place during the breeding season. Relocation activities would be consistent with a Salvage and Relocation Plan to be submitted to and approved by CDFW prior to commencement of project activities. The Salvage and Relocation Plan will include measures to remove MDFW nests from the project site prior to project implementation, to relocate them to a suitable location outside of the project site, and to recreate suitable habitat for MDFW upon project completion.

Mitigation Measure BIO-5: Smith's Blue Butterfly

During protocol-level rare plant surveys conducted on the project site, a qualified botanist shall also search for SBB host plant species. If no SBB host plants are observed on the project site, SBB shall be surveyed for during preconstruction surveys and the biological monitor shall stop any work that may result in take of SBB. If SBB host plants are observed on the project site, unavoidable impacts to those host plants shall be mitigated by 1) hand-removal and onsite preservation of individual plants and the soils/duff beneath

them, and 2) replanting of preserved SBB host plants, and 3) inclusion of SBB host plants in the Revegetation Plan in the disturbed areas wherein SBB host plants had occurred (with SBB host plants planted at a 2:1 ratio [mitigation:impacts]).

Mitigation Measure BIO-6: SCCC Steelhead

In order to avoid auditory impacts to SCCC steelhead, all sheet piles shall be installed using only a vibratory hammer; no impact hammer shall be used. Prior to installation of sheet piles, the in-water work area shall be cleared of all potential fish species. This operation shall be overseen by an approved fisheries biologist. The approved fisheries biologist shall likewise be present if any dewatering is required, to ensure fish are not entrapped within the work area. Any fish observed shall be removed by the fisheries biologist and placed in the Carmel Lagoon, upstream of the work area.

Mitigation Measure BIO-7: Nesting Birds

If vegetation removal or ground disturbance are scheduled to occur between February 15 and August 31, a preconstruction nesting bird survey of all suitable nesting habitat on the project site and within the zone of influence (the area immediately surrounding the project site that supports suitable nesting habitat that could be impacted by the project due to visual or auditory disturbance associated with the removal of vegetation and construction activities scheduled to occur during the nesting season) shall be conducted by a qualified biologist within 14 days prior to commencement of vegetation removal or ground disturbance. If no nesting birds are observed during the survey, the vegetation removal and/or ground disturbance may commence as planned. If nesting birds are observed during the survey, a non-disturbance buffer of 50 feet for passerine birds and 250 feet for raptors shall be established. This buffer shall remain in place until such a time as the young have been determined (by a qualified biologist) to have fledged.

Mitigation Measure BIO-8: Aquatic Resources

All impacts to waters of the U.S. would be temporary and result in no net loss. In locations where wetlands would be temporarily impacted to facilitate construction access and staging, appropriate BMPs (e.g., filter fabric and gravel) shall be placed over the wetland. Following construction activities, all temporary fill shall be removed, and all trenched and graded areas would be returned to pre-construction grades. All temporarily impacted wetlands shall be re-planted with appropriate native vegetation.

Mitigation Measure BIO-9: Protected Trees

A County-approved arborist shall conduct a tree survey of the project site to document all existing trees and to determine impacts to trees that are protected by the County's tree ordinance as well as those that are protected due to their location within the riparian canopy (CDFW jurisdiction). Information regarding protected oak trees shall be compiled in a tree survey report and submitted to the County. Information regarding riparian canopy impacts will be provided to CDFW and the Central Coast RWQCB. It is likely that

tree replacement would be required to mitigate impacts from the removal of protected trees; this replacement ratio shall be determined in coordination with the County and CDFW. Revegetation work would be consistent with a Revegetation Plan to be submitted to and approved by appropriate agencies prior to commencement of project activities. In addition, all trees not scheduled for removal or trimming shall be protected from damage by the installation of exclusion fencing around the trees' dripline.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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V. CULTURAL RESOURCES – Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Disturb any human remains, including	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Background:

A cultural resources study was prepared for the project by Pacific Legacy (January 2018 – on file at CAWD offices or review by authorized persons). The Pacific Legacy study included archival and records search was conducted within a 0.25-mile buffer area around the Project area by staff at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University and site inspections. The literature search included a review of:

- The Historic Properties Directory (California Office of Historic Preservation 2015);
- The California Inventory of Historic Resources (State of California 1976);
- California Historical Landmarks (California Office of Historic Preservation 1996);
- California Points of Historical Interest listing May 1992 (State of California 1992); and
- The National Register of Historic Places (Directory of Determinations of Eligibility, California Office of Historic Preservation, Volumes I and II, 1990; Office of Historic Preservation Computer Listing 1990 and updates).

The archival and records search revealed that 12 prior cultural resources studies encompassed portions of the Project area, while a further 52 studies had been conducted outside of the Project area but within the 0.25-mile buffer. Of the 12 prior studies that covered a portion of the Project area, seven involved reconnaissance, one involved a cultural inventory, three involved archaeological monitoring, and one involved excavation.

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outside of the Project area but within the 0.25-mile buffer. Of the 12 prior studies that covered a portion of the Project area, seven involved reconnaissance, one involved a cultural inventory, three involved archaeological monitoring, and one involved excavation.

Archival and records searches revealed that a portion of one cultural resource (P-27-000150) intersected the Project area while a further five resources had been previously recorded within the 0.25-mile buffer (see Table 2). P-27-000150 (CA-MNT-14) is a prehistoric resource. The site was subject to subsurface excavation by Garlinghouse et al. (2009) and recommended eligible for the California Register of Historical Resources (CRHR). The resource was thought to have been occupied during the Early Period (5500 – 2600 B.P.) with intermittent occupation in later periods. Two additional resources exist within 0.25 miles of the Project area (P-27-000562; P-27-000714). P-27-000714 is thought to be associated with P-27-000150. The two sites are thought to have been separated by the original installation of the underground wastewater pipeline being modified during the current Project. The remaining three resources within 0.25 miles of the Project area are mission period associated structures and sites, including Mission San Carlos (P-27-000154), the Mission Orchard House (P-27-002116), and the Mission Ranch (P-27-002087H).

Pedestrian archaeological survey of the Project area was conducted by Pacific Legacy archaeologist Christopher Peske on December 18, 2017, and January 15, 2018 (see Attachment A, Figure 2). The January 15 survey was completed after the sandbar was breached although a large portion of the survey was still inundated. The purpose of the surveys was to identify cultural resources that may be adversely impacted by ground disturbing activities associated with the Project. The survey determined that the Project area does not directly intersect the midden within P-27-000150; however, material from the resource has tumbled downhill into the Project area. Approximately 4.4 acres of the Project area were not observed due to dense vegetation in portions and inundation of portions of the Project area.

Further inspection of the area around P-27-000150 near the Project, when the Carmel River sandbar was breached and waters receded, was conducted on January 15, 2018. This study included subsurface probing to determine the presence or absence of cultural materials in this area that are otherwise obscured by sedimentation or marsh vegetation. Two auger bores were placed in the section of the Project area that overlaps the boundary of site P-27-000150. Both bores were placed where the presence of shell material was noted on the surface and were designed determine if subsurface cultural material extended into the Project area. No cultural material was identified beneath the surface in either bore.

a. Historic Resources – *No Impact*.

As described in Item a), above, the only historic resources within 0.25 miles of the Project area are mission period associated structures and sites, including Mission San Carlos (P-27-000154), the Mission Orchard House (P-27-002116), and the Mission Ranch (P-27-002087H). The project does not propose any construction activities that have the potential to affect any of these resources. Therefore, it would have ***no impact*** to historic-era resources.

b, d. Archaeological Resources and Human Remains – *Less than Significant with Mitigation*

Although the site investigations did not find evidence of archaeological materials or human remains on the site, there is the potential that ground disturbing activities may reveal subsurface deposits not readily visible during our field inspection. An evaluation of the site conducted by Garlinghouse et al. (2009) showed that an intact sub-surface portion of the site exists near the mouth of the Carmel River. The site has been recommended as significant under the CEQA, making it eligible for inclusion in the CRHR (Garlinghouse et al. 2009). The project construction activities could impact this resource, if encountered during earth-moving activities. Borings did not find evidence of this resource on the project site. However, due to the limited extents of auger bore testing, there is the potential that further ground disturbing activities may reveal subsurface deposits not identified during the field investigation. Mitigation Measures CULT 1 and CULT-2 would reduce this impact to a ***less-than-significant*** level.

c. Paleontological Resources - *Less than Significant*

Due to the location of the project in an active river channel, the likelihood of encountering paleontological resources is low. Therefore, this impact is considered **less than significant**.

Mitigation Measures

Mitigation Measure CULT-1 - Archaeological Resources. Prior to initiating ground disturbing activities associated with the Project area, construction personnel should be alerted to the possibility of encountering buried prehistoric or historic period cultural material. A qualified archaeologist will conduct cultural sensitivity training prior to the start of construction activities. Personnel should be advised that, upon discovery of buried archaeological deposits, work in the immediate vicinity of the find should cease and a qualified archaeologist should be contacted immediately if one is not already present.

In addition, archaeological monitoring by a professional archaeological monitor shall be conducted during vegetation removal and grubbing to allow for inspection of areas not observed during the cultural resources survey.

In the event any cultural deposits are located the state park archaeologist shall be contacted immediately (for the staging area clearing and dredging/excavation). If a find is identified, plans for the treatment, evaluation, and mitigation of impacts to the find shall be developed if it is found to be NRHP and/or CRHR eligible. Potential cultural materials include prehistoric and historic period artifacts and remains. These may consist of, but are not limited to:

- Historic period artifacts, such as glass bottles and fragments, tin cans, nails, ceramic and pottery sherds, and other metal objects;

- Historic period features such as privies, wells, cellars, foundations or other structural remains (bricks, concrete, or other building materials);
- Flaked-stone artifacts and debitage, consisting of obsidian, basalt, and/or chert;
- Groundstone artifacts, such as mortars, pestles, and grinding slabs;
- Dark, almost black, soil with a “greasy” texture that may be associated with charcoal, ash, bone, shell, flaked stone, groundstone, and fire-affected rock; and,
- Human remains.

Mitigation Measure CULT-2 – Human Remain. If human remains are encountered during construction, work in that area shall cease and the Monterey County Coroner must be notified immediately. If the remains are determined to be Native American, the NAHC shall be notified within 48 hours as required by Public Resources Code 5097. The NAHC shall notify the designated Most Likely Descendant, who shall in turn provide recommendations for the treatment of the remains within 24 hours.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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VI. GEOLOGY AND SOILS – Would the project:

a) Expose people or structures to 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 California Geologic Survey Special Publication 42.

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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ii) Strong seismic ground shaking?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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iii) Seismic-related ground failure, including liquefaction?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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iv) Landslides?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Result in substantial soil erosion or the loss of topsoil?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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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?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Background:

Geology

The project area in the Carmel Lagoon and east of the lagoon is comprised of younger floodplain deposits laid down by the Carmel River, comprised of fine silt and sand with occasional discontinuous clay layers. These deposits are typically less than 20 feet thick and are underlain by older floodplain deposits. The pumping plant area on the west side of the lagoon is underlain by granodiorite (granitic rock).

Seismicity

The greater San Francisco/Monterey Bay Area is seismically dominated by the active San Andreas Fault system, the tectonic boundary between the northward moving Pacific Plate (west of the fault) and the North American Plate (east of the fault).

The proposed project vicinity is transected by the Cypress Point Fault, which is not considered active. The proposed project site is not located within an Alquist-Priolo Earthquake Fault Zone and no mapped active faults are known to cross the proposed project site. The nearest fault is the Monterey Bay/Tularcitos Fault approximately 4.6 miles to the northeast. The probability of ground surface rupture at the proposed project site due to displacement is considered low. However, the proposed project site is located in a region of high seismicity. It is anticipated that during the useful life of the proposed project, the proposed project area will be subject to strong ground shaking. It is also anticipated that the area will periodically experience small to moderate magnitude earthquakes¹³.

Discussion:

a) i, ii, iii Fault Rupture, Ground Shaking, Ground Failure - *Less than Significant Impact*. No fault rupture is likely at the site. The project area is subject to high ground shaking in the event of a major earthquake on nearby faults. The young alluvium has a “high” liquefaction susceptibility, while the older alluvium has a “moderate” liquefaction susceptibility. Bedrock and upland areas are mapped as having a “low” liquefaction susceptibility. There are no known historic liquefaction sites from the 1906 and 1989 earthquakes. The proposed project lies within moderate to high liquefaction susceptibility zones¹⁴. Lateral spreading is horizontal movement of soil toward a free face, such as a creek bank, typically associated with liquefaction. Lateral spreading generally occurs in shallow groundwater areas with unsupported embankments including natural creek banks, fill slopes, and levees, and is possible at the edge of the lagoon.

¹³ Denise Duffy & Associates, Inc., Carmel Lagoon EPB, SRPS, and ISMP Project Public Draft Environmental Impact Report, December 2016.

¹⁴ Ibid

Any damage to the proposed pipeline due to seismic shaking and localized liquefaction would be temporary and would be repaired as needed.

a. iv. Landslides – No Impact. Most of the proposed pipeline would be buried on nearly level topography in a lagoon bottom. No landslides are possible in this area. The portion of the pipeline climbing up the west bank to the pumping station would be on bedrock, which also is not subject to landslide hazards. The landslide potential on the project site is considered to be low, as indicated by Monterey County’s Landslide Hazard Map.

b. Soil Erosion - Less than Significant Impact. Soil erosion hazards could occur during construction, especially during subsurface trenching and prior to revegetation of the access road and staging areas. Soil exposed by roadway and staging area clearing and leveling activities could be subject to erosion if exposed to heavy rain. The project applicant would create and implement an erosion control plan prior to the start of grading activities, as described in BMP-3 in the Project Description. Potential for soil erosion in the lagoon during trenching is addressed in the Hydrology and Water Quality section of this document. Soil erosion and/or loss of topsoil during construction and grading activities would be reduced to a *less-than-significant* level with implementation of this BMP.

c. Unstable Soil - Less than Significant Impact. See discussion of potential soil instability associated with seismic shaking in response to Item a, above. The pipeline would not result in, or be subject to, non-seismically induced differential settlement or other soil instabilities. Therefore, this impact would be *less than significant*.

d. Expansive Soil - Less than Significant Impact. Site soils would be used as trench backfill. Because the project trench would be in alluvium under the lagoon, soils would be continually wetted and expansion/contraction cycles would not be likely to occur. Any unsuitable soils would be stabilized or replaced by suitable imported fills. Therefore, this impact would be *less than significant*.

e. Inadequate Soils for Disposal - No Impact. The project would not include the installation of septic tanks or alternative wastewater disposal systems and would therefore have *no impact* on soils related to septic tanks or alternative wastewater disposal systems.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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**VII. GREENHOUSE GAS EMISSIONS –
Would the project:**

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Background

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), ozone, and water vapor.

While the presence of the primary GHGs in the atmosphere are naturally occurring, CO₂, CH₄, and N₂O are also emitted from human activities, accelerating the rate at which these compounds occur within earth’s atmosphere. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. Greenhouse gases are typically reported in units of “carbon dioxide-equivalents” (CO₂e).¹⁵

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity (California Climate Change Portal, accessed September, 2015.)

The MBARD has not developed a threshold of significance for GHG emissions. The MBARD recommends using an adopted GHG significance threshold from an adjacent air district, such as the Bay Area Air Quality Management District (BAAQMD) or the San Luis Obispo

¹⁵ Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in “carbon dioxide-equivalents,” which present a weighted average based on each gas’s heat absorption (or “global warming”) potential.

County Air Pollution Control District (SLOCAPCD). The BAAQMD does not have an adopted GHG emissions threshold for construction, therefore the SLOCAPCD Bright-line threshold of 1,150 metric tons of CO₂e per year was used in this analysis. The SLOCAPCD recommends quantifying emissions from construction-only projects (e.g. roadways, pipelines, etc.), amortizing construction emissions over the life of the project and comparing the amortized construction emissions to the Bright-line threshold.¹⁶ The SLOCAPCD recommends using a 25-year project life for industrial facilities.

a. Generate greenhouse gas emissions – *Less than Significant Impact.*

The proposed project would temporarily generate GHG emissions from construction equipment, haul trucks, and worker automobiles. The proposed project would not generate new GHG emissions from operations. Construction emissions were estimated with the SMAQMD Road Construction Emissions Model (Version 8.1.0). Estimated GHG emissions from construction of the proposed project would be approximately 313 metric tons of CO₂e in 2018 or approximately 12.5 metric tons of CO₂e per year amortized over the lifetime of the proposed project (assumed to be 25 years). Thus, construction emissions would be below the Bright-line significance threshold of 1,150 metric tons of CO₂e per year and the impact would be **less than significant**.

b. Conflict with an applicable plan – *Less than Significant Impact.*

Monterey County does not have an adopted Climate Action Plan therefore, the proposed project would result in a significant impact if it would be in conflict with AB 32 State goals. The proposed project is a replacement project and would only temporarily generate GHG emissions over the four-month construction period. The proposed project has been reviewed relative to AB 32 measures and it has been determined that the proposed project would not conflict with the goals of AB 32. Thus, the proposed project would have a **less-than-significant impact**.

¹⁶ SLO County APCD, *Greenhouse Gas Thresholds and Supporting Evidence*.

<http://www.slocleanair.org/images/cms/upload/files/Greenhouse%20Gas%20Thresholds%20and%20Supporting%20Evidence%204-2-2012.pdf>

VIII. HAZARDS AND HAZARDOUS MATERIALS – would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Background:

Portions of the project corridor have historically been used as a utility corridor and railroad line, and some soils contamination may be present.

Discussion:

a. Hazardous Materials Transport – No Impact. The proposed project is the replacement of an existing wastewater pipeline and treated wastewater outfall pipe, and would not involve the transport of any new hazardous materials. The project would eliminate the potential hazards associate with rupture of the existing degraded pipelines.

b. Hazardous Materials Accidental Release - Less than Significant Impact. Project construction may involve the use of equipment, fuels, solvents, welding equipment, and other sources of potentially hazardous materials. BMP-4 in the Project Description, which is incorporated into the project, includes measures to minimize the risk of release of hazardous materials, and contamination of soil or groundwater by any such releases. This BMP would reduce the potential impact of release of hazardous materials to a **less-than-significant** level.

c. Hazardous Materials Emissions – No Impact. Two schools are located within one quarter mile of the proposed project’s access road: Junipero Serra School and Carmel River Elementary School. The project is replacement of the degraded treated-wastewater outfall and sewage force main, which is intended to reduce the hazards of accidental emissions of these wastes to the surrounding Carmel River and Lagoon waters, and to the Pacific Ocean immediately downstream. Therefore, the project would reduce this potential impact compared to existing conditions, and **no impact** would occur.

d. Hazardous Site List – No Impact. Historic and current land uses within the proposed project area could be associated with the use, generation, or disposal of hazardous materials. Designated land uses within the proposed project area are a mix of agriculture and open space surrounded by commercial and residential use in the surrounding urban area. The proposed project area has historically been used for agricultural production that has now been converted to open space, wetland and riparian habitat. Past agricultural operations may have involved the use of petroleum fuels, pesticides, and fertilizers. Pesticides and fertilizers are applied directly to the soil, and potential releases of petroleum fuels can occur through spills and leaks from storage tanks. The CAWD Wastewater Treatment Facility is located adjacent to the proposed project access road. Chemicals

associated with the treatment plant may be considered hazardous materials and are subject to appropriate regulations. The project would have no impact to these materials.

A regulatory database search for past hazardous material spills on properties within 1-mile of proposed project components was conducted¹⁷. The State Water Resources Control Board (SWRCB) database shows two incidents of leaking underground storage tanks (UST) near the site, at the CAWD Treatment Plant. Gasoline was discovered in the monitoring well, adjacent to the UST. Subsequently, the tanks were removed, the area remediated, and the case has been closed since April 2003. There are no instances of open and ongoing cases reported. The database search also found no reported incidents of hazardous materials being released in the immediate vicinity of the proposed project.

e. Public Airport Hazards - No Impact. The closest public use airport to the project site is Monterey regional Airport, approximately 6-7 miles northeast of the project site. The project is a sewer line replacement that would underground existing above-ground lines. Therefore, it would not affect or be affected by airport uses and **no impact** would result.

f. Private Airport Hazards - No Impact. There are no private airstrips in the project vicinity. The project is a sewer line replacement that would underground existing above-ground lines. Therefore, it would not affect or be affected by private airport uses and **no impact** would result.

g. Emergency Response Plan - No Impact. The project is a sewer pipeline replacement, mostly in a lagoon. The primary construction access would be via a private roadway. Therefore, it would not interfere with any roadways or other emergency access-ways. Therefore, **no impact** would result.

h. Wildland Fires - No Impact. California Department of Forestry and Fire Prevention (CAL FIRE) maps identify fire hazard severity zones in the State. Portions of nearby City of Carmel are designated a very high fire hazard severity zone (CAL FIRE, 2007)¹⁸. The proposed project area is not in a designated high or very high severity zone. The project itself is sewer line replacement, mostly in a trench under a lagoon, which would have no potential adverse effect on wildfires. Therefore, the proposed project would not expose people or structures to significant risks associated with wildland fires, and **no impact** would result.

¹⁷ California State Water Resources Control Board "GeoTracker" database, available online at: <http://geotracker.waterboards.ca.gov/>, and California Department of Toxic Substances Control "EnviroStor" database, available online at: <http://www.envirostor.dtsc.ca.gov/public/>.

¹⁸ http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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IX. HYDROLOGY AND WATER QUALITY – Would the project:

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|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| j) Inundation by seiche, tsunami, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Background:

Hydrologic Conditions and Processes

A hydrology and water quality study was prepared for the project by Engeo (January 17, 2018; revised March 22, 2018). The report is summarized in this section and provided in full as Appendix C to this IS/MND.

The Carmel River Watershed is located within the California Coast Ranges Geomorphic Province. The entire drainage area of the watershed is located on the western slopes of the Sierra De Salinas. The northwesterly flowing Carmel River originates approximately 35 miles upstream from Carmel Bay at an elevation of 3,500 feet above sea level. Streamflow in the Carmel River is directly attributed to rainfall. According to the National Weather Service, average annual precipitation is estimated between 18 to 20 inches. Like many other watersheds along the Central California Coast, the Carmel River watershed has a typical coastal California wet-dry seasonal pattern that can vary significantly. More than 90 percent of the annual rainfall typically occurs over the watershed during the six-month period between November and April.

Before entering the Pacific Ocean, the Carmel River enters a lagoon, located at the bottom of the watershed. The lagoon and associated wetlands, which are located immediately south of the City of Carmel-by-the-Sea, cover an area of approximately 100 acres. The lagoon is generally not connected to the ocean during times of very low or zero streamflow, when ocean waves build a barrier beach (sandbar) across the mouth of the lagoon and close the outflow channel.

The lagoon is subject to seasonal fluctuations depending on how connected it is to the ocean. When river inflow is relatively low and the lagoon is not open to the ocean, a dynamic equilibrium is reached between streamflow and groundwater inflows, outflow through the barrier beach, evapotranspiration, and ocean wave overtopping. In summer, this leads to lower water surface elevations. In the fall, prior to sandbar breaching, potentially abrupt increases in water surface elevations can occur due to overtopping of the sand bar by ocean water.

As streamflow increases in the fall and early winter, lagoon water surface elevations can rise to flood stage depending on precipitation patterns. When flooding does occur, infrastructure along the northern edge of the lagoon and within the lagoon floodplain are threatened with flooding before the sandbar would typically open naturally. This dynamism results in seasonal changes in turbidity and salinity in the lagoon in terms of water quality, as well as seasonal fluctuation of surface water elevations.

The Central Coast Regional Water Quality Control Board (RWQCB) in their Basin Plan (RWQCB, 2016) has designated beneficial uses of the Carmel River as the following: municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); groundwater recharge (GWR); freshwater replenishment (FRESH); water contact recreation (REC1); noncontact water recreation (REC2); commercial and sport fishing (COMM); warm fresh water habitat (WARM); cold water habitat (COLD); wildlife habitat (WILD); preservation of biological habitats of special significance (BIOL); rare, threatened, or endangered species (RARE); migration of aquatic organisms (MIGR); and spawning, reproduction, and/or early development (SPWN). Beneficial uses of the surface water from the Carmel River Estuary include the following: GWR; REC1; REC 2; COMM; WILD; COLD; MIGR; SPWN; BIOL; RARE; and estuarine habitat (EST)(RWQCB,2016). General water quality objectives exist for each of the beneficial uses identified. Surface water quality objectives have also been identified for the Carmel River for Total Dissolved Solids, chlorine, sulfate, boron and sodium.

In terms of baseline hydrologic data related to the lagoon, the Central Coast Watershed Studies Team (CCoWS) monitored water quality in the lagoon between 2004 and 2007. Salinity, dissolved oxygen, and temperature in the lagoon vary seasonally and with depth. The CCoWS noted that the topography and lack of mixing in the lagoon creates a layer of isolated saltwater in the bottom of the south arm of the lagoon. Water quality in the lagoon is influenced by freshwater inflow from the Carmel River, tidal levels, and ocean waters over topping the sandbar. Water quality often declines late summer, fall, and early winter months when the Carmel River flows are reduced or completely cease. When inflows from the Carmel River cease, groundwater infiltration becomes the only freshwater source of water into the lagoon.

Schaaf and Wheeler estimated 100-year recurrence interval velocities in the south arm of the lagoon near the project site as between 2.4 and 4.5 feet per second. However, during summer months, water circulation in the lagoon is minimal.

According to a geotechnical report prepared by GTO Inc., surficial slopes upslope of the proposed crossing consists of artificial fill, as well as colluvium and floodplain deposits. Soils consists generally of loose sands intermixed with clay and silt material and should be considered to be potentially fast raveling during rainstorm events. Groundwater elevations are generally between 3 to 8 feet below ground surface upslope of the lagoon. Groundwater conditions are expected to vary depending on factors such as weather conditions, time of year, and water surface levels in the lagoon.

Regulatory Conditions

Federal and State Regulations

Flooding: The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE and approved agencies' studies; for coordinating the federal response to floods, earthquakes, hurricanes, and other natural or man-made disasters; and for providing disaster assistance to states, communities and individuals. FEMA prepares and distributes the Flood Insurance Rate Maps (FIRMs), which are used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including the 100-year flood zone.

The Flood Insurance and Mitigation Administration (FIMA), a component of FEMA, manages the National Flood Insurance Program (NFIP). The NFIP consist of three components: flood insurance; floodplain management; and flood hazard mapping. Nearly 20,000 communities across the United States and its territories participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in these communities. Community participation in the NFIP is voluntary. In addition to providing flood insurance and reducing flood damages through floodplain management regulations, the NFIP also identifies and maps the nation's floodplains.

Water Quality: To address the issue of changes in surface water quality as a result of development and construction activities, the federal government implemented the National Pollution Discharge Elimination System (NPDES). NPDES is an amendment of the federal Clean Water Act from 1987 that mandates that each population center obtain a permit to discharge stormwater. The limits vary by category of industry and are based on a level of treatment that uses the best available technology. Stormwater that would be discharged from the site during construction activity would be subject to regulation under the NPDES program. The California State Water Resources Board is responsible for establishing water quality standards statewide and designates the Central Coast Regional Water Quality Control Board (CCRWQCB) for regulation of discharges of wastes and runoff in this area.

Construction activities on one acre or more or that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Construction Permit (SWRCB Order No. 2009-09-DWQ; Modified 2010-0014-DWQ). The State Board established the General Construction Permit program to reduce surface water impacts from construction activities. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation.

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The Construction General Permit requires the preparation and implementation of a SWPPP for construction activities. The SWPPP must be prepared before the construction begins. The SWPPP must include specifications

for best management practices (BMPs) that would need to be implemented during construction. BMPs are measures that are undertaken to control degradation of surface water by preventing soil erosion or the discharge of pollutants from the construction area. Additionally, the SWPPP must describe measures to prevent or control runoff after construction is complete and identify the procedures for inspecting and maintaining facilities and other project elements. The required elements of a SWPPP include:

- Site description addressing the elements and characteristics specific to the site;
- Descriptions of BMPs for erosion and sediment controls;
- BMPs for construction waste handling and disposal;
- Implementation of approved local plans;
- Proposed post-construction controls; and
- Non-stormwater management.

Examples of typical construction BMPs include scheduling or limiting activities to certain times of year, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing, and fueling. The RWQCB has identified BMPs in the California Stormwater Best Management Practice Handbook (California Stormwater Quality Association, 2003) to effectively reduce degradation of surface waters to an acceptable level.

Local Regulations

The County of Monterey also has water quality protection regulation in its County Code, as follows:

- Chapter 16.08 of the Monterey County Code identifies rules and regulations to control all grading, including excavations, fills and embankments, and establishes the procedures for the issuances of grading permits. Chapter 16.08 is intended to minimize erosion as a result of ground disturbing activities.
- Chapter 16.12 (Erosion Control) of the Monterey County Code sets forth required provisions for project planning, preparation of erosion control plans, runoff control, land clearing, and winter operations; and establishes procedures for administering those provisions. The code requires that specific design considerations be incorporated into projects to reduce the potential for erosion and that an erosion control plan be approved by the County prior to initiation of grading activities.
- Chapter 16.16 of the Monterey County Code identifies rules and regulations to control development within the floodplain. Chapter 16.16 is intended to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions.

- Chapter 16.16 consists of regulations to: 1) restrict and/or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; 2) require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; 3) control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; 4) control filling, grading, dredging, and other development which may increase flood damage; and 5) prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

Discussion:

a and f. Water Quality Standards – *Less than Significant with Mitigation.*

Implementation of the project during construction and in the operations phase could degrade the existing water quality of the estuary. During the construction phase of the project, the project would remove existing concrete-filled steel piles, which support the existing pipe structure over the lagoon, and whose foundations are in the bottom estuary below the mudline. Pile removal could temporarily increase turbidity.

In-Water Work

The project intends to install sheet piles on both sides of the proposed excavation where the pipelines would be installed under and across the lagoon. The sheet piles are intended to isolate the work area and allow for trenching to install the two new pipelines below the mudline of the estuary. However, complete dewatering of the excavation would not likely be possible due to the nature of sandy soil materials found at the bottom of the lagoon, which allow high levels of seepage into the bottom of the construction area isolated by the sheet piles. The wet cofferdams, however, would contain the majority of construction water and thus reduce turbidity into the neighboring lagoon regions during installation activities. Turbidity curtains would also be installed on both sides of the proposed construction area as an additional mitigation measure, to prevent turbid water from construction activities from entering undisturbed portions of the lagoon. Fish passage between the upper and lower portions of the south arm of the lagoon would be facilitated via two 12-inch culverts. The culverts would penetrate through the sheetpiles and turbidity curtains and would be watertight to prevent turbid water from entering undisturbed areas of the lagoon. The pipes would be placed at different vertical elevations to maintain the general water quality stratigraphy found in the lagoon during summer months. Mitigation Measures HYDRO-2 and 3, implementation of a Construction Diversion and Dewatering Plan (DDP) would reduce the potential impact of in-water construction on turbidity and other water quality indicators to a **less-than-significant** level.

Upland Dewatering

In addition, groundwater dewatering would be done at the tie-in points of new pipes in the uplands, which are located on the east and west sides of the trenching area. Mitigation Measures HYDRO-1 through 5, and the BMPs described in the Project Description, would reduce the potential impact of

discharge of dewatering water from upland sites on turbidity and other water quality indicators to a **less-than-significant** level.

Erosion

Implementation of the project during construction could increase erosion in overland areas caused by earthmoving activities during construction. In general, water quality impacts would be significant if a water quality standard were to be exceeded or a beneficial use were to be impacted due to changes in water quality caused by erosion and/or siltation.

Earthmoving activities associated with proposed project construction would temporarily alter existing drainage patterns to some degree. Exposed soil from excavated areas, stockpiles, and other areas where ground cover would be removed could be inadvertently transported off-site by wind or water. If not properly managed, this could increase sediment loads in surface water bodies, some of which are located on-site (e.g., the lagoon), and adversely impact the surface water quality, thereby adversely affecting water quality and designated beneficial uses. Mitigation Measures HYDRO-1 and 5, and the BMPs described in the Project Description, would reduce the potential impact of erosion on turbidity and other water quality indicators to a **less-than-significant** level.

Spoils Storage

During construction, dredge spoils from excavation work would be stockpiled on either side of the lagoon. Excess water from the spoils would filter through sediment controls and either discharge back into the lagoon or be allowed to infiltrate through the porous on-site soil material. Mitigation Measures HYDRO-2 through 4, and the BMPs described in the Project Description, would reduce the potential impact of discharge of water from spoil stockpiles on turbidity and other water quality indicators to a **less-than-significant** level.

Hazardous Materials release

Upland construction activities could also result in the accidental release of hazardous construction chemicals, such as adhesives, solvents, lubricants, and fuels. If not managed appropriately, these chemicals could adhere to soil particles, become mobilized by rain or runoff, and flow to downstream water bodies, including Carmel Bay/Pacific Ocean, degrading water quality. Mitigation Measures HYDRO-1, below, and the BMPs described in the Project Description would reduce this potential impact to a **less-than-significant** level.

Pipeline Rupture

Lastly, if a pipeline rupture were to occur after the project is finished, wastewater could potentially enter the estuary or groundwater below the estuary through the proposed force main or outfall lines, and potentially impact and degrade the water quality of the estuary system. The project would reduce the potential impact of rupture compared to existing conditions, and therefore would have **no impact**.

b. Groundwater Supplies – Less Than Significant Impact. Implementation of the project could significantly deplete groundwater supplies if long-term groundwater use would occur as a result of implementation of the project. Construction of the proposed project would result

in a limited, temporary, and minor dewatering operation on either end of the proposed pipe. No groundwater use is proposed with operation of the proposed project.

Implementation of the project could substantially interfere with groundwater recharge if post-project conditions significantly modified areas on site where existing surface/groundwater exchanges take place. The underground pipe system would create a potential barrier underneath and on the sides of the lagoon where some groundwater recharge is likely occurring. However, the size of the permanent trench would be up to 8 feet wide, which would be insignificant as compared to the entire south arm of the lagoon where groundwater/surface water interactions are occurring. Therefore, impacts related to interference with existing groundwater recharge patterns are considered to be insignificant.

Therefore, impacts related to depletion of groundwater supplies are considered to be **less than significant**.

c, d, and e. Drainage - *Less than Significant Impact with Mitigation.* The CAWD would likely dewater a portion of the work area adjacent to the lagoon for construction of portions of the sewer line not directly underneath the lagoon water surface. This dewatering operation would likely lower levels in the lagoon slightly, as underground seepage would occur through the porous soil materials surrounding the excavated construction area. Water levels in the upper and lower portions of the south arm of the lagoon would be monitored during these operations to verify that lagoon water surface levels would not drop more than approximately 4 inches due to the dewatering operation. Mitigation Measure HYDRO-6, below, would assure that no significant impacts would occur if the water levels were to drop below the 4-inch threshold. Therefore, impacts related to modification of existing drainage patterns are would be mitigated to a **less-than-significant** level.

Implementation of the project could exceed capacity of existing drainage facilities if post-project imperviousness was increased as a result of the project leading to greater rainfall runoff, which could potentially raise site water surface elevations during rainstorm events. However, the project does not intend to increase imperviousness of the site after implementation. Rather, the undergrounding of the pipeline system would result in a slight reduction of site imperviousness. Therefore, impacts related to modification of existing drainage patterns or flooding would be **less than significant**.

g. Housing within Flood Zone – *No Impact.* The project does not propose any housing. There would be **no impact**.

h. Flooding – *No Impact.* By removing the piles that support the existing transmission structure in the south arm of the lagoon, the capacity of that portion of the lagoon to transmit flood flows would increase. Pier removal would also slightly lower water surface elevations in the lagoon as well by removing obstructions. The project facilities would be buried below the lagoon, and would therefore be protected from flood hazards.

i. Dam failure – *Less than Significant Impact.* There are no local reservoirs or dams whose failure would inundate the site. Failure of local levees could inundate some or all of

the project area. However, the project would have no effect on dam or levee stability, and, most of the project is a subsurface pipe, which would not likely be substantially affected by any such failures. This impact would be **less than significant**.

j. Tsunami, Seiche, or Mudflow - *Less Than Significant Impact*. Tsunamis are open sea tidal waves generated by earthquakes. Tsunami damage is typically confined to low-lying coastal areas. The proposed project site is located within the mapped tsunami inundation area (California Emergency Management Agency et al., 2009). According to the Monterey County Operational Area Tsunami Incident Response Plan (Monterey County Office of Emergency Services, 2007) a locally generated tsunami may occur if a large enough earthquake occurs in or near Monterey Bay region. Such an earthquake could produce a tsunami that reaches shore in a matter of minutes. The plan states that, within Monterey County, there is a low likelihood of experiencing a tsunami.

Because the pipeline would be relocated to a subsurface location under the lagoon, mudflow, seiche or tsunami impacts would be minimal. Therefore, impacts from inundation by seiche, tsunami, or mudflow would be **less than significant**.

Mitigation Measures

Mitigation Measure HYDRO-1: Implementation of SWPPP.

Prior to construction of the proposed project, the applicant shall demonstrate compliance with the State Water Resources Control Board Construction General Permit, including implementation of erosion and stormwater quality control measures set forth in a Stormwater Pollution Prevention Plan (SWPPP) that would prevent substantial adverse effects on water quality during construction. Requirements for SWPPP are discussed in the regulatory section above. The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD).

Mitigation Measure HYDRO-2 – Implementation of Construction Diversion and Dewatering Plan.

Because of the nature of the limited dewatering operation associated with the proposed project, the applicant would also separately demonstrate that the implementation of a temporary dewatering operation would not adversely impact lagoon water quality, nor adversely impact biological resources in the upper and lower portions of the south arm of the lagoon. We understand that the applicant may discharge any excess construction water from dewatering operations into the force main sanitary sewer system assuming minimal impact to water volumes in the lagoon. The excess water would then be subsequently delivered to their treatment plant, processed and discharged under their existing NPDES permit to operate the facility. Additional information would be set forth in a Construction Diversion and Dewatering Plan (DDP) approved by the RWQCB as well as other Federal and State agencies that regulate biological resources associated with the lagoon. The Construction DDP would be prepared by a licensed Civil Engineer in the State of California and include the following:

- Limits of dewatering and containment operation.
- Height and length of sheetpiles based on estimated lagoon water surface elevations during time of operation.
- Measures to reduce turbidity during trenching activities.
- General pumping and connection diagrams.
- Estimates of quantities to be discharged.
- Capacity and percentage of capacity used for dewatering estimates.
- Contingency plans for overtopping and pumping failure.
- Additional connectivity measures as required to reduce water quality impacts or significantly reduce water quality volumes in the upper and lower portions of the south arm of the lagoon during dewatering operations.
- Additional measures to allow fish passage between the upper and lower portions of the south arm of the lagoon during the construction, after sheet piles have been installed across the lagoon bottom. Addition of adjacent well

water and solar bees to improve water quality in the upper portion of the south arm of the lagoon.

Measures included in the DDP would reduce construction related potential impacts associated with the construction dewatering phase of the project to a less-than-significant level.

Mitigation Measure HYDRO-3 – Water Quality Monitoring Program.

A water quality-monitoring program shall be implemented to measure levels of turbidity, pH and dissolved oxygen content in the south arm of the lagoon near the site during construction operations and included in the DDP. In addition to the monitoring program, the following measures would also be incorporated to enhance water quality in the upper portion of the south arm of the lagoon:

1. To help maintain adequate dissolved oxygen levels in the lagoon, freshwater would be pumped from an existing agricultural well adjacent to Highway 1.
2. Additionally, two solar bees would be placed within the lagoon to provide oxygen at the top layer of water.

Mitigation Measure HYDRO-4 – Compliance with Section 401 and 404 Clean Water Act.

Due to the proposed project's permanent impacts in the lagoon, a regulated water of the State, under state and Federal law the project shall also demonstrate compliance with CWA Sections 404 and 401, and other waste discharge requirements of the Porter-Cologne Water Quality Control Act. This shall take place upon consultation with the USACE and RWQCBs during the project permitting phase in order to receive a federal and state level clearance prior to performing the project. These applications shall specifically evaluate the permanent proposed alignment, type and thickness of pipe casing, and any potential long-term monitoring measures required for the project to conform to state and Federal Law.

Measures included 401 and 404 permitting process would reduce permanent potential impacts associated with the implementation and operational phases of the project to a less-than-significant level.

Mitigation Measure HYDRO-5 – Grading Permit.

In addition to SWPPP measures outlined in Mitigation Measure HYDRO-1, above, prior to construction of the project, the applicant shall also receive a grading permit from Monterey County. The grading permit shall require that the applicant submit an erosion and sediment control plan specifically describing construction BMPs that shall be implemented to reduce water quality impacts associated with grading and stockpiling activities to less-than-significant levels.

Mitigation Measure HYDRO-6 – Water Level Drawdown Measures.

If more than 4 inches of water surface elevation drawdown is observed, the project would incorporate either a temporary storage tank system which would pump, treat and discharge excess construction water back into the lagoon, or create infiltration ponds near the lagoon which would transmit excess construction water back to the lagoon via subsurface flow to equilibrate water surface levels. Well water pumping also may be used to restore water levels in the lagoon.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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X. LAND USE AND PLANNING – Would the project:

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Background:

The project alignment for both the eastern access road and pipeline extends along a California State Parks easement (10 feet on either side of the existing pipeline) through Carmel River State Beach property from where the pipelines exit the treatment plant site to the pump station (sewage force main) and over the hill to the ocean (treated wastewater outfall pipe). Nearby land uses include open space associated with the State Beach, residential uses on the ridge above the pump station, and the CAWD treatment plant facility.

The project alignment is designated as Wetlands and Coastal Strand and Agricultural Preservation in the Monterey County General Plan¹⁹. It is zoned as RC-D CZ, (Resources Conservation, Coastal Zone) and CAP-D (CZ) (Coastal Agricultural Preserve, Coastal Zone) in the County Zoning Ordinance.²⁰

Discussion:

a. Division of Community – No Impact. The project pipelines would be replacing existing pipelines, would be subsurface and in existing utility easements. Therefore, the project would have no potential to alter or divide any community. There would be **no impact**.

¹⁹ Monterey County Land Use Plan, Carmel Area, as amended, March 9, 1995

²⁰ Monterey County Zoning, Coastal Implementation Plan – Title 20 (accessed October 19, 2017)

b. Plan Conflict – No Impact. The replacement sewer lines line would be permitted under all of the zoning and General Plan designations along the alignment. Therefore, the project would have **no impact** with respect to consistency with plans and policies. The project’s conformance with Biological Resources plans and policies are addressed in item e) in that section of this Initial Study.

c. Habitat Plan Conflict - No Impact. No habitat conservation plans or natural community conservation plans apply to the project site. There would be **no impact** on such plans.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XI. MINERAL RESOURCES – Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Background:

There are no known mineral resources on the site. The Open Space and Conservation Element of the Monterey County General Plan (Figure 10) does not identify any mineral resources at the project site. Sand, gravel, and petroleum are the primary mineral resources extracted in Monterey County. Construction-grade aggregate (sand, gravel, and crushed stone) is the most abundant and commonly used mineral resource.

Discussion:

a. and b. Mineral Resources - No Impact. The proposed project site contains sand; however, the proposed project site does support any mining activities and due to the biologic sensitivity of the area and its inclusion in the State Parks Wetland and Lagoon Preserve and Caltrans biological mitigation bank, future mineral extraction in this area is very unlikely. Therefore, the proposed project would not result in the loss of availability of a known mineral resource. There would be **no impact** from the project.

Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
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XII. NOISE - Would the project result in:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive ground-born vibration or ground-born noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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 expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Background:

Environmental Setting

The project site is surrounded by open space and residential uses and is approximately 900 feet east of the Pacific Ocean. The nearest sensitive receptors include residences in the Carmel Meadows neighborhood, immediately south of the southwest edge of the project area. The area of most intense construction would be in the Carmel River Lagoon, no closer than 170 feet from the nearest residences.

To quantify existing ambient noise levels in the immediate project vicinity, RCH conducted short-term (10-minute) measurements at four locations in the project site vicinity. Noise measurements were made using Metrosonics db308 Sound Level Meters calibrated before and after the measurements. Noise measurements are included in Appendix D of this IS/MND.

Figure N-1 in the Noise Appendix shows the location of the noise measurements. The noise measurements are summarized in **Table NOI-1** below. In general, the project site is a quiet location. The dominant source of existing noise in the vicinity of the project is traffic from Highway 1.

As shown in **Table NOI-1**, short-term sound level measurements at the site (conducted on Monday October 23, 2017 measured average short-term noise levels of between 46 and 52 dB in the noise monitoring locations.

Regulatory Setting

State Guidelines

The State Land Use Compatibility standards for Community Noise (Table 4 of the Noise Appendix) indicate that for Low Density Residential, a Community Noise Exposure up to 60 dB (Ldn or CNEL) is Normally Acceptable, and a Community Noise Exposure up to 70 dB (Ldn or CNEL) is Conditionally Acceptable.

Monterey County General Plan

The Safety Element of the Monterey County General Plan (Monterey County 2010) combines the state mandated safety and noise elements. It identifies sources of noise and provides policies addressing existing and foreseeable noise problems. Relevant policies include:

S-7.9: No construction activities pursuant to a County permit that exceed “acceptable” levels [according to the Land Use Compatibility Standards for Community Noise from the State Guidelines] shall be allowed within 500 feet of a noise sensitive land use during the evening hours of Monday through Saturday, or anytime on Sunday or holidays, prior to completion of a noise mitigation study. Noise protection measures, in the event of any identified impact, may include but not be limited to:

- Constructing temporary barriers, or
- Using quieter equipment than normal.

S-7.10: Construction projects shall include the following standard noise protection measures:

- Construction shall occur only during times allowed by ordinance/code unless such limits are waived for public convenience;
- All equipment shall have properly operating mufflers; and
- Lay-down yards and semi-stationary equipment such as pumps or generators shall be located as far from noise-sensitive land uses as practical.

Table NOI-1: Existing Noise Measurements

Location	Time Period	Noise Levels (dB)	Noise Sources
Site 1. Calle La Cruz pump station, 260 feet from the centerline of Calle La Cruz, see Figure N-1 in Noise Appendix	Monday October 23, 2017 10:50-11:00 a.m.	5-minute Leq's: 50, 50	Wind is up to 62 dB. Pedestrian and dogs passing by is 55 dB. Background noise is 42 dB. Quieter noises include birds, back-up beep, distant traffic, and a dog barking.
Site 2. Northeast side of Calle La Cruz cul-de-sac, see Figure N-1 in Noise Appendix	Monday October 23, 2017 11:09-11:19 a.m.	5-minute Leq's: 52, 48	Passing car is 58 dB. Airplane is 57 dB. Wind is up to 56 dB. Background noise is 42 dB. Quieter noises include pedestrians, distant traffic, and birds.
Site 3. West end of trail along the lagoon, 165 feet from the centerline of Calle La Cruz, see Figure N-1 in Noise Appendix	Monday October 23, 2017 11:25-11:35 a.m.	5-minute Leq's: 48, 46	Wind is up to 53 dB. Distant traffic is up to 47 dB. Background noise is 43 dB. Quieter noises include birds and a back-up beeper.
Site 4. Path along ocean side of the neighborhood, 200 feet from the centerline of Ribera Road and 230 feet east of the Pacific Ocean, see Figure N-1 in Noise Appendix	Monday October 23, 2017 11:46-11:56 a.m.	5-minute Leq's: 48, 48	Construction noise is up to 55 dB. Background noise is 44 dB. Quieter noises include waves, pedestrians, birds, and wind.

Source: RCH Group, 2017

Monterey County Noise Ordinance

Chapter 10.60 of the Monterey County Code of Ordinances discusses Noise Control. Relevant Sections include:

10.60.030: Operation of noise-producing devices restricted. At any time of the day, it is prohibited within the unincorporated area of the County of Monterey to operate, assist in operating, allow, or cause to be operated any machine, mechanism, device, or contrivance which produces a noise level exceeding 85 dBA measured 50 feet therefrom. The prohibition in this Section shall not apply to aircraft nor to any such machine, mechanism, device or contrivance that is operated in excess of 2,500 feet from any occupied dwelling unit.

10.60.040: Regulation of nighttime noise. The following regulations shall apply to nighttime noise:

A. It is prohibited within the unincorporated area of the County of Monterey to make, assist in making, allow, continue, create, or cause to be made any loud and unreasonable sound any day of the week from 10:00 p.m. to 7:00 a.m. the following morning.

B. Within the time period 10:00 p.m. to 7:00 a.m. the following morning, and for the purposes of this Section, a loud and unreasonable sound shall include any sound that exceeds [nighttime exterior noise levels of 45 Leq or 65 Lmax].

Discussion:

a. Exposure to noise in excess of standards – *Less than Significant with Mitigation.*
and

d. Substantial Temporary Increase of Ambient Noise Levels – *Less than Significant with Mitigation.* The primary noise impact of the project would be from construction of the pipelines on nearby residences. Nearby residences would be sensitive receptors for the construction noise, but are no closer than 170 feet from the area of most intense construction. Project construction activities would cause a temporary increase of ambient noise levels in the project vicinity. After construction, noise in the project vicinity would not differ from existing conditions.

Construction activities would require the use of noise-generating equipment, such as excavating machinery (e.g., bulldozer, excavator, loader, etc.), a vibratory hammer to drive the sheet pile (i.e., sonic pile driver), and other noisy construction equipment (e.g., crane, trucks, air compressor, generator, etc.).

The Monterey County Noise Ordinance prohibits operation of any device which produces a noise level exceeding 85 dBA measured 50 feet therefrom. Table 2 of the Noise Appendix shows maximum noise levels generated by various types of construction equipment, which can range from 75 to 96 dB at 50 feet. Vibratory hammers and jackhammers could exceed

the limit of 85 dB at 50 feet. A jackhammer is not expected to be used for this project, but a vibratory hammer would be used for sheet pile driving.

At the nearest residence (170 feet away), noise levels from the vibratory hammer would be experienced as approximately 83 dB, L_{max}, and typically average 64 to 67 dBA, Leq²¹. High noise levels from the vibratory hammer would not be continuous, but rather periodic, occurring for a few minutes at a time as each sheet pile is driven into the ground, with quieter periods during transitions from one pile to the next. Noise from this equipment would be noticeable and may be annoying to nearby residents, however, given the relatively short duration of the sheet pile portion of the project and the limitations on equipment use and hours of construction in Mitigation Measure NOI-1, this impact would be reduced to a less-than-significant level.

Construction worker traffic and construction-related material haul trips would generate noise and incrementally raise ambient noise levels along local haul routes, depending on the number of haul trips made and types of vehicles used. Construction activities and associated traffic would occur primarily during the daytime.

The implementation of **Mitigation Measure NOI-1** would reduce potentially significant temporary construction noise impacts to a **less-than-significant** level.

b. Exposure to excessive vibration – Less Than Significant Impact. As stated above, the area of intense construction would be in the lagoon, no closer than 170 feet from the nearest residences. As shown in Table NOI-2, the predicted vibration levels from bulldozers and loaded trucks at a distance of 170 feet would not exceed the 0.5 in/sec PPV threshold for residential and commercial structures. The project would involve the use of vibratory hammers, which would have a vibration level substantially below 0.5 in/sec, and the impact would be **less than significant**.

c. Permanent increase in ambient noise levels – Less Than Significant Impact. As discussed in **a)**, above, construction of the project would be temporary, and operational noise (after construction) would not differ from existing conditions. Therefore, the project would not result in a substantial permanent increase in ambient noise levels in the project vicinity, and this impact would be **less than significant**.

e. Public Airport Noise - No Impact. The closest public use airport to the project site is Monterey Municipal Airport, located about 6-8 miles northeast of the site. Noise from that airport would not be audible at the site, and the project is not subject to noise impacts. Therefore, **no impact** would result.

f. Private Airport Noise - No Impact. There are no private airstrips in the site vicinity. Therefore, **no impact** would result.

²¹ This is based on a reference noise level range of 77 to 80 dBA, Leq at 50 feet, described in Laughlin (2010).

Table NOI-2: Representative Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity at 50 Feet (in/sec)	Peak Particle Velocity at 170 Feet (in/sec)
Pile Driver (impact)	upper range	0.537	0.086
	typical	0.228	0.036
Pile Driver (sonic)	upper range	0.260	0.041
	typical	0.060	0.010
Vibratory Roller		0.074	0.012
Large Bulldozer		0.031	0.005
Loaded Trucks		0.027	0.004
Jackhammer		0.012	0.002
Small Bulldozer		0.001	0.000

Source: Federal Transit Administration, 2006.

Note: Vibration levels at 50 and 170 feet were calculated using the equation provided by FTA that may be used to estimate vibration at different distances based on reference vibration levels at 25 feet for various construction equipment. (See **Table 3** of the Noise Appendix.)

Mitigation Measure

Mitigation Measure NOI-1 -Construction Noise

To reduce noise impacts due to construction at nearby sensitive receptors, the applicant shall employ the following mitigation measures:

1. Construction activities shall only take place during the hours between 8 a.m. and 6 p.m. on weekdays and between 9 a.m. and 5 p.m. on Saturdays. Construction will not be allowed on Sundays or national holidays.²²
2. Construction equipment shall be properly equipped with standard mufflers properly maintained in good working order.
3. If stationary construction equipment would cause a substantial noise impact, it shall be located as far away from sensitive residences as necessary to reduce noise to acceptable levels and/or be equipped with engine-housing enclosures.
4. Designate a “construction noise coordinator” who would be responsible for responding to local complaints about construction noise. The construction noise coordinator shall determine the cause of the complaint and shall require

²² These hours are the same as was used in the Pebble Beach Company Project Environmental Impact Report (Monterey County 2012), which was suggested by Monterey County Planning Staff as an example of a recent CEQA document for the County. Also, these hours fall within the permitted hours of construction for the City of Carmel, the neighboring jurisdiction, which according to Chapter 15.08 of the Carmel Municipal Code (City of Carmel, 2017) are 8 a.m. to 6:30 p.m. Monday through Saturday.

that reasonable measures warranted to correct the problem be implemented. The telephone for the construction noise coordinator shall be conspicuously posted at the construction site.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XIII. POPULATION AND HOUSING – Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Background:

The proposed project would construct a replacement sewage force main and treated wastewater outfall pipe, which would be consistent with the site’s zoning and General Plan designations. No residences would be constructed as part of this project. These pipelines are not a limitation to growth in the project area.

Discussion:

a. Population Growth - *No Impact*. The project would replace existing degraded sewer outfall and force main lines; no expanded service capacity is proposed. Therefore, the project would have **no impact** on growth inducement.

b, c. Displace Housing or People – *No Impact*. The project alignment contains no housing, and the proposed project would not displace any housing or people. There would be **no impact**.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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XIV. PUBLIC SERVICES:

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities? The construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Background:

Fire Protection: The unincorporated Monterey County is within the Cypress Fire Protection District (CFPD). Under contract with the CFPD, the California Department of Forestry and Fire Protection (CAL FIRE) provides primary fire protection service to the vicinity of the proposed project site. The closest CAL FIRE station to the proposed project area is the Rio Road Station at 3775 Rio Road, Carmel, which is located approximately two miles east of the proposed project site. The Carmel Hill Forestry and CAL FIRE Station are located near the Highway 1 and westbound Highway 68 interchange. The station is approximately three miles north of the proposed project site. In addition, the City of Carmel fire station (with secondary responsibility via a shared service agreement) is located 1-mile to the north.

Police Protection: The proposed project site is in the unincorporated area of Monterey County and would be served from the Monterey County Sheriff's Office Coastal Station located in in Monterey on Aguajito Road. The Coastal Station's estimated response time is varied depending on the location, number of personnel on duty, and time of the call; however, the general range is five to ten minutes.

Within Carmel River State Beach, the State Parks employees provide maintenance, waste removal, and public safety/police patrol. The closest ranger station to the proposed project site is at Point Lobos, approximately one mile south. A minimum of one public service patrol ranger is stationed there at all times of the day and night to respond to emergency calls. The

local district of State Parks office is located approximately 6.5 miles north of the site at 2211 Garden Road, Monterey, CA 93940, where the full staff for all local parks is based.

Schools: The public schools closest to the project site are Junipero Serra School and Carmel River Elementary School. These schools are about one quarter mile north of the proposed project's access road.

Parks: The project pipeline alignment, and eastern staging area and access road are within the California Department of Parks and Recreation's Carmel River State Beach property. This park is undeveloped in the project site, but public access to the State Beach to the west of the site is permitted.

Discussion:

i) Fire Protection. *Less than Significant Impact.* No new fire protection services would be required as a result of the proposed project. Upland construction activities (clearing of access roadway and staging areas) would take place near heavily vegetated areas. Operation of power tools and equipment during project construction could provide an ignition source and increase fire risk in the area. Storage of flammable materials (e.g., fuel) during project construction could also increase fire risk. However, project construction activities would follow the requirements for fire safety during construction contained in the California Fire Code that are applicable to outdoor areas. Adherence to the applicable requirements of the California Fire Code would ensure that potential fire risk during construction would be ***less than significant.***

ii) Police Protection. *No Impact.* The new force main and outfall pipelines would have no potential to increase demand on police protection services because it would not result in any new development and its construction would not bring substantial numbers of people to the area.

iii) Schools. *No Impact.* The new force main and outfall pipelines would have no potential to increase demand on school services because it would not result in any new development and its construction would not bring substantial numbers of people to the area.

iv) Parks. *No Impact.* The new force main and outfall pipeline construction would not affect operations of publically accessible areas of the Carmel River State Beach.

v) Other public facilities. *No Impact.* The proposed project would not affect other public facilities by increasing demand beyond anticipated levels.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XV. RECREATION:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Background:

The proposed project access road, staging areas and pipeline alignment runs through lands of the California Department of Parks and Recreation’s Carmel River Lagoon and Natural Preserve (a part of Carmel River State Beach) and a Caltrans biological mitigation bank. The Carmel River State Beach is a 297-acre area, created by flood cycles and the meandering Carmel River that flows into the Pacific Ocean. The Carmel River State Beach features the Carmel River Lagoon and Wetland Natural Preserve, Ohlone Coastal Cultural Preserve, a mile-long beach, a lagoon restoration site, an organic farm with historic buildings, and bird habitat that includes waterfowl and songbirds.

Discussion:

a. Increase Park Usage - No Impact. The project is a treated wastewater outfall and force main replacement for degraded lines on the same alignment. The pipelines would not affect population or park use.

b. Impact of Project Recreational Facilities - Less than Significant Impact. The project construction activities would occur on State Parks Preserve and Caltrans mitigation bank lands, which, although informally accessed by birders and other recreational users, are not designated public use areas; it would not affect operations at the public use areas of Carmel River Beach State Park. Cleared areas of the access roads would be restored once construction is completed. Informal public use of the southern access road would be eliminated during the construction period. This temporary, short-term impact to undeveloped park lands would be **less than significant**.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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**XVI. TRANSPORTATION AND TRAFFIC –
Would the project:**

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian, bicycle paths and mass transit? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with an applicable congestion management program, including but not limited to level of service demands and travel demand measures, or other standards established by the county congestion management agency for designated roads/highways. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Background:

The project alignment is accessed via US Highway 1 and the driveway to the CAWD Wastewater Treatment Plant, and a partially overgrown dirt road on California State Parks property.

Discussion:

a. Conflict with an Applicable Plan Regarding Effectiveness of Circulation System - *Less Than Significant*; b. Conflict with an Applicable Congestion Management Program - *Less Than Significant*. During construction, the project would generate fewer than 10 daily automobile trips, for project construction workers, and up to an additional 10 truck trips per day for materials and equipment delivery during the four-month construction period. This level of additional trips would not materially affect traffic on Highway 1 or any other local streets. The project would not generate any additional traffic after construction. Therefore, the impact would be **less than significant**.

c. Air Traffic Levels - *No Impact*. The Project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Therefore, it would have no impact on air traffic.

d. Hazards - *Less Than Significant Impact*. The Project would not create any hazards due to design features on the adjacent street system. As noted in Item a, above, a small number of truck trips would occur during construction, with no new trips after construction. Trucks regularly use Highway 1 and the treatment plant access road, with no major safety hazards in this area. Therefore, the impact would be **less than significant**.

e. Emergency Access - *No Impact*. The project construction would not require any road or lane closures or otherwise impede emergency access.

f. Adopted Plans Supporting Alternative Transportation - *No Impact*. The project would not conflict with Monterey County policies supporting alternative transportation. It would neither generate demand nor alter any existing or proposed alternative transportation (bus, bike, or pedestrian) routes.

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XVII. TRIBAL CULTURAL RESOURCES

a) 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:

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| I. 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 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| II. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Background:

Pacific Legacy personnel submitted a request to the NAHC for a search of the Sacred Lands File as it encompasses the Project area on November 20, 2017. This report is available for review by authorized persons at CAWD offices. Frank Lienert, Associate Governmental Program Analyst with the NAHC, responded on December 5, 2017 to report that no Native American cultural resources had been previously reported within the Project area. He provided contact information for eight tribal representatives who may have knowledge of the vicinity. Pacific Legacy personnel contacted Mr. Valentin Lopez, Chairperson of the Amah Mutsun Tribal Band; Ms. Irenne Zwierlein, Chairperson of the

Amah Mutsun Tribal Band of Mission San Juan Bautista; Mr. Tony Cerda, Chairperson of the Costanoan Rumsen Carmel Tribe; Mr. Tom Nason of the Esselen Tribe of Monterey County; Ms. Ann Marie Sayers, Chairperson of the Indian Canyon Mutsun Band of Costanoan; Ms. Louise-Miranda Ramirez, Chairperson of the Ohlone/Costanoan-Esselen Nation; and Ms. Karen White, Council Chairperson of the Xolon-Salinan Tribe via certified letter on January 2, 2018 to request any information they might have regarding the Project area.

Responses were received from the Ohlone/Costanoan – Esselen Nation and the Xolon Salinian Tribe. The Ohlone/Costanoan-Esselen Nation objects to excavation in known cultural lands and requested to be kept informed regarding surveys, reburials, placement of cultural items, and approval of monitoring, The Xolon Salinian tribe did not identify any sensitive sites, and requested that any new ground disturbance within this project, should be evaluated under Phase 1 survey criteria, and that they be informed if any cultural materials are unearthed. Tribal consultation per AB 52 is ongoing between the CAWD and interested Native American stakeholders. Tribal representatives have been mailed the results of the literature review and Phase 1 survey conducted for the project for review and comment.

Please see the Cultural Resources section of this Initial Study for a discussion of the site's cultural resources, impacts, and mitigation measures.

Discussion:

a) Tribal Cultural Resources - *Less than Significant Impact with Mitigation.* Tribal representatives contacted as part of the cultural resources assessment did not provide any input regarding tribal cultural resources. One CRHR-eligible site exists on the property. Mitigation measures CULT-1 and CULT-2 would reduce potential impacts to this property to a **less-than-significant** level.

XVIII. UTILITIES AND SERVICE SYSTEMS – Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities; the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities; the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Background:

The project would generally follow an easement already in use for the existing force main and treated wastewater outfall pipelines.

Discussion:

a. Exceed Wastewater Treatment Requirements - No Impact. b. Required New Water or Wastewater Treatment Facility – No Impact. The project is a replacement of existing degraded force main and treated wastewater outfall pipelines that would not result in any new sewage generation. Portable toilets would be used to provide restroom facilities for project workers during the construction period. The existing CAWD wastewater treatment plant would not be affected by the project.

c. New Stormwater Facilities – No Impact. The proposed project would not increase impervious surfaces or alter any existing stormwater facilities. Therefore, it would not increase runoff and would have **no impact** to stormwater facilities.

d. Water Supplies - Less than Significant Impact. The proposed project would consume small amounts of water for dust control along the access road and in the staging areas during construction, which would be a **less-than-significant** impact.

e. Wastewater Service - No Impact. Please see response to item a, above. The project would not generate any wastewater or affect any wastewater treatment facility. The existing lines would not be removed until after the replacement lines are operational.

f. Landfill Capacity – Less than Significant Impact. The project would generate small amounts of construction wastes associated with the removal and disposal of the existing pipelines, and small quantities of soil may be removed from the site by the project contractor, if needed. This would not substantially affect landfill capacity in the area. The project would generate no wastes after completion of construction. Therefore, this impact would be **less than significant**.

g. Solid Waste Statutes and Regulations – No Impact. As described in item f, above, the project would generate small quantities of solid waste during construction only. Most excavated soils would be reused as backfill. Any contaminated soils encountered would be tested and disposed of at an appropriate facility. Therefore, the project would have **no impact** on solid waste regulations.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XIX. MANDATORY FINDINGS OF SIGNIFICANCE:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Does the project have the potential to 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, 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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion:

a) **Less than Significant with Mitigation.** As discussed in the Biological Resources Section of this document, with the incorporation of mitigation measures, the project would not have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal. Similarly, the project’s potential impacts to cultural resources would be mitigated to a **less-than-significant** level.

b) Less Than Significant. Cumulative impacts of the project and other planned, approved, or reasonably foreseeable projects have been assessed in this Initial Study. Three related projects have been proposed by Monterey County for the area to reduce flood hazards to houses to the north of the Carmel River, and were the subject of a Draft Environmental Impact Report prepared in December 2016. These are the Carmel Lagoon Ecosystem Protective Barrier, Scenic Road Protection Structure, and Interim Sandbar Management Plan Project. Project components include:

Ecosystem Protective Barrier (EPB)

The proposed EPB includes a setback of up to 40-feet from the property line with a top of wall elevation of 17.5 feet. This option was recommended because it:

- increases protection of facilities and homes accounting for sea level rise over the next 50 years;
- minimizes ecological impacts by eliminating drainage infrastructure and fill;
- minimizes visual impacts with a lower height and greater area of vegetative cover;
- reduces noise because of smaller pumps with less frequent pumping; and
- increases area that serves as a bioswale to collect urban runoff.

If the proposed project is determined to impact operations of the Mission Ranch, a separate EPB alignment would continue from the eastern boundary of the Carmel River Elementary School and extend across the southern boundary of Mission Ranch development.

Scenic Road Protection Structure (SRPS)

The preferred alternative SRPS would be located at the toe of the sand slope along Scenic Road. This proposed SRPS involves excavation of the beach that would be followed by installation of a geotextile, then by two layers of armor rock. The alignment allows continued use of the beach area located north of the barrier when (if) the beach breaches to the north.

Interim Sandbar Management Plan (ISMP)

Monterey County assumed a lead role in seeking permits for a long-term solution that would avoid performing mechanical breaching for flood control purposes. The process to complete technical feasibility studies, design, environmental review, permitting, and construction is estimated to take up to eight years, depending on resource availability; however, the County is making every effort to reduce this timeframe to five years or less. In the interim, the County has developed the ISMP for managing the lagoon including winter openings and summer closure in the best possible manner that reduces potential impacts to both wildlife and property.

After receipt of the comments on the DEIR, the process was suspended and none of these projects have been approved.

Carmel River Floodplain Restoration and Environmental Enhancement (FREE) Project

Another floodplain management project, the Carmel River FREE Project, has been proposed by the Big Sur Land Trust and the County of Monterey. The that project consists of two interdependent Project components: the Floodplain Restoration and the Causeway. The Floodplain Restoration Component consists of: (1) remove approximately 1,470 linear feet

of non-structural earthen levees on the south side of the Carmel River channel; (2) grading on approximately 103 acres to restore the site's ecological function as a floodplain by creating the hydrogeomorphic characteristics necessary to support floodplain restoration activities; (3) grading to elevate approximately 23 acres of existing farmland above the 100-year floodplain elevation to create an agricultural preserve; and (4) implementation of a Restoration Management Plan (RMP).

Because of the relatively short construction period for the proposed CAWD project, which would occur in the Spring of 2018, and the time needed for permitting of the various flood-related projects, overlapping construction impacts are unlikely. In addition, if construction were to overlap, cumulative impacts would not be significant with the mitigation measures that would be implemented by both projects. Operationally, the proposed project would have no overlapping environmental impacts with the County or Carmel River FREE projects, and the proposed project would need to occur prior to implementation of the FREE projects.

c) *Less than Significant.* As discussed in Section VIII. Hazards and Hazardous Materials, the project would follow all laws and regulations involving the use and transport of hazardous materials and would not cause potential health risks to the public.

E. REPORT PREPARERS

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CHAPTER 4. REFERENCES

Publications:

California Department of Transportation, Scenic Highways
http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/route1.htm

California Air Resources Board, ADAM: Air Quality Data Statistics,
<http://www.arb.ca.gov/adam/topfour/topfourdisplay.php>

California Air Resources Board, Area Designation Maps/State and National,
<https://www.arb.ca.gov/desig/adm/adm.htm>

CALFIRE, http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones

California State Water Resources Control Board “GeoTracker” database, available online at: <http://geotracker.waterboards.ca.gov/>, and California Department of Toxic Substances Control “EnviroStor” database, available online at: <http://www.envirostor.dtsc.ca.gov/public/>.

City of Carmel, 2017. Carmel-by-the-Sea Municipal Code. Chapter 15.08 Building Code.

Denise Duffy & Associates, Inc., Carmel Lagoon EPB, SRPS, and ISMP Project Public Draft Environmental Impact Report, December 2016.

ENGEO, 2018. Calle La Cruz Force Main Project, Carmel by the Sea California, Technical Summary of Hydrology and Water Quality Impacts and Mitigation Measures. January 17, 2018, Revised March 22, 2018.

Federal Transit Administration (FTA), 2006. *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-1003-06).

Johnson Marigot Consulting, Inc. 2018. Biological Resource Analysis, Calle La Cruz Pipeline Replacement Project. January 2018.

Laughlin, J., 2010. Washington State Department of Transportation. *Airborne Noise Measurements (A-weighted and un-weighted) during Vibratory Pile Installation – Technical Memorandum*. June 21, 2010.

Monterey Bay Unified Air Pollution Control District (MBUAPCD), CEQA Air Quality Guidelines, dated February 2008, [http://mbuapcd.org/pdf/CEQA_full%20\(1\).pdf](http://mbuapcd.org/pdf/CEQA_full%20(1).pdf)

MBUAPCD, 2012-2015 Air Quality Management Plan, March 15, 2017,
http://mbard.org/wp-content/uploads/2017/03/2012-2015-AQMP_FINAL.pdf

Monterey County, 2010. *Monterey County General Plan*. Safety Element.

Monterey County Land Use Plan, Carmel Area, as amended, March 9, 1995

Monterey County Zoning, Coastal Implementation Plan – Title 20 (accessed October 19, 2017)

Monterey County, 2012. *Pebble Beach Company Project Final Environmental Impact Report*. April 2012.

Monterey County, 2017. *Monterey County Code of Ordinances*. Chapter 10.60 – Noise Control.

Pacific Legacy, 2018. Draft Cultural Resources Assessment for CAWD Calle La Cruz Pipeline Replacement Project. January 18, 2018.

SMAQMD Road Construction Emissions Model Version 8.1.0, May 2016,
<http://www.airquality.org/businesses/ceqa-land-use-planning/ceqa-guidance-tools>

Appendices

Appendix A. Air Quality Calculations

Appendix B. Biological Resource Study

Appendix C: Hydrologic Study

Appendix D: Noise Calculations

Appendix E. Mitigation Monitoring and Reporting Program (to be included in Final IS/MND)

Appendix A. Air Quality Calculations

Appendix A

Air Quality and Greenhouse Gases Appendix

Sacramento Metropolitan Air Quality Management District
Road Construction Emissions Model Version 8.1.0
Data Input and Emissions Output

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Calle La Cruz														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	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
Grading/Excavation	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
Drainage/Utilities/Sub-Grade	4.84	33.69	49.41	12.39	2.39	10.00	4.25	2.17	2.08	0.08	7,764.65	1.64	0.10	7,836.38
Paving	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
Maximum (pounds/day)	4.84	33.69	49.41	12.39	2.39	10.00	4.25	2.17	2.08	0.08	7,764.65	1.64	0.10	7,836.38
Total (tons/construction project)	0.21	1.48	2.17	0.54	0.10	0.44	0.19	0.10	0.09	0.00	341.64	0.07	0.00	344.80

Notes: Project Start Year -> 2018
 Project Length (months) -> 4
 Total Project Area (acres) -> 2
 Maximum Area Disturbed/Day (acres) -> 1
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd ³ /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	400	0	400	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.


Total Emission Estimates by Phase for -> Calle La Cruz														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	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
Grading/Excavation	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
Drainage/Utilities/Sub-Grade	0.21	1.48	2.17	0.54	0.10	0.44	0.19	0.10	0.09	0.00	341.64	0.07	0.00	312.80
Paving	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
Maximum (tons/phase)	0.21	1.48	2.17	0.54	0.10	0.44	0.19	0.10	0.09	0.00	341.64	0.07	0.00	312.80
Total (tons/construction project)	0.21	1.48	2.17	0.54	0.10	0.44	0.19	0.10	0.09	0.00	341.64	0.07	0.00	312.80

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model Data Entry Worksheet Version 8.1.0

Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.



Input Type

Project Name	Calle La Cruz	
Construction Start Year	2018	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	4.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.00	mile
Total Project Area	2.00	acres
Maximum Area Disturbed/Day	1.00	acre
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.
http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd ³) (assume 20 if unknown)	Import Volume (yd ³ /day)	Export Volume (yd ³ /day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigation

Off-road Equipment Emissions Mitigation

Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<http://www.airquality.org/ceqa/mitigation.shtml>).
Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	0.40	6/1/2018	1/1/2018
Grading/Excavation	0.00	1.60	6/1/2018	1/1/2018
Drainage/Utilities/Sub-Grade	4.00	1.40	6/1/2018	1/1/2018
Paving	0.00	0.60	10/1/2018	5/3/2018
Totals (Months)		4		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade	40.00		10	0	400.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/mile)	0.07	0.36	1.51	0.10	0.04	0.02	1,590.26	0.00	0.05	1,605.93
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e

Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.06	0.32	1.33	0.09	0.04	0.01	1,402.37	0.00	0.05	1,416.19
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.06	0.00	0.00	0.00	61.70	0.00	0.00	62.31
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.01	0.06	0.00	0.00	0.00	61.70	0.00	0.00	62.31

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
User Input											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)		0.07	0.36	1.51	0.10	0.04	0.02	1,590.26	0.00	0.05	1,605.93
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input				Calculated Daily Trips	Calculated Daily VMT						
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing				0	0.00						
No. of employees: Grading/Excavation				0	0.00						
No. of employees: Drainage/Utilities/Sub-Grade	10			20	400.00						
No. of employees: Paving				0	0.00						
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Draining/Utilities/Sub-Grade (grams/mile)	0.03	1.33	0.15	0.05	0.02	0.00	393.83	0.01	0.01	395.91	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Draining/Utilities/Sub-Grade (grams/trip)	1.17	3.21	0.26	0.00	0.00	0.00	87.83	0.02	0.01	91.49	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Drainage/Utilities/Sub-Grade	0.08	1.31	0.14	0.04	0.02	0.00	351.17	0.01	0.01	353.16	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.06	0.01	0.00	0.00	0.00	15.45	0.00	0.00	15.54	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.06	0.01	0.00	0.00	0.00	15.45	0.00	0.00	15.54	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Program Estimate of		User Override of Truck		Default Values		Calculated		
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT				
Grubbing/Land Clearing - Exhaust						0.00				
Grading/Excavation - Exhaust						0.00				
Drainage/Utilities/Subgrade						0.00				
Paving						0.00				
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.36	1.51	0.10	0.04	0.02	1,590.26	0.00	0.05	1,605.93
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default Maximum Acreage/Day	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day			pounds/day	tons/period	pounds/day	tons/period
Fugitive Dust - Grubbing/Land Clearing				0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation				0.00	0.00	0.00	0.00
Fugitive Dust - Drainage/Utilities/Subgrade	1.00			10.00	0.44	2.08	0.05

Drainage/Utilities/Subgrade	Default	Mitigation Option	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	
	Number of Vehicles	Override of										Default
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)										Equipment Tier
	Program-estimate				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
1.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Air Compressors	0.40	2.47	2.67	0.20	0.20	0.00	375.27	
			Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Cranes	0.56	2.47	6.67	0.29	0.27	0.01	568.03	
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Excavators	0.30	3.38	3.19	0.15	0.14	0.01	536.03	
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Generator Sets	0.51	3.75	4.11	0.26	0.26	0.01	623.04	
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00			Model Default Tier	Off-Highway Trucks	1.54	8.36	16.57	0.60	0.56	0.03	2,646.00	
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Rubber Tired Dozers	1.08	8.96	11.70	0.54	0.50	0.01	896.22	
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.27	2.36	2.66	0.19	0.17	0.00	316.00	
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	
	Drainage/Utilities/Sub-Grade			pounds per day	4.70	32.06	47.94	2.25	2.11	0.06	6,011.10	
	Drainage/Utilities/Sub-Grade			tons per phase	0.21	1.41	2.11	0.10	0.09	0.00	264.49	

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2
	Number of Vehicles		Override of	Default							
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier							
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00
				Paving	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
				Paving	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions all Phases (tons per construction period) =>					0.21	1.41	2.11	0.10	0.09	0.00	264.49

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8

Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

Appendix B. Biological Resource Study

Revised Biological Resource Analysis

CALLE LA CRUZ PIPELINE REPLACEMENT PROJECT
Unincorporated Monterey County, California

March 2018



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SECTION 1. INTRODUCTION

This Biological Resource Analysis has been prepared for the approximately 7.2-acre Calle la Cruz Pipeline Replacement Project Site located in unincorporated Monterey County, California (herein referred to as the project site) (Appendix A, Figures 1 and 2). The proposed project includes the replacement of a wastewater outfall pipeline and a sewage force main pipeline which currently exist aboveground over the northwestern portion of the Carmel River Lagoon, with two undergrounded pipelines at the same location. This analysis has been prepared to provide a detailed description of biological resources existing on the project site and to identify potentially significant impacts that could be incurred by these biological resources from the construction of the proposed development. In this assessment, biological resources include both common and rare plant and animal species, as designated by the United States Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), and the scientific community which includes organizations such as the California Native Plant Society (CNPS) (Appendix B, Tables 1 and 2); as well as waters of the United States and the State of California, regulated under the jurisdiction of the United States Army Corps of Engineers (Corps), the Regional Water Quality Control Board (RWQCB), and/or CDFW.

SECTION 2. PROJECT SITE LOCATION AND SETTING

The approximately 7.2-acre project site is located within unincorporated Carmel, Monterey County, California, within the Monterey U.S. Geological Survey (USGS) 7.5' topographic quadrangle (quad) (T16S, R1W). The project site occurs southwest of the Carmel Area Wastewater Treatment Plant (operated by the Carmel Area Wastewater District [CAWD]), just inland from the Carmel River State Beach, approximately 0.5 mile west of the intersection of Rio Road and Highway 1 (36.537631° N, 121.922714° W) (Appendix A, Figure 2). The project site is bordered by the Carmel Area Wastewater Treatment Plant to the northeast, the Carmel River to the northwest, and the Carmel River Lagoon to the south and west. The project site is partially within the Carmel River State Beach, owned and operated by California State Parks, and a portion of the Caltrans' Carmel River Mitigation Bank. The greater area surrounding the project site is dominated by medium-density residential development to the north (Carmel-By-The-Sea) and south (Carmel Meadows), undeveloped land to the east, and the Pacific Ocean to the west.

2.1 PROJECT SITE HISTORY

The project site and surrounding land has a history dominated by agriculture, having been subjected to cultivation since the late 1700s, when the area was converted from riparian forest and wetlands to agricultural land. In the 1920s, the Odello family acquired the land and grew artichokes on it for the next 75 years. In 1994, the land was acquired by State Parks and incorporated into what became the 300-acre Carmel River Lagoon and Wetlands Natural Preserve. In 1996, California Department of Transportation (Caltrans) and State Parks began restoration work to restore the lagoon through conversion of the agricultural lands back to wetlands and riparian forest. In 2004, State Parks implemented the Carmel River Lagoon Enhancement Project to recreate the southern arm of the lagoon and the adjacent habitat. Restoration work included lowering the elevation of the western portion of the existing CAWD access road (which is within the project site) to the meet/match elevation of the surrounding flood plain. An historic topographic map is included in Appendix A, Figure 3; this map reflects site conditions prior to the restoration work discussed above.

2.2 PROPOSED PROJECT

The project proponent (CAWD) proposes to replace an existing aboveground, 24-inch by 204-foot long treated wastewater outfall and temporary 6-inch by 204-foot long sewage force main. This outfall and force main currently span the south arm of the Carmel River Lagoon. The two pipelines would be replaced with a below-ground (below the lagoon) 24-inch wastewater outfall and an 8-inch sewage force main. To install the new pipes under the bed of the lagoon, construction would necessitate trenching across the south arm of the Carmel Lagoon. To access the pipelines, clearing and grubbing of vegetation at certain locations along the access roads to the north and south of the lagoon would be necessary in order to widen the roads for vehicular access. Staging areas would also be cleared and graded to the north and south of the lagoon for construction access, construction equipment, and soil stockpiles. Proposed locations for the access roads, staging areas, and trenching are shown in Appendix A, Figure 4.

2.3 PROJECT SITE INVESTIGATIONS

Extensive site surveys were conducted on the project site on November 10, 2014 and September 13 and 14, 2017. Surveys included walking the project site to characterize current site conditions including vegetation, topography, and the presence of suitable resting, nesting, and/or roosting wildlife habitat. In addition, general current and historic uses of the site were noted, as well as general observations of neighboring property uses. On September 13, 2017, Johnson Marigot Consulting, LLC (JMC) personnel Sadie McGarvey and Lauren Bingham conducted a field survey to determine the location and extent of potential waters of the U.S. within the project site. The wetland delineation was conducted using the methods described in the *Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), supplemented with guidance as directed by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2008).

Prior to site investigations, literature reviews were conducted of known and potential special-status species, including analysis of the California Natural Diversity Database (CNDDDB) and a query of the Inventory of Rare, Threatened, and Endangered Plants of California (California Native Plant Society; CNPS), and review of the on-site soils pursuant to the US Department of Agriculture (USDA).

SECTION 3. EXISTING SITE CONDITIONS

The project site consists of undeveloped land surrounding a rarely maintained access road. The project site occurs primarily on the former northern levee of the former Odello family artichoke farm; the western portion of the project site was regraded approximately 13 years ago to match the surrounding floodplain elevations (see site history above). The project site occurs on a gentle south and southwestern facing slope, with elevations ranging between approximately 20 feet above mean sea level (AMSL) at the northeastern portion of the site and approximately 8 feet AMSL at the western portion of the site (adjacent to the lagoon).

3.1 VEGETATION COMMUNITIES

The project site is dominated by riparian woodland and ruderal habitat, as well as seasonal and perennial wetland; a small area of coastal sage scrub occurs at the southwestern corner of the project site (Appendix A, Figure 5). A list of plant species observed on the project site are provided in Appendix D.

3.1.1 RIPARIAN WOODLAND

A majority of the project site is comprised of riparian woodland, which dominates the northern and central portions of the project site. The fairly dense canopy (70-100% canopy cover) is dominated by willows (*Salix* spp.), coast live oak (*Quercus agrifolia*), and cottonwood (*Populus fremontii*), with sub-dominant species including elderberry (*Sambucus nigra*), and dogwood (*Cornus sericea*). The understory is fairly densely vegetated, and is dominated by California blackberry (*Rubus ursinus*) and poison oak (*Toxicodendron diversilobum*).

3.1.2 RUDERAL

The northeastern portion of the project site is dominated by ruderal vegetation. These species may be native or non-native, but are often thought of as “weedy” species. Dominant species in this area include non-native herbaceous species such as Italian thistle (*Carduus pycnocephalus*), poison hemlock (*Conium maculatum*), bristly ox-tongue (*Helminthotheca echioides*), and Canada horseweed (*Erigeron canadensis*), as well as non-native grasses such as Italian wildrye (*Festuca perennis*), slender wild oat (*Avena barbata*), and rip-gut brome (*Bromus diandrus*). A small native contingent occurs within the shrub layer and includes species such as coyote brush (*Baccharis pilularis*), California blackberry, and California sage (*Artemisia californica*).

3.1.3 COASTAL SAGE SCRUB

The southwestern portion of the project site is dominated by a small area of coastal sage scrub. The onsite scrub habitat is densely vegetated and is dominated by Monterey cypress (*Hesperocyparis macrocarpa*), California sage, poison oak, coyote brush, poison hemlock, and black mustard (*Brassica nigra*).

3.1.4 WETLAND

3.1.4.1 SEASONAL WETLAND

Seasonal wetlands occur throughout the central portion of the project site. These wetlands are dominated by brown-headed rush (*Juncus phaeocephalus*), hardstem bulrush (*Schoenoplectus*

acutus), and salt grass (*Distichlis spicata*), with lesser common species including cutleaf plantain (*Plantago coronopus*) and seaside barley (*Hordeum marinum*).

3.1.4.2 PERENNIAL WETLAND

The southwestern portion of the project site is dominated by perennial wetland. This wetland area is clearly subjected to greater periods of inundation than the seasonal wetlands due to its closer proximity to the topographic low portions of the adjacent lagoon. At the time of the September site visit, some portions of this wetland were still inundated with several inches of water. Dominant species in the perennial wetland included Santa Barbara sedge (*Carex barbarae*), fleshy jaumea (*Jaumea carnosa*), spotted ladies thumb (*Persicaria maculosa*), dotted smartweed (*Persicaria punctata*), and hardstem bulrush.

3.2 AQUATIC RESOURCES

Approximately 1.813 acres of potential waters of the U.S. have been mapped on the project site, including 0.352 acre of seasonal wetland, 0.95 acre of perennial wetland, 0.33 acre of navigable waters, and 0.001 acre of drainages. A wetland delineation was conducted on September 13, 2017, and JMC submitted a Request for Preliminary Jurisdictional Determination to the Corps on December 14, 2017. To date, the Corps has not determined the extent of waters of the U.S./State on the project site.

The implementation of the proposed project would result in temporary impacts to a total of approximately 0.29 acre of waters of the U.S./State. Temporary impacts will be incurred to 0.02 acre of seasonal wetland (to be impacted by the access road), 0.21 acre of perennial wetland (to be impacted by the construction of a staging areas and crane pad), 0.0003 acre of drainages (to be impacted by the access road), and 0.06 acre of navigable waters (to be impacted during trenching and work associated with undergrounding the new pipeline). No permanent impacts to aquatic resources are expected to be incurred as a result of project implementation.

SECTION 4. POTENTIAL IMPACTS TO SPECIAL-STATUS SPECIES

Special-status species include species considered to be rare by federal and/or state resource agencies (USFWS, NMFS, CDFW) and/or the scientific community (CNPS) and are accordingly legally protected via the federal, state, and/or local laws defined below.

Endangered Species Act (ESA): The USFWS and NMFS (Resource Agencies), with regulatory authority over listed plants, wildlife, and fish, oversee the ESA (50 CFR § 402.7, Section 305(b)(4)(B)). The ESA prohibits the “take” of any wildlife species listed as threatened or endangered, by the Resource Agencies, including the destruction of habitat that could hinder species recovery. The Resource Agencies administer the ESA and authorize take through issuance of Biological Opinions in consultation with the federal action agency (e.g. CORPS or FEMA).

Migratory Bird Treaty Act (MBTA): The MBTA of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755; as amended in 1936; 1960, 1968, 1969, 1974, 1978, 1986, and 1998) prohibits the take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of any migratory bird or any part, nest, or egg of any such bird.

California Endangered Species Act (CESA): CESA prohibits the “take” of any wildlife species listed as endangered and threatened by the state of California. Section 2090 of the CESA requires state agencies to comply with regulations for protection and recovery of listed species and to promote conservation of these species. The CDFW administers the act and authorizes “take” through section 2081 agreements (except for designated “fully protected species”). Regarding rare plant species, the CESA defers to the California Native Plant Protection Act of 1977.

California Native Plant Protection Act & California Fish and Game Code (Plants): The California Native Plant Society (CNPS) designates California Rare Plants through a ranking system. Rank 1A, 1B, and 2 meet the definitions established in Sec. 1901, Chapter 10 (Native Plant Protection Act of 1977) or Secs. 2062 and 2067 of the CESA and are eligible for state listing (CNPS Inventory, 2015).

California Fish and Game Code (Fully Protected Species): To provide additional protections for wildlife that is rare or faces potential extinction, California Fish and Game Code Sections 3511, 4700, 5050, and 5515 designates “fully protected” status for specific birds, mammals, reptiles and amphibians, and fish. Fully protected species cannot be taken or possessed at any time and no licenses or permits can be issued for their take. Exceptions are established for scientific research collection, relocation of the bird species for the protection of livestock, and take resulting from recovery activities for state-listed species.

California Fish and Game Code (Birds): California Fish and Game Code (Section 3503) prohibits the take of nest or eggs of any bird. Raptors and other fully protected bird species are further protected in Sections 3503.5 and 3511, which states that raptors/fully protected birds or parts thereof may not be taken or possessed at any time.

California Fish and Game Code (Species of Special Concern): A species of special concern is a designation given by the State to a native species that meets one or more of the following criteria: extirpated for the State; Federally (but not State) listed; experiencing, or formerly experienced, population declines or range restrictions; has naturally small populations at high risk of declines.

A search of the CNDDDB and the CNPS Inventory of Rare, Threatened, and Endangered Plants of California was conducted for state and federally listed and candidate species, as well as CNPS-ranked species known to occur in the vicinity of the property. The species identified in this search were compiled in tables (Tables 1 and 2) and evaluated for likelihood of occurrence on the project site. The potential for species to be adversely affected by the proposed project was classified as high, moderate, or low, using the definitions provided below. When a species was not expected to occur on or adjacent to the project site, the potential for adverse effects was identified as “none.”

High: The potential for a species to occur was considered high when the project site was located within the range of the species, recorded observations were identified within known dispersal distance of the project site, and suitable habitat was present on the project site.

Moderate: The potential for a species to occur was considered moderate when the project site was located within the range of the species, recorded observations were identified nearby but outside known dispersal distance of the project site, and suitable habitat was present on the project site. A moderate classification was also assigned when recorded observations were identified within known dispersal distance of the project site but habitat on the project site was of limited or marginal quality.

Low: The potential for a species to be adversely affected was considered low when the project site was within the range of the species, but no recorded observations within known dispersal distance were identified, and habitat on the project site was limited or of marginal quality. The potential for adverse effects was also classified as low when the project site was located at the edge of a species’ range and recorded observations were extremely rare, but habitat in the project site was suitable.

4.1 SPECIAL-STATUS PLANTS

According to the CNDDDB and the CNPS Inventory of Rare, Threatened, and Endangered Plants of California, a total of 36 special-status plant species are known to occur in the vicinity of the project site (Appendix B, Table 1). The closest of these recorded occurrences of special-status plant species (according to the CNDDDB and CNPS databases) is approximately 0.7-mile northeast of the project site. Eleven of these species require specialized habitats that do not occur on the project site (coniferous forest, broadleafed upland forest, cismontane woodland, chaparral, coastal prairie, coastal dunes, and valley and foothill grassland).

While no occurrences of special-status plant species have been documented on or adjacent to the project site, the project site provides suitable habitat for the 25 remaining species. A brief description of each of these species is included below, including the species’ distribution, habitat, life cycle, threats to the species, and potential impacts to the species resulting from development of the proposed project.

4.1.1 HICKMAN’S ONION (*ALLIUM HICKMANII*)

Hickman’s onion is a small, white to pale-pink-flowered perennial bulbiferous herbaceous member of the onion family (Alliaceae), that blooms between March and May. This species is endemic to California and is known to occur in closed-cone coniferous forest, maritime chaparral, coastal prairie, coastal scrub, and valley and foothill grassland habitats. Hickman’s onion is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by urbanization, grazing, non-native plants, trampling, road construction, and military activities.

A 1985 occurrence of this species was recorded on grassy slopes in coastal prairie approximately 0.7-mile northeast of the project site (CNDDDB Occurrence No. 5). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Hickman's onion. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.2 HOOKER'S MANZANITA (*ARCTOSTAPHYLOS HOOKERI* SSP. *HOOKERI*)

Hooker's manzanita is a white to pink-flowered shrub member of the heather family (Ericaceae), that blooms between February and April. This species is endemic to California and is known to occur in closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub habitats. Hooker's manzanita is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by agriculture, development, fire suppression, and competition with non-native *Eucalyptus*.

A 2005 occurrence of this species was recorded in maritime chaparral on a west-facing ridgeline approximately 1.2 miles south of the project site (CNDDDB Occurrence No. 15). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While no manzanita species were observed during site surveys, the surveys conducted on the project site were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Hooker's manzanita. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.3 TORO MANZANITA (*ARCTOSTAPHYLOS MONTEREYENSIS*)

Toro manzanita is a white to pink-flowered perennial evergreen shrub member of the heather family, that blooms between February and March. This species is endemic to California and is known to occur in maritime chaparral, cismontane woodland, and coastal scrub. Toro manzanita is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by development.

An historic record for this species is documented approximately 0.9 mile north of the project site (CNDDDB Occurrence No. 25), however, that occurrence is presumed extirpated. The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While no manzanita species were observed during site surveys, the surveys conducted on the project site were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to toro manzanita. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.4 SANDMAT MANZANITA (*ARCTOSTAPHYLOS PUMILA*)

Sandmat manzanita is a white to pink-flowered perennial evergreen shrub member of the heather family, that blooms between February and May. This species is endemic to California and is known to occur in closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub. Sandmat manzanita is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by urbanization and military activities.

An historic record for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 12), however, that occurrence is considered possibly extirpated. The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While no manzanita species were observed during site surveys, the surveys conducted on the project site were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to sandmat manzanita. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.5 COASTAL DUNES MILK-VETCH (*ASTRAGALUS TENER* VAR. *TITI*)

Coastal dunes milk-vetch is a purple-flowered annual herbaceous member of the pea family (Fabaceae), that blooms between March and May. This species is endemic to California and is known to occur in sandy coastal bluff scrub, coastal dunes, and mesic coastal prairie. Coastal dunes milk-vetch is state and federally endangered, and is a CNPS Rank 1B.1 species, threatened by urbanization, recreational activities, and non-native plants.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to coastal dunes milk-vetch. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.6 PINK JOHNNY-NIP (*CASTILLEJA AMBIGUA* SSP. *INSALUTATA*)

Pink Johnny-nip is a pink, yellow, and white-flowered hemiparasitic annual herbaceous member of the broomrape family (Orobanchaceae), that blooms between May and August. This species is endemic to California and is known to occur in coastal prairie and coastal scrub. Pink Johnny-nip is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by development and non-native plants.

An historic record for this species is documented approximately 1.5 miles southwest of the project site (CNDDDB Occurrence No. 6). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed

on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to pink Johnny-nip. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.7 MONTEREY SPINEFLOWER (*CHORIZANTHE PUNGENS* VAR. *PUNGENS*)

Monterey spineflower is a white-flowered annual herbaceous member of the buckwheat family (Polygonaceae), that blooms between April and August. This species is endemic to California and is known to occur in sandy-soiled maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland. Monterey spineflower is federally threatened, and is a CNPS Rank 1B.2 species, threatened by urbanization, recreational development and activities, agriculture, military activities, and non-native plants.

The closest record for this species occurs approximately 1.5 miles southwest of the project site (CNDDDB Occurrence No. 45). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Monterey spineflower. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.8 JOLON CLARKIA (*CLARKIA JOLONENSIS*)

Jolon clarkia is a pale lavender-flowered annual herbaceous member of the evening primrose family (Onagraceae), that blooms between April and June. This species is endemic to California and is known to occur in chaparral, cismontane woodland, coastal scrub, and riparian woodland. Jolon clarkia is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by grazing, foot traffic, and non-native plants.

An historic record for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 15). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to jolon clarkia. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.9 SAN FRANCISCO COLLINSIA (*COLLINSIA MULTICOLOR*)

San Francisco collinsia is a white and purple-flowered annual herbaceous member of the plantain family (Plantaginaceae), that blooms between February and May. This species is endemic to California and is known to occur in closed-cone coniferous forest and coastal scrub. San Francisco collinsia is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by urbanization, foot traffic, and non-native plants.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to San Francisco collinsia. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.10 SEASIDE BIRD'S-BEAK (*CORDYLANTHUS RIGIDUS SSP. LITTORALIS*)

Seaside bird's-beak is a yellow-flowered hemiparasitic annual herbaceous member of the broomrape family, that blooms between April and October. This species is endemic to California and is known to occur in sandy closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub. Seaside bird's-beak is state-listed as endangered, and is a CNPS Rank 1B.1 species, threatened by development, energy projects, road widening, vehicles, military operations, and non-native plants.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to seaside bird's-beak. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.11 HUTCHINSON'S LARKSPUR (*DELPHINIUM HUTCHINSONIAE*)

Hutchinson's larkspur is a blue-purple-flowered perennial herbaceous member of the buttercup family (Ranunculaceae), that blooms between March and June. This species is endemic to California and is known to occur in broadleafed upland forest, chaparral, coastal prairie, and coastal scrub. Hutchinson's larkspur is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by foot traffic, non-native plants, recreational activities, grazing, and trampling.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides

suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Hutchinson's larkspur. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.12 EASTWOOD'S GOLDENBUSH (*ERICAMERIA FASCICULATA*)

Eastwood's goldenbush is a yellow-flowered perennial evergreen shrub member of the sunflower family (Asteraceae), that blooms between July and October. This species is endemic to California and is known to occur in sandy openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub in the Monterey Bay area. Eastwood's goldenbush is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by development.

Multiple historic observations (1889-1913) of Eastwood's goldenbush are documented in the vicinity of the project site (exact locations are unknown) (CNDDDB Occurrence No. 8). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Eastwood's goldenbush. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.13 FRAGRANT FRITILLARY (*FRITILLARIA LILIACEA*)

Fragrant fritillary is a white-flowered perennial bulbiferous herbaceous member of the lily family (Liliaceae), that blooms between February and April. This species is endemic to California and is known to occur in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland. Fragrant fritillary is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by grazing, agriculture, urbanization, and non-native plants.

An historic record (1940) for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 5). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Fragrant fritillary. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.14 *MONTEREY GILIA (GILIA TENUIFLORA SSP. ARENARIA)*

Monterey gilia is a purple and pink-flowered annual herbaceous member of the phlox family (Polemoniaceae), that blooms between April and June. This species is endemic to California and is known to occur sandy openings in maritime chaparral, cismontane woodland, coastal dunes, coastal scrub. Monterey gilia is federally listed as endangered, state-listed as threatened, and is a CNPS Rank 1B.2 species, threatened by development, sand mining, vehicles, recreational activities, foot traffic, and non-native plants.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Monterey gilia. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.15 *KELLOGG'S HORKELIA (HORKELIA CUNEATA SSP. SERICEA)*

Kellogg's horkelia is a white-flowered perennial herbaceous member of the rose family (Rosaceae), that blooms between April and September. This species is endemic to California and is known to occur in sandy or gravelly openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub. Kellogg's horkelia is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by coastal development.

An historic record (1896) for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 15). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Kellogg's horkelia. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.16 *BEACH LAYIA (LAYIA CARNOSA)*

Beach layia is a white and yellow-flowered annual herbaceous member of the sunflower family, that blooms between March and July. This species is known to occur coastal dunes and coastal scrub in California and Oregon. Beach layia is state and federally endangered, and is a CNPS Rank 1B.1 species, threatened by coastal development, foot traffic, vehicles, and non-native plants.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the

September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to beach layia. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.17 CARMEL VALLEY BUSH-MALLOW (*MALACOTHAMNUS PALMERI* VAR. *INVOLUCRATUS*)

Carmel Valley bush-mallow is a white to pale-pink-flowered perennial deciduous shrub member of the hibiscus family (Malvaceae), that blooms between April and October. This species is endemic to California and is known to occur in chaparral, cismontane woodland, and coastal scrub. Carmel Valley bush-mallow is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by development.

An historic record (1955) for this species is documented approximately 2.6 miles east of the project site (exact location is unknown) (CNDDB Occurrence No. 30). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Carmel Valley bush-mallow. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.18 CARMEL VALLEY MALACOTHRIX (*MALACOTHRIX SAXATILIS* VAR. *ARACHNOIDEA*)

Carmel Valley malacothrix is a white-flowered perennial rhizomatous herbaceous member of the sunflower family, that blooms between March and December. This species is endemic to California and is known to occur in rocky chaparral and coastal scrub. Carmel Valley malacothrix is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by road maintenance.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Carmel Valley malacothrix. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.19 OREGON MECONELLA (*MECONELLA OREGANA*)

Oregon meconella is a white-flowered annual herbaceous member of the poppy family (Papaveraceae), that blooms between March and April. This species is known to occur in coastal prairie and coastal scrub in California, Oregon, and Washington. Oregon meconella is not state or federally listed, but is a CNPS Rank 1B.1 species, threatened by alteration of fire regimes.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Oregon meconella. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.20 MARSH MICROSERIS (*MICROSERIS PALUDOSA*)

Marsh microseris is a yellow-flowered perennial herbaceous member of the sunflower family, that blooms between April and July. This species is endemic to California and is known to occur in closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland. Marsh microseris is not state or federally listed, but is a CNPS Rank 1B.2 species.

An historic record (1901) for this species is documented in the vicinity of the project site (exact location is unknown) (CNDDDB Occurrence No. 30). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to marsh microseris. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.21 NORTHERN CURLY-LEAVED MONARDELLA (*MONARDELLA SINUATA* SSP. *NIGRESCENS*)

Northern curly-leaved monardella is a lavender to purple-flowered annual herbaceous member of the mint family (Lamiaceae), that blooms between April and September. This species is endemic to California and is known to occur in sandy chaparral, coastal dunes, coastal scrub, and lower montane coniferous forest. Northern curly-leaved monardella is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by on-native plants, development, habitat loss, habitat fragmentation, and climate shifts.

This species is known to occur on the same quad as the project site (Monterey Quad). The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, even though the surveys were conducted during the blooming

season, they were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to northern curly-leaved monardella. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.22 YADON'S REIN ORCHID (*PIPERIA YADONII*)

Yadon's rein orchid is a green and white-flowered perennial herbaceous member of the orchid family (Orchidaceae), that blooms between February and August. This species is endemic to California and is known to occur in sandy coastal bluff scrub, closed-cone coniferous forest, maritime chaparral. Yadon's rein orchid is federally endangered, and is a CNPS Rank 1B.1 species, threatened by urbanization, recreational development, non-native plants, road maintenance, and herbivory.

The closest record for this species occurs in a Monterey pine/coast live oak woodland approximately 0.7-mile northeast of the project site (CNDDDB Occurrence No. 24) The southwestern portion of the project site is comprised of coastal sagebrush scrub and provides suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Yadon's rein orchid. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.23 HICKMAN'S CINQUEFOIL (*POTENTILLA HICKMANII*)

Hickman's cinquefoil is a yellow-flowered perennial herbaceous member of the rose family, that blooms between April and August. This species is endemic to California and is known to occur in coastal bluff scrub, closed-cone coniferous forest, vernal mesic meadows and seeps, and freshwater marshes and swamps. Hickman's cinquefoil is state and federally endangered, and is a CNPS Rank 1B.1 species, threatened by urbanization, recreational activities, non-native grasses, and grazing.

This species is known to occur on the same quad as the project site (Monterey Quad). The coastal sagebrush scrub and the wetland habitat that occur on the project site provide suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Hickman's cinquefoil. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.24 SALINE CLOVER (*TRIFOLIUM HYDROPHILUM*)

Saline clover is a white, pink, red, and/or purple-flowered annual herbaceous member of the pea family (Fabaceae), that blooms between April and June. This species is endemic to California and is known to occur in marshes and swamps, mesic and alkaline valley and foothill grassland, and vernal pools. Saline clover is not state or federally listed, but is a CNPS Rank 1B.2 species, threatened by development, trampling, road construction, and vehicles.

This species is known to occur on the same quad as the project site (Monterey Quad). The onsite wetlands provide suitable habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to saline clover. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.1.25 PACIFIC GROVE CLOVER (*TRIFOLIUM POLYODON*)

Pacific Grove clover is a pink to white and purple-flowered annual herbaceous member of the pea family, that blooms between April and July. This species is endemic to California and is known to occur in mesic closed-cone coniferous forest, coastal prairie, meadows and seeps, and valley and foothill grassland. Pacific Grove clover is a state-listed rare species, and is a CNPS Rank 1B.1 species, threatened by urbanization, recreation, foot traffic, trampling, and non-native plants.

This species is known to occur on the same quad as the project site (Monterey Quad). The project site provides marginal habitat for this species. While this species was not observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to Pacific Grove clover. These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.2 STATE AND FEDERALLY LISTED WILDLIFE

A total of 11 special-status wildlife species are known to occur in the vicinity of the project site (Appendix B, Table 2): black legless lizard (*Anniella pulchra* ssp. *nigra*), California red-legged frog (*Rana draytonii*), black swift (*Cypseloides niger*), California brown pelican (*Pelecanus occidentalis* ssp. *californicus*), California tiger salamander (*Ambystoma californiense*), coast range newt (*Taricha torosa* ssp. *torosa*), monarch butterfly (*Danaus plexippus* ssp. *plexippus*), Smith's blue butterfly (*Euphilotes enoptes* ssp. *smithi*), steelhead (*Oncorhynchus mykiss* ssp. *irideus*), western pond turtle (*Emys marmorata*), white-tailed kite (*Elanus leucurus*). Four of these species require specialized habitats that do not occur on the project site, such as steep, rocky cliffs (black swift), offshore islands (California brown pelican); grasslands adjacent to sufficiently deep freshwater seasonal wetlands and ponds (California tiger salamander); tall stands of eucalyptus (*Eucalyptus* sp.),

Monterey cypress, Monterey pine (*Pinus radiata*), and western sycamore trees (*Platanus racemosa*) [monarch butterfly].

Of the 10 special-status wildlife species known to occur in the vicinity of the project site, four have been recorded on the project site (California red-legged frog, steelhead, western pond turtle, and white-tailed kite). While not detected on the project site, the site provides suitable habitat for black legless lizard and coast range newt, and potentially suitable habitat for Smith's blue butterfly. A description of these species is included below, including the species' distribution, habitat, life cycle, threats to the species, current habitat conservation efforts, and potential impacts to the species resulting from implementation of the proposed project.

4.2.1 BLACK LEGLESS LIZARD (*ANNIELLA PULCHRA SSP. NIGRA*)

The black legless lizard (BLL) is a small, slender lizard, with smooth, shiny scales, a blunt tail, and no legs. BLL range in body length from 4.5 to 7 inches, with females generally slightly larger (Lee 2008). This lizard is often mistaken for a snake, but can be easily differentiated from a snake by the presence of eyelids. Adult BLL have a black upper (dorsal) body with a yellow belly. The BLL is considered by many to simply represent a melanistic form of *Anniella pulchra*, however is recognized as a separate subspecies (*ssp. nigra*) by some herpetologists and state agencies.

The BLL burrows in loose, sandy soils, and is known to occupy sand dunes as well as other sandy-soiled areas such as oak or pine-oak woodland, chaparral, wooded stream edges, and desert-scrub. Often foraging in loose soil and leaf litter, and under rocks, logs, and/or driftwood, black legless lizards eat larval insects, small adult insects, and spiders. This species breeds in late spring/early summer, gestates for approximately 4 months, and gives birth to one to four live young in the fall (Zeiner et. al. 1988, updated 2000; Hollingsworth and Hammerson 2007).

BLL is known only from the Monterey Bay area and is a state Species of Special Concern. Major threats to this species include habitat loss due to agriculture, development, sandmining, recreation, and the introduction of exotic plants such as ice plant.

The closest record for this species occurs in the immediate vicinity of the project (the exact location is suppressed by CNDDDB and is unavailable for public viewing) (CNDDDB Occurrence No. 22). The project site provides suitable habitat for this species, and as such, the implementation of the proposed project has the potential to result in adverse impacts to BLL, both directly (physical impacts to individual BLL) and indirectly (temporary alteration of suitable habitat). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.2.2 CALIFORNIA RED-LEGGED FROG (*RANA DRAYTONII*)

The California red-legged frog (CRLF) has coarsely granular skin, with coloring that ranges from brown, to grey, to olive, to reddish, with dark, irregular blotches. Although a distinctive feature of this species is the often-prominent ridges (dorsolateral folds) running from behind the eyes down to the hips, this species gets its name from the generally reddish-coloring on its lower abdomen and ventral side of its legs (Storer 1925). The CRLF is the largest native frog in the western United States, ranging in body length from 1.5 to 5.1 inches, and exhibiting sexual dimorphism, with

females growing significantly longer than males (Wright and Wright 1949, Hayes and Miyamoto 1984).

CRLF is a highly aquatic species, generally staying close to their aquatic habitat: streams and creeks, ponds, marshes, seeps, and springs. Ideal CRLF habitat includes aquatic breeding areas embedded within a matrix of riparian and upland dispersal habitats. Dispersal habitat generally includes moist, shaded areas with vegetation that provides cover as a protection from predators and to prevent desiccation; these frogs often travel along riparian corridors and can be found adjacent to aquatic habitats (USFWS 2002).

Ideal breeding habitat includes still water exceeding two feet in depth, with emergent vegetation. Breeding occurs November through July, with females laying between 750 and 4,000 eggs in clusters (egg masses), typically attached to emergent vegetation (Jennings et. al 1992, Stebbins 1954). The amount of time to metamorphosis is highly dependent on temperature (Calef 1973), but generally takes 11 to 20 weeks (Storer 1925, Calef 1973). Adult frogs generally become sexually mature in three to four years and may live for eight to ten years.

CRLF has sustained a 70 percent reduction in its geographic range as a result of degradation and loss of its habitat through agriculture, urbanization, mining, overgrazing, recreation, timber harvesting, non-native plants, impoundments, water diversions, degraded water quality, use of pesticides, and introduced predators (Jennings et al. 1992). Several introduced species prey upon CRLF, larvae, and eggs, including crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), bullfrogs (*Rana catesbeiana*), green sunfish (*Lepomys cyanellus*), bluegill (*L. macrochirus*), largemouth bass (*Micropterus salmoides*) and smallmouth bass (*M. dolomieu*).

CRLF was listed as federally threatened in 1996 (Federal Register 61:25813-25833), with critical habitat originally designated for this species in 2001 (Federal Register 66:14626-14674). This critical habitat ruling was contested (Home Builders Association of Northern California, et al. v. Norton, et al., Civ. No. 01-1291 (RJL) (D. D.C.)), withdrawn, reduced (Federal Register 71:19244-19346), and finally re-designated in 2010 (Federal Register 75:12816-12959). CRLF is currently state-listed as a Species of Special Concern.

A 2001 record for this species documented CRLF at multiple sites throughout the project site (CNDDDB Occurrence No. 472). The implementation of the proposed project has the potential to result in adverse impacts to CRLF, both directly (physical impacts to individual CRLF) and indirectly (temporary alteration of habitat). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.2.3 COAST RANGE NEWT (*TARICHA TOROSA SSP. TOROSA*)

The coast range newt (CRN) is a stocky, medium-sized newt with rough, granular skin. Adult CRN have a dark brown upper (dorsal) body with a yellow to dark orange lower (ventral) body. CRN range from approximately 5 to 8 inches in total length, with males generally slightly larger than females (Espinoza 2001).

CRN is a largely fossorial species, spending much of the year in underground refugia in upland mesic woodlands, but can be found travelling overland in moist conditions year-round. Migration to/from breeding areas is generally initiated by the first rains of fall, with many individuals

migrating from their upland habitat as far as 2 miles to breeding areas. Breeding occurs in ponds, reservoirs, and streams. Egg sacks are attached to emergent vegetation and submerged sticks and stones (Hammerson 2008 and Zeiner 1988), and depending on location, CRN egg incubation lasts between 14 and 52 days, and larval stage lasts several months. Adult CRN eat earthworms, snails, slugs, and small insects, while larval CRN eat small aquatic invertebrates and decomposing organic matter (Stebbins 1972).

CRN is known to occur in scattered populations along the coast from Monterey County southward through southern California. It is a state Species of Special Concern, threatened by habitat loss and degradation, and predation by non-native introduced fish and crayfish.

The closest record for this species occurs approximately 2.4 miles southeast of the project site (CNDDDB Occurrence No. 70). The project site provides suitable habitat for this species, and as such, the implementation of the proposed project has the potential to result in adverse impacts to CRN, both directly (physical impacts to individual CRN) and indirectly (temporary alteration of suitable habitat). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.2.4 MONTEREY DUSKY-FOOTED WOODRAT (*NEOTOMA MACROTIS* SSP. *LUCIANA*)

The Monterey dusky-footed woodrat (MDFW) is a large-sized wood rat with a blunt nose, long whiskers, and a scantily haired tail. Adult MDFW have a gray-brown dorsal body, with a pale to white ventral body. MDFW range from 10 to 17 inches in total length (Jameson and Peeters 2004).

MDFW build large houses of sticks, leaves, and other debris on the ground or in trees; with the exception of females with young, each stick house generally supports just one adult. MDFW breed primarily in winter and spring, rearing between one and five litters (with 1 to 3 young) per year, with most young born between February and May (Cassola 2016). MDFW are primarily nocturnal rodents, foraging in bushes and trees as well as on the ground, feeding mainly on woody plants, fungi, flowers, grasses, berries, and acorns (Zeiner 1988-90, updated 2008; Jameson and Peeters 2004).

MDFW is known to occur in dense oak woodlands, riparian woodlands, and cooler chaparral habitats in coastal California from Monterey Bay to Morrow Bay. It is a state Species of Special Concern, threatened by habitat loss and degradation due to coastal development.

While no records for MDFW occur within 3 miles of the project site, several woodrat nests were observed on the project site during the September 2017 site investigations. As such, the implementation of the proposed project has the potential to result in adverse impacts to MDFW, both directly (physical impacts to individual CRN) and indirectly (temporary alteration of occupied habitat). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.2.5 SMITH'S BLUE BUTTERFLY (*EUPHILOTES ENOPTES* SSP. *SMITHI*)

Smith's blue butterfly (SBB) is a small-sized butterfly with a wing span of just under 1 inch. Males and females have the same coloring on the ventral sides of their wings, with white-gray coloring

with black dots and a band of red-orange dots along the outer edge of the hind-wings. However, SBB exhibits sexual dimorphism in the coloring on the dorsal sides of their wings, with males exhibiting bright blue wing coloring, and females exhibiting brown wing coloring with red-orange markings on the hind wings. SBB's life history is tied to its host plant(s): seacliff buckwheat (*Eriogonum parvifolium*) and seaside buckwheat (*Eriogonum latifolium*). Larvae feed on the flowers of these host plants, adults feed on the nectar and use them as mating sites (Black and Vaughn 2005).

Adult SBBs can be seen between late mid-June through early September (this timing is synchronized with the flowering of their host plants). Males emerge first, with females emerging approximately one week later. Adults immediately mate and lay eggs on the flowers of the host plants. Caterpillars hatch from these eggs after approximately four to eight days, grow for approximately four weeks, then rest for the winter (diapause). Caterpillars spend the winter and spring in a chrysalis and emerge in late summer/early fall (NatureServe 2017).

Historically, SBB occurred in scattered populations along the California coast from Monterey Bay to Point Gorda. However, this range has been greatly reduced due to habitat loss from development and recreation, and invasion of exotic plants introduced for beach stabilization purposes.

SBB was listed as federally endangered in 1976 (Federal Register 41:22041-22044). Critical habitat was proposed for SBB in 1977 (Federal Register 42:7972-7976), but was never designated. The *Smith's Blue Butterfly Recovery Plan* (SBB Recovery Plan) was approved and published in 1984 (USFWS 1984). The SBB Recovery Plan identifies existing populations and strategies to preserve and protect the species. Specifically, when the 18 existing population locations (or 18 equivalent sites) listed in the SBB Recovery Plan are protected, managed, and appear to support healthy populations of SBB, the species can be determined "recovered," and be delisted. The project site does not occur within any of the 18 identified sites, and does not provide the quality of coastal dune or cliff/chaparral habitat necessary to be considered an equivalent site.

SBB is not known to occur on or adjacent to the project site, however four records for this species occur within 3 miles of the project site. The closest record of SBB is for individuals observed approximately 1.3 miles east of the project site on preserved land within the Palo Corona Regional Park. Dune buckwheat, one of SBB's host plant species, has been observed in close proximity to the project site (0.3-mile north of the project site, adjacent to the Carmel River State Beach parking lot). While the project site provides marginal habitat for SBB, no buckwheat species of any kind were observed on the project site during the September 2017 site investigation. The presence of SBB is correlated with the presence of their host plant. The presence of the host plant, however, is not indicative of presence of SBB, as the range of the host plant species is much larger than the range of the butterfly. Regardless, in the absence of thorough botanical surveys, the presence of SBB host plants and the presence of SBB cannot be ruled out. The potential for this species to occur on the project site is low. As such, the implementation of the proposed project has the potential to result in adverse impacts to SBB, both directly (physical impacts to individual SBB) and indirectly (temporary alteration of occupied habitat). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.2.6 STEELHEAD (SOUTH-CENTRAL CALIFORNIA COAST DPS) (*ONCORHYNCHUS MYKISS* SSP. *IRIDEUS*)

In North America, steelhead are found in the Pacific Ocean and associated tributaries from southern California to Alaska. Within California, known spawning populations are found in coastal streams from Malibu Creek in Los Angeles County to the Smith River near the Oregon border, and in the Sacramento and San Joaquin River systems. Steelhead are anadromous, with two-year-old smolts generally migrating from freshwater to sea and returning to freshwater after two years to spawn.

The steelhead species is divided into 10 Distinct Population Segments (DPSs) based on location. The locally occurring population is the South-Central California Coast DPS (SCCC Steelhead). SCCC steelhead occur in streams from the Pajaro River (inclusive) located in Santa Cruz County, CA, to (but not including) the Santa Maria River in San Luis Obispo County. Steelhead utilize the Carmel River Lagoon throughout the year. In the Carmel River, adult migration in the river is delayed until the sandbar at the mouth of the Carmel River is breached in January to April, but may start as early as December and extend into May. The fish then travel upstream to spawning habitat in the Carmel River and peak spawning occurs from December through April. After spawning, eggs incubate 3 weeks to 2 months and fry emerge post-hatch 2 to 6 weeks in spring or early summer. Juvenile steelhead rear in the Carmel River and Carmel River Lagoon for 1 to 2 years before smolting and entering the ocean (Alley 2013). The southern arm of the lagoon is usually the deepest portion of the lagoon during the summer months, thus the area is likely to provide refuge for juvenile steelhead when the river flows cease and the lagoon size decreases. Following smolt migration, the Carmel River Lagoon provides steelhead rearing habitat from March to early June and primarily in April and May (Alley 2014). Juvenile steelhead continued to enter the lagoon after the March to June period as long as there is stream flow connecting the lower river to the lagoon. These fish rear in the lagoon through the summer-fall period and utilize the south arm particularly when volume and depth in the main embayment is limited in late summer (Casagrande, NMFS, personal observations, 2001 - 2006).

Threats to SCCC steelhead include the loss of fresh water and estuarine habitat, periodic poor ocean conditions, and land-use practices impacting watershed processes. The SCCC steelhead was listed as federally threatened in 2006 (Federal Register 71:834-862), with critical habitat designated for the species in 2005 (Federal Register 70:69348-69350).

The species has been well documented within the Carmel River and within the Carmel River Lagoon. SCCC steelhead smolt migrate downstream from the Carmel River to the Carmel River Lagoon where they reside prior to entering the ocean; this migration is heaviest from March to May. As the proposed project will temporarily impact the south arm of the Carmel River Lagoon, implementation of the proposed project has the potential to result in adverse impacts to SCCC steelhead, both directly (physical impacts to individual fish) and indirectly (temporary alteration of occupied habitat and acoustic impacts). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.2.7 WESTERN POND TURTLE (*EMYS MARMORATA*)

The western pond turtle (WPT) is a small, fairly flat-bodied turtle, with an olive, brown, or black carapace (dorsal “shell”) with yellow dots, splotches, or lines and a plastron (ventral “shell”) that is generally yellow with dark splotches. WPT range from approximately 3.5 to 8.5 inches in shell

length. Male turtles vary slightly from females in location of vent relative to carapace edge, throat coloration, and shell depth and markings. (Stebbins 1985).

WPT generally overwinter in upland habitats near permanent or intermittent waters such as rivers, creeks, small lakes/ponds, marshes, and reservoirs. Mating generally occurs between April and May, when adults are 8 to 10 years of age. Egg laying occurs between April and August, with females digging nests in upland friable soils and laying between 2 and 11 eggs. Egg incubation lasts for approximately 10-12 weeks, and young overwinter in the nest until early spring when they emerge and migrate back towards aquatic habitat (Zeiner 1988, updated 2000). WPT eat aquatic plants and invertebrates, as well as worms, amphibian larvae and eggs, and carrion.

WPT is known to occur throughout California, west of the Sierra-Cascade crest, but is absent from desert areas (except along the Mojave River and its tributaries) (Jennings and Hayes 1994). It is a state Species of Special Concern, and was petitioned for federal listing in 2012. Threats to the species include habitat loss and degradation, competition with non-native invasive turtle species (red-eared sliders and painted turtles), and predation by bullfrogs.

A 2001 record for this species documented two individuals on the project site (CNDDDB Occurrence No. 1108). The project site provides suitable habitat for this species, and as such, the implementation of the proposed project has the potential to result in adverse impacts to WPT, both directly (physical impacts to individual WPT and their nests) and indirectly (temporary alteration of suitable habitat). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.2.8 WHITE-TAILED KITE (*ELANUS LEUCURUS*)

The white-tailed kite (WTK) is a medium-sized raptor with a wing span of approximately 39 inches. This species is easily identified by its primarily white body with a grey back and wings and red eyes. WTK forage predominantly in open grasslands, agricultural fields, and emergent wetlands hovering as much as 30 meters above the ground in search of prey (primarily on voles [*Microtus* spp.] and other small, diurnal mammals). WTK build stick nests in dense tree stands adjacent to suitable foraging habitat. Females generally lay a single clutch of 4-5 eggs each year, incubating eggs for approximately 28 days. The young generally fledge between 35 and 40 days after hatching (Zeiner et. al. 1988, updated 2005).

WTK is found throughout much of California, but is most common in coastal and valley lowlands in or in close proximity to grasslands, agricultural fields, or emergent wetlands. It is a state Fully Protected species, threatened by habitat loss and degradation due to development and agriculture.

Several WTK were observed on the project site during the September 2017 site investigations. While no nesting WTK or active or abandoned raptor nests were observed onsite during these surveys, the surveys were not conducted during the nesting season and were not sufficiently thorough to be considered protocol-level nesting raptor surveys. The project site provides suitable nesting habitat for this species, and as such, the implementation of the proposed project has the potential to result in adverse impacts to nesting WTK, both directly (physical impacts to individual WTK) and indirectly (disturbances that would cause abandonment of eggs or young). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the

implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.3 FULLY PROTECTED SPECIES

Records for two fully protected species occur within 3 miles of the project site: California brown pelican and WTK. While the project site does not provide suitable habitat for the California brown pelican, WTK were observed on the project site during the September 2017 site investigations. The project site provides suitable nesting habitat for WTK, and as such, the implementation of the proposed project has the potential to result in adverse impacts to fully protected species, both directly (physical impacts to individual WTK) and indirectly (disturbances that would cause abandonment of eggs or young). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

4.4 NESTING BIRDS/RAPTORS

The trees, shrubs, and bulrush on the project site provide suitable nesting habitat for a variety of raptors and passerines. As such, the implementation of the proposed project has the potential to result in adverse impacts to MBTA protected- and California Fish and Game Code protected-species, both directly (physical impacts to individuals) and indirectly (disturbances that would cause abandonment of eggs or young). These impacts can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

SECTION 5. POTENTIAL IMPACTS TO WILDLIFE CORRIDORS

A wildlife corridor is an area of habitat adjoining two or more larger areas of similar wildlife habitat, often connecting wildlife populations separated by natural or created activities, disturbances, or structures. Wildlife corridors are used by individuals and populations for dispersal and migration, allowing for genetic exchange, population growth, and access to larger stretches of suitable habitats, and functionally reduce fragmentation.

The majority of the project site does not represent a regional or local migration corridor for any common or special-status wildlife species. However, the Carmel River Lagoon represents a significant part of the SCCC steelhead Carmel River migration route, with smolt residing in the lagoon (specifically in the southern arm of the lagoon which is usually the deepest portion of the lagoon during the summer months) after their Carmel River downstream migration and prior to entering the ocean.

While the sheet piles installed to isolate the work area from flowing water within the south arm of the Carmel River Lagoon will act as a barrier to SCCC steelhead movement to/from the lagoon to/from the Carmel River during construction, this isolation will be temporary in nature, and will not impact SCCC steelhead migration to the ocean as the construction work window will occur during the period of time prior to the sandbar at the mouth of the Carmel River being breached (i.e., outside of the migration season for the local population of SCCC steelhead).

SECTION 6. POTENTIAL IMPACTS TO AQUATIC RESOURCES

Aquatic resources are regulated by state and federal resource agencies (CORPS, California State Water Resources Control Board (SWRCB), and CDFW) and are accordingly legally protected via the federal and/or state laws defined below.

Section 404 Clean Water Act (CWA): Section 404 of the Clean Water Act (CWA), administered by the CORPS, establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Per Section 404, a permit is required prior to discharge of fill material into waters of the United States, unless the activity is exempt from Section 404 regulation.

Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands. Wetlands are “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [33 C.F.R. 328.3(b), 51 F.R. 41250, November 13, 1986]. Wetlands can be perennial or intermittent, and isolated or adjacent to other waters.

Other waters are non-tidal, perennial, and intermittent watercourses and tributaries to such watercourses [33 C.F.R. 328.3(a), 51 F.R. 41250, November 13, 1986].

Rivers and Harbors Act (RHA) of 1899: The RHA, also administered by the CORPS, prohibits the construction of any bridge, dam, dike or causeway over or in navigable waterways of the U.S. Administration of section 9 has been delegated to the Coast Guard ((33 U.S.C. 403; Chapter 425, March 3, 1899; 30 Stat. 1151).

Magnuson-Stevens Fishery Conservation and Management Act (MSA): The MSA (50 CFR § 600.920(b)), requires all federal agencies to consult on activities or proposed activities that may adversely affect Essential Fish Habitat (EFH) of federally managed marine and anadromous fish species. EFH is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (Magnuson-Stevens Act: 16 U.S.C. 1802 (10)).

Water Pollution Control and Storm Water Management: The National Pollutant Discharge Elimination System (NPDES) Permit Program, also authorized by the CWA, controls water pollution by regulating point sources (discrete conveyances such as pipes or constructed ditches) that discharge pollutants into waters of the United States. The implementation of this federal program has been charged to the State of California for implementation through the State Water Resource Control Board (SWRCB) and RWQCBs. In California, NPDES permits are also referred to as waste discharge requirements (WDRs) that regulate discharges to waters of the United States.

Also implemented by the RWQCB is the Municipal Storm Water Permitting Program, which regulates storm water discharges from municipal separate storm sewer systems (MS4s). The MS4 Permit Program was established to restore and maintain the chemical, physical, and biological integrity waters of the U.S./State and reduce/eliminate storm water pollution.

Section 401 CWA: The State Water Resources Control Board (SWRCB) and its nine regional water boards (Regional Water Quality Control Boards) have been charged with the protection and enhancement of water quality in the state of California. Pursuant to Section 401 of the CWA and the Porter Cologne Water Quality Control Act (Porter Cologne), the Regional Water Quality Control

Board (RWQCB) has authority to regulate discharges of fill and dredged material into Waters of the State. Pursuant to Porter Cologne, waters of the State are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” This is generally taken to include all waters of the U.S., all surface waters not considered to be waters of the U.S. (non-jurisdictional wetlands), groundwater, and territorial seas (with territorial boundaries extending 3.0 nautical miles beyond outermost islands, reefs, and rocks and includes all waters between the islands and the coast).

California Fish and Game Code 1602 (Lake and Streambed Alteration): Pursuant to California Fish and Game code, the CDFW maintains jurisdiction over rivers, streams and lakes; this jurisdiction includes to all features exhibiting bed, bank, and channel (the extent of CDFW’s jurisdiction on these features extends to the top of bank or the edge of riparian canopy - whichever is greater). This Fish and Game Code requires that any project that substantially diverts or obstructs the natural flow of a river, stream, or lake or substantially changes the bed or bank of a river, stream, or lake notifies CDFW prior to project implementation.

6.1 WATERS OF THE UNITED STATES

The project site contains approximately 1.813 acres of waters that would be regulated by the federal government, including 5 wetland features (totaling 1.482 acres) and two linear features (totaling 266 linear feet, 0.331 acre). The implementation of the proposed project would result in temporary impacts to a total of approximately 0.29 acre of waters of the U.S. As such, it is assumed that project authorization from the Corps pursuant to Section 404 of the CWA would be required.

6.2 ESSENTIAL FISH HABITAT

The waters of Carmel Lagoon are designated as EFH. The fish species using the lagoon are both resident and anadromous species and therefore year-round utilization is expected. The southern arm of the lagoon is usually the deepest portion of the lagoon during the summer months, thus the area is likely to provide refuge for fish species when the river flows cease and the lagoon size decreases. The lagoon is utilized as a forage area for juveniles and adults and nursery area for larvae and juveniles. As the project includes construction activities that would temporarily impact EFH, it is likely that NMFS will include provide conservation recommendations on minimizing impacts to EFH as part of section 7 consultation.

6.3 WATERS OF THE STATE

The project site contains approximately 1.813 acres of waters that would be regulated by the state government, including 5 wetland features (totaling 1.482 acres) and two linear features (totaling 266 linear feet, 0.331 acre). The implementation of the proposed project would result in temporary impacts to a total of approximately 0.29 acre of waters of the State. As such, it is assumed that project authorization from the RWQCB pursuant to Section 401 of the CWA would be required.

6.4 RIVERS, STREAMS, AND LAKES

The proposed project would require work within the Carmel River Lagoon and associated riparian habitat, and would accordingly result in temporary impacts to waters/habitats regulated by CDFW. As such, it is assumed that project authorization from CDFW pursuant to section 1602 of the California Fish and Game Code would be required.

SECTION 7. LOCAL ORDINANCES, LAND USE AND PLANNING

Additional state and local natural resource ordinances and laws, as well as local land use plans, are applicable to the proposed project; these ordinances, laws, and plans are discussed below.

Coastal Zone Management Act (CZMA) of 1972: The U.S. Congress addressed the regulation of development in the coastal zone by passing the CZMA in 1972. This act, administered by NOAA, provides for the management of the nation’s coastal resources. The goal is to “preserve, protect, develop, and where possible, to restore or enhance the resources of the nation’s coastal zone.” The CZMA outlined the National Coastal Zone Management Program, of which 34 states including California participate. Section 307 of the CZMA, called the “federal consistency” provision, gives states a role in the federal agency decision making process for activities that may affect a state’s coastal uses or resources. The CZMA encourages states to develop coastal management programs and implement the federal consistency procedures of the CZMA. Upon certification of a state’s coastal management program, all federal agency activities (including federal development projects, permits and licenses, and assistance to state and local governments) affecting the coastal zone must be consistent with the enforceable policies of the state’s certified program.

Coastal Act of 1976: The federal government certified the California Coastal Management Program in 1977. The enforceable policies of that document are Chapter 3 of the California Coastal Act of 1976; these policies address public access, recreation, the marine environment, land resources, development, and industrial development.

The Federal Consistency Unit of the California Coastal Commission (CCC) implements the CZMA and the Coastal Act, however, the Coastal Act was designed to be carried out by local governments through the creation and implementation of Local Coastal Programs (LCPs). The preparation of an LCP (comprised of a Land Use Plan and an Implementation Plan, and certified by the CCC) is required from all coastal counties and cities for the portion of their jurisdiction that falls within the coastal zone.

In 1988, the LCP created by and for Monterey County was certified by the CCC. The LCP divided Monterey County’s coastal zone into four land segments for the purposes of adequately addressing these different areas’ differing characteristics and needs; the four segments are North County, Big Sur, Carmel, and Del Monte. The project area occurs in the Carmel coastal zone land segment.

Carmel Land Use Plan: The project site is located within the Carmel Coastal Segment of the Monterey County LCP. The Carmel Coastal Segment extends from Pescadero Canyon in the north to Malpaso Creek in the south. Pursuant to the Coastal Act, development within the Carmel Coastal Segment must comply with the Carmel Area Land Use Plan and the Monterey County Coastal Implementation Plan.

Only policy measures and recommendations regarding impacts to natural resources and deemed pertinent to the proposed project are addressed in this section. Policies regarding specific project requirements such as County implementation of the review process and specific action recommendations for local, state, or federal agencies are not addressed below. Similarly, policy measures and recommendations that are clearly referring to projects or activities that are not related to the proposed project (e.g., residential, commercial, and recreational development projects) are not addressed below.

7.1 ENVIRONMENTALLY SENSITIVE HABITATS

7.1.1 GENERAL POLICY 1

General Policy 1 states that “Development, including vegetation removal, excavation, grading, filling, and the construction of roads and structures, shall be avoided in critical and sensitive habitat areas, riparian corridors, wetlands, sites of known rare and endangered species of plants and animals, rookeries and major roosting and haul-out sites, and other wildlife breeding or nursery areas identified as critical. Resource-dependent uses, including nature education and research, hunting, fishing, and aquaculture, shall be allowed within environmentally sensitive habitats only if such uses will not cause significant disruption of habitat values. Only small-scale development necessary to support the resource-dependent uses may be located in sensitive habitat areas if they cannot feasibly be located elsewhere.”

The proposed project consists of preemptive work to underground the sewer and outfall pipes in order to prevent future impediments to flow within the Carmel River Lagoon as well as potential damage to pipes by floating debris within the lagoon. This work will require vegetation removal, excavation, and other temporary disturbances to riparian and wetland habitat, as well as the south arm of the Carmel River Lagoon. This development within the environmentally sensitive habitats within the project site cannot be feasibly located elsewhere as it the work is location-dependent. As such, the development avoidance recommendation presented within this general policy measure does not apply to the proposed project.

7.1.2 GENERAL POLICY 2

General Policy 2 states that “Land uses adjacent to locations of environmentally sensitive habitats shall be compatible with the long-term maintenance of the resource. New land uses shall be considered compatible only where they incorporate all site planning and design features needed to prevent habitat impacts and where they do not establish a precedent for continued land development which, on a cumulative basis, could degrade the resource.”

The proposed project consists of preemptive work to underground the sewer and outfall pipes in order to prevent future impediments to flow within the Carmel River Lagoon as well as potential damage to pipes by floating debris within the lagoon. This project would result in temporary impacts to environmentally sensitive habitats in order to maintain and improve the sustainability of the pipeline within the Carmel River Lagoon area, which is compatible with and beneficial to long-term maintenance of the Carmel River Lagoon habitat.

7.1.3 GENERAL POLICY 5

General Policy 5 states that “Where private or public development is proposed in documented or expected locations of environmentally sensitive habitats - particularly those habitats identified in General Policy No. 1 - field surveys by qualified individuals or agency shall be required in order to determine precise locations of the habitat and to recommend mitigating measures to ensure its protection. This policy applies to the entire segment except the internal portions of Carmel Woods, Hatton Fields, Carmel Point (Night heron site excluded), Odello, Carmel Meadows, and Carmel Riviera. If any habitats are found on the site or within 100 feet from the site, the required survey shall document how the proposed development complies with all the applicable habitat policies.”

As detailed in the sections above, field surveys conducted by JMC personnel Ms. McGarvey and Ms. Bingham (trained biologists and ecologists) were conducted on the project site to document natural resources present on and adjacent to the project site. The results of these surveys are included within this report. Mitigation measures are presented in Section 8 (below) that would ensure the protection of sensitive natural resources found on the project site. In addition, a certified arborist, approved by the County of Monterey, will conduct a tree survey and prepare their findings in a tree survey report to document impacts to trees associated with project implementation. This tree report will be provided to the County upon completion.

7.1.4 GENERAL POLICY 6

General Policy 6 states that “The County shall require deed restrictions or dedications of permanent conservation easements in environmentally sensitive habitat areas where development is proposed on parcels containing such habitats. Where development has already occurred in areas supporting sensitive habitat, property owners should be encouraged to voluntarily establish conservation easements or deed restrictions.”

The establishment of conservation easements or deed restrictions within the project site is not necessary as the project site occurs within land owned and managed by State Parks. The proposed project would result in temporary impacts within this protected land.

7.1.5 RIPARIAN CORRIDORS AND OTHER TERRESTRIAL WILDLIFE HABITATS POLICY 1

Riparian Corridors and Other Terrestrial Wildlife Habitats Policy 1 states that “Riparian plant communities shall be protected by establishing setbacks consisting of a 150-foot open space buffer zone on each side of the bank of perennial streams and 50 feet on each side of the bank of intermittent streams, or the extent of riparian vegetation, whichever is greater. No new development, including structural flood control projects, shall be allowed within the riparian corridor. However, improvements to existing dikes and levees shall be allowed if riparian vegetation damage can be minimized and at least an equivalent amount and quality of replacement vegetation is planted. In addition, exceptions may be made for carefully sited recreational trails. The setback requirement may be modified if it can be demonstrated that a narrower corridor is sufficient to protect existing riparian vegetation. Riparian vegetation is an association of plant species which typically grows adjacent to freshwater courses and needs or tolerates a higher level of soil moisture than dryer upland vegetation.”

Due to the location of the proposed project, impacts to riparian habitat will be necessary in order to establish a staging area for construction equipment and temporary spoils piles necessary for project implementation. Upon completion of the project, riparian vegetation will be replanted as required by state and local permits to be issued for the project.

7.1.6 RIPARIAN CORRIDORS AND OTHER TERRESTRIAL WILDLIFE HABITATS POLICY 4

Riparian Corridors and Other Terrestrial Wildlife Habitats Policy 4 states that “To protect important wildlife habitat, all off-road recreational vehicle activity should be discouraged within riparian corridors and public access should be limited to designated areas. Accordingly, roads and trails should be sited to avoid impacts to riparian habitat.”

The access road to be cleared/constructed as part of project-related activities, will be used in order for construction crews and equipment to access the pipeline replacement/undergrounding portion

of the project site, and would not constitute a road or trail open for public use. As such, the avoidance recommendation presented within this general policy measure does not apply to the proposed project.

7.1.7 WETLANDS AND MARINE HABITATS POLICY 1

Wetlands and Marine Habitats Policy 1 states that “A setback of 100 feet from the edge of all coastal wetlands shall be provided and maintained in open space use. No new development shall be allowed in this setback area.”

Unavoidable temporary impacts would be incurred to portions of three wetlands as a part of project-related activities. Restoration plantings and monitoring will be conducted within these temporarily disturbed wetlands as required by local, state, and federal project authorizations. All wetlands adjacent to project work that are not scheduled for disturbance will be protected from incidental disturbances via intervening barriers to placement of fill such as silt fencing. Setbacks around wetlands are not appropriate for this project.

7.2 WATER AND MARINE RESOURCES

7.2.1 WATER AVAILABILITY POLICY 5

Water Availability Policy 5 states that “Any diversion of surface sources of water shall be required to submit an approved water appropriation permit from the SWRCB prior to approval of any coastal development permit except where such water appropriation permit is not required by applicable State law.”

Project implementation will require the installation of sheet piles and localized dewatering of a portion of the work area while the new pipeline is connected to the old pipeline. Project authorizations will be obtained from the RWQCB and the Corps prior to commencement of project-related activities that would impact surface sources of water.

7.2.2 WATER POLLUTION CONTROL POLICY 1

Water Pollution Control Policy 1 states that “All dumping of spoils (dirt, garbage, refuse, etc.) into riparian corridors and other drainage courses should be prohibited.”

Project implementation will require that spoils taken from the south arm of the Carmel River Lagoon be temporarily placed within the staging areas. A plastic or wooden barrier will be in place between these spoil piles and the staging area substrate in order to protect keep these substrate materials separate. The wetland and riparian habitats to be temporarily impacted by the staging areas will be revegetated with wetland and riparian species and monitored, as required by local, state, and federal project authorizations. Revegetation work would be consistent with a Revegetation Plan to be submitted to and approved by appropriate agencies prior to commencement of project activities.

7.3 OAK TREES

Pursuant to the Monterey County Oak Protection Ordinance, the removal of trees that have been designated as “protected” requires a permission from the County Planning Department. With regard to the proposed project, protected trees include oak trees that are six inches or more in diameter at two feet above ground level. While a tree survey has not been conducted on the project

site to date, and as such, impacts to protected trees have not been calculated, there is potential for unavoidable impacts to protected trees associated with implementation of the proposed project. Impacts associated with the removal of protected trees can be reduced to a level considered less than significant pursuant to CEQA with the implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures presented in Section 8, below.

7.4 ZONING

The Monterey County General Plan zones the majority of the project as Coastal Agricultural Preservation (CAP), however, the open-water portion of the project site is zoned as Resource Conservation (RC-D), and the western access area is designated as Medium Density Residential (MDR).

SECTION 8. IMPACTS AND MITIGATION

In accordance with Appendix G of the State CEQA Guidelines, project-related impacts would be considered significant if the proposed project would result in one or more of the following effects:

- 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 CDFW or USFWS; or
- b) have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS; or
- c) have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; or
- 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; or
- e) conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

Potential impacts associated with implementation of the proposed project are addressed below. With implementation of the General Avoidance and Minimization Measures as well as the specific mitigation measures recommended below, all project-related impacts to natural resources can be reduced to a level considered less than significant.

8.1 GENERAL AVOIDANCE AND MINIMIZATION MEASURES

- 1) Prior to project-implementation, all construction personnel working on vegetation removal, earthmoving, and/or construction activities will attend a mandatory environmental education program, led by an approved biologist.
- 2) All staging, maintenance, and storage of construction equipment will be performed in a manner to preclude any direct or indirect discharge of fuel, oil, or other petroleum products into waters of the U.S./State. No other debris, rubbish, creosote-treated wood, soil, silt, sand, cement, concrete or washings thereof, or other construction-related materials or wastes will be allowed to enter into or be placed where they may be washed by rainfall or runoff into waters of the U.S./State. All such debris and waste shall be picked-up daily and properly disposed of at an appropriate site.
- 3) All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once a day from the project site.
- 4) No firearms will be allowed on the project site except for those carried by authorized security personnel, or local, State, or Federal law enforcement officials.
- 5) Project personnel will not be permitted to have dogs or cats in the project area.

- 6) Project personnel will not be permitted to smoke in the project area.
- 7) No pesticides of any kind will be used on the project site at any time during project implementation, with the exception of pre-authorized herbicide application to prevent the spread of the invasive pampas grass currently occurring on the project site.
- 8) No equipment will be operated in areas of flowing or standing water. No fueling, cleaning, or maintenance of vehicles or equipment will take place within any areas where an accidental discharge to waters of the U.S./State waters may occur.
- 9) All equipment including excavators, trucks, hand tools, etc., that may have come in contact with invasive plants or the seeds of these plants, will be carefully cleaned before arriving on the site and shall also be carefully cleaned before removal from the site to prevent spread of these plants.
- 10) Prior to commencement of vegetation removal or ground disturbance, invasive plant species (as identified by the California Invasive Plant Council [Cal-IPC] and the California Department of Parks and Recreation) occurring on and/or adjacent to the project site will be identified and marked with construction flagging. These plants will be removed
- 11) Disturbance or removal of vegetation will not exceed the minimum necessary to complete construction.
- 12) To minimize harassment, injury, death, and harm in the form of temporary habitat disturbances, all project-related vehicle traffic will be restricted to established roads, construction areas, equipment staging, parking, and stockpile areas.
- 13) The work area will be delineated with orange wildlife exclusion fencing in order to minimize impacts to habitat beyond the work limit. A biological monitor will supervise the installation of protective fencing and will conduct preconstruction inspections of the fencing daily until construction is complete to ensure that the protective fencing remains intact. Orange cyclone fencing, or other materials that can entrap small amphibians and reptiles and other special-status species, will not be used.
- 14) Wetlands temporarily impacted by construction activities will be protected with a layer of filter fabric and clean crushed gravel to prevent unnecessary adverse effects to vegetation or wetland hydrology. This temporary fill will be removed at the end of construction activities.
- 15) Prior to any instream work, sheet piles will be installed both up- and downstream from the area to be trenched in order to isolate the work area from the flowing stream. Any water removed from within the in-water work area would be filtered through sediment controls and either discharged back into the lagoon (after treatment in Baker tanks) or let to infiltrate through the porous on-site soil material. At the completion of instream work, all water-diversion systems will be removed from the work area.

- 16) After construction completion, any installed by-pass pipe, sheet piles, or other related construction materials installed within the project boundary shall be removed in its entirety.
- 17) Site conditions will be returned to pre-construction contours and will be revegetated with native habitat-appropriate species.
- 18) Prior to commencement of work each day, the biological monitor will check for animals under any equipment such as vehicles and stored pipes. In order to prevent inadvertent entrapment of terrestrial wildlife during the proposed project, all excavated, steep-walled holes or trenches more than 2 feet deep will be covered at the close of each working day by plywood or similar materials. Alternatively, an additional 2-foot high vertical barrier, independent of exclusionary fences, may be used to further prevent the inadvertent entrapment of terrestrial wildlife. If it is not feasible to cover an excavation or provide an additional 2-foot high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. Similarly, in order to prevent inadvertent entrapment of special-status aquatic wildlife during the localized dewatering of a portion of the work area, the intake of all pumps will be installed outside of emergent vegetation and will be screened.
- 19) An approved biologist(s) will be onsite during all work within the south arm of the Carmel River Lagoon and during all activities that could result in impacts to special-status species. The approved biologist will have the authority to stop any work that may result in adverse impacts to special-status species. If determined to be necessary for project implementation and wildlife safety, only approved biologists will capture, handle, and monitor special-status species observed onsite. Otherwise, all wildlife will be allowed to leave the site of their own accord.
- 20) All project-related ground moving activities will be restricted to between June 15 and November 1 in order to avoid the time period when locally occurring special-status species are most likely to be migrating through the project site and the immediately surrounding area.

8.2 BIOLOGICAL IMPACT 1: SPECIAL-STATUS PLANTS [LESS THAN SIGNIFICANT WITH MITIGATION]

While no special-status plant species were observed on the project site during the September 2017 site investigation, the surveys were not conducted during the blooming season for most locally occurring special-status plants and were not sufficiently thorough to be considered adequate to rule out presence of special-status plant species. In the absence of protocol-level rare plant surveys on the project site, the proposed project may result in adverse impacts to special-status plants. Impacts to special-status plants would be considered a significant adverse impact, pursuant to the CEQA. The mitigation measures presented below would reduce these impacts to a level considered less than significant pursuant to the CEQA.

8.2.1 MITIGATION MEASURE 1: SPECIAL-STATUS PLANTS

In the Spring and Summer immediately prior to project implementation, protocol-level rare plant surveys will be conducted on the project site. Rare plant surveys will be conducted by a qualified

botanist, in accordance with all applicable survey guidelines including those published by USFWS (USFWS 1996), CDFW (CDFW 2000, 2009) and CNPS (CNPS 2001). If determined to be necessary, reference site surveys will be conducted to confirm plant phenology (flowering periods).

8.3 BIOLOGICAL IMPACT 2: SPECIAL STATUS AMPHIBIANS AND REPTILES [LESS THAN SIGNIFICANT WITH MITIGATION]

The project site provides suitable habitat for breeding, nesting, foraging, and migrating special-status amphibian and reptile species known to occur locally, including black legless lizard, California red-legged frog, coast range newt, and western pond turtle. Further, California red-legged frog and western pond turtle have been documented on the project site. Project implementation could result in adverse impacts to these species. Impacts to special-status amphibians and reptiles would be considered a significant adverse impact, pursuant to the CEQA. The mitigation measures presented below would reduce these impacts to a level considered less than significant pursuant to the CEQA.

8.3.1 MITIGATION MEASURE 2: SPECIAL STATUS AMPHIBIANS AND REPTILES

The following measures are standard avoidance measures prescribed for special-status amphibians and reptiles by state and federal agencies and have been deemed appropriate to protect special-status amphibian and reptile species potentially occurring on the project site.

Within 48 hours prior to the initiation of work that may impact special-status amphibians and reptiles, a preconstruction survey for special-status amphibians and reptiles will be conducted by an approved biologist within the boundaries of the project site. The approved biologist would investigate all areas that could be used by the special-status amphibians and reptiles for feeding, breeding, sheltering, movement, and other essential behaviors. This survey will be likewise conducted immediately prior to commencement of project-related work that may impact special-status amphibians and reptiles. If any adults, sub adults, juveniles, tadpoles, or eggs are found, the approved biologist would contact the appropriate agencies to determine next steps.

8.4 BIOLOGICAL IMPACT 3: MONTEREY DUSKY-FOOTED WOODRATS [LESS THAN SIGNIFICANT WITH MITIGATION]

Several woodrat nests were observed on the project site during the September 2017 site investigation; these woodrat nests occur entirely within the footprint of the northern staging area and cannot be feasibly avoided. As such, implementation of the proposed project has the potential to result in adverse impacts to Monterey dusky-footed woodrat (MDFW). Impacts to this California Species of Concern would be considered a significant adverse impact, pursuant to the CEQA. The mitigation measures presented below would reduce these impacts to a level considered less than significant pursuant to the CEQA.

8.4.1 MITIGATION MEASURE 3: MONTEREY DUSKY-FOOTED WOODRATS

Within 30 days prior to project-related activities that could impact MDFW, an approved biologist will conduct a preconstruction survey to locate and map the locations of all existing MDFW nests. As all of the MDFW nests on the project site are in areas that cannot be avoided by project-related activities, they will be relocated according to standard woodrat nest relocation procedures. Relocation activities would be consistent with a Salvage and Relocation Plan to be submitted to and

approved by CDFW prior to commencement of project activities. The Salvage and Relocation Plan will include measures to remove MDFW nests from the project site prior to project implementation, to relocate them to a suitable location outside of the project site, and to recreate suitable habitat for MDFW upon project completion.

8.5 BIOLOGICAL IMPACT 4: SMITH'S BLUE BUTTERFLY [LESS THAN SIGNIFICANT WITH MITIGATION]

The coastal scrub habitat on the project site provides potentially suitable habitat for Smith's blue butterfly (SBB) and its obligate host plants (seacliff buckwheat and seaside buckwheat). While no buckwheat species of any kind were observed on the project site during the September 2017 site investigation, those surveys were not sufficiently thorough to be considered adequate to rule out presence of SBB host plants. In the absence of thorough botanical surveys, the presence of SBB host plants and the presence of SBB cannot be ruled out. Impacts to SBB would be considered a significant adverse impact, pursuant to the CEQA. The mitigation measures presented below would reduce these impacts to a level considered less than significant pursuant to the CEQA.

8.5.1 MITIGATION MEASURE 4: SMITH'S BLUE BUTTERFLY

During protocol-level rare plant surveys conducted on the project site, a qualified botanist will also search for SBB host plant species. If no SBB host plants are observed on the project site, SBB will be surveyed for during preconstruction surveys and the biological monitor will stop any work that may result in take of SBB. If SBB host plants are observed on the project site, unavoidable impacts to those host plants will be mitigated by 1) hand-removal and onsite preservation of individual plants and the soils/duff beneath them, and 2) replanting of preserved SBB host plants, and 3) inclusion of SBB host plants in the Revegetation Plan in the disturbed areas wherein SBB host plants had occurred (with SBB host plants planted at a 2:1 ratio [mitigation:impacts]).

8.6 BIOLOGICAL IMPACT 5: SCCC STEELHEAD [LESS THAN SIGNIFICANT WITH MITIGATION]

The Carmel River Lagoon is known to support SCCC steelhead. As such, the implementation of the in-stream portion of the proposed project could result in adverse impacts to SCCC steelhead. Impacts to the federally listed SCCC steelhead would be considered a significant adverse impact, pursuant to the CEQA. The mitigation measures presented below would reduce these impacts to a level considered less than significant pursuant to the CEQA.

8.6.1 MITIGATION MEASURE 5: SCCC STEELHEAD

In order to avoid auditory impacts to SCCC steelhead, all sheet piles will be installed using only a vibratory hammer; no impact hammer will be used. Prior to installation of sheet piles, the in-water work area shall be cleared of all potential fish species. This operation will be overseen by an approved fisheries biologist. The approved fisheries biologist will likewise be present if any dewatering is required to ensure fish are not entrapped within the work area. Any fish observed will be removed by the fisheries biologist and placed in the Carmel Lagoon, upstream of the work area.

8.7 BIOLOGICAL IMPACT 6: NESTING BIRDS [LESS THAN SIGNIFICANT WITH MITIGATION]

The trees on the project site provide suitable nesting habitat for nesting birds and raptors protected pursuant to the Migratory Bird Treaty Act and California Fish and Game Code, Sections 3503, 3503.5, and 3511. Impacts to nesting birds and raptors would be considered a significant

adverse impact, pursuant to the CEQA. The mitigation measures presented below would reduce these impacts to a level considered less than significant pursuant to the CEQA.

8.7.1 MITIGATION MEASURE 6: NESTING BIRDS

If vegetation removal or ground disturbance are scheduled to occur between February 15 and August 31, a preconstruction nesting bird survey of all suitable nesting habitat on the project site and within the zone of influence (the area immediately surrounding the project site that supports suitable nesting habitat that could be impacted by the project due to visual or auditory disturbance associated with the removal of vegetation and construction activities scheduled to occur during the nesting season) will be conducted by a qualified biologist within 14 days prior to commencement of vegetation removal or ground disturbance. If no nesting birds are observed during the survey, the vegetation removal and/or ground disturbance may commence as planned. If nesting birds are observed during the survey, a non-disturbance buffer of 50 feet for passerine birds and 250 feet for raptors will be established. This buffer will remain in place until such a time as the young have been determined (by a qualified biologist) to have fledged.

8.8 BIOLOGICAL IMPACT 7: AQUATIC RESOURCES [LESS THAN SIGNIFICANT WITH MITIGATION]

The implementation of the proposed project would result in temporary impacts to a total of approximately 0.29 acre of waters of the U.S./State. Temporary impacts will be incurred to 0.02 acre of seasonal wetland, 0.21 acre of perennial wetland, 0.0003 acre of drainages, and 0.06 acre of navigable waters. These impacts would consist of temporary wetland fill to facilitate construction access, grading wetlands to create staging areas, and trenching/dewatering for pipeline installation. Adverse impacts to waters of the U.S./State would be considered a significant adverse impact, pursuant to the CEQA. The mitigation measures presented below would reduce these impacts to a level considered less than significant pursuant to the CEQA.

8.8.1 MITIGATION MEASURE 7: AQUATIC RESOURCES

All impacts to waters of the U.S. will be temporary and result in no net loss. In locations where wetlands would be temporarily impacted to facilitate construction access and staging, appropriate BMPs (e.g., filter fabric and gravel) would be placed over the wetland. Following construction activities, all temporary fill would be removed, and all trenched and graded areas would be returned to pre-construction grades. All temporarily impacted wetlands would be re-planted with appropriate native vegetation.

8.9 BIOLOGICAL IMPACT 8: PROTECTED TREES [LESS THAN SIGNIFICANT WITH MITIGATION]

As the dominant habitat type on the project site is riparian woodland, it is assumed that implementation of the proposed project would result in unavoidable impacts to trees protected either by the County's tree ordinance or CDFW policy. Impacts to protected trees would be considered a significant adverse impact, pursuant to the CEQA. The mitigation measures presented below would reduce these impacts to a level considered less than significant pursuant to the CEQA.

8.9.1 MITIGATION MEASURE 8: PROTECTED TREES

A County-approved arborist will conduct a tree survey of the project site to document all existing trees and to determine impacts to trees that are protected by the County's tree ordinance as well as those that are protected due to their location within the riparian canopy (CDFW jurisdiction).

Information regarding protected oak trees will be compiled in a tree survey report and submitted to the County. Information regarding riparian canopy impacts will be provided to CDFW and the Central Coast RWQCB. It is likely that tree replacement will be required to mitigate impacts from the removal of protected trees; this replacement ratio will be determined in coordination with the County and CDFW. Revegetation work would be consistent with a Revegetation Plan to be submitted to and approved by appropriate agencies prior to commencement of project activities. In addition, all trees not scheduled for removal or trimming will be protected from damage by the installation of exclusion fencing around the trees' dripline.

SECTION 9. REFERENCES

Alley, D.W. 2013. 2012 Summary Report-Juvenile Steelhead Densities in the San Lorenzo, Soquel, Aptos and Corralitos Watersheds, Santa Cruz County, CA. Prepared for The County of Santa Cruz Environmental Health Department by D.W. Alley & Associates.

Alley, D.W. 2014. Fishery Analysis for the Carmel River-Lagoon Biological Assessment Report – January 2014. Prepared for County of Monterey Resource Management Agency by D.W. Alley & Associates.

Black, S. H., and D. M. Vaughan. 2005. Species Profile: *Euphilotes enoptes smithi*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). Red List of Pollinator Insects of North America. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation.

Calef, G. W. 1973. Natural mortality of tadpoles in a population of *Rana aurora*. Ecology 54:741-758.

Cassola, F. 2016. *Neotoma fuscipes*. The IUCN Red List of Threatened Species 2016: e.T14587A22371665. <http://dx.doi.org/10.2305/IUCN.UK.2016-2.RLTS.T14587A22371665.en>. Accessed 14 December 2017.

CDFG (California Department of Fish and Game). 2000. Guidelines for assessing the effects of proposed developments on rare and endangered plants and plant communities. December 9, 1983, revised May 8, 2000.

_____. 2009. Protocols for surveying and evaluating impacts to special status native plant populations and natural communities. November 2009. 7 pps.

CNPS (California Native Plant Society). 2001. Inventory of rare and endangered plants of California (sixth edition). Rare plant scientific advisory committee, David P. Tibor, convening editor. California Native Plant Society. Sacramento, CA. x+338 pps.

CNPS. 2017. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org>. Accessed September 3 2017.

Corps (U.S. Army Corps of Engineers). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Environmental Laboratory. 1987. Army Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U. S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

Espinoza, A. 2001. "Taricha torosa" (On-line), Animal Diversity Web at http://animaldiversity.org/accounts/Taricha_torosa/. Accessed December 12, 2017.

Hammerson, G. 2008. *Taricha torosa*. The IUCN Red List of Threatened Species 2008: e.T59471A11946313. <http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T59471A11946313.en>. Accessed on 12 December 2017.

Hayes, M. P. and M. M. Miyamoto. 1984. Biochemical, behavioral and body size difference between *Rana aurora aurora* and *R. a. draytonii*. *Copeia*, 1984(4), 1018-1022.

Hollingsworth, B. & Hammerson, G.A. 2007. *Anniella pulchra*. The IUCN Red List of Threatened Species 2007: e.T62227A12582107.
<http://dx.doi.org/10.2305/IUCN.UK.2007.RLTS.T62227A12582107.en>. Accessed on 12 December 2017.

Jameson, E.W. and H.J. Peeters. 2004. Mammals of California; Revised Edition. University of California Press, Berkeley. 429 pp.

Jennings, M.R., Hayes, M.P. and D.C. Holland. 1992. A petition to the U.S. Fish and Wildlife Service to place the California Red-legged Frog (*Rana aurora draytonii*) and the Western Pond Turtle (*Clemmys marmorata*) on the list of endangered and threatened wildlife and plants.

Jennings, M. R. and M. P. Hayes. 1994. Amphibian and reptile species of special concern in California. California Department of Fish and Game. Rancho Cordova 255 pp.

Lee, S. 2008. "Anniella pulchra" (On-line), Animal Diversity Web.
http://animaldiversity.org/accounts/Anniella_pulchra/. Accessed on December 12, 2017.

NatureServe. 2017. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available
<http://explorer.natureserve.org/servlet/NatureServe?searchName=Euphilotes+enoptes+smithi>. Accessed on January 4, 2018.

Stebbins, R. C. 1954. Amphibians and reptiles of western North America. McGraw-Hill, New York. 536pp.

Stebbins, R. C. 1972. California amphibians and reptiles. Univ. California Press, Berkeley. 152 pp.

Stebbins, R. C. 1985. A field guide to western reptiles and amphibians. Second edition. Houghton Mifflin Company, Boston, Massachusetts. xiv + 336 pp.

Storer, T. I. 1925. A synopsis of the amphibia of California. University of California Publications in Zoology. 27. 342 pp.

USFWS (United States Fish and Wildlife Service). 1984. Smith's Blue Butterfly Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 87 pp.

_____. 1996. Sacramento Fish & Wildlife Office Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants. Prepared September 23, 1996. Endangered Species Information. INTERNET (http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/es_survey.htm)

_____. 2002. Recovery plan for the California red-legged frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. viii + 173 pp.

Wright, Albert Hazen and Anna Wright. *Handbook of Frogs and Toads of the United States and Canada*. Cornell University Press, 1949.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updated by California Wildlife Habitat Relationships Program Staff, September 2000

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Appendix C. Plant Species Observed on the Project Site

APPENDIX A

Figures

Figure 1. Project Site Map

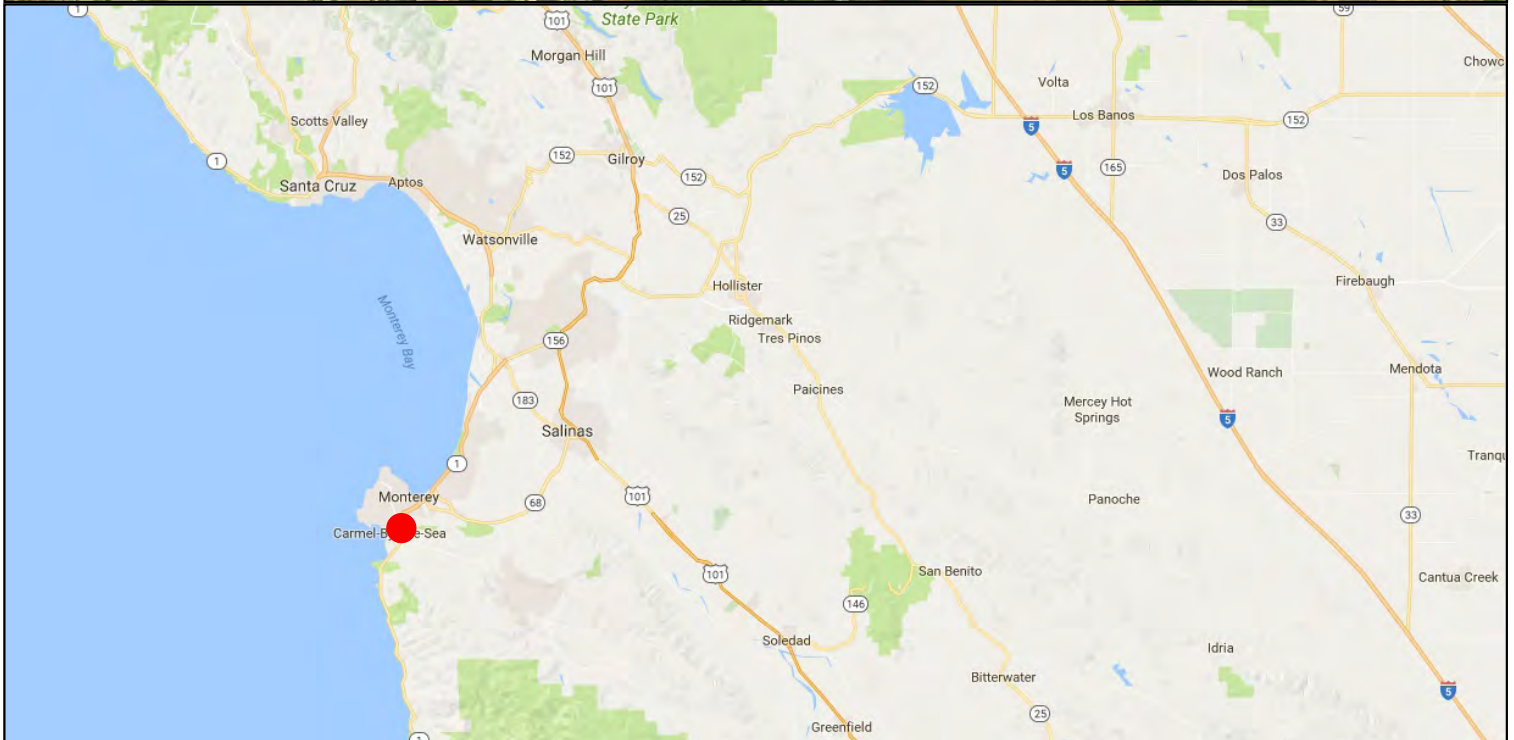
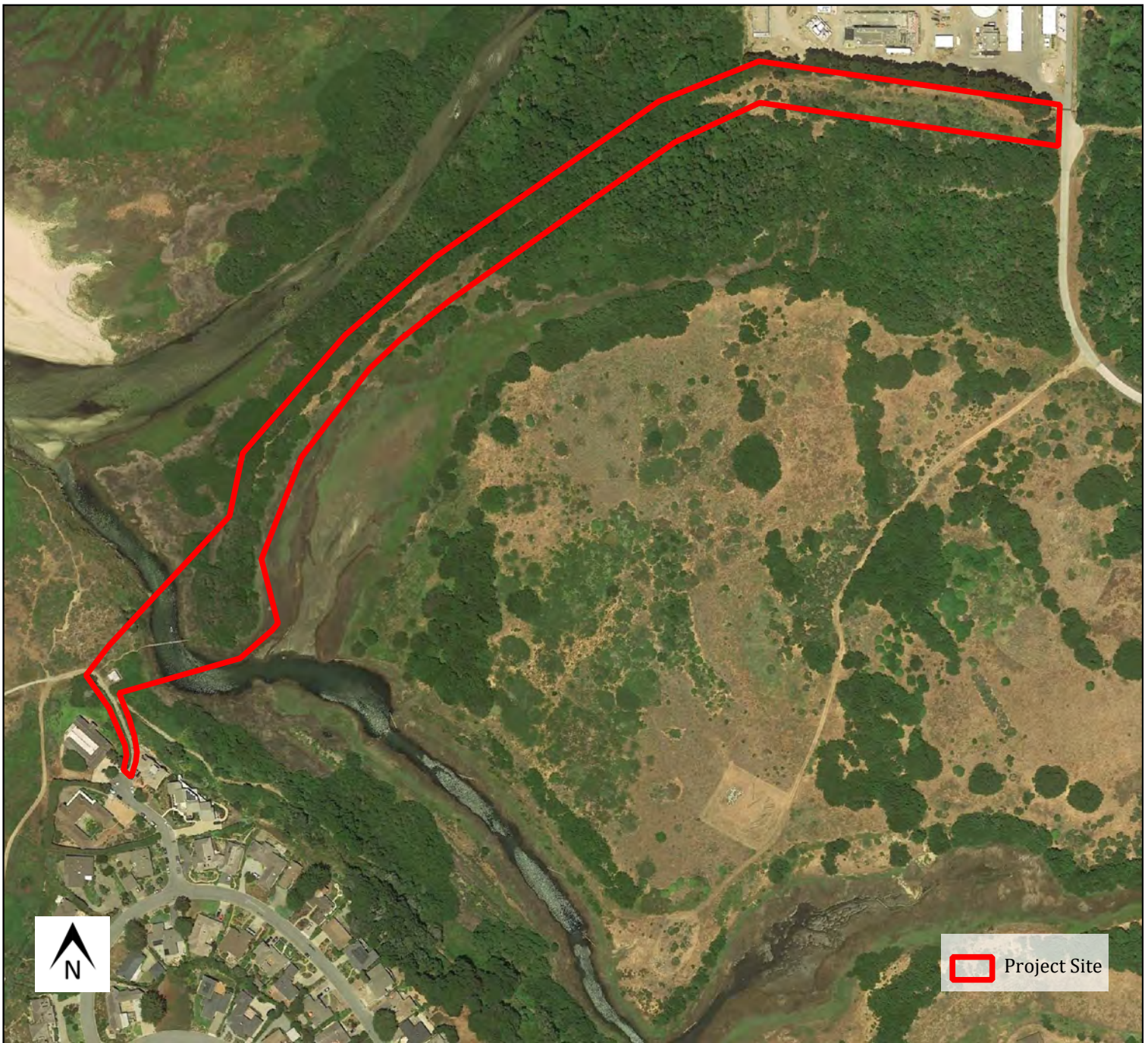


Figure 2. Project Site and Surrounding Area Aerial Map



Project Site



0 0.25 0.5 0.75 1 miles

Figure 3. Historic Topographic Map of the Project Site and Surrounding Area

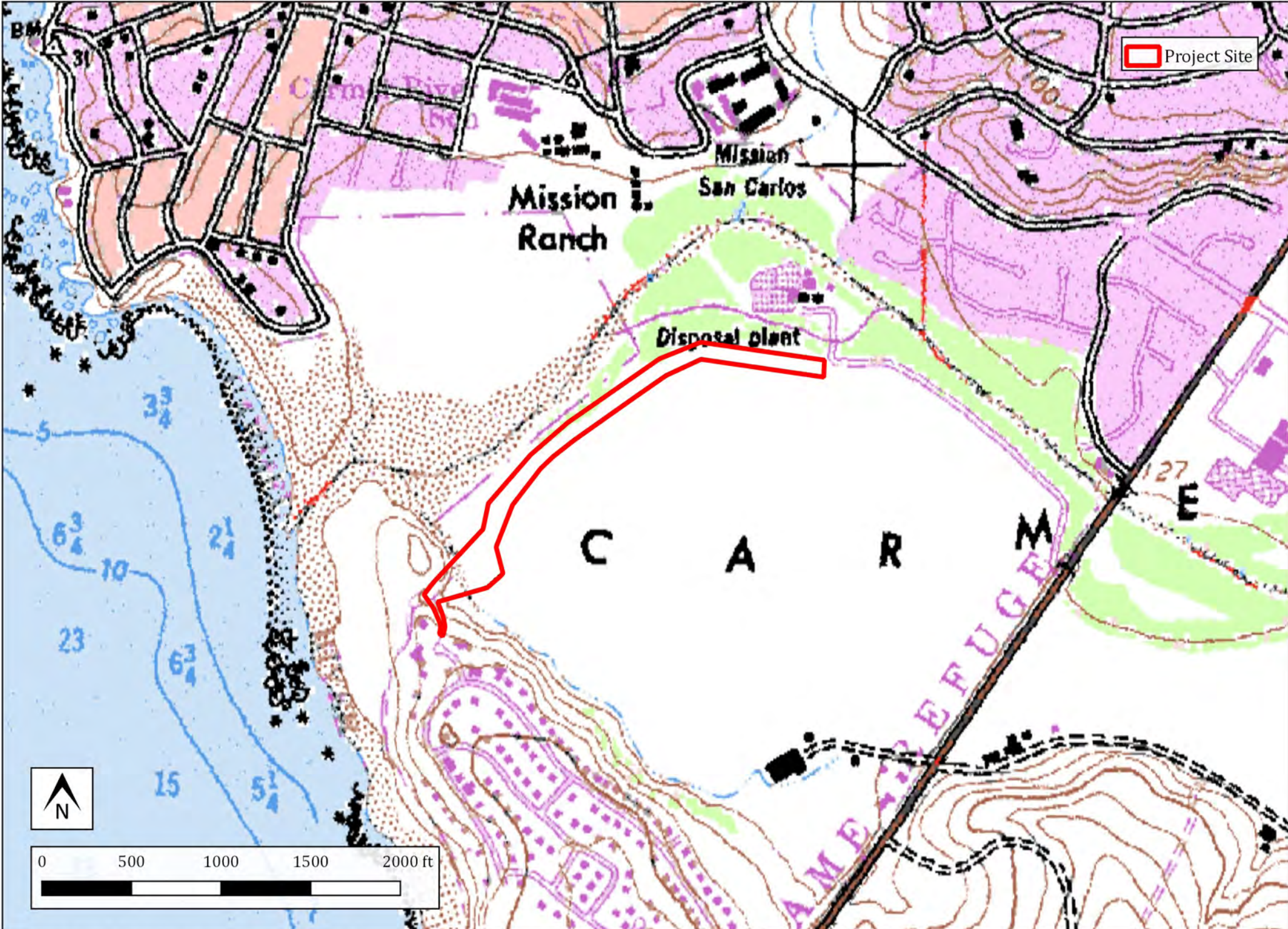


Figure 4. Proposed Locations of Work Areas

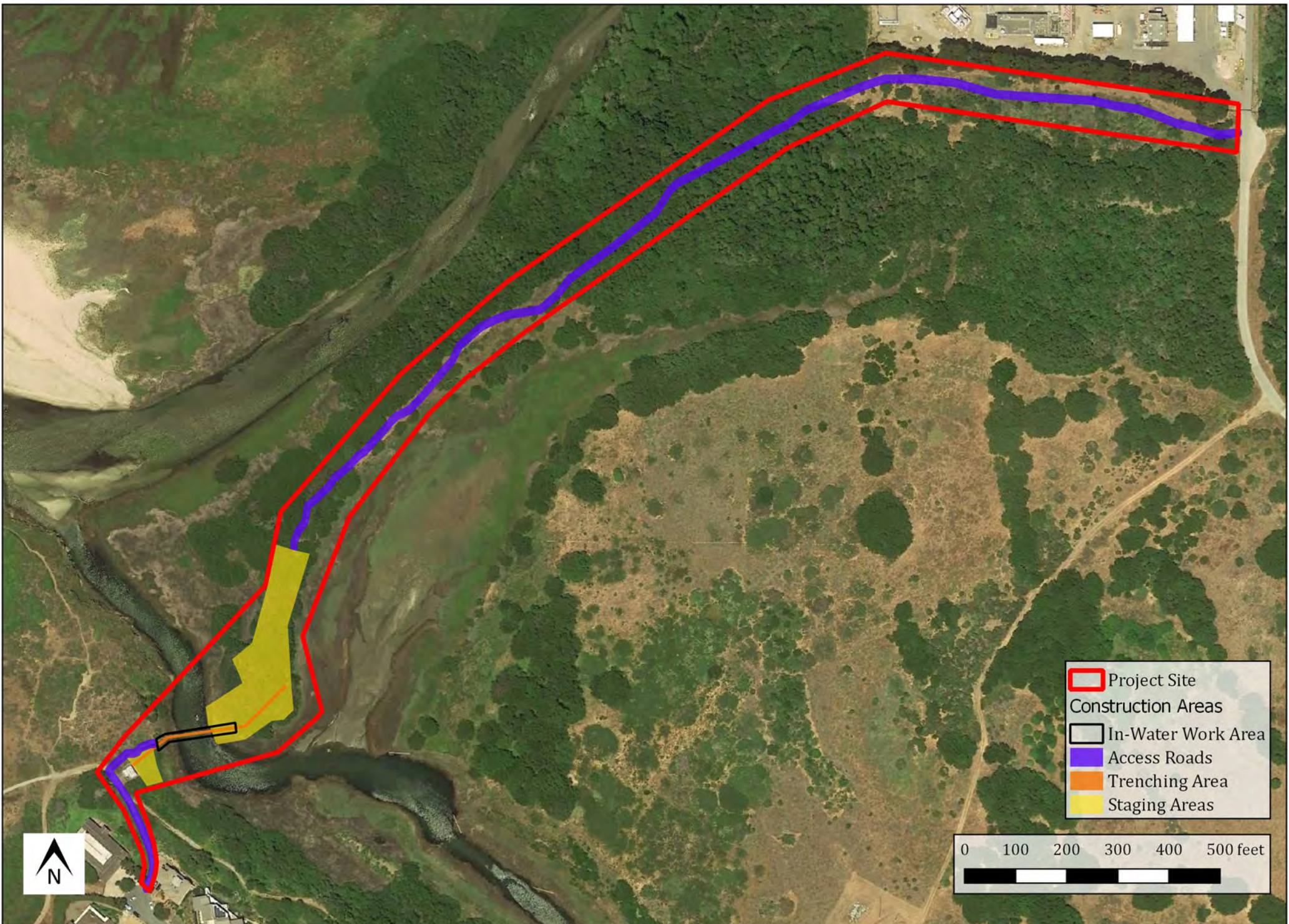
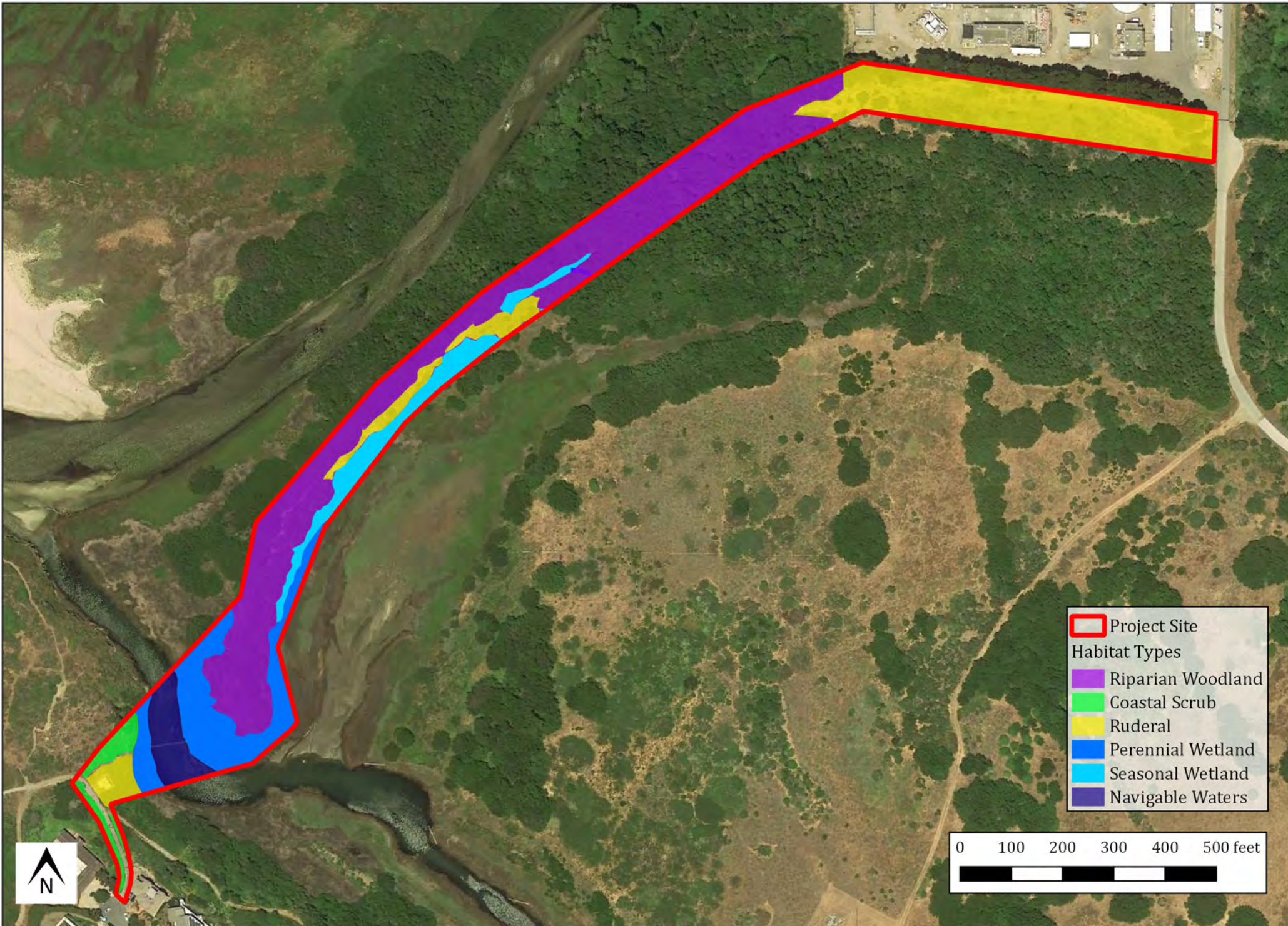


Figure 5. Project Site Habitat Map



APPENDIX B

Tables

Table 1. Special-Status Plant Species Known to Occur in the Vicinity of the Project Site

Scientific Name	Common Name	Status	Habitat Type/Components	Occurrence Information	Probably of Occurring on the Project Site
<i>Allium hickmanii</i>	Hickman's Onion	CNPS: Rank 1B.2	Closed-cone coniferous forest, maritime chaparral, coastal prairie, coastal scrub, and valley and foothill grassland	The closest record for this species occurs approximately 0.7 mile northeast of the project site (CNDDDB Occurrence No. 5).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>	Hooker's Manzanita	CNPS: Rank 1B.2	Sandy soils in closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub	The closest record for this species occurs approximately 1.2 miles south of the project site (CNDDDB Occurrence No. 15).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Arctostaphylos montereyensis</i>	Toro manzanita	CNPS: Rank 1B.2	Sandy soils in maritime chaparral, cismontane woodland, and coastal scrub	An historic record (1950) for this species occurs approximately 0.9 mile north of the project site (CNDDDB Occurrence No. 25). This record is presumed extirpated.	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Arctostaphylos pumila</i>	Sandmat Manzanita	CNPS: Rank 1B.2	Sandy openings in closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub	An historic record (early 1900s) for this species occurs in the vicinity of the project site (CNDDDB Occurrence No. 12). Exact location unknown. This record is presumed possibly extirpated.	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Astragalus tener</i> var. <i>titi</i>	Coastal Dunes Milk-Vetch	Federal: Endangered California: Endangered CNPS: Rank 1B.1	Sandy soils in coastal bluff scrub, coastal dunes, and mesic coastal prairie (often vernal mesic)	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Castilleja ambigua</i> ssp. <i>insalutata</i>	Pink Johnny-Nip	CNPS: Rank 1B.1	Coastal prairie and coastal scrub	An historic record for this species occurs approximately 1.5 miles southwest of the project site (CNDDDB Occurrence No. 6).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Chorizanthe pungens</i> var. <i>pungens</i>	Monterey Spineflower	Federal: Threatened CNPS: Rank 1B.2	Sandy soils in cismontane woodland, maritime chaparral, coastal dunes, coastal scrub, and alley and foothill grassland	The closest record for this species occurs approximately 1.5 miles southwest of the project site (CNDDDB Occurrence No. 45).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Clarkia jolonensis</i>	Jolon Clarkia	CNPS: Rank 1B.2	Chaparral, cismontane woodland, coastal scrub, and riparian woodland	An historic record (1903) for this species occurs in the vicinity of the project site (CNDDDB Occurrence No. 15). Exact location unknown.	Low. The southwestern portion of the project site comprised of coastal scrub habitat.

<i>Collinsia multicolor</i>	San Francisco Collinsia	CNPS: Rank 1B.2	Closed-cone coniferous forest and coastal scrub. Sometimes serpentinite	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Cordylanthus rigidus ssp. littoralis</i>	Seaside Bird's-Beak	California: Endangered CNPS: Rank 1B.1	Sandy soils in closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub. Often at disturbed sites	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Delphinium hutchinsoniae</i>	Hutchinson's Larkspur	CNPS: Rank 1B.1	Broadleafed upland forest, chaparral, coastal prairie, and coastal scrub	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Delphinium umbracolorum</i>	Umbrella Larkspur	CNPS: Rank 1B.3	Chaparral and cismontane woodland	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	None. No suitable habitat occurs on or adjacent to the project site.
<i>Ericameria fasciculata</i>	Eastwood's Goldenbush	CNPS: Rank 1B.1	Sandy openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub	Multiple historic records (1889-1913) for this species occur in the vicinity of the project site (CNDDDB Occurrence No. 8). Exact location unknown.	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Eriogonum nortonii</i>	Pinnacles Buckwheat	CNPS: Rank 1B.3	Sandy soils in chaparral and valley and foothill grassland. Often at recently burned sites	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	None. No suitable habitat occurs on or adjacent to the project site.
<i>Erysimum menziesii</i>	Menzie's Wallflower	Federal: Endangered California: Endangered CNPS: Rank 1B.1	Coastal dunes	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	None. No suitable habitat occurs on or adjacent to the project site.
<i>Fritillaria liliacea</i>	Fragrant Fritillary	CNPS: Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland. Often serpentinite	An historic record (1940) for this species occurs in the vicinity of the project site (CNDDDB Occurrence No. 5). Exact location unknown.	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Gilia tenuiflora ssp. arenaria</i>	Monterey Gilia	Federal: Endangered California: Threatened CNPS: Rank 1B.2	Sandy openings in chaparral (maritime), cismontane woodland, coastal dunes, and coastal scrub	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.

<i>Hesperocyparis goveniana</i> (formerly <i>Cupressus goveniana</i>)	Gowen Cypress	Federal: Threatened CNPS: Rank 1B.2	Closed-cone coniferous forest and maritime chaparral	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	None. No suitable habitat occurs on or adjacent to the project site.
<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	CNPS: Rank 1B.2	Closed-cone coniferous forest	The closest record for this species occurs approximately 1.5 miles southwest of the project site (CNDDDB Occurrence No. 1).	None. No suitable habitat occurs on or adjacent to the project site.
<i>Horkelia cuneata</i> ssp. <i>sericea</i>	Kellogg's Horkelia	CNPS: Rank 1B.1	Sandy or gravelly openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub	An historic record (1896) for this species occurs in the vicinity of the project site (CNDDDB Occurrence No. 15). Exact location unknown.	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Layia carnosa</i>	Beach Layia	Federal: Endangered California: Endangered CNPS: Rank 1B.1	Coastal dunes and sandy coastal scrub	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Lupinus tidestromii</i>	Tidestrom's Lupine	Federal: Endangered California: Endangered CNPS: Rank 1B.1	Coastal dunes	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	None. No suitable habitat occurs on or adjacent to the project site.
<i>Malacothamnus palmeri</i> var. <i>involucratus</i>	Carmel Valley Bush-Mallow	CNPS: Rank 1B.2	Chaparral (rocky) and coastal scrub	An historic record (1955) for this species occurs approximately 2.6 miles east of the project site (CNDDDB Occurrence No. 30). Exact location is unknown.	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Malacothrix saxatilis</i> var. <i>arachnoidea</i>	Carmel Valley Malacothrix	CNPS: Rank 1B.2	Rocky chaparral and coastal scrub	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Meconella oregana</i>	Oregon Meconella	CNPS: Rank 1B.1	Coastal prairie and coastal scrub	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.

<i>Microseris paludosa</i>	Marsh Microseris	CNPS: Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland	An historic (1901) record for this species occurs in the vicinity of the project site (CNDDDB Occurrence No. 4). Exact location unknown.	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Monardella sinuata</i> <i>ssp. nigrescens</i>	Northern Curly-Leaved Monardella	CNPS: Rank 1B.2	Sandy soils in coastal dunes, coastal scrub, chaparral (in Santa Cruz Co.), and lower montane coniferous forest (in the ponderosa pine sandhills in Santa Cruz Co.)	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Monolopia gracilens</i>	Woodland Woollythreads	CNPS: Rank 1B.2	Serpentine soils in openings in broadleafed upland forest, chaparral, and North Coast coniferous forest. Also in cismontane woodland and valley and foothill grassland	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	None. No suitable habitat occurs on or adjacent to the project site.
<i>Pinus radiata</i>	Monterey Pine	CNPS: Rank 1B.1	Closed-cone coniferous forest and cismontane woodland	The best estimate of the historic range of the species includes the area immediately surrounding the project site (CNDDDB Occurrence No. 3).	None. No suitable habitat occurs on or adjacent to the project site.
<i>Piperia yadonii</i>	Yadon's Rein Orchid	Federal: Endangered CNPS: Rank 1B.1	Sandy soils in coastal bluff scrub, closed-cone coniferous forest, and maritime chaparral	The closest record for this species occurs approximately 0.7 mile northeast of the project site (CNDDDB Occurrence No. 24).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Plagiobothrys uncinatus</i>	Hooked Popcornflower	CNPS: Rank 1B.2	Sandy chaparral, cismontane woodland, and valley and foothill grassland	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	None. No suitable habitat occurs on or adjacent to the project site.
<i>Potentilla hickmanii</i>	Hickman's Cinquefoil	Federal: Endangered California: Endangered CNPS: Rank 1B.1	Coastal bluff scrub, closed-cone coniferous forest, vernal mesic meadows and seeps, and freshwater marshes and swamps	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The southwestern portion of the project site comprised of coastal scrub habitat.
<i>Rosa pinetorum</i>	Pine Rose	CNPS: Rank 1B.2	Closed-cone coniferous forest and cismontane woodland	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	None. No suitable habitat occurs on or adjacent to the project site.

<i>Trifolium hydrophilum</i>	Saline Clover	CNPS: Rank 1B.2	Marshes and swamps, mesic and alkaline valley and foothill grassland, and vernal pools	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The project provides suitable habitat, however, no clover species of any kind were observed during site surveys.
<i>Trifolium polyodon</i>	Pacific Grove Clover	California: Rare CNPS: Rank 1B.1	Mesic soils in closed-cone coniferous forest, coastal prairie, meadows and seeps, and valley and foothill grassland	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	Low. The project provides marginal habitat, however, no clover species of any kind were observed during site surveys.
<i>Trifolium trichocalyx</i>	Monterey Clover	Federal: Endangered California: Endangered CNPS: Rank 1B.1	Sandy openings and burned areas in closed-cone coniferous forest	This species has been recorded on the same quad as the project site (CNPS 1-Quad Search - Monterey Quad).	None. No suitable habitat occurs on or adjacent to the project site.

Table 2. Special-Status Wildlife Species Known to Occur in the Vicinity of the Project Site

Common Name	Scientific Name	Status	Habitat Type/Components	Occurrence Information	Probably of Occurring on the Project Site
Black Legless Lizard	<i>Anniella pulchra ssp. nigra</i>	State: Species of Special Concern	Loose (sandy) soils, especially dunes, but including oak woodlands, chaparral, and along wooded stream edges	The closest record for this species occurs in the immediate vicinity of the project site (CNDDDB Occurrence No. 22). Exact location is suppressed by CNDDDB and is unavailable for public viewing.	Moderate. The project site provides suitable habitat for this species that is known to occur in close proximity.
Black Swift	<i>Cypseloides niger</i>	State: Species of Special Concern	Builds nests on steep, rocky, often moist, cliffs.	The closest record for this species occurs approximately 1.5 miles southwest of the project site (CNDDDB Occurrence No. 16) at Point Lobos State Reserve.	None. No suitable habitat occurs on or adjacent to the project site.
California Brown Pelican	<i>Pelecanus occidentalis ssp. californicus</i>	State: Fully Protected	Nest in colonies on offshore islands that are free of mammalian predators and human disturbance.	The closest nest record for this species occurs approximately 2.1 miles southwest of the project site (CNDDDB Occurrence No. 12) on a small island south of Point Lobos State Reserve.	None. No suitable habitat occurs on or adjacent to the project site.
California Red-Legged Frog	<i>Rana draytonii</i>	Federal: Threatened State: Species of Special Concern	Grassland and riparian habitats, with creeks/streams with plunge pools, or wetlands/ponds	This species has been observed on the project site (CNDDDB Occurrence No. 472).	High. Records for this species occur on and adjacent to the project site.
California Tiger Salamander	<i>Ambystoma californiense</i>	Federal: Threatened State: Threatened	Grasslands adjacent to sufficiently deep freshwater seasonal wetlands and ponds	The closest record for this species occurs approximately 1.5 miles southwest of the project site (CNDDDB Occurrence No. 16).	None. No suitable habitat occurs on or adjacent to the project site.
Coast Range Newt	<i>Taricha torosa ssp. torosa</i>	State: Species of Special Concern	Grasslands, woodlands, and forests adjacent to ponds, reservoirs, and streams	The closest record for this species occurs approximately 2.4 miles southeast of the project site (CNDDDB Occurrence No. 70).	Moderate. The project site provides suitable habitat for this species.
Monarch (Overwintering Population)	<i>Danaus plexippus ssp. plexippus</i>	Federal: Candidate	Generally overwinter in stands of exotic eucalyptus (<i>Eucalyptus</i> sp.), Monterey cypress (<i>Hesperocyparis macrocarpa</i>), Monterey pine (<i>Pinus radiata</i>), and western sycamore trees (<i>Platanus racemosa</i>).	There are multiple recorded overwintering sites for this species within 3 miles of the project site.	None. No suitable habitat occurs on or adjacent to the project site.

Monterey Dusky-Footed Woodrat	<i>Neotoma macrotis ssp. luciana</i>	State: Species of Special Concern	Generally overwinter in stands of exotic eucalyptus (<i>Eucalyptus</i> sp.), Monterey cypress (<i>Hesperocyparis macrocarpa</i>), Monterey pine (<i>Pinus radiata</i>), and western sycamore trees (<i>Platanus racemosa</i>).	This species is presumed to occur on the project site.	High. Woodrat nests were observed on the project site during site surveys.
Smith's Blue Butterfly	<i>Euphilotes enoptes ssp. smithi</i>	Federal: Endangered	Coastal sand dunes and cliff/chaparral; feeds solely on seacliff buckwheat (<i>Eriogonum parvifolium</i>)	The closest record for this species occurs approximately 1.3 miles southeast of the project site (CNDDDB Occurrence No. 57).	None. No suitable habitat occurs on or adjacent to the project site.
Steelhead (South-Central California Coast DPS)	<i>Oncorhynchus mykiss ssp. irideus</i>	Federal: Threatened	South-Central California coastal rivers, permanent coastal streams, and/or lagoons from the Pajaro River (Santa Cruz Co) to the Santa Maria River (San Luis Obispo Co)	This species is known to occur in the Carmel River and the Carmel River Lagoon (CNDDDB Occurrence No. 24).	High. Records for this species occur on and adjacent to the project site.
Western Pond Turtle	<i>Emys marmorata</i>	State: Species of Special Concern	Calm waters including streams and pools, with vegetated banks and log or rock basking sites	This species has been observed on the project site (CNDDDB Occurrence No. 1108).	High. Records for this species occur on and adjacent to the project site.
White-tailed Kite	<i>Elanus leucurus</i>	California Fully Protected	Forages in grasslands, nests in proximally located trees with dense canopy	This species was observed on the project site during site surveys.	High. This species has been observed on the project site.

APPENDIX C

Plant Species Observed on the Project Site

Common Name	Species Name
Acacia	<i>Acacia</i> spp.
Pinegrass	<i>Calamagrostis rubescens</i>
California sagebrush	<i>Artemisia californica</i>
Slender wild oats	<i>Avena barbata</i>
Coyote brush	<i>Baccharis pilularis</i>
Black mustard	<i>Brassica nigra</i>
Ripgut brome	<i>Bromus diandrus</i>
Italian thistle	<i>Carduus pycnocephalus</i>
Santa Barbara Sedge	<i>Carex barbarae</i>
Buckbrush	<i>Ceanothus cuneatus</i>
Poison hemlock	<i>Conium maculatum</i>
Dogwood	<i>Cornus sericea</i>
Pampas grass	<i>Cortaderia jubata</i>
Bermudagrass	<i>Cynodon dactylon</i>
Tall flatsedge	<i>Cyperus eragrostis</i>
Salt grass	<i>Distichlis spicata</i>
Horseweed	<i>Erigeron canadensis</i>
Seaside golden yarrow	<i>Eriophyllum staechadifolium</i>
Blue gum	<i>Eucalyptus globulus</i>
Italian ryegrass	<i>Festuca perennis</i>
Fennel	<i>Foeniculum vulgare</i>
California coffeeberry	<i>Frangula californica</i>
Marsh gumplant	<i>Grindelia stricta</i> var. <i>angustifolia</i>
Rosilla	<i>Helenium puberulum</i>
Bristly ox-tongue	<i>Helminthotheca echioides</i>
Toyon	<i>Heteromeles arbutifolia</i>
Short-podded mustard	<i>Hirschfeldia incana</i>
Seaside barley	<i>Hordeum marinum</i>
Fleshy jaumea	<i>Jaumea carnosa</i>
Brown-headed rush	<i>Juncus phaeocephalus</i>
Bird's foot trefoil	<i>Lotus corniculatus</i>
Spotted ladysthumb	<i>Persicaria maculosa</i>
Dotted smartweed	<i>Persicaria punctata</i>
Cut-leaf plantain	<i>Plantago coronopus</i>
Narrow-leaved plantain	<i>Plantago lanceolata</i>
Fremont cottonwood	<i>Populus fremontii</i>
Silverweed	<i>Potentilla anserina</i> ssp. <i>pacifica</i>
Coast live oak	<i>Quercus agrifolia</i>
Current	<i>Ribes</i> sp.
California blackberry	<i>Rubus ursinus</i>
Curly dock	<i>Rumex crispus</i>
Ditchgrass	<i>Ruppia maritima</i>
Sandbar willow	<i>Salix exigua</i>

Arroyo willow
Elderberry
Hardstem bulrush
Poison oak

Salix lasiolepis
Sambucus nigra
Schoenoplectus acutus
Toxicodendron diversilobum

Appendix C: Hydrology and Water Quality Study



**CALLE LA CRUZ FORCE MAIN PROJECT
CARMEL-BY-THE-SEA, CALIFORNIA**

**TECHNICAL SUMMARY OF HYDROLOGY AND
WATER QUALITY IMPACTS AND MITIGATION MEASURES**

SUBMITTED TO
Ms. Lauren Bingham
Johnson-Marigot Consulting, LLC.
88 North Hill Drive, Suite C
Brisbane, CA 94005

PREPARED BY
ENGEO Incorporated

January 17, 2018
Revised March 22, 2018

PROJECT NO.
14271.000.000

Project No.
14271.000.000

January 17, 2018
Revised March 22, 2018

Ms. Lauren Bingham
Johnson-Marigot Consulting, LLC
88 North Hill Drive
Brisbane, CA 94005

Subject: Calle La Cruz Force Main Project
Carmel-by-the-Sea, California

TECHNICAL SUMMARY OF HYDROLOGY AND WATER QUALITY IMPACTS AND MITIGATION MEASURES


Dear Ms. Bingham:

At your request, we are pleased to submit this technical summary of hydrologic and water quality issues associated with the proposed Calle La Cruz Force Main project in Carmel-by-the-Sea, California. The objectives of this study are to outline minimization and mitigation measures to protect water quality and erosion hazards during construction and to outline long-term impacts to water quality and hydrology.

If you have any questions regarding this report, please do not hesitate to contact us.

Sincerely,

ENGEO Incorporated


Jonathan D. Buck, GE

jdb/rps/dt




Paul C. Guerin, GE



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1.0 INTRODUCTION AND PROJECT DESCRIPTION

The Carmel Area Wastewater District (CAWD) proposes to replace a section of an existing aboveground, pile-supported 24-inch by 204-foot-long treated wastewater outfall, and a temporary 6-inch by 204-foot-long sewage force main that both span the south arm of the Carmel Lagoon (“the Lagoon”). The project area is located adjacent to the Carmel River where the river meets the sea immediately south of the town of Carmel-by-the-Sea, California (Figure 1). The pipelines are undergrounded on either side of the south arm of the Lagoon, and are located above ground over the Lagoon. The undergrounded portion of the pipelines have been determined to be in serviceable good condition and do not require replacement, while the portion of the pipelines spanning the Lagoon are damaged and need to be replaced.

The portions of the pipelines spanning the Lagoon would be replaced with a below-ground (below the Lagoon) 24-inch wastewater outfall pipe and an 8-inch sewage force main pipe. In order to install the new pipes under the bed of the Lagoon, construction would necessitate trenching and installation of a wet cofferdam across the south arm of the Carmel Lagoon, resulting in temporary impacts to both navigable waters and wetlands bordering the south arm of the Lagoon (Figure 2).

The CAWD owns a 10-foot easement along the length of the pipelines. In order to access the pipeline for construction equipment, improvements would be necessary to existing access roads to the north and south of the Lagoon. Improvements include clearing and grubbing of vegetation to widen the access roads to 15 feet across, placement of temporary fill in a seasonal wetland, and drainage. Staging areas would also be cleared and graded to the north and south of the Lagoon for construction access, staging and operation of construction equipment, and soil stockpiles. The perennial wetland at the western edge of the northern staging area would be temporarily filled to accommodate a crane pad.

The objectives of this study are:

1. To summarize the hydrology, geomorphology and fluvial hydraulics of the Carmel Lagoon in the area where the project is proposed.
2. To outline mitigation countermeasures that will reduce impacts of the proposed project associated with hydrology and water quality of the Carmel Lagoon and surrounding areas to less than significant levels.

2.0 HYDROLOGIC SETTING

The Carmel River Watershed is located within the California Coast Ranges Geomorphic Province. The entire drainage area of the watershed is located on the western slopes of the Sierra De Salinas. The northwesterly flowing Carmel River originates approximately 35 miles upstream from Carmel Bay at an elevation of 3,500 feet above sea level. Streamflow in the Carmel River is directly attributed to rainfall. According to the National Weather Service, average annual precipitation is estimated between 18 to 20 inches. Like many other watersheds along the Central California Coast, the Carmel River watershed has a typical coastal California wet-dry seasonal pattern that can vary significantly. More than 90 percent of the annual rainfall typically occurs over the watershed during the six-month period between November and April.

Before entering the Pacific Ocean, the Carmel River enters the Lagoon, located at the bottom of the watershed. The Lagoon and associated wetlands, which are located immediately south of the City of Carmel-by-the-Sea, cover an area of approximately 100 acres. The Lagoon is not open to the ocean during times of very low or zero streamflow, when ocean waves build a barrier beach (sandbar) across the mouth of the Lagoon.

The Lagoon is subject to seasonal fluctuations depending on streamflow and sandbar breaching. When river inflow is relatively low and the Lagoon is not open to the ocean, a dynamic equilibrium is reached between streamflow and groundwater inflows, outflow through the barrier beach, evapotranspiration, and ocean wave overtopping. In summer, when streamflow is low, this leads to lower water surface elevations. In the fall, prior to sandbar breaching, potentially abrupt increases in water surface elevations can occur due to overtopping of ocean water.

As streamflow increases in the fall and early winter, the Lagoon's water surface elevations can rise to flood stage depending on precipitation patterns. When flooding does occur, infrastructure along the northern edge of the Lagoon and within the Lagoon floodplain are threatened with flooding before the sandbar opens naturally. Therefore, this dynamism may result in seasonal changes in turbidity and salinity in the Lagoon, as well as seasonal fluctuation of surface water elevations.

In terms of baseline hydrologic data related to the Lagoon, the Central Coast Watershed Studies Team (CCoWS) monitored water quality in the Lagoon between 2004 and 2007. Salinity, dissolved oxygen, and temperature in the Lagoon vary seasonally and with depth. The CCoWS noted that the topography and lack of mixing in the Lagoon creates a layer of isolated saltwater in the bottom of the south arm of the Lagoon. Water quality in the Lagoon is influenced by freshwater inflow from the Carmel River, tidal levels, and ocean waters over topping the sandbar. Water quality often declines late summer, fall, and early winter months when the Carmel River flows are reduced or completely cease. When inflows from the Carmel River cease, groundwater infiltration becomes the only freshwater source of water into the Lagoon.

Schaaf and Wheeler estimated 100-year recurrence interval velocities in the south arm of the Lagoon near the project site as between 2.4 and 4.5 feet per second. However, during summer months, water circulation in the Lagoon is minimal. According to a geotechnical report prepared by GTO Inc., surficial soils in the vicinity of the proposed crossing consist of artificial fill, as well as colluvium and floodplain deposits. Soils consist generally of loose sands intermixed with clay and silt material and should be considered to be potentially fast raveling during rainstorm events. Groundwater elevations are generally between 3 to 8 feet below ground surface upslope of the Lagoon. Groundwater conditions are expected to vary depending on factors such as weather conditions, time of year, and water surface elevations in the Lagoon.

The Central Coast Regional Water Quality Control Board (RWQCB) in their Basin Plan (RWQCB, 2016) has designated beneficial uses of the Carmel River as the following: municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); groundwater recharge (GWR); freshwater replenishment (FRESH); water contact recreation (REC1); non-contact water recreation (REC2); commercial and sport fishing (COMM); warm fresh water habitat (WARM); cold water habitat (COLD); wildlife habitat (WILD); preservation of biological habitats of special significance (BIOL); rare, threatened, or endangered species (RARE); migration of aquatic organisms (MIGR); and spawning, reproduction, and/or early development (SPWN). Beneficial uses of the surface water from the Carmel River Estuary include the following: GWR; REC1; REC 2; COMM; WILD; COLD; MIGR; SPWN; BIOL; RARE; and estuarine habitat

(EST)(RWQCB, 2016). General water quality objectives exist for each of the beneficial uses identified. Surface water quality objectives have also been identified for the Carmel River for Total Dissolved Solids, Chlorine, Sulfate, Boron and Sodium.

The proposed project includes construction through the Lagoon by removing existing wastewater pipelines along with their supporting structures and trenching to install new wastewater pipelines under the bed the Lagoon. No dewatering would be done for trenching across the Lagoon. Dewatering would occur only at the tie-in points of the new pipeline outside the Lagoon. Turbidity curtains would be installed to protect waters outside of the active in-water construction zone from turbid construction waters. Two 12-inch pipes would be installed to provide fish passage from upstream to downstream of Lagoon. The pipes would be installed at different depths to provide conveyance of the Lagoon water that may vary in water quality based on in-site stratigraphic considerations. Sheet piles would be installed using vibratory hammer upstream and downstream of trenching area. The trenching area will not be dewatered. During construction, freshwater from a nearby well would be pumped upstream and downstream of the trenching area to assist in maintenance of water levels in the upper portion of the South Lagoon and enhance water quality during construction. Two solar bees would also be placed within the Lagoon to maintain adequate oxygenation. Temporary fill would be placed in wetlands to facilitate vehicular access. Temporary sediment basins would be installed in the Northern Staging Area and a crane pad would be placed at the southern edge of the staging area. Staging areas would serve as temporary infiltration areas for excess construction water, baker tank staging (if required), and dredge spoils stockpile.

3.0 REGULATORY SETTING

3.1 FEDERAL REGULATIONS

3.1.1 FEMA and The National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE and approved agencies' studies; for coordinating the federal response to floods, earthquakes, hurricanes, and other natural or man-made disasters; and for providing disaster assistance to states, communities and individuals. FEMA prepares and distributes the Flood Insurance Rate Maps (FIRMs), which are used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including the 100-year flood zone.

The Flood Insurance and Mitigation Administration (FIMA), a component of FEMA, manages the National Flood Insurance Program (NFIP). The NFIP consist of three components: flood insurance; floodplain management; and flood hazard mapping. Nearly 20,000 communities across the United States and its territories participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in these communities. Community participation in the NFIP is voluntary. In addition to providing flood insurance and reducing flood damages through floodplain management regulations, the NFIP also identifies and maps the nation's floodplains.

3.1.2 Section 404 Clean Water Act (CWA)

Section 404 of the Clean Water Act (CWA), administered by the USACE, establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Per Section 404, a permit is required prior to discharge of fill material into waters of the United States, unless the activity is exempt from Section 404 regulation.

Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands. Wetlands are “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [33 C.F.R. 328.3(b), 51 F.R. 41250, November 13, 1986]. Wetlands can be perennial or intermittent, and isolated or adjacent to other waters.

Other waters are non-tidal, perennial, and intermittent watercourses and tributaries to such watercourses [33 C.F.R. 328.3(a), 51 F.R. 41250, November 13, 1986].

3.1.3 Rivers and Harbors Act (RHA) of 1899

The RHA, also administered by the USACE, prohibits the construction of any bridge, dam, dike or causeway over or in navigable waterways of the U.S. Administration of Section 9 has been delegated to the Coast Guard (33 U.S.C. 403; Chapter 425, March 3, 1899; 30 Stat. 1151).

3.1.4 Water Pollution Control and Storm Water Management

The National Pollutant Discharge Elimination System (NPDES) Permit Program, also authorized by the CWA, controls water pollution by regulating point sources (discrete conveyances such as pipes or constructed ditches) that discharge pollutants into waters of the United States. The implementation of this federal program has been charged to the State of California for implementation through the State Water Resource Control Board (SWRCB) and RWQCBs. In California, NPDES permits are also referred to as waste discharge requirements (WDRs) that regulate discharges to waters of the United States.

3.1.5 National Pollution Discharge Elimination System Construction General Permit

Construction activities on one acre or more or that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Construction Permit (SWRCB Order No. 2009-09-DWQ; Modified 2010-0014-DWQ). The State Board established the General Construction Permit program to reduce surface water impacts from construction activities. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation.

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The Construction General Permit requires the preparation and implementation of a SWPPP for construction activities. The SWPPP must be prepared before the construction begins. The SWPPP must include specifications for best management practices (BMPs) that would need to be implemented during construction. BMPs are measures that are undertaken to control degradation of surface water by preventing soil erosion or the discharge of pollutants from the construction area. Additionally, the SWPPP must describe measures to

prevent or control runoff after construction is complete and identify the procedures for inspecting and maintaining facilities and other project elements. The required elements of a SWPPP include:

- Site description addressing the elements and characteristics specific to the site;
- Descriptions of BMPs for erosion and sediment controls;
- BMPs for construction waste handling and disposal;
- Implementation of approved local plans;
- Proposed post-construction controls; and
- Non-stormwater management.

Examples of typical construction BMPs include scheduling or limiting activities to certain times of year, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing, and fueling. The RWQCB has identified BMPs in the California Stormwater Best Management Practice Handbook (California Stormwater Quality Association, 2003) to effectively reduce degradation of surface waters to an acceptable level.

3.2 STATE REGULATIONS

3.2.1 Section 401 Clean Water Act

The State Water Resources Control Board (SWRCB) and its nine regional water boards (Regional Water Quality Control Boards) have been charged with the protection and enhancement of water quality in the state of California. Pursuant to Section 401 of the CWA and the Porter Cologne Water Quality Control Act (Porter Cologne), the Regional Water Quality Control Board (RWQCB) has authority to regulate discharges of fill and dredged material into Waters of the State. Pursuant to Porter Cologne, waters of the State are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” This is generally taken to include all waters of the U.S., all surface waters not considered to be waters of the U.S. (non-jurisdictional wetlands), groundwater, and territorial seas (with territorial boundaries extending 3.0 nautical miles beyond outermost islands, reefs, and rocks and includes all waters between the islands and the coast).

3.3 MONTEREY COUNTY CODE

Chapter 16.08 of the Monterey County Code identifies rules and regulations to control all grading, including excavations, fills and embankments, and establishes the procedures for the issuances of grading permits. Chapter 16.08 is intended to minimize erosion as a result of ground disturbing activities.

Chapter 16.12 (Erosion Control) of the Monterey County Code sets forth required provisions for project planning, preparation of erosion control plans, runoff control, land clearing, and winter operations; and establishes procedures for administering those provisions. The code requires that specific design considerations be incorporated into projects to reduce the potential for erosion and that an erosion control plan be approved by the County prior to initiation of grading activities.

Chapter 16.16 of the Monterey County Code identifies rules and regulations to control development within the floodplain. Chapter 16.16 is intended to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions. Chapter 16.16

consists of regulations to: 1) restrict and/or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; 2) require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; 3) control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; 4) control filling, grading, dredging, and other development which may increase flood damage; and 5) prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

4.0 IMPACTS ANALYSIS AND MITIGATION MEASURES

Implementation of the project in the construction and operations phase could have significant impacts to the water quality and hydrology of the estuary. This hydrology and water quality analysis evaluates whether the proposed project construction activities would have the potential to degrade existing water quality, increase erosion, modify existing drainage patterns, exceed capacities of existing drainage facilities, deplete groundwater supplies, or interfere with recharge, based on whether the project would violate any water quality standards or waste discharge requirement. In general, water quality impacts would be significant if a water quality standard were to be exceeded or a beneficial use were to be impacted due to changes in water quality or hydrology caused by implementation of the project.

In terms of this analysis, the majority of potential water quality impacts would be created during the construction phase. The project intends to replace an existing pipe system transmitting sanitary sewer flows over the south arm of the Lagoon with an underground system. After completion, the project should decrease potential impacts to the water quality of the Lagoon if a breach of the pipe system were to occur since the new pipe will be underground instead of over the Lagoon. The project also proposes to remove existing pier obstructions in the channel, which should increase potential mixing of estuarine waters and ultimately improve water quality in the south arm of the Lagoon. Lastly, by removing the above ground pipe, the ultimate imperviousness of the site would be slightly decreased.

Regulatory measures are referenced that will be incorporated into the project planning documents where potential significant impacts to hydrology and water quality may occur.

4.1 DEGRADE EXISTING WATER QUALITY

Implementation of the project during construction and in the operations phase could degrade the existing water quality of the estuary. During the construction phase of the project, the project would remove existing concrete-filled steel piles, which support the existing pipe structure over the Lagoon, and whose foundations are in the bottom estuary below the mudline. The project would use a wet cofferdam to isolate the work area and trenching methods to install the two new pipelines below the mudline of the estuary. It is not anticipated that full dewatering of the work area is possible due to the loose granular soil materials located where the temporary cofferdam installation is proposed. However, groundwater dewatering would be done at the tie-in points of new pipes, which are to the east and west sides of the trenching area. Thus, both the cofferdam installation and trenching activities could temporarily increase turbidity of the estuary and potentially impact other indicators of water quality. Overland construction activities could also result in the accidental release of hazardous construction chemicals, such as adhesives, solvents, lubricants, and fuels. If not managed appropriately, these chemicals could adhere to soil particles,

become mobilized by rain or runoff, and flow to downstream water bodies, including Carmel Bay/Pacific Ocean, degrading water quality.

Lastly, if a pipeline rupture were to occur after the project is finished, wastewater could potentially enter the estuary or groundwater below the estuary through the proposed force main or outfall lines, and potentially impact and degrade the water quality of the estuary system.

4.1.1 Regulatory Measure 1 – Implementation of Storm Water Pollution Prevention Plan

Prior to construction of the proposed project, the applicant would demonstrate compliance with the State Water Resources Control Board Construction General Permit, including implementation of erosion and stormwater quality control measures set forth in a Stormwater Pollution Prevention Plan (SWPPP) that would prevent substantial adverse effects on water quality during construction. Requirements for SWPPP are discussed in the regulatory section above. The SWPPP would be prepared by a Qualified SWPPP Developer (QSD).

Measures included in the SWPPP would reduce construction-related potential impacts associated with the construction phase of the project to a less-than-significant level. In addition, there would be a less-than-significant impact based on the compliance with regulatory requirements that insure that there would be a lack of substantial pollutants released or disposed at the sites, and the low amount of flow that would carry any pollutants such that contamination of groundwater resources are not expected. The proposed project would have a less-than-significant impact on water quality associated with increased inadvertent releases of toxic chemicals during general construction activities. No additional mitigation measures for general construction practices would be required.

4.1.2 Regulatory Measure 2 – Implementation of Construction Diversion and Dewatering Plan

Because of the nature of the dewatering operation associated with the proposed project, the applicant would also separately demonstrate that the implementation of a temporary dewatering operation would not adversely impact Lagoon water quality, nor adversely impact biological resources in the upper and lower portions of the South Arm of the Lagoon. We understand that the applicant may discharge any excess construction water from dewatering operations into the force main sanitary sewer system assuming minimal impact to water volumes in the Lagoon. The excess water would then be subsequently delivered to their treatment plant, processed and discharged under their existing NPDES permit to operate the facility. Additional information would be set forth in a Construction Diversion and Dewatering Plan (DDP) approved by the RWQCB as well as other Federal and State agencies that regulate biological resources associated with the Lagoon. The Construction DDP would be prepared by a licensed Civil Engineer in the State of California and include the following:

- Limits of dewatering and containment operation.
- Height and length of cofferdams based on estimated Lagoon water surface elevations during time of operation.
- Measures to reduce turbidity during installation of temporary cofferdams.
- General pumping and connection diagrams.

- Estimates of quantities to be discharged.
- Capacity and percentage of capacity used for dewatering estimates.
- Contingency plans for overtopping and pumping failure.
- Additional connectivity measures as required to reduce water quality impacts or significantly reduce water quality volumes in the upper and lower portions of the South Arm of the Lagoon during dewatering operations.
- Additional measures to allow fish passage between the upper and lower portions of the South Arm of the Lagoon during the construction, after sheet piles have been installed across the Lagoon bottom. Addition of adjacent well water and solar bees to improve water quality in the upper portion of the South Arm of the Lagoon.

Based on preliminary discussions with the CAWD, the project intends to install sheet piles on both sides of the proposed excavation where the sewer line would be installed under and across the Lagoon. However, complete dewatering of the excavation would not likely be possible due to the nature of sandy soil materials found at the bottom of the Lagoon, which allow high levels of seepage into the bottom of the construction area isolated by the sheet piles. The cofferdams, however, would contain the majority of construction water and thus reduce turbidity into the neighboring Lagoon regions during installation activities. Turbidity curtains would also be installed on both sides of the proposed construction area as an additional mitigation measure, to prevent turbid water from construction activities from entering undisturbed portions of the Lagoon.

The CAWD would allow fish passage between the upper and lower portions of the South Arm of the Lagoon via two 12-inch culverts. The culverts would penetrate through the cofferdams and turbidity curtains, and would be watertight to prevent turbid water from entering undisturbed areas of the Lagoon. The pipes would be placed at different vertical elevations to maintain the general water quality stratigraphy found in the Lagoon during summer months.

During construction, dredge spoils from excavation work would be stockpiled on either side of the Lagoon. Excess water from the spoils would filter through sediment controls and either discharge back into the Lagoon, or be allowed to infiltrate through the porous on-site soil material.

A water quality-monitoring program would be implemented to measure levels of turbidity, pH and dissolved oxygen content in the South Arm of the Lagoon near the site during construction operations, and included in the DDP. In addition to the monitoring program, the following measures would also be incorporated to enhance water quality in the upper portion of the South Arm of the Lagoon:

1. To help maintain adequate dissolved oxygen levels in the Lagoon, freshwater would be pumped from an existing agricultural well adjacent to Highway 1.
2. Additionally, two solar bees would be placed within the Lagoon to provide oxygen at the top layer of water.

These additional measures would help verify that levels of turbidity, pH and dissolved oxygen would stay consistent with seasonal background levels found during the months of August through October, as based on historic data and supplemental field testing in ambient waters during the construction operation.

The CAWD would likely dewater a portion of the work area adjacent to the Lagoon for construction of portions of the sewer line not directly underneath the Lagoon water surface. This dewatering operation would likely lower levels in the Lagoon slightly, as underground seepage would occur through the porous soil materials surrounding the excavated construction area. Water levels in the upper and lower portions of the South Arm of the Lagoon would be monitored during these operations to verify that Lagoon water surface levels would not drop more than approximately 4 inches due to the dewatering operation. If more than 4 inches of water surface elevation drawdown is observed, the project would incorporate either a temporary storage tank system which would pump, treat and discharge excess construction water back into the Lagoon, or create infiltration ponds near the Lagoon which would transmit excess construction water back to the Lagoon via subsurface flow to equilibrate water surface levels. Alternatively, water from an existing well near the Lagoon could be used to equilibrate water surface levels depending on the level and rate of drawdown during the dewatering operation.

These measures are conceptually shown on Figures 2 and 3 of this report. Measures included in the DDP and approved by the RWQCB would reduce construction related potential impacts associated with the construction-dewatering phase of the project to a less-than-significant level.

4.1.3 Regulatory Measure 3 – Section 401 and 404 Clean Water Act

Due to the proposed project's temporary impacts in the Lagoon, a regulated water of the State, under State and Federal law, the project will also demonstrate compliance with CWA Sections 404 and 401, and other waste discharge requirements of the Porter-Cologne Water Quality Control Act. This will take place upon consultation with the USACE and RWQCBs during the project-permitting phase in order to receive a Federal and State level clearance prior to performing the project. These applications will specifically evaluate the permanent proposed alignment, type and thickness of pipe casing, and any potential long term monitoring measures required for the project to conform to state and Federal Law.

Measures included 401 and 404 permitting process would reduce temporary potential impacts associated with the implementation and operational phases of the project to a less-than-significant level.

4.2 INCREASE EROSION

Implementation of the project during construction could increase erosion in overland areas caused by earthmoving activities during construction. In general, water quality impacts would be significant if a water quality standard were to be exceeded or a beneficial use were to be impacted due to changes in water quality caused by erosion and/or siltation.

Earthmoving activities associated with proposed project construction would temporarily alter existing drainage patterns to some degree. Exposed soil from excavated areas, stockpiles, and other areas where ground cover would be removed could be inadvertently transported off-site by wind or water. If not properly managed, this could increase sediment loads in surface water bodies, some of which are located on-site (e.g., the Lagoon), and adversely impact the surface water quality, thereby adversely affecting water quality and designated beneficial uses.

4.2.1 Regulatory Measure 4 – Grading Permit

In addition to SWPPP measures outlined in Regulatory Measure 1, prior to construction of the project, the applicant would also receive a grading permit from Monterey County. The grading permit will require that the applicant submit an erosion and sediment control plan specifically describing construction BMPs that will be implemented to reduce water quality impacts associated with grading and stockpiling activities to less-than-significant levels.

4.3 MODIFY EXISTING DRAINAGE PATTERNS

Implementation of the project could modify existing drainage patterns to some degree if finished project grades were altered during construction. However, the project does not intend to alter finished grades in areas where temporary construction areas are proposed to any significant degree. Therefore, impacts related to modification of existing drainage patterns are considered to be insignificant.

4.4 EXCEED CAPACITIES OF EXISTING DRAINAGE FACILITIES

Implementation of the project could exceed capacity of existing drainage facilities if post-project imperviousness was increased as a result of the project leading to greater rainfall runoff, which could potentially raise site water surface elevations during rainstorm events. However, the project does not intend to increase imperviousness of the site after implementation. Rather, the undergrounding of the pipeline system will result in a slight reduction of site imperviousness. Also by removing the piles that support the existing transmission structure in the south arm of the Lagoon, the capacity of that portion of the Lagoon to transmit flood flows will also increase. Pier removal would also slightly lower water surface elevations in the Lagoon as well by removing obstructions. Therefore, impacts related to modification of existing drainage patterns or flooding are considered to be insignificant.

4.5 DEplete GROUNDWATER SUPPLIES

Implementation of the project could significantly deplete groundwater supplies if long-term groundwater use would occur as a result of implementation of the project. Construction of the proposed project would result in a limited, temporary dewatering operation on either side of the proposed pipe undergrounding in the south arm of the Lagoon. It is anticipated that the minimal amount of water that will be pumped from the excavation while the cofferdam system is in place will originate from groundwater seepage from areas adjacent to where dewatering is being performed. However, the amount of groundwater intrusion is anticipated to be minor in order for the dewatering operation to be successful. Also, during construction, minor amounts of groundwater from an adjacent well may supplement Lagoon surface water to enhance water quality and quantity. However, after construction, no groundwater use is associated with the permanent operation of the proposed project. Therefore, impacts related to depletion of groundwater supplies are considered to be insignificant.

4.6 INTERFERE WITH GROUNDWATER RECHARGE

Implementation of the project could substantially interfere with groundwater recharge if post-project conditions significantly modified areas on site where existing surface/groundwater exchanges take place. In the operational phase of the project, the undergrounding of the pipe system would create a potential barrier underneath and on the sides of the Lagoon where some

groundwater recharge is likely occurring. However, the size of the permanent trench would be approximately 6 feet wide, which would be insignificant as compared to the entire South Arm of the Lagoon where groundwater/surface water interactions are occurring. Therefore, impacts related to interference with existing groundwater recharge patterns are considered to be insignificant.

5.0 CONCLUSION

In closing, we recommend several mitigation measures be incorporated into project implementation to address hydrology and water quality considerations related to requirements from the State Water Resources Control Board, the Central Coast Regional Water Quality Control Board, and Monterey County.

6.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report is issued with the understanding that it is the responsibility of the owner to transmit the information and recommendations of this report to developers, contractors, buyers, architects, engineers, and designers for the project so that the necessary steps can be taken by the contractors and subcontractors to carry out such recommendations in the field. The conclusions and recommendations contained in this report are solely professional opinions.

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SELECTED REFERENCES

Balance Hydrology, Inc.; Carmel River Lagoon EPM-Potential Impacts to the CAWD Wastewater Treatment Facility and Mission Ranch; Memorandum dated July 2016.

California Regional Water Quality Control Board, Central Coast Region; Water Quality Control Plan for the Central Coastal Basin; March 2016.

Central Coast Regional Water Quality Control Board; Diversion and Dewatering Plan Guidelines; June 6, 2016.

California Stormwater Quality Association; Stormwater Best Management Practice Handbook; Construction; 2003.

GTO Geotechnical Consultants; Geotechnical Report CAWD Calle la Cruz Force Main, Carmel, California; March 2014.

James, G.W.; Monterey Peninsula Water Management District; Technical Memorandum 05-01; Surface Water Dynamics at the Carmel River Lagoon Water Years 1991 through 2005, 2005.

Schaaf and Wheeler; South Arm Lagoon Velocity Analysis, prepared for Carmel Area Wastewater District; November 28, 2016.



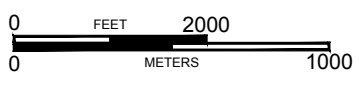
FIGURES

FIGURE 1: Vicinity Map

FIGURE 2: Site Plan

FIGURE 3: Cross Section A – A'

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BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE

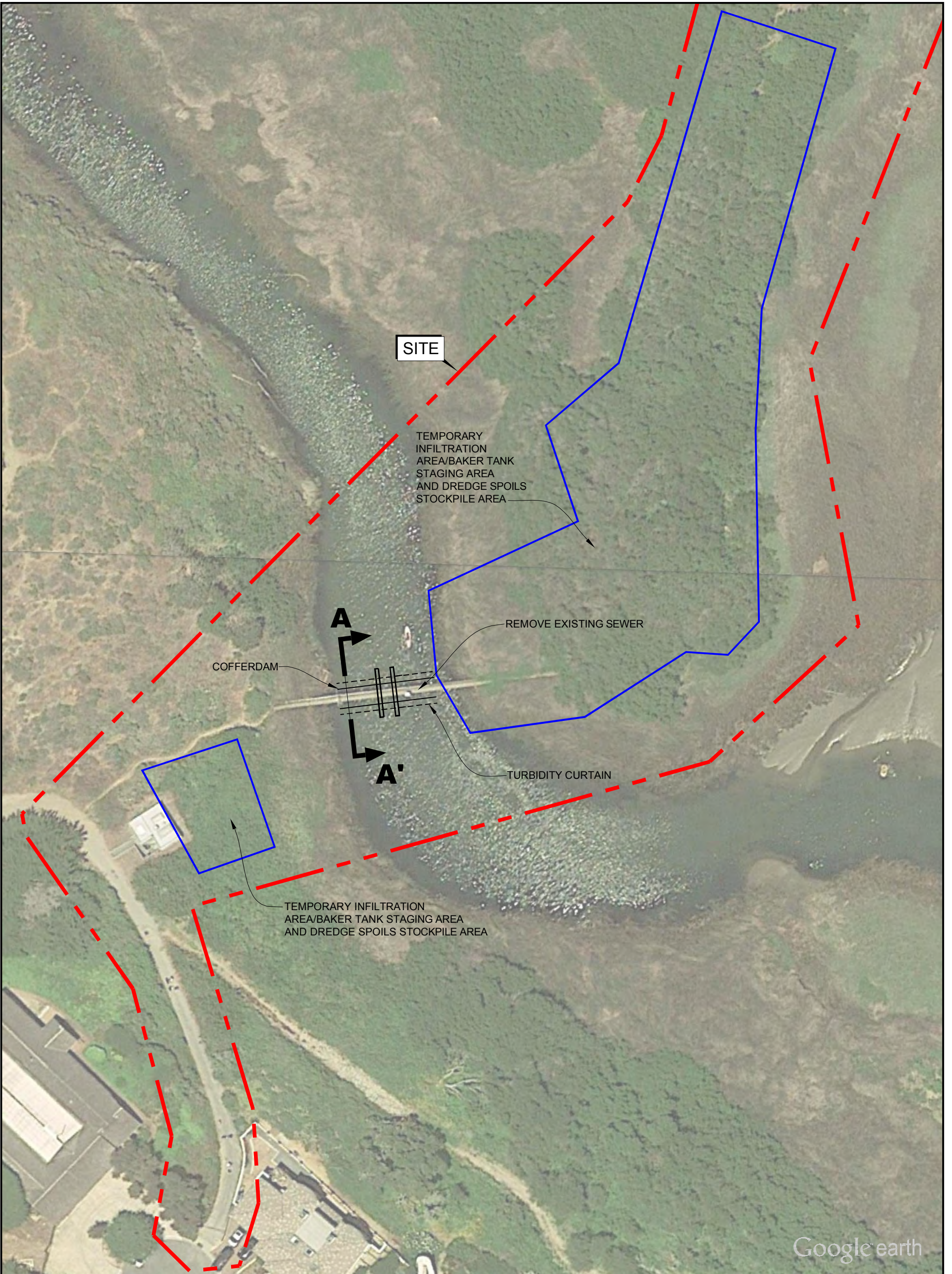


VICINITY MAP
CARMEL MEADOWS SEWER
CARMEL-BY-THE-SEA, CALIFORNIA

PROJECT NO.: 14271.000.000	
SCALE: AS SHOWN	
DRAWN BY: SRP	CHECKED BY: JCB

FIGURE NO.
1

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Google earth

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

— STAGING AREAS

A A' CROSS SECTION LOCATION



BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE

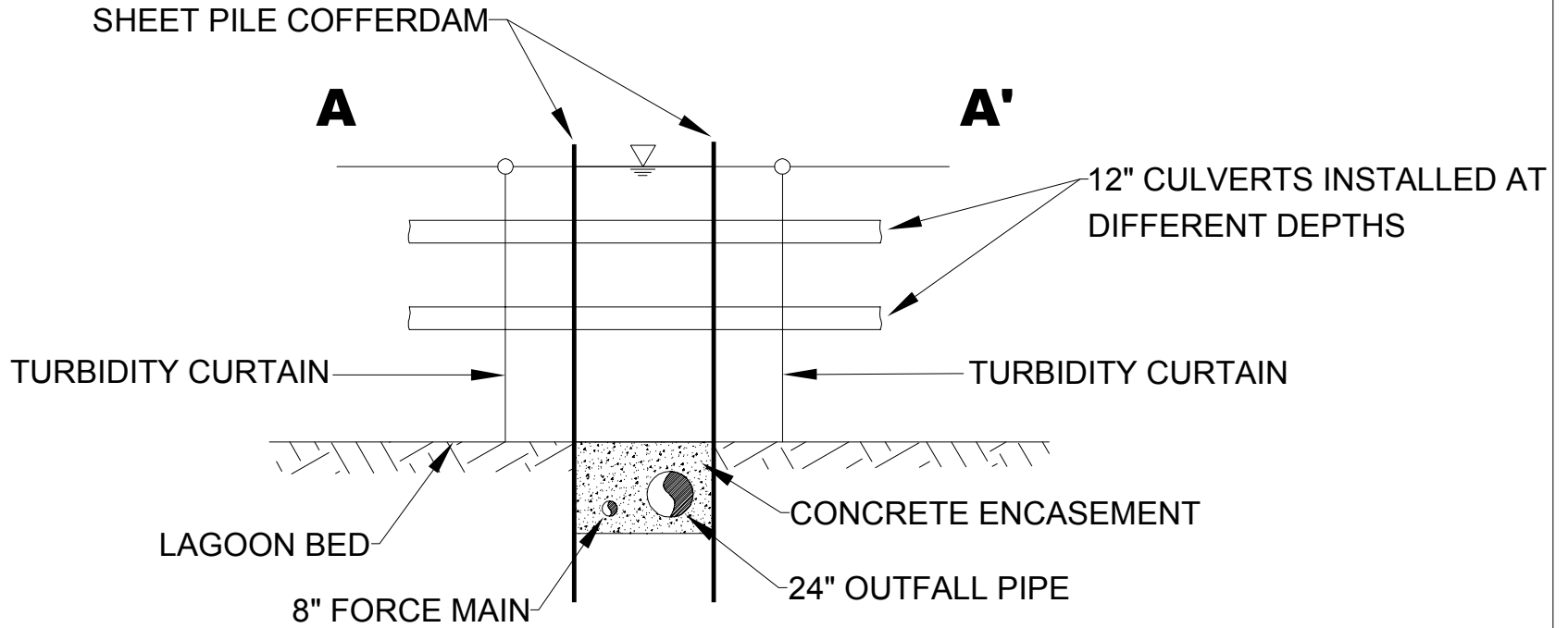


SITE PLAN
 CARMEL MEADOWS SEWER
 CARMEL-BY-THE-SEA, CALIFORNIA

PROJECT NO.: 14271.000.000	FIGURE NO. 2
SCALE: AS SHOWN	
DRAWN BY: SRP CHECKED BY: JCB	

ORIGINAL FIGURE PRINTED IN COLOR

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	CROSS SECTION A-A' CARMEL MEADOWS SEWER CARMEL-BY-THE-SEA, CALIFORNIA		PROJECT NO.: 14271.000.000	FIGURE NO.
			SCALE: NO SCALE	3
			DRAWN BY: SRP	

Appendix D: Noise Calculations

**Carmel Area Wastewater District
Calle La Cruz Project
Noise Appendix**

Technical Information

Noise Measurement Locations Figure



Noise Technical Information

Noise Descriptors

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the “loudness” of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A-weighting of sound levels best reflects the human ear’s reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A-weighted sound level over a given time period (Leq)¹; day-night 24-hour average sound level (Ldn)² with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)³, also a 24-hour average that includes both an evening and a nighttime sensitivity weighting.

Table 1 identifies decibel levels for common sounds heard in the environment.

Noise Attenuation

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a “line” source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source, which also depends on ground absorption (CalTrans, 1998). Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, will increase the attenuation that occurs by distance alone.

Sensitive Receptors

Noise sensitive land uses typically include residences, schools, child care centers, hospitals, long-term health care facilities, convalescent centers, retirement homes and recreation areas.

Temporary Construction Noise

The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction. **Table 2** shows typical noise levels from construction equipment.

¹The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time-varying sound energy in the measurement period.

²Ldn is the day-night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

³CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10-decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

Table 1: Typical Noise Levels

Noise Level (dB)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80–90	Diesel truck at 50 feet	Loud television at 3 feet
70–80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60–70	Commercial area	Normal speech at 3 feet
40–60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20–40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10–20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: (modified from Caltrans Technical Noise Supplement, 1998)

Groundborne Vibration

Construction operations have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. The ground vibration levels associated with various types of construction equipment are summarized in **Table 3**. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effects of ground vibration may be imperceptible at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels.

At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. For most structures, a peak particle velocity (PPV) threshold of 0.5 inches per second (in/sec) or less is sufficient to avoid structural damage. The Federal Transit Administration recommends a PPV threshold of 0.5 in/sec for residential and commercial structures, 0.25 in/sec for historic buildings and archaeological sites, and 0.2 in/sec for non-engineered timber and masonry buildings (FTA 2006).

Table 2: Typical Noise Levels from Construction Equipment

Construction Equipment	Noise Level (dB, Lmax at 50 feet)
Air Compressor	78
Backhoe	78
Concrete Mixer Truck	79
Concrete Pump Truck	81
Crane	81
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Grader	85
Jackhammer	89
Loader	79
Paver	77
Pickup Truck	75
Vibratory Hammer	82 – 96*

Source: Federal Highway Administration, Roadway Construction Noise Model User's Guide, 2006

*Source: Jim Laughlin, Washington State Department of Transportation, Airborne Noise Measurements during Vibratory Pile Installation – Technical Memorandum, 2010

Table 3: Representative Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity at 25 Feet (in/sec)
Pile Driver (impact)	upper range	1.518
	typical	0.644
Pile Driver (sonic)	upper range	0.734
	typical	0.170
Vibratory Roller		0.210
Large Bulldozer		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozer		0.003

Source: Federal Transit Administration, 2006.

State Guidelines

State Land Use Compatibility standards for Community Noise (**Table 4**) are provided in the State of California General Plan Guidelines.

Table 4: Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - Ldn or CNEL (db)							
	50	55	60	65	70	75	80	
Residential - Low Density Single Family, Duplex, Mobile Homes	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Residential - Multi-Family	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Transient Lodging – Motel/ Hotel	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Auditorium, Concert Hall, Amphitheaters	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Sports Arena, Outdoor Spectator Sports	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Playgrounds, Neighborhood Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Office Buildings: Business, Commercial, and Professional	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Industrial, Manufacturing, Utilities, Agriculture	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable
	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable
	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable	Normally Unacceptable
Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	

Source: State of California General Plan Guidelines, Office of Planning and Research, November 1998, Appendix A: Noise Element Guidelines.

References

- California Department of Transportation (Caltrans), 1998. *Technical Noise Supplement*.
- California Department of Transportation (Caltrans), 1998. *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, October 1998.
- Federal Highway Administration (FHWA), 2006. *Roadway Construction Noise Model User's Guide*.
- Federal Transit Administration (FTA), 2006. *Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06)*.
- Governor's Office of Planning and Research (OPR), 2003. *State of California General Plan Guidelines*.
- Laughlin, J., 2010. Washington State Department of Transportation. *Airborne Noise Measurements (A-weighted and un-weighted) during Vibratory Pile Installation – Technical Memorandum*. June 21, 2010.



SOURCE: Google Earth and RCH Group 2017

Carmel Area Wastewater District Pipelines
Calle La Cruz Project
Figure N-1
Noise Measurement Locations

Appendix E. Draft Mitigation Monitoring and Reporting Program

MITIGATION MONITORING AND REPORTING PROGRAM – CALLE LA CRUZ PIPELINE REPLACEMENT PROJECT

When adopting a Mitigated Negative Declaration, the CEQA Guidelines [Section 15074(d)] require that Lead Agencies adopt a program for reporting on or monitoring the changes that it has required in the project or made a condition of approval to mitigate or avoid significant environmental effects.

This monitoring program for mitigation measures identified by the Mitigated Negative Declaration includes:

1. A list of mitigation measures with a space for the completion date,
2. The full text of the mitigation measures, and
3. Monitoring details, including: 1) agency responsible for implementation, 2) timing of implementation and monitoring, and 3) monitoring verification.

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date

Biological Resources						
<i>General Biological Impacts</i>	<p><i>Mitigation Measure BIO-1: General Avoidance and Minimization Measures</i></p> <p>a) Prior to project-implementation, all construction personnel working on vegetation removal, earthmoving, and/or construction activities shall attend a mandatory environmental education program, led by an approved biologist.</p> <p>b) All staging, maintenance, and storage of construction equipment will be performed in a manner to preclude any direct or indirect discharge of fuel, oil, or other petroleum products into waters of the U.S./State. No other debris, rubbish, creosote-treated wood, soil, silt, sand, cement, concrete or washings thereof, or other construction-related materials or wastes will be allowed to enter into or be placed where they may be washed by rainfall or runoff into waters of the U.S./State. All such debris and waste shall be picked-up daily and properly disposed of at an appropriate site.</p> <p>c) All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed</p>	CAWD Construction Contractor	CAWD Project Manager	Condition of construction contract; field verify implementation during construction		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
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	<p>containers and removed at least once a day from the project site.</p> <p>d) Firearms shall not be allowed on the project site except for those carried by authorized security personnel, or local, state, or federal law enforcement officials.</p> <p>e) Project personnel shall not be permitted to smoke in the project area.</p> <p>f) Project personnel shall not be permitted to have dogs or cats in the project area.</p> <p>g) Pesticides of any kind shall not be used on the project site at any time during project implementation, with the exception of pre-authorized herbicide application to prevent the spread of the invasive pampas grass currently occurring on the project site.</p> <p>h) Equipment shall not be operated in areas of flowing or standing water. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to waters of the U.S./State waters may occur.</p>					
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Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	<p>i) All equipment including excavators, trucks, hand tools, etc., that may have come in contact with invasive plants or the seeds of these plants, shall be carefully cleaned before arriving on the site and shall also be carefully cleaned before removal from the site to prevent spread of these plants.</p> <p>j) Prior to commencement of vegetation removal or ground disturbance, invasive plant species (as identified by the California Invasive Plant Council [Cal-IPC] and the California Department of Parks and Recreation) occurring on and/or adjacent to the project site will be identified and marked with construction flagging. These plants will be removed</p> <p>k) Disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction.</p> <p>l) To minimize harassment, injury, death, and harm in the form of temporary habitat disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, equipment staging, parking, and stockpile areas.</p>					

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	<p>m) The work area shall be delineated with orange wildlife exclusion fencing in order to minimize impacts to habitat beyond the work limit. A biological monitor shall supervise the installation of protective fencing and shall conduct preconstruction inspections of the fencing daily until construction is complete to ensure that the protective fencing remains intact. Orange cyclone fencing, or other materials that can entrap small amphibians and reptiles and other special-status species, shall not be used.</p> <p>n) Wetlands temporarily impacted by construction activities shall be protected with a layer of filter fabric and clean crushed gravel to prevent unnecessary adverse effects to vegetation or wetland hydrology. This temporary fill shall be removed at the end of construction activities.</p> <p>o) Prior to any instream work, sheet piles shall be installed both up- and downstream from the area to be trenched in order to isolate the work area from the flowing stream. Any water removed from within the in-water work area shall be pumped back to the CAWD treatment</p>					

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
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	<p>facility or a sediment basin to remove suspended sediments. At the completion of instream work, all water-diversion systems shall be removed from the work area.</p> <p>p) After construction completion, any installed by-pass pipe, cofferdam, or other related construction materials installed within the project boundary shall be removed in its entirety.</p> <p>q) Site conditions shall be returned to pre-construction contours and shall be revegetated with native habitat-appropriate species.</p> <p>r) Prior to commencement of work each day, the biological monitor shall check for animals under any equipment such as vehicles and stored pipes. In order to prevent inadvertent entrapment of terrestrial wildlife during the proposed project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials. Alternatively, an additional 2-foot high vertical barrier, independent of exclusionary fences, may be used to further prevent the inadvertent entrapment of terrestrial wildlife. If it is not</p>					
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Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	<p>feasible to cover an excavation or provide an additional 2-foot high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. Similarly, in order to prevent inadvertent entrapment of special-status aquatic wildlife during the dewatering of the work area, the intake of all pumps shall be installed outside of emergent vegetation and shall be screened.</p> <p>s) An approved biologist(s) shall be onsite during all work within the south arm of the Carmel River Lagoon and during all activities that could result in impacts to special-status species. The approved biologist shall have the authority to stop any work that may result in adverse impacts to special-status species. If determined to be necessary for project implementation and wildlife safety, only approved biologists shall capture, handle, and monitor special-status species observed onsite. Otherwise, all wildlife shall be allowed to leave the site of their own accord.</p>					

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	t) All project-related ground moving activities shall be restricted to between June 15 and November 1 in order to avoid the time period when locally occurring special-status species are most likely to be migrating through the project site and the immediately surrounding area.					
<i>Impacts to Special Status Plants</i>	<i>Mitigation Measure BIO-2: Special-Status Plants.</i> In the Spring and Summer immediately prior to project implementation, protocol-level rare plant surveys shall be conducted on the project site. Rare plant surveys shall be conducted by a qualified botanist, in accordance with all applicable survey guidelines including those published by USFWS (USFWS 1996), CDFW (CDFW 2000, 2009) and CNPS (CNPS 2001). If determined to be necessary, reference site surveys shall be conducted to confirm plant phenology (flowering periods).	Project botanist	CAWD Project Manager	Spring and Summer immediately prior to project implementation		
<i>Impacts to Monterey Dusky-footed Woodrats</i>	<i>Mitigation Measure BIO-4: Monterey Dusky-footed Woodrats.</i> Within 30 days prior to project-related activities that could impact MDFW, an approved biologist shall conduct a preconstruction survey to locate and map the locations of all existing MDFW nests. As all of the MDFW nests on the project site are in	Project wildlife biologist	CAWD Project Manager	Within 30 days prior to any grading or vegetation removal.		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	<p>areas that cannot be avoided by project-related activities, they shall be relocated according to standard woodrat nest relocation procedures.</p> <p>Active nests shall be sufficiently disturbed to cause individual woodrats to leave the nest and seek refuge elsewhere. After nests have been thus disturbed, they shall be dismantled and reassembled outside of the project site at a sufficient distance to proposed impact areas to remain undisturbed by project-related activities. Due to work-window constraints imposed on the project by hydrologic and federal-listed species concerns, nest dismantling will take place during the breeding season. If during nest dismantling a litter of young is observed or suspected, the removed nest material shall be replaced, and the nest shall be left alone for 2-3 weeks to allow for further maturation of young. After the 2-3-week period, the nest shall be rechecked to determine if the young are capable of survival on their own, before proceeding with nest dismantling and relocation.</p>					
<i>Impact to Smith's Blue Butterfly</i>	<i>Mitigation Measure BIO-5: Smith's Blue Butterfly.</i> During protocol-level rare plant surveys conducted on the project site, a qualified botanist shall also search for SBB host plant species. If no SBB host plants are observed on the	Project botanist/ biological monitor	CAWD Project manager	Surveys to be conducted during protocol-level rare plant surveys		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	project site, SBB shall be surveyed for during preconstruction surveys and the biological monitor shall stop any work that may result in take of SBB. If SBB host plants are observed on the project site, unavoidable impacts to those host plants shall be mitigated by 1) hand-removal and onsite preservation of individual plants and the soils/duff beneath them, and 2) replanting of preserved SBB host plants, and 3) inclusion of SBB host plants in the Revegetation Plan in the disturbed areas wherein SBB host plants had occurred (with SBB host plants planted at a 2:1 ratio [mitigation:impacts]).					
Impacts to Steelhead	Mitigation Measure BIO-6: SCCC Steelhead. In order to avoid auditory impacts to SCCC steelhead, all sheet piles shall be installed using only a vibratory hammer; no impact hammer shall be used. Prior to installation of sheet piles, the area shall be cleared of all potential fish species. This operation shall be overseen by an approved fisheries biologist. The approved fisheries biologist shall likewise be present if any dewatering is required, to ensure fish are not entrapped within the work area. Any fish observed shall be removed by the fisheries biologist and placed in the Carmel Lagoon, upstream of the work area.	CAWD Construction contractor to use appropriate pile driving method. CDFW-Approved fisheries biologist shall oversee implementation.	CAWD Project Manager	Prior to and during sheet pile driving.		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
<i>Impacts to nesting special-status birds</i>	<i>Mitigation Measure BIO-7: Nesting Birds.</i> If vegetation removal or ground disturbance are scheduled to occur between February 15 and August 31, a preconstruction nesting bird survey of all suitable nesting habitat on the project site and within the zone of influence (the area immediately surrounding the project site that supports suitable nesting habitat that could be impacted by the project due to visual or auditory disturbance associated with the removal of vegetation and construction activities scheduled to occur during the nesting season) shall be conducted by a qualified biologist within 14 days prior to commencement of vegetation removal or ground disturbance. If no nesting birds are observed during the survey, the vegetation removal and/or ground disturbance may commence as planned. If nesting birds are observed during the survey, a non-disturbance buffer of 50 feet for passerine birds and 250 feet for raptors shall be established. This buffer shall remain in place until such a time as the young have been determined (by a qualified biologist) to have fledged.	Project biologist	CAWD Project Manager	Prior to implementation of any vegetation-disturbing activities.		
<i>Impacts to Waters of the US</i>	<i>Mitigation Measure BIO-8: Aquatic Resources.</i> All impacts to waters of the U.S. would be temporary and result in no net loss. In locations where wetlands would be temporarily impacted to facilitate construction access and	Project construction contractor.	CAWD Project Manager	Implement at start of construction period; remove/restore at end of		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	staging, appropriate BMPs (e.g., filter fabric and gravel) shall be placed over the wetland. Following construction activities, all temporary fill shall be removed, and all trenched and graded areas would be returned to pre-construction grades. All temporarily impacted wetlands shall be re-planted with appropriate native vegetation.			construction period.		
<i>Impacts to protected trees</i>	Mitigation Measure BIO-9: Protected Trees. A County-approved arborist shall conduct a tree survey of the project site to document all existing trees and to determine impacts to trees that are protected by the County's tree ordinance as well as those that are protected due to their location within the riparian canopy (CDFW jurisdiction). Information regarding protected oak trees shall be compiled in a tree survey report and submitted to the County. Information regarding riparian canopy impacts will be provided to CDFW and the Central Coast RWQCB. It is likely that tree replacement would be required to mitigate impacts from the removal of protected trees; this replacement ratio shall be determined in coordination with the County and CDFW. Revegetation work would be consistent with a Revegetation Plan to be submitted to and approved by appropriate agencies prior to commencement of project activities. In addition, all trees not scheduled for	County-approved arborist	CAWED Project Manager	Prior to any vegetation removal activities		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
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	removal or trimming shall be protected from damage by the installation of exclusion fencing around the trees' dripline.					
Cultural Resources						
<i>Impacts to Archaeological Resources</i>	<p><i>Mitigation Measure CULT-1 - Archaeological Resources.</i> Prior to initiating ground disturbing activities associated with the Project area, construction personnel should be alerted to the possibility of encountering buried prehistoric or historic period cultural material. Personnel should be advised that, upon discovery of buried archaeological deposits, work in the immediate vicinity of the find should cease and a qualified archaeologist should be contacted immediately if one is not already present.</p> <p>In addition, archaeological monitoring by a professional archaeological monitor shall be conducted during vegetation removal and grubbing to allow for inspection of areas not observed during the cultural resources survey.</p> <p>In the event any cultural deposits are located the state park archaeologist shall be contacted immediately (for the staging area clearing and dredging/excavation). If a find is identified, plans for the treatment,</p>	Archaeological Monitor	CAWD Project Manager	Prior to initiating ground disturbing activities (training); During grading and trenching activities (monitoring)		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	<p>evaluation, and mitigation of impacts to the find shall be developed if it is found to be NRHP and/or CRHR eligible. Potential cultural materials include prehistoric and historic period artifacts and remains. These may consist of, but are not limited to:</p> <ul style="list-style-type: none"> • Historic period artifacts, such as glass bottles and fragments, tin cans, nails, ceramic and pottery sherds, and other metal objects; • Historic period features such as privies, wells, cellars, foundations or other structural remains (bricks, concrete, or other building materials); • Flaked-stone artifacts and debitage, consisting of obsidian, basalt, and/or chert; • Groundstone artifacts, such as mortars, pestles, and grinding slabs; • Dark, almost black, soil with a “greasy” texture that may be associated with charcoal, ash, bone, shell, flaked stone, groundstone, and fire-affected rock; and, • Human remains. 					

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date

<i>Impacts to Human Remains</i>	<i>Mitigation Measure CULT-2 - Human Remains.</i> If human remains are encountered during construction, work in that area shall cease and the Monterey County Coroner must be notified immediately. If the remains are determined to be Native American, the NAHC shall be notified within 48 hours as required by Public Resources Code 5097. The NAHC shall notify the designated Most Likely Descendant, who shall in turn provide recommendations for the treatment of the remains within 24 hours.	Project construction contractor; archaeological monitor	CAWD Project manager	During construction period		
Hydrology and Water Quality						
Construction Impacts to Water Quality	<i>Mitigation Measure HYDRO-1: Implementation of SWPPP.</i> Prior to construction of the proposed project, the applicant shall demonstrate compliance with the State Water Resources Control Board Construction General Permit, including implementation of erosion and stormwater quality control measures set forth in a Stormwater Pollution Prevention Plan (SWPPP) that would prevent substantial adverse effects on water quality during construction. Requirements for SWPPP are discussed in the regulatory section above. The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD).	Project construction contractor	CAWD Project Manager	Develop plan prior to start of construction; implement during construction.		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
Impacts of construction diversion and dewatering.	<p><i>Mitigation Measure HYDRO-2 – Implementation of Construction Diversion and Dewatering Plan.</i></p> <p>Because of the nature of the dewatering operation associated with the proposed project, the applicant would also separately demonstrate that the implementation of a temporary dewatering operation would not adversely impact Lagoon water quality, nor adversely impact biological resources in the upper and lower portions of the South Arm of the Lagoon. We understand that the applicant may discharge any excess construction water from dewatering operations into the force main sanitary sewer system assuming minimal impact to water volumes in the Lagoon. The excess water would then be subsequently delivered to their treatment plant, processed and discharged under their existing NPDES permit to operate the facility. Additional information would be set forth in a Construction Diversion and Dewatering Plan (DDP) approved by the RWQCB as well as other Federal and State agencies that regulate biological resources associated with the Lagoon. The Construction DDP would be prepared by a licensed Civil Engineer in the State of California and include the following:</p>	Project Engineers and Construction Contractor.	Project Construction Manager			

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	<ul style="list-style-type: none"> • Limits of dewatering and containment operation. • Height and length of cofferdams based on estimated Lagoon water surface elevations during time of operation. • Measures to reduce turbidity during installation of temporary cofferdams. • General pumping and connection diagrams. • Estimates of quantities to be discharged. • Capacity and percentage of capacity used for dewatering estimates. • Contingency plans for overtopping and pumping failure. • Additional connectivity measures as required to reduce water quality impacts or significantly reduce water quality volumes in the upper and lower portions of the South Arm of the Lagoon during dewatering operations. • Additional measures to allow fish passage between the upper and lower portions of the South Arm of the Lagoon during the construction, after sheet piles have been installed across the Lagoon bottom. Addition of adjacent well water and solar bees to improve water quality in the upper portion of the South Arm of the Lagoon. 					

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	<p>Mitigation Measure HYDRO-3 – Water Quality Monitoring Program. A water quality-monitoring program shall be implemented to measure levels of turbidity, pH and dissolved oxygen content in the South Arm of the Lagoon near the site during construction operations and included in the DDP. In addition to the monitoring program, the following measures would also be incorporated to enhance water quality in the upper portion of the South Arm of the Lagoon:</p> <ol style="list-style-type: none"> 1. To help maintain adequate dissolved oxygen levels in the Lagoon, freshwater would be pumped from an existing agricultural well adjacent to Highway 1. 2. Additionally, two solar bees would be placed within the Lagoon to provide oxygen at the top layer of water. 	Project Engineers and Construction Contractor.	Project Construction Manager	Plan to be developed prior to start of construction. Monitoring to occur during in-water construction activities.		
Water Quality Impacts	<p>Mitigation Measure HYDRO-4 – Compliance with Section 401 and 404 Clean Water Act. Due to the proposed project’s permanent impacts in the Lagoon, a regulated water of the State, under state and Federal law the project shall also demonstrate compliance with CWA Sections 404 and 401, and other</p>	Project Engineers	CAWD Project Manager	Upon consultation with the USACE and RWQCBs during the project permitting phase		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
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	<p>waste discharge requirements of the Porter-Cologne Water Quality Control Act. This shall take place upon consultation with the USACE and RWQCBs during the project permitting phase in order to receive a federal and state level clearance prior to performing the project. These applications shall specifically evaluate the permanent proposed alignment, type and thickness of pipe casing, and any potential long-term monitoring measures required for the project to conform to state and Federal Law.</p> <p>Measures included 401 and 404 permitting process would reduce permanent potential impacts associated with the implementation and operational phases of the project to a less-than-significant level.</p>					
Erosion from grading	<p>Mitigation Measure HYDRO-5 – Grading Permit. In addition to SWPPP measures outlined in Mitigation Measure HYDRO-1, above, prior to construction of the project, the applicant shall also receive a grading permit from Monterey County. The grading permit shall require that the applicant submit an erosion and sediment control plan specifically describing construction BMPs that shall be implemented to reduce water quality impacts associated with grading and</p>	Project Construction Manager	CAWD Project Manager	Prior to any grading or trenching.		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	stockpiling activities to less-than-significant levels.					
Potential impacts to Lagoon water levels	Mitigation Measure HYDRO-6 – Water Level Drawdown Measures. If more than 4 inches of water surface elevation drawdown is observed, the project would incorporate either a temporary storage tank system which would pump, treat and discharge excess construction water back into the Lagoon, or create infiltration ponds near the Lagoon which would transmit excess construction water back to the Lagoon via subsurface flow to equilibrate water surface levels. Well water pumping also may be used to restore water levels in the lagoon.	Project Construction Contractor	CAWD Project Manager	During in-water work.		
Noise						
Construction noise impacts to nearby residents.	Mitigation Measure NOI-1 - Construction Noise. To reduce noise impacts due to construction at nearby sensitive receptors, the applicant shall employ the following mitigation measures: 1. Construction activities shall only take place during the hours between 8 a.m. and 6 p.m. on weekdays and between 9 a.m. and 5 p.m. on Saturdays. Construction will not be allowed on Sundays or national holidays.	Project Construction Contractor	CAWD Project Manager	During construction period		

Identified Impact	Related Mitigation Measure	MONITORING			VERIFICATION	
		Implementation Entity	Monitoring and Verification Entity	Timing Requirements	Signature	Date
	<p>2. Construction equipment shall be properly equipped with standard mufflers properly maintained in good working order.</p> <p>3. If stationary construction equipment would cause a substantial noise impact, it shall be located as far away from sensitive residences as necessary to reduce noise to acceptable levels and/or be equipped with engine-housing enclosures.</p> <p>4. Designate a “construction noise coordinator” who would be responsible for responding to local complaints about construction noise. The construction noise coordinator shall determine the cause of the complaint and shall require that reasonable measures warranted to correct the problem be implemented. The telephone for the construction noise coordinator shall be conspicuously posted at the construction site.</p>					