

Chapter 3

ENVIRONMENTAL CHECKLIST

- 1. Project Title:** Butano Creek Channel Reconnection & Resilience Project
- 2. Lead Agency Name and Address:** San Mateo Resource Conservation District
625 Miramontes Street #103
Half Moon Bay, CA 94019
- 3. Contact Person, Phone Number and Email:** Kellyx Nelson
Executive Director
(650) 712-7765, ext. 102
kellyx@sanmateoRCD.org
- 4. Project Location and APN:** The majority of the Project site is within Pescadero Marsh Natural Preserve between State Route 1 and Pescadero Creek Road. The western portion of the Project is on Pescadero State Beach. The southern portion of the Project is south of Pescadero Creek Road along Butano Creek and on agricultural land in unincorporated San Mateo County.
- 5. Property Owner:** 086-221-010, 086-221-020, 086-221-030, 086-230-030, 086-230-020, 086-160-060, 086-090-010, 086-111-190, and 086-270-010
- 6. General Plan Designation:** Agriculture and Institutional/Open Study/Future Study
- 7. Zoning:** Planned Agricultural District/Coastal Development District (PAD/CD)
- 8. Description of Project:** See Chapter 2, *Project Description*.
- 9. Surrounding Land Uses and Setting:** Open space or agricultural land to the north, west, and south; private agricultural land and the community of Pescadero to the east; and a California Department of Forestry and Fire Protection (CAL FIRE) station to the southwest at the corner of Pescadero Creek Road and Bean Hollow Road

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

- San Mateo Public Works Department
- San Mateo Planning and Building Department
- California Department of Fish and Wildlife
- California State Historic Preservation Officer
- California Coastal Commission
- National Marine Fisheries Service
- Regional Water Quality Control Board (San Francisco Bay Region)
- United States Army Corps of Engineers
- United States Fish and Wildlife Service

This chapter of the IS/MND assesses the proposed Project's environmental impacts based on the environmental checklist provided in Appendix G of the state's CEQA Guidelines. The environmental resources and potential environmental impacts of the proposed Project are described in the individual subsections below. Each section (3.1 through 3.19) provides a brief overview of existing environmental conditions for each resource topic to help the reader understand the conditions that could be affected by the proposed Project. In addition, each section includes a discussion of the rationale used to determine the significance level of the Project's environmental impact for each checklist question. For environmental impacts that have the potential to be significant, mitigation measures are identified that would reduce the severity of the impact to a less-than-significant level.

Environmental Factors Potentially Affected

The environmental factors checked below would potentially be affected by the proposed Project, as indicated by the checklist on the following pages.

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

1 Determination

2 The conclusions and recommendations contained herein are professional opinions derived in
3 accordance with current standards of professional practice. They are based on a review of sources of
4 information cited in this document, and the comments received, conversations with knowledgeable
5 individuals; the preparer's personal knowledge of the area; and, where necessary, a visit to the site.

6 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

5/1/2018
Date

Name: Kellyx Nelson

San Mateo Resource Conservation District

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3.1 AESTHETICS

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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 that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.1.1 Discussion of Checklist Responses

a, c. Adverse effects on scenic vistas and changes to existing visual character or quality.

A scenic vista is generally considered a view of an area that has remarkable scenery or a natural resource that is indigenous to the area. The Project is located primarily within the Pescadero Marsh Natural Preserve, a scenic natural setting with four trails offering views of natural habitats including freshwater marsh, brackish marsh, riparian habitat, and northern coastal scrub. Recreationists (including hikers) frequently visit the preserve for viewing pleasure including bird-watching and to view the wildflowers in the spring time. Given the preserve's natural setting, the Project area has high visual quality. The southern extent of the Project site includes agricultural fields that would be used for temporary stockpiling of removed sediment and forested habitat where the proposed berm augmentation work would occur.

The Project site is visible from State Route 1, a state designated scenic highway; and from Pescadero Creek Road, which is designated as a County scenic road. From State Route 1, motorists have close-up but fleeting views of the lagoon, Butano Creek, Pescadero Creek, Butano Channel, and the surrounding marsh lands and Memorial County Park and Pescadero Creek Park in the distance. Similarly, unobstructed views of the preserve are available from Pescadero Creek Road; viewers primarily include motorists and bicyclists. Close-up views of the Project site are also available from the Butano Trail, while more distant views are

accessible from the North Pond Trail (east of the Project site) and the Sequoia Audubon Trail and Round Hill Trail (north of the Project site). At the Pescadero Creek Road bridge crossing over Butano Creek, views of the Project site consist of thick woody riparian vegetation.

Project construction activities would be temporary, occurring in three construction periods: fall 2018, spring 2019, and summer to fall 2019. As noted in Chapter 2, *Project Description*, construction equipment and materials would be primarily stored at four staging areas. Throughout the construction periods, the Butano Trail, which coincides with the Lower Butano Marsh Levee, would be closed so no public views of construction activities would be visible from this trail. Recreationists using other trails in the preserve such as the Round Hill Trail, Sequoia Audubon Trail and North Pond Trail would have partial views of the construction work areas. Construction equipment and materials stored at Staging Areas #1 and #2 would be temporarily visible from State Route 1 and Pescadero Creek Road. In the event that Access Point #1 is utilized from State Route 1, motorists from the highway and recreationists at Pescadero State Beach would also have temporary views of a crane lowering the barge and other large dredging equipment (e.g., boat-based excavator, dredge, airboat, barges) into Pescadero Lagoon. Similarly, from Pescadero Creek Road, motorists passing by would have fleeting views of construction materials and dredging equipment in the areas immediately upstream and downstream from Pescadero Creek Road bridge. Staging Area #4 and the temporary sediment stockpile area at the boat launch (Staging Area #3) to the north of Pescadero Creek Road would also be partially visible from this road, although an existing bluff along the road would largely screen views of Staging Area #3. Views of these staging areas would also be brief due to the speed of traffic. In addition, the temporary sediment stockpile area proposed on private agricultural land to the south of Pescadero Creek Road would be visible from the road but due to the speed of travel, such views would be fleeting for motorists. A few residences located on Pescadero Creek Road would have longer duration views of the sediment stockpiling area. While the presence of construction equipment and materials at the above-described areas could temporarily degrade scenic views of the Project area, given that the Project's construction timeframe would be temporary, short-term effects on scenic vistas and the Project area's visual character and visual quality would be less than significant.

Following Project implementation, isolated pools, artificial channels and deeper ponded areas of Butano Marsh would be filled with excavated sediment. Creation of the natural levee analog along the left floodplain of Butano Creek would ecologically enhance the higher ground areas above the top of the left bank. The levee analog would be reseeded with native vegetation. The upstream extent of Butano Creek channel would be cleared of woody vegetation. Motorists accustomed to traveling on Pescadero Creek Road and recreational hikers using Butano Marsh Trail may notice the thinning of vegetation in Reach 3 during and immediately after construction. However, over time, riparian vegetation in this reach is expected to regrow quickly along the dredged creek channel and thus would not substantially degrade views from Pescadero Creek Road. While some low-lying areas of Butano Marsh (e.g., Butano Channel) where ponds were once visible would be filled with sediment, over time, these low-lying areas would be comprised of marsh vegetation commonly seen throughout the preserve. Additionally, after construction is completed, all disturbed staging areas and access routes including the Butano Trail (Lower Butano Marsh Levee) would be revegetated with native vegetation similar to existing conditions. Provided that the Project would maintain the open space and natural setting of the preserve, the Project would not result in adverse effects on scenic vistas, the Project area's visual character, and visual quality. This impact would be **less than significant**.

b. Damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway

As described in the discussion above, State Route 1 is the nearest state scenic highway, which is located immediately west of the Project site. Pescadero Creek Road is designated as a scenic corridor in the County's General Plan (County of San Mateo 2010). No trees, rock outcroppings or historic buildings would be affected or damaged along State Route 1. Tree removal activities would primarily occur in the upstream portion of the historic Butano Creek channel (Reach 3) prior to dredging of the channel. While the removal of trees may be noticeable in the vicinity of the Pescadero Creek Road bridge, riparian vegetation is expected to regrow along the dredged creek channel relatively quickly. For these reasons, damage to scenic resources would be considered **less than significant**.

d. New sources of light or glare

Project construction activities would occur between 7:00 a.m. and 6:00 p.m., Monday through Friday, consistent with the County's Noise Ordinance. If weekend work is necessary, work would occur between 9:00 a.m. and 5:00 p.m. on Saturdays. There would be no nighttime construction that would require lighting, installation of permanent lighting such as street lights, or the use of any materials or surfaces that would create a new source of light or glare. The proposed Project is expected to have **no impact** on the community as a result of light pollution.

3.2 AGRICULTURAL RESOURCES

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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 (FMMP) of the California Resources Agency, to nonagricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 zoned 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 in a manner that will significantly affect timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, or other public benefits?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Involve other changes in the existing environment that, because of their location or nature, could result in a conversion of Farmland to a nonagricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.2.1 Discussion of Checklist Responses

a, e. Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agriculture use

According to the California Department of Conservation's (CDOC's) Farmland Mitigation and Monitoring Program, the proposed sediment stockpiling area near the proposed upper floodplain berm would be located on land designated as Prime Farmland (CDOC 2016). While these areas would not be available for agricultural use throughout the construction duration, after construction is complete, the stockpiling areas would be restored and could be used for

agricultural uses again. Since no permanent conversion of farmland would occur, this impact on farmland would be **less than significant**.

b. Conflict with existing zoning for agriculture use or Williamson Act Contract

Part of the Project site is designated as Planned Agricultural District and Coastal Development District (PAD/CD) (County of San Mateo 2018). The proposed berm augmentation and temporary sediment stockpile area south of Pescadero Creek Road would be on lands owned by Level Lea Farm which are covered under the Williamson Act (CDOC 2006).

The majority of the proposed work would take place within Butano Creek and Butano Marsh. The remainder of the work would occur south of Pescadero Creek Road where agricultural activities exist. The sediment stockpiling area and upper floodplain berm augmentation site are on Assessor's Parcel Number (APN) 086-090-010, which is owned by Level Lea Farm. SMRCD would need to obtain written approval from the property owners prior to using their property for stockpiling and construction access purposes and berm construction. Note that verbal approval has been given. Current agricultural practices that take place on the parcel owned by Level Lea Farms are limited to forage production, growing hay, and vegetable row crops.

CEQA Guidelines Section 16026 states that a project would cause a significant impact if it resulted in the cancellation of a Williamson Act contract for parcels of 100 acres or more. The Project would not result in a cancellation to any Williamson Act contracts. Following construction, the sediment stockpiling areas and access route leading to the berm augmentation site could continue being used for agricultural purposes. Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract and the Project would have a **less-than-significant** impact on existing zoning for agricultural use and Williamson Act contracts.

c, d. Conflict with existing zoning for forest land or timberland, or result in the loss of forest land or conversion of forest land to non-forest use

The Project area is not zoned for timberland or forest land uses. Therefore, the project would not conflict with such uses, nor would it result in the loss or forest land or conversion of forest land to non-forest uses. **No impact** would occur.

3.3 AIR QUALITY

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
When 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 checked="" type="checkbox"/>	<input type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>

3.3.1 Discussion of Checklist Responses

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

The proposed Project is located in the San Francisco Bay Area Air Basin (SFBAAB) which includes all of Napa, Contra Costa, Alameda, Santa Clara, San Mateo, San Francisco, and Marin Counties, the southern portion of Sonoma County, and the western portion of Solano County. The Bay Area Air Quality Management District (BAAQMD) is the regulatory agency responsible for assuring that national and state ambient air quality standards are attained and maintained in the SFBAAB.

A project is deemed inconsistent with air quality plans if it would result in population and/or employment growth that exceeds growth estimates included in the applicable air quality plan, which, in turn, would generate emissions not accounted for in the applicable air quality plan emissions budget. The proposed Project would have a significant impact if it would conflict with or impair implementation of applicable air quality plans established by

BAAQMD or local general plans. Applicable air quality plans include the Bay Area 2005 Ozone Strategy, BAAQMD's *2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 Clean Air Plan) and the San Mateo County General Plan. The Bay Area 2005 Ozone Strategy includes stationary source control measures to be implemented through BAAQMD regulations; mobile source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with Metropolitan Transportation Commission (MTC), local governments, transit agencies and others. The 2017 Bay Area Clean Air Plan presents the BAAQMD's plan for attaining federal air quality standards, particularly for ozone and particulate matter (PM) emissions (BAAQMD 2017a). This plan includes a control strategy focused on stationary source, mobile source, transportation control, land use and local impact, energy and climate, and additional measures to control ozone and its precursors (reactive organic gas [ROG] and nitrogen oxides [NO_x]), particulate matter of aerodynamic radius of 10 micrometers or less (PM₁₀), particulate matter of aerodynamic radius of 2.5 micrometers or less (PM_{2.5}), and toxic air contaminants (TACs). For additional discussion regarding federal, state and local regulations pertaining to air quality and that are applicable to the Project, refer to **Appendix B**.

The proposed Project's construction activities would have temporary construction workers (six to 20) but would not result in any permanent changes in local populations. Similarly, once construction is completed, the Project's operation and maintenance activities would require brief use of workers on-site but would not permanently or substantially alter the local populations.

The proposed Project would follow all federal, state, and local regulations related to stationary and area sources of air pollutants. In addition, construction activities would follow BAAQMD's rules and regulations for fugitive dust, including implementation of BMP-12 (Dust Management Controls) which is described in Table 5 in Chapter 2, *Project Description*. In addition, the Project would not impair or conflict with implementation of San Mateo County's General Plan and LCP, or the applicable BAAQMD air quality planning documents including the 2017 Clean Air Plan. Therefore, because the proposed Project would be consistent with the applicable planning policies and would comply with all applicable regulations for sources of air pollutants, the proposed Project would not obstruct or conflict with applicable air quality plans and would have a **less-than-significant** impact.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation

The SFBAAB is a state and federal non-attainment area for ozone and PM_{2.5}, and a state nonattainment area for PM₁₀. A project would have a significant impact if it would contribute substantially to these air quality violations. San Mateo County has determined that the mass emission thresholds of significance adopted by BAAQMD in 2010 are appropriate air quality thresholds based on substantial evidence. A substantial contribution is defined as a contribution above the BAAQMD CEQA threshold of significance for criteria pollutants including ozone precursors ROG and NO_x. The BAAQMD has established mass emission thresholds of significance to determine if air emissions would contribute to an existing or projected air quality violation or result in a cumulatively considerable net increase of criteria pollutant such that the air basin is nonattainment for ambient air quality standards. These are shown in **Table AQ-1** below.

Table AQ-1. BAAQMD CEQA Thresholds of Significance for Criteria Air Pollutants

Pollutant	Construction-Related	Operational-Related	
		Average Daily Emissions (pounds per day)	Maximum Annual Emissions (tons per year)
Criteria Air Pollutants and Precursors	Average Daily Emissions (pounds per day)	Average Daily Emissions (pounds per day)	Maximum Annual Emissions (tons per year)
ROG	54	54	10
NOx	54	54	10
PM ₁₀	82 (Exhaust)	82	15
PM _{2.5}	54 (Exhaust)	54	10
PM ₁₀ /PM _{2.5} (Fugitive Dust)	Best Management Practices (BMPs)	None	

Source: BAAQMD 2017b.

BAAQMD recommends implementation of BMPs to reduce fugitive dust emissions for all projects (see BMP-12 in Chapter 2, Table 5). With implementation of fugitive dust control measures outlined in BMP-12, BAAQMD considers fugitive dust emissions to be less than significant.

The emissions associated with construction and maintenance activities for the proposed Project are shown in Tables AQ-2 and AQ-3, below. These emissions were estimated using the California Emission Estimator Model (CalEEMod) version 2016.3.2 which uses estimates from CARB's models for off-road vehicles and EMFAC2014. The modeling result details are provided in Appendix C.

Table AQ-2. Estimated Construction-Related Criteria Pollutant Emissions for the Proposed Project

	Pollutant						
	ROG	NO _x	CO	PM ₁₀ Exhaust	PM ₁₀ Fugitive	PM _{2.5} Exhaust	PM _{2.5} Fugitive
Estimated Project Annual Emissions – 2018 – Tons/year	0.0946	0.1010	0.0508	0.00428	0.019	0.00394	0.0104
Estimated Project Annual Emissions – 2019 – Tons/year	0.334	3.032	1.991	0.1317	0.3236	0.1235	0.1719
Estimated Project Average Daily Emissions - 2018 (lbs/day) ¹	37.84	40.40	20.32	1.71	7.60	1.58	4.16
Estimated Project Average Daily Emissions - 2019 (lbs/day) ¹	6.42	61.25	40.22	2.66	6.54	2.49	3.47
BAAQMD Average Daily Emissions Threshold (lbs/day) ²	54	54	None	82	BMPs	54	BMPs
Exceed Threshold?	N	Y	N	N	N	N	N
Mitigated Estimated Project Average Daily – 2019 Emissions ³	3.47	49.72	43.54	2.13	6.54	2.07	3.47
Exceed Threshold After Mitigation?	N	N	N	N	N	N	N

Note: “BMPs” indicates that no calculation is required because compliance with BMPs is considered by BAAQMD to reduce the emission to below the threshold. Shaded cells indicate exceedance of a significance threshold.

¹ Estimates of fugitive dust emissions (PM₁₀ and PM_{2.5}) do not account for any watering that would be performed in accordance with the BMP-12, Dust Management Controls. Therefore, actual fugitive dust emissions would be less than those shown.

² The average daily emissions thresholds are based on the BAAQMD’s *CEQA Air Quality Guidelines* (BAAQMD 2017a).

³ The mitigated emissions estimates assume that all off-road construction equipment, except for off-road trucks, used during the Project’s construction activities would be Tier 3, which provides an approximately 19 percent reduction in NO_x emissions. San Mateo Resource Conservation District and/or its contractor may use Tier 3 equipment or another combination of mitigation measures as described in Mitigation Measure AQ-1 below to achieve the BAAQMD significance thresholds.

As shown in Table AQ-3, the proposed Project’s NO_x emissions would exceed the BAAQMD’s NO_x significance threshold and would potentially contribute substantially to an existing air quality violation (i.e., ozone nonattainment). All other projected emissions would not exceed their applicable significance thresholds and would not be considered to substantially contribute to any existing air quality violations or violate any air quality standards. Particulate matter emissions from the proposed Project would be minimized through compliance with all of the BAAQMD’s applicable regulations, particularly those summarized in BMP-12, which prescribes fugitive dust control requirements and minimizes vehicle idling. Implementation of BMP-12 would reduce the potential for and magnitude of PM-related

impacts. Implementation of **Mitigation Measure AQ-1** is required to reduce construction-related NO_x emissions to below the BAAQMD's NO_x significance threshold.

Mitigation Measure AQ-1: NO_x Emissions Control and Cap Measures. SMRCD or its contractor shall implement any combination of the measures described below to reduce NO_x emissions, in any given construction year, to ensure Project NO_x emissions are capped below an average of 54 pounds per day. As a performance standard, the mitigation measures shall demonstrate that off-road equipment (greater than 50 hp) and material hauling vehicles used during construction (i.e., owned, leased, and subcontracted vehicles) will achieve emission reductions to the extent feasible. Equipment and material hauling vehicles shall achieve at least a project-wide fleet average of 20 percent NO_x reduction compared to the most recent CARB fleet average up to a Tier IV-equivalent engine. The SMRCD or its contractor will implement any of the following examples of appropriate mitigation to achieve this reduction including, but not limited to: limit the number of daily one-way material hauling trips, use alternative-fueled equipment, alter the phasing of construction activities, use of chemical additives or after-market devices to reduce emissions on existing equipment, use higher tier (Tier 3 or greater) and/or newer models for equipment and/or material hauling trucks, use of electrically powered equipment, reduction in total equipment hours, use of alternative fuels, or engine retrofit technology.

As demonstrated in Table AQ-2, implementation of Mitigation Measure AQ-1 is feasible and would reduce the Project's NO_x emissions to less than the average daily significance threshold (54 lbs/day). For the purposes of demonstrating feasibility, it was assumed that all off-road equipment, except for trucks, would be at least Tier 3 and achieve at least a 19 percent reduction in NO_x emissions. Implementation of this mitigation measure would ensure compliance with the BAAQMD's significance thresholds and ensure that the proposed Project would not substantially contribute to any existing air quality violations or violate any air quality standards. As a result, the Project's construction-related impacts would be less than significant with mitigation.

Operation and maintenance of the Project would involve use of substantially less equipment and require less hauling trips, than those forecasted for the Project's construction-related activities. Thus, maintenance-related activities would generate emissions substantially less than the applicable BAAQMD significance thresholds, as shown in Table AQ-3, and would ensure that the proposed Project would not substantially contribute to any existing air quality violations or violate any air quality standards. For these reasons, the Project's maintenance-related impacts would be less than significant.

Table AQ-3. Estimated Maintenance-Related Criteria Pollutant Emissions for the Proposed Project

	Pollutant						
	ROG	NO _x	CO	PM ₁₀ Exhaust	PM ₁₀ Fugitive	PM _{2.5} Exhaust	PM _{2.5} Fugitive
Estimated Project Annual Maintenance Emissions – 2020 – Tons/year	0.0115	0.1115	0.1162	0.00553	0.0361	0.00539	0.0181
Estimated Project Average Daily Maintenance Emissions – 2020 (lbs/day) ¹	0.22	2.25	2.35	0.11	0.73	0.11	0.37
BAAQMD Average Daily Emissions Threshold (lbs/day) ²	54	54	None	82	BMPs	54	BMPs
Exceed Threshold?	N	N	N	N	N	N	N

Note: “BMPs” indicates that no calculation is required because compliance with BMPs is considered by BAAQMD to reduce the emission to below the threshold. Shaded cells indicate exceedance of a significance threshold.

¹ Estimates of fugitive dust emissions (PM₁₀ and PM_{2.5}) do not account for any watering that would be performed in accordance with the BMP-12, Dust Management Controls. Therefore, actual fugitive dust emissions would be less than those shown.

² The average daily emissions thresholds are based on the BAAQMD’s CEQA Air Quality Guidelines (BAAQMD 2017a).

Since the emissions from Project construction and operation and maintenance activities would be below the BAAQMD CEQA significance thresholds with implementation of BMP-12 and Mitigation Measure AQ-1, the overall impact would be **less than significant with mitigation**.

c. Cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area

As defined in the BAAQMD’s CEQA Guidelines, project-level emissions that are below the mass emissions thresholds are considered to be less than cumulatively considerable. As described above, with implementation of Mitigation Measure AQ-1, the construction-related emissions of all criteria pollutants would be less than significant, rendering the Project’s contribution to cumulatively significant impacts less than considerable. In addition, maintenance-related emissions would be less than significant and would not have a considerable contribution to cumulatively significant impacts. With implementation of Mitigation Measure AQ-1, this impact would be **less than significant with mitigation**.

d. Expose sensitive receptors to substantial pollutant concentrations

During Project construction, diesel particulate matter (DPM) and gasoline fuel combustion emissions that are classified as TACs could be emitted from construction equipment. Due to

the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically operating within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. Chronic and cancer-related health effects estimated over short periods are uncertain. Cancer potency factors are based on animal lifetime studies or worker studies with long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from exposure that would last only a small fraction of a lifetime. Some studies indicate that the dose rate may change the potency of a given dose of a carcinogenic chemical. In others words, a dose delivered over a short period may have a different potency than the same dose delivered over a lifetime (California Office of Environmental Health Hazard Assessment [OEHHA] 2015). Furthermore, construction impacts are most severe adjacent to the construction area and decrease rapidly with increasing distance. Concentrations of mobile-source DPM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005).

The nearest sensitive receptors are located over 500 feet from the Project's primary dredging, excavation, and sediment reuse areas. However, there are a few residences located along Project hauling routes, particularly near Access Point #7 on Pescadero Creek Road. Hauling activities on Pescadero Creek Road and along the access route leading to the stockpile area and upstream berm augmentation site would be temporary (less than 10 days). For this reason, and because potential DPM emissions from hauling trucks would only occur briefly in proximity to any residences as hauling trucks are in transit, residences on Pescadero Creek Road would not be exposed to substantial pollutant concentrations. There is one residence located within approximately 400 feet or less of the upper floodplain berm augmentation's hauling route and stockpile area. This residence would not be exposed to substantial pollutant concentrations from the Project's construction activities because it is located even farther from potential Project sources of TACs (DPM) and construction activities at the upper floodplain berm would be temporary.

The CAL FIRE station, which is located just west of the Pescadero Creek Road bridge at Bean Hollow Road, would not be exposed to substantial pollutant emissions since it is temporarily occupied by adult workers who are not as sensitive as residential children to TACs. the Project's construction activities in the vicinity of the CAL FIRE station would also be temporary. All other potential sensitive receptors, including the Pescadero Community Church, which is approximately 3,900 feet from the upstream end of the Project area, would not be anticipated to be affected by mobile-source DPM emissions due to their distances from project construction activities and haul routes. For the reasons described above, the Project's maintenance-related activities would similarly not be anticipated to expose any sensitive receptors to substantial pollutant concentrations. Therefore, the potential temporary impacts related to exposing sensitive receptors to TACs would be **less than significant**.

e. Create objectionable odors affecting a substantial number of people

The Project's construction activities would not result in the generation of permanent or long-term objectionable odors. Odors associated with the intermittent operation of gasoline and diesel-powered equipment might be detected by nearby sensitive receptors but these odors would be of short duration and would not affect a substantial number of people. Soil or sediment excavated from the Butano Creek channel may contain decaying organic material that may create an objectionable odor. The intensity of the odor perceived by a receptor

1 depends on the distance of the receptor from construction activities and the amount and
2 quality of the exposed soil material. Staging Area #3, which would be used to temporarily
3 stockpile excavated soil, is not located near any sensitive receptors. The soil stockpiling area
4 proposed on agricultural land in the southern portion of the Project site would be within 500
5 feet of one residence. However, excavated soil would only be placed in this area temporarily
6 until it was dried sufficiently and reused to construct the berm. Therefore, the Project's soil
7 stockpiling activities and other construction-related activities would not result in the
8 generation of permanent or long-term objectionable odors.

9 During the Project's operation and maintenance phase, sediment in the area immediately
10 upstream and downstream of Pescadero Creek Road bridge would be monitored and up to
11 1,455 cubic yards of sediment may be excavated and either reused or disposed of. For
12 maintenance-related sediment disposal and reuse, all sediment disposal and reuse sites
13 would be identified in the future and may include nearby agricultural properties used in the
14 past for other County-led sediment removal activities. Placement of organic soils or sediment
15 at these sites may cause temporary odors. However, sediment disposal sites would need to
16 be approved by appropriate resource agencies prior to use and would likely not be located in
17 close proximity to sensitive receptors. In addition, any odors that could be produced would
18 be short-term and temporary from either project construction- or maintenance-related
19 activities and would not affect a substantial number of people. Thus, this impact would be
20 **less than significant.**

1 3.4 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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 CDFW or USFWS?	<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, or regulations, or by the DFG or USFWS?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 marshes, vernal pools, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 (HCP); natural community conservation plan; or other approved local, regional, or state HCP?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 3.4.1 Environmental Setting: Relationship between Biological Resources and 3 Water Quality Conditions

4 As described in Chapter 2, Section 2.1, numerous biological and water quality studies have
5 been conducted in the Butano-Pescadero watershed and Pescadero Marsh Natural Preserve
6 by the PLSP, CDFW, Dr. John Largier's UC Davis Bodega Bay Marine Lab, and other scientists.
7 To provide some context regarding the Project area's existing conditions, the following

paragraph summarizes the relationship between water quality conditions in Butano Marsh and fish kills (including special-status fish) based on recent studies conducted by the Dr. John Largier in coordination with San Francisco Regional Water Quality Control Board (RWQCB), State Parks, and CDFW.

When the estuary/Pescadero Lagoon mouth is closed, an anoxic lower layer of water consisting of diluted seawater becomes trapped in the lagoon by dense, high-salinity water and a layer of less-dense, lower salinity water. While oxygen levels generally vary in the lower levels of the water column, water quality studies have found that more persistent hypoxia/anoxia develops during long mouth closures (e.g., over 2 months). In addition to the saltwater-related anoxia, an anoxic lower layer of water also develops in the marsh and its drainage system, in which dissolved oxygen is taken up by decomposition of organic matter at a faster rate than oxygen can be replenished. This results in a depletion of oxygen to hypoxic levels that pose a threat to fish species and other aquatic organisms. When water surface elevations in the marsh rise above 6.5 feet (NADV) and the marsh is inundated for over a week, breaching events result in these highly degraded water quality conditions spreading into the lagoon via rapid drainage of anoxic/hypoxic water from Butano Marsh. Of particular concern are abrupt lagoon mouth breaches that cause mixing of the water column and quickly result in hypoxic/anoxic conditions in which fish are unable to find refuge. Such conditions have spread hypoxic/anoxic water to large portions of the estuary, resulting in extensive fish kills including special-status fish species. These conditions are also believed to have adverse effects on other aquatic organisms such as California red-legged frog (CRLF) larvae, which thrive in freshwater habitat.

As described in Chapter 2, one of the primary objectives of the proposed Project is to improve salmonid survival and reduce the risk and/or severity of fish kills by creating access to oxygen-rich freshwater refuge during times of low water quality and by reducing anoxic conditions by preventing the slow percolation and movement of freshwater from Butano Creek through and across Butano Marsh. Reducing the processes known to be causing high levels of hypoxia in Butano Marsh, addressing the artificial deep water areas that function as hypoxia/anoxia hotspots, and expanding freshwater refugia in Butano Creek is not only expected to help improve salmonid survival but also improve habitat conditions for special-status species such as CRLF and San Francisco garter snake (SFGS), the effects of which are addressed in Section 3.4.2, below.

3.4.2 Environmental Setting: Habitats in the Project Area

Habitats (based on observed vegetation communities) mapped within the Project are shown in Figure 2 of Chapter 2, *Project Description*. Vegetation communities in the Project area include freshwater forested/shrub wetland, freshwater emergent wetland, estuarine and marine wetland, coyote brush scrub, coastal brambles and estuarine and marine deepwater (State Parks 2017).

Freshwater forested/shrub wetland is found in the southern portion of the Project area, along the historic Butano Creek channel and its immediate floodplain. This habitat is generally dominated by arroyo willow (*Salix lasiolepis*), with white alder (*Alnus rhombifolia*) becoming more prevalent in the upstream portions of this habitat in the vicinity of the Pescadero Creek Road bridge. Herbaceous vegetation is dominated by dotted smartweed (*Persicaria punctata*) with water parsley (*Oenanthe sarmentosa*) and panicked bulrush (*Scirpus microcarpus*) also common.

Freshwater emergent wetland is found in Upper Butano Marsh and along the western fringes of Lower Butano Marsh where there are freshwater influences. This habitat is dominated by cattail (*Typha latifolia*), with areas of tule (*Schoenoplectus acutus* var. *occidentalis*) also present.

Estuarine and marine wetland habitat is found in Lower and Middle Butano Marshes in more saline areas than the freshwater emergent wetland. This habitat is dominated by pickleweed (*Salicornia pacifica*), alkali bulrush (*Bolboschoenus maritimus*), salt grass (*Distichlis spicata*), and alkali heath (*Frankenia salina*). These habitats contain sensitive natural communities including *Sarcocornia pacifica* [*Salicornia depressa*] Herbaceous Alliance - Pickleweed mats and *Bolboschoenus maritimus* Herbaceous Alliance - Salt marsh bulrush marshes. Estuarine and marine deepwater habitats are largely unvegetated.

Coyote Brush Scrub is found on the higher terrace to the west of Butano Marsh and is dominated by coyotebrush (*Baccharis pillularis* ssp. *pillularis*), with California blackberry (*Rubus ursinus*), lizardtail (*Eriophyllum staechadifolium*), and soft chess (*Bromus hordeaceus*) subdominant.

Coastal brambles habitat is dominated by California blackberry.

Habitats not shown in Figure 2 include Developed/Disturbed and Agriculture. Developed/Disturbed habitat consists of previously disturbed areas such as parking lots or roads that are largely unvegetated. Agriculture consists of agricultural land currently used for forage production, growing hay and vegetable row crops.

Impacts to habitats within the Project site are summarized in **Table BIO-1**. Impacts have been subdivided by Project activity type.

Table BIO-1. Habitat Impacts

Construction Activity	Habitat Type	Impact Area (Acres)
<i>Staging Areas, Stockpiling, and Access Routes</i>		
Staging Area #1	Developed/Disturbed	0.40
Staging Area #2	Coyote Brush Scrub	0.14
	Developed/Disturbed	0.14
Staging Area #3	Developed/Disturbed	0.13
Staging Area #4	Developed/Disturbed	0.15
Sediment Stockpile Area	Agriculture	1.26
Access route between Staging Area #1 and Staging Area #2	Coyote Brush Scrub	0.16
	Developed/Disturbed	0.16
Access route between Staging Area #2 and Marsh Control Structure	Developed/Disturbed	0.16
	Coyote Brush Scrub	0.16

Construction Activity	Habitat Type	Impact Area (Acres)
	Freshwater Forested/Shrub Wetland	0.02
Access route on Lower Butano Marsh Levee (left levee of Butano Creek)	Coastal Brambles	0.95
	Estuarine and Marine Wetland	0.19
Vegetation Dispersal Area (along southern side of Butano Marsh Levee)	Coastal Brambles	0.01
	Estuarine and Marine Wetland	1.09
Temporary Material Placement along Reach 2	Coastal Brambles	0.09
	Estuarine and Marine Deepwater	0.11
	Estuarine and Marine Wetland	0.21
Access route through existing vegetation near proposed berm augmentation	Freshwater Forested/Shrub Wetland	0.17
Access Route from Access Point #5	Developed/Disturbed	<0.01
	Freshwater Forested/Shrub Wetland	0.05
Access Route from Access Point #6	Developed/Disturbed	<0.01
	Freshwater Forested/Shrub Wetland	0.07
<i>Sediment Dredging and Beneficial Sediment Reuse</i>		
Butano Creek channel dredging	Coastal Brambles	0.19
	Developed/Disturbed	0.05
	Estuarine and Marine Deepwater	1.80
	Estuarine and Marine Wetland	0.97
	Freshwater Emergent Wetland	1.05
	Freshwater Forested/Shrub Wetland	3.53
Type 1 Marsh Fill	Estuarine and Marine Deepwater	1.53
	Estuarine and Marine Wetland	2.22

Construction Activity	Habitat Type	Impact Area (Acres)
	Freshwater Emergent Wetland	1.05
	Freshwater Forested/Shrub Wetland	0.10
Type 2 Marsh Fill	Coastal Brambles	0.55
	Estuarine and Marine Deepwater	3.47
	Estuarine and Marine Wetland	2.94
	Freshwater Emergent Wetland	0.34
	Freshwater Forested/Shrub Wetland	0.01
Type 3 Marsh Fill (Natural Levee Analog)	Estuarine and Marine Deepwater	0.01
	Estuarine and Marine Wetland	2.15
	Freshwater Emergent Wetland	4.48
	Freshwater Forested/Shrub Wetland	3.64
Type 4 Marsh Fill	Estuarine and Marine Deepwater	0.02
	Estuarine and Marine Wetland	4.31
	Freshwater Emergent Wetland	2.84
	Freshwater Forested/Shrub Wetland	0.60
<i>Other</i>		
Berm augmentation	Freshwater Forested/Shrub Wetland	0.18
Marsh control structure	Estuarine and Marine Deepwater	0.02

3.4.3 Discussion of Checklist Responses

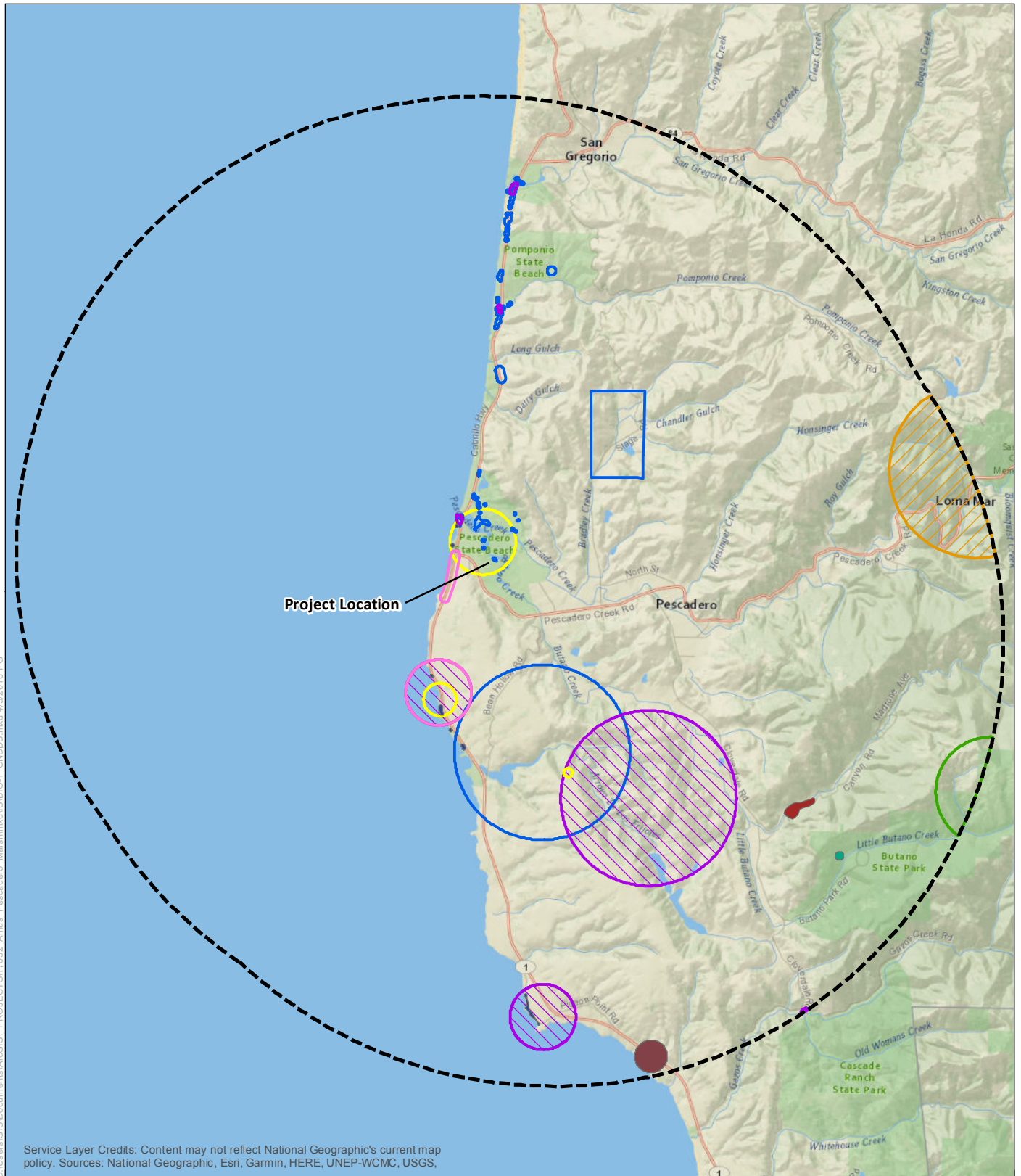
a. Substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species

For the purposes of this assessment, special-status species are those that are listed as rare, species of concern, candidate, threatened, or endangered by USFWS or the CDFW, as well as species given special consideration by the San Mateo County Local Coastal Program and species protected under the Marine Mammal Protection Act. Special-status plant and animal species with the potential to occur in the Project area were identified through a review of the following resources:

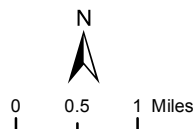
- USFWS Information for Planning and Consultation Report (USFWS 2018, Appendix C),
- California Natural Diversity Database (CNDDDB) queries for the six U.S. Geological Survey (USGS) 7.5-minute quadrangles containing and surrounding the project site: Half Moon Bay, Woodside, San Gregorio, La Honda, Pigeon Point, Franklin Point (CDFW 2018, Appendix C),
- California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Plants of California query for the six USGS 7.5-minute quadrangles containing and surrounding the project sites (CNPS 2018, Appendix C), and
- <https://ebird.org/home> (eBird 2018).

A list of special-status species and their potential to occur within the existing site is provided in **Appendix C, Biological Resources Background Information, Tables C-1 and C-2. Figures BIO-1 and BIO-2** provide known occurrences of these species within a 5 mile-radius of the Project site. **Figure BIO-3** shows the location of critical habitat within 5 miles of the Project site. USFWS-designated critical habitat for California red-legged frog, tidewater goby, and Central California Coast evolutionary significant unit (ESU) steelhead is located within the Project site. The potential for special-status species to occur in areas affected by the proposed Project was evaluated according to the following criteria:

- **None:** indicates that the area contains a complete lack of suitable habitat, the local range for the species is restricted, and/or the species is extirpated in this region.
- **Not Expected:** indicates situations where suitable habitat or key habitat elements may be present but may be of poor quality or isolated from the nearest extant occurrences. Habitat suitability refers to factors such as elevation, soil chemistry and type, vegetation communities, microhabitats, and degraded/substantially altered habitats.
- **Possible:** indicates the presence of suitable habitat or key habitat elements that potentially support the species.
- **Present:** indicates that either the target species was observed directly or its presence was confirmed by diagnostic signs during field investigations or in previous studies in the area.



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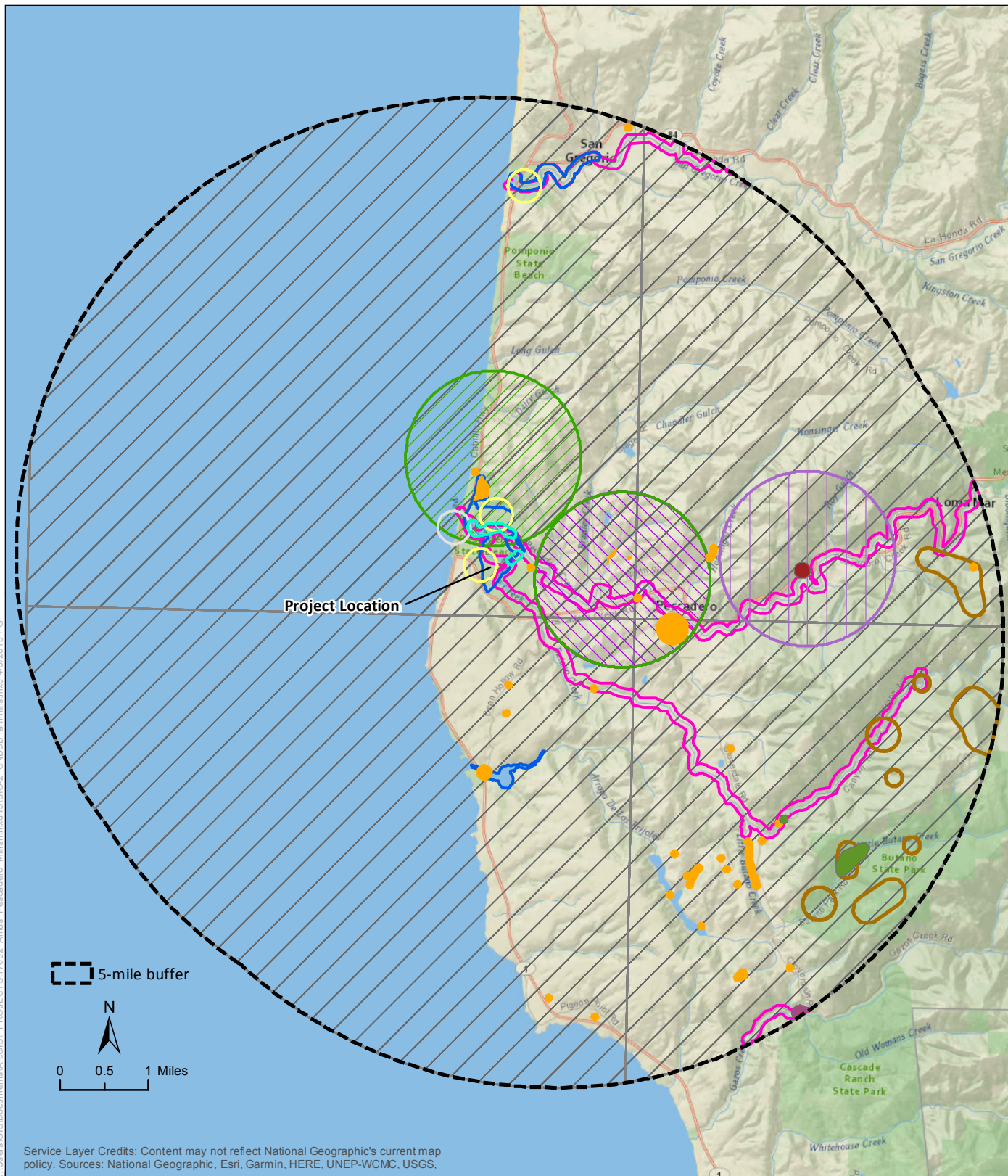
- | | |
|----------------------------|--------------------------|
| Anderson's manzanita | coastal marsh milk-vetch |
| Blasdale's bent grass | marsh microseris |
| Choris' popcornflower | minute pocket moss |
| Point Reyes meadowfoam | perennial goldfields |
| San Mateo woolly sunflower | rose leptosiphon |

Source: CDFW, CNDDDB, February 2018 update

Figure BIO-1
Special-status Plant
Species Occurrences

Butano Creek Channel
Reconnection and
Resilience Project

C:\Users\GIS\Documents\ArcGIS\PROJECTS\17032 Alnus_Pescadero_Marsh\mxd\BIO-2_CNDDDB_animals.mxd 4/3/2018 PG



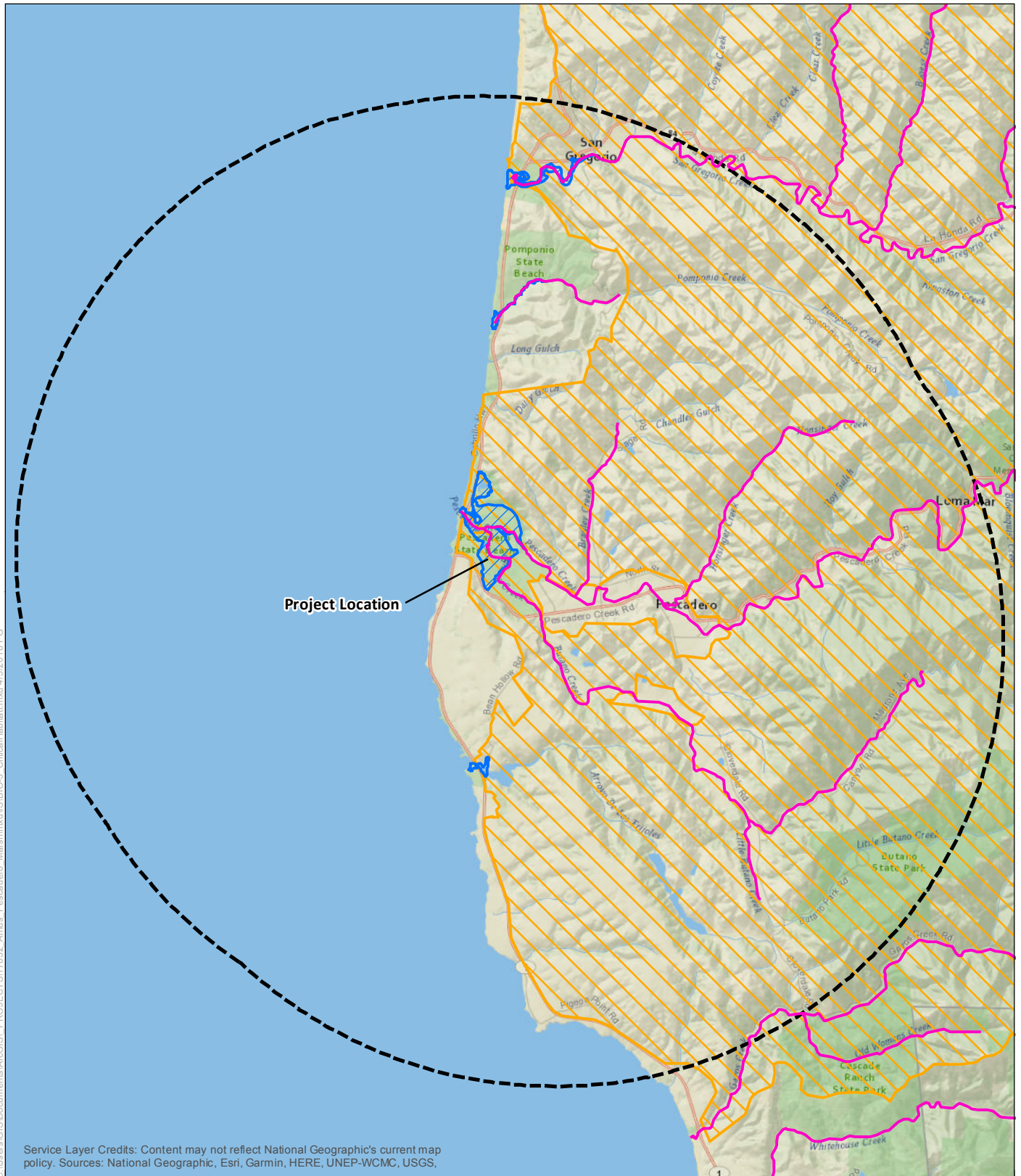
Service Layer Credits: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS,

- | | | |
|-------------------------------|--------------------------|-------------------------------|
| California giant salamander | Townsend's big-eared bat | pallid bat |
| California red-legged frog | bank swallow | saltmarsh common yellowthroat |
| Myrtle's silverspot butterfly | longfin smelt | steelhead |
| San Francisco gartersnake | marbled murrelet | tidewater goby |
| Santa Cruz black salamander | CA brackishwater snail | western snowy plover |

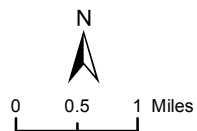
Figure BIO-2
Special-status
Animal Species
Occurrences

Butano Creek Channel
Reconnection and Resilience Project

C:\Users\GIS\Documents\ArcGIS\PROJECTS\17032_Altius_Pescadero_Marsh\mxd\BIO-3_CriticalHabitat.mxd 4/5/2019 PG



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5-mile buffer

Critical Habitat

- California red-legged frog
- tidewater goby
- Steelhead

Source: USFWS 2018

Figure Blo-3
Critical Habitat

Butano Creek Channel
Reconnection and
Resilience Project

Special-status Plant Species

There are CNDDDB records for several special-status plants in the vicinity of the Project.

Coastal marsh milk vetch. Coastal marsh milk vetch (*Astragalus pycnostachyus* var. *pycnostachyus*) (California Rare Plant Rank [CRPR]¹ 1B.2) has been recorded in several areas of the marsh, including along the Lower Butano Marsh Levee and in the North Marsh, north of Pescadero Creek (CDFW 2018). This species was observed in several locations on the Lower Butano Marsh Levee during a November 2017 site visit. Coastal marsh milk vetch is a perennial herb that blooms from June through September and typically grows in coastal marshes, seeps, and adjacent sand habitats (Wojciechowski and Spellenberg 2012). Coastal marsh milk vetch plants could be adversely affected during Project construction by vegetation clearing and excavator access along the Lower Butano Marsh Levee and discharge pipes crossing the Lower Butano Marsh Levee to transport dredged sediment from Butano Creek into Butano Marsh. The total population within Butano Marsh and adjacent areas is approximately 300 individuals (CDFW 2018). An estimated fewer than 20 individuals would be affected along the levee. The creation of the natural levee analog would create elevations within the marsh that may be suitable for coastal marsh milk vetch, expanding potential habitat for this species. Additionally, this species often grows in infrequently disturbed sites, such as levees, eroding gullies, and road edges, so disturbance may have an overall positive effect on the population.

Choris' popcornflower. Choris' popcornflower (*Plagiobothrys chorisianus* var. *chorisianus*) (CRPR 1B.2) has also been observed in the vicinity of Pescadero Marsh (CDFW 2018). This annual species blooms from March through June and typically occurs in grassy, moist places, ephemeral drainages, coastal scrub, and chaparral (Kelley 2012). It was observed in 2015 in the coastal scrub in the western portion of the Pescadero Marsh Natural Preserve, west of State Route 1 (Corelli et al. 2015). This species has potential to occur in the coyotebrush scrub adjacent to proposed Staging Areas #1 and #2 and along portions of the Butano Trail between Staging Area #1 and Access Point #2, which would be used for construction access. Clearing of coyotebrush scrub to expand Staging Area #2 and access routes to the work area along the Lower Butano Marsh Levee could result in adverse effects on Choris' popcornflower if this species is present in those areas.

Marsh microseris. Marsh microseris (*Microseris paludosa*) (CRPR 1B.2) had historically been observed in the vicinity of Pescadero State Beach, but this species is thought to be extirpated in this location (CDFW 2018). This perennial herb blooms from April through June and typically grows in moist grassland and open woodland (Chambers 2012). As the marsh microseris population at this location is thought to be extirpated, no effects on this species are anticipated.

Perennial goldfields. There are occurrences of perennial goldfields (*Lasthenia californica* ssp. *macrantha*) (CRPR 1B.2) in the vicinity of the Project on the west side of State Route 1 (CDFW 2017). This perennial herb blooms year-round (mostly May through August) and typically grows in grassland and dunes along the immediate coast (Chan and Ornduff 2012).

¹ California Rare Plant Rank definitions: 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere. Threat ranks: 0.1 - Seriously threatened in California and 0.2 - Moderately threatened in California

As the Project would not occur within grassland or dune habitats, no effects on perennial goldfields are anticipated.

Rose leptosiphon. Rose leptosiphon (*Leptosiphon rosaceus*) (CRPR 1B.1) is known from a 1943 collection but is considered possibly extirpated (CDFW 2018). This annual herb blooms from April to June and is typically found in open, grassy slopes and coastal bluff habitats (Patterson and Battaglia 2012). The Project is not located within the coastal bluff or grassland habitats where rose leptosiphon occurs, so effects on this species are not anticipated.

Special-status plants are not anticipated to occur within the dredging footprint or areas proposed for sediment placement within Butano Marsh.

Implementation of BMP-24 through BMP-26 would minimize potential construction-related effects to special-status plant species through pre-construction special-status plant surveys, avoidance of special-status plants if feasible, and minimization measures if special-status plants cannot be avoided. With implementation of these BMPs, no net reduction in the size or viability of the local population of special-status plants potentially affected by the Project is anticipated. Thus, impacts on special-status plant species would be less than significant.

Special-status Wildlife Species

Several species were considered due to their occurrence in the general vicinity of the Project site, but they are not discussed in detail because they have no suitable habitat or reasonable expectation of occurrence on the Project site and therefore would not be affected by the Project. These include the following:

- The Globose dune beetle (*Coleus globosus*) has no federal or state protected status, but it is considered a rare species by the San Mateo County Local Coastal Program. The species is associated with coastal sand dunes, where it lives and forages under the sand. No sand dune habitat occurs within the Project area; thus, the species is not expected to occur on the Project site.
- The northern elephant seal (*Mirounga angustirostris*) is a California fully protected species. Elephant seals breed colonially at Año Nuevo State Park, located approximately 12 miles south of the Project site, and haul out along coastal beaches throughout the year. The narrow strip of sandy shoreline surrounding Pescadero Lagoon does not provide high quality habitat for elephant seals, due to its limited extent and distance from shore, and elephant seals have not been observed at the lagoon. Thus, elephant seals are not expected to occur on the Project site.
- The southern sea otter (*Enhydra lutris nereis*) is federally threatened and a California fully protected species. Sea otters occupy coastal marine habitats where food and kelp canopies are abundant. Otters spend the majority of their lives at sea, and only rarely haul out on land where they move slowly and awkwardly. Thus, otters are not expected to occur on the Project site.

Several other special-status wildlife species, such as the California brown pelican (*Pelecanus occidentalis californicus*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), and peregrine falcon (*Falco peregrinus*), occur in the Project area only as occasional nonbreeding visitors. Project impacts on such species would be limited to

temporary impacts to a very small proportion of regionally available foraging habitat during project construction. Such species would therefore not be impacted substantially by the Project and are not discussed further.

Special-status Amphibians and Reptiles

California red-legged frog. CRLF, a federally listed threatened species and a California Species of Special Concern, is known to occur in the Project area. Critical habitat for this species also occurs within the Project area. Previous studies in the Project area have detected CRLF in Lower, Middle, and Upper Butano Marshes, and Butano Creek (Jennings and Hayes 1990, Smith and Reis 1997). CRLF were found more often in the upper portions of the Project area (e.g., Upper Butano Marsh and the upper portions of Butano Creek).

Within the Project area, CRLF are expected to breed in slow-moving areas of deeper water within Middle and Upper Butano Marshes, in backwaters along the Butano Creek channel, and in deeper floodplain pools along Butano Creek upstream to the upstream limits of the Project. Salinity has an important effect on aquatic habitat suitability for this species. Juvenile CRLF are more sensitive to salinity, as they are completely aquatic, but adult CRLF are also sensitive to salinity. Adults and juveniles are expected to occur in low abundance in Lower and Middle Butano Marsh due to higher salinities. Nighttime CRLF reconnaissance surveys in February of 2018 in the Upper, Middle, and Lower Butano Marshes, support the link between salinities and adult presence, with no frogs being detected in the Lower Marsh and only one frog detected in the Middle Marsh. CRLF detections were also low for the Upper Marsh, and high along the Butano Creek channel and floodplain upstream of the Project site (T. Hyland and J. Robins, pers. comm.). Dispersing individuals may occur in upland areas as well, especially during the wet season, and therefore there is some potential for the species to occur throughout the Project area.

After construction is complete, the Project is expected to improve CRLF habitat quality through creation of expanded high-quality, freshwater habitat. Currently, low-oxygen conditions may limit CRLF larval survival in some areas, and such conditions limit prey abundance for larval, juvenile, and adult CRLF. By reducing hypoxic conditions in Butano Marsh and Butano Channel, the Project would reduce areas where low-oxygen conditions may adversely affect the health and survival of CRLF larvae, thus expanding areas of suitable habitat, and increase the abundance of aquatic invertebrates on which CRLF feed, potentially increasing the carrying capacity of Butano Marsh for CRLF. In addition, the Project is expected to reduce salinity in portions of Middle and Lower Butano Marshes. Because CRLF breeding areas are limited by higher salinity and CRLF abundance in higher-salinity portions of the marsh is low, the expansion of freshwater conditions within Butano Marsh would make more of the marsh suitable for breeding and increase habitat suitability in the marsh as a whole. Recent surveys suggest that CRLF densities are highest along parts of Butano Creek that are adjacent to active floodplain habitat with well-oxygenated slow water refuge. Restoration of the Butano Creek channel through Reach 3 would create additional habitat similar to what is found upstream as well as additional edge habitat which is anticipated to improve conditions for CRLF in the vicinity of the Project.

The proposed sediment reuse areas (including artificial open water areas such as drainage channels and relic borrow pits) within Butano Marsh would reduce the extent of deeper water aquatic habitat within the Lower and Middle Butano Marsh and some of these areas within the Middle Butano Marsh may be suitable for CRLF breeding. Placement of fill could

convert some previously perennial pools and deep water areas to seasonal habitat. The extent of sediment placement is estimated at approximately 30 acres, consisting of approximately 20.3 acres of marsh, 5.0 acres of open water, and 4.4 acres of riparian habitat. While this may result in some loss of deeper-water habitat or reduction in suitability of some pools for breeding, conversion of perennial pools to seasonal pools may benefit CRLF by reducing the suitability of those pools for breeding by predatory non-native invasive bullfrogs (*Lithobates catesbeianus*) and, more importantly, the deep areas to be filled are currently subject to hypoxic conditions and do not provide high-quality CRLF habitat, especially for larvae. The beneficial sediment reuse areas would remain marsh habitat, and thus continue to be suitable for CRLF cover, foraging, and dispersal, and would not result in permanent habitat loss or substantial reduction in long-term habitat quality. During the construction period, the deposition of slurry in these marshes would reduce habitat quality briefly. However, CRLF within affected areas would be able to easily disperse elsewhere. Construction would occur in summer and fall, so no egg masses (which might otherwise be covered by slurry) would be present when construction occurs.

Permanent modification of CRLF habitat is limited to upgrades to the existing marsh control structure, which would impact approximately 0.02 acre of little-used CRLF dispersal and foraging habitat in Lower Butano Marsh. Following Project completion, all other grading, fill, access, and staging areas that would be modified during Project construction would continue to provide CRLF habitat, to the extent that such areas currently do. Impacts to habitat types within the Project site are summarized in Table BIO-1 (above) and described in detail below in sections 3.4.3(b) and 3.4.3(c).

Injury or mortality of individual frogs may occur during Project construction, either in the Butano Creek channel or in wetland, riparian, and upland habitats on the Project site due to impacts from equipment or personnel. Implementation of the BMPs listed in Table 5 in Chapter 2, which include worker environmental awareness training (BMP-18), construction monitoring, and relocation of individual CRLF that are found in harm's way during project construction (see BMP-21) would reduce the potential for and magnitude of impacts to individual CRLF. Implementation of **Mitigation Measure HYD/WQ-1 (Water Turbidity Monitoring)** and **HYD/WQ-2 (Dissolved Oxygen Monitoring)** would also reduce temporary water quality impacts on CRLF. Implementation of the above-referenced BMPs and Mitigation Measures HYD/WQ-1 and HYD/WQ-2 would reduce temporary adverse effects on CRLF to less than significant. In the long-term, the net effect of the Project on CRLF would be beneficial. The improvements in water quality within Butano Marsh, and the expansion of freshwater marsh breeding and foraging habitat, would result in a net increase in high-quality CRLF habitat and, by improving water quality for CRLF larvae and this species' prey, potentially increase the carrying capacity for CRLF within Butano Marsh. While the Project would have beneficial effects on CRLF in the long-term, Project construction activities would result in temporary adverse effects that would be minimized to a level that is less than significant with mitigation.

San Francisco garter snake. SFGS, which is federally and state listed as endangered and state fully protected, is known to occur in the Project area. SFGS may use wetland habitats throughout Butano Marsh for foraging and dispersal, though it likely occurs sparingly in more saline areas such as Lower Butano Marsh. SFGS is also expected to occur along Butano Creek and in associated riparian habitat where CRLF and chorus frogs are numerous. SFGS can also disperse into surrounding upland habitats to prey on amphibians aestivating in small

mammal burrows (Barry 1993). Therefore, SFGS is considered potentially present throughout the Project area.

As discussed above for CRLF, after construction is complete, the overall effect of the Project on SFGS would be more beneficial due to the improvement in habitat quality and expansion of high-quality, freshwater habitat for the snake's amphibian prey. Riparian habitat removal along Butano Creek would remove some vegetative cover, but reduction in the dense woody canopy along Butano Creek between Pescadero Creek Road and Butano Marsh would increase the extent of open, sunny basking habitat for garter snakes, provide an improved migration corridor, and potentially improve habitat quality in that area. Additionally, restoration of the Butano Creek channel would create additional edge habitat which is anticipated to improve conditions for SFGS in the vicinity of the Butano Creek. As recommended by CDFW and USFWS, the Project has been designed to result in expansion of areas of low stature marsh and transitional upland without dense tree canopy (e.g., levee analog), which would provide additional habitat for SFGS.

Permanent modification of SFGS habitat would be limited to upgrades to the existing marsh control structure, which would impact approximately 0.02 acre of potential dispersal and foraging habitat in Lower Butano Marsh. Following Project completion, all other grading, fill, access, and staging areas that would be modified during Project construction would continue to provide SFGS habitat, to the extent that such areas currently do. Impacts to habitat types within the Project site are summarized in Table BIO-1 and described in detail below in sections 3.4.3(b) and 3.4.3(c).

In the absence of BMPs, injury or mortality of individual SFGS due to impacts from equipment or personnel may occur during Project construction, either in the Butano Creek channel or in wetland, riparian, and upland habitats on the Project site. However, implementation of the BMPs in Section 2.5.12, which include worker environmental awareness training (BMP-17), construction monitoring, and relocation of individual SFGS that are found in harm's way (with appropriate permits) (see BMP-21), would minimize injury or mortality of individual SFGS. Prior to construction, SMRCD would obtain all necessary regulatory permits and authorizations from CDFW and other resource agencies to enable relocation of individual SFGS or, in the absence of such permits and authorizations and in the event that individual SFGS are encountered, work would be halted to allow individuals to disperse.

Once Project construction is completed, the Project's effects on SFGS would be beneficial, despite temporary construction-related impacts to SFGS habitat. The improvements in water quality and expansion of freshwater conditions within Butano Marsh would result in a substantial net benefit to populations of the snake's favored prey, the CRLF and Sierran chorus frog. As a result, the Project could potentially increase the carrying capacity for SFGS within Butano Marsh. In conclusion, while Project construction activities could result in temporary impacts on SFGS habitat and individual SFGS that would be less than significant with implementation of the above-listed BMPs, after construction is complete, the Project would improve habitat conditions for SFGS. Overall, impacts on SFGS would be less than significant.

Western pond turtle. Western pond turtle (*Actinemys marmorata*), a species of special concern, has been observed along Pescadero Creek and adjacent areas (Smith and Reis 1997) and this species is expected to occur in Butano Marsh and Butano Creek as well. Pools and wetlands within the Butano Marsh complex, as wells as the Butano Creek channel and

floodplain pools within the Butano Creek riparian corridor, provide high-quality foraging and dispersal habitat for western pond turtles. Suitable nesting habitat may be a limiting factor for western pond turtle in the project area. This species may also disperse into surrounding upland habitats during spring and summer to nest, and open areas with sparse, low vegetation and dry, fine soil such as levees provide nesting sites for these turtles. Therefore, the western pond turtle is considered potentially present throughout the Project area.

Western pond turtles feed on a variety of aquatic invertebrates, amphibians, and fish, and a reduction in low-oxygen conditions within aquatic habitats in Butano Marsh would improve habitat conditions for the turtle's prey species. Such improvement is expected to increase populations of the turtle's prey, thus potentially increasing the carrying capacity of Butano Marsh for western pond turtles. Habitat modification resulting from the Project would also be beneficial for pond turtles. Spreading of slurry over portions of Butano Marsh would not adversely affect the turtle's habitat, and reduction in the dense woody canopy along Butano Creek between Pescadero Creek Road and Butano Marsh would increase the extent of open, sunny basking habitat for turtles. The levee analog would also potentially increase available basking habitat for turtles. Dredging of the creek channel would also improve connectivity for turtles along Butano Creek by providing a defined channel through which the species can move. As a result, channel dredging would improve western pond turtle habitat quality.

In the absence of BMPs, injury or mortality of individual western pond turtles due to impacts from equipment or personnel may occur during Project construction, either in the Butano Creek channel or in wetland, riparian, and upland habitats on the Project site. However, implementation of the BMPs listed in Chapter 2, *Project Description*, which would include worker environmental awareness training, construction monitoring, and relocation of individual turtles that are found in harm's way (see BMP-21), would minimize the potential for and magnitude of injury or mortality of individual turtles. Construction-related impacts on western pond turtles would thus be less than significant. The overall effect of the Project on western pond turtle would be beneficial.

Special-status Fish

Special status fish, including tidewater goby (federally endangered, California Species of Special Concern) and steelhead trout (federally threatened) are known to occur within the Project area.

Tidewater goby. Tidewater gobies have frequently been documented in the Pescadero Marsh Natural Preserve. However, based on available data (e.g., Smith and Reis 1997, Rischbieter 2013), densities within the Project area are expected to be low. Under existing conditions, the distribution of tidewater gobies within the Project area is expected to be largely limited to Reach 1 of Butano Creek and possibly portions of Reach 2 during open sandbar (i.e., low stage) conditions. Portions of Reach 2 as well as the entirety of Reach 3 are currently inaccessible to tidewater gobies. Butano Channel and the Butano Marsh are only accessible during higher high tides or closed sandbar (i.e., high stage) conditions. Dredging of Butano Creek and beneficial sediment reuse to fill portions of Butano Channel and Butano Marsh may adversely affect tidewater goby adults and juveniles during construction.

Implementation of BMP-20 would require that fish relocation efforts be conducted prior to in-channel dredging work to minimize injury or mortality of special-status fish during construction. All fish relocations would be conducted by qualified fisheries biologists and

would occur at low tides when wetted channel widths and depths in the Project area are at their lowest levels. The relocation would be conducted in three consecutive stages. First, multiple seine hauls would be conducted in Butano Creek, and to the extent possible, in Butano Channel, in accordance with the USFWS survey protocol for tidewater gobies (USFWS 2005). Captured fish would be transported to suitable habitat in the northern portions of the Pescadero Marsh Natural Preserve, away from the Project site (e.g., North Pond, lower Pescadero Creek). Tidewater gobies would be targeted for capture during this first stage, but incidentally-captured salmonids would also be relocated. The second stage of the fish relocations would consist of pulling/pushing a channel-spanning seine from the head of the wetted portion of Butano Creek toward the downstream extent of disturbance to encourage remaining fish to move into the estuary and/or lower Pescadero Creek. The seine would then be secured in place downstream of the extent of dredging operations to block fish from re-entering the dredging area until Water Control Dam #1 is installed and operational. Within Butano Channel, the presence of the existing marsh control structure, as well as the deeper water depths created by that structure, preclude the downstream herding approach proposed for Butano Creek. As such, only seine hauls would be conducted to the extent feasible to capture and relocate sensitive fish species. Lastly, standard electrofishing methodologies electrofishing would be used to relocate fish from the uppermost segment of Reach 3 on Butano Creek in the vicinity of Pescadero Creek Road bridge. Tidewater gobies are not expected to be present in this area, and any salmonids captured would be relocated to suitable upstream habitat in Butano Creek prior to cofferdam installation and dewatering. Since there is potential for individual tidewater gobies to be affected by fish relocation efforts, the SMRCD would obtain all necessary regulatory permits and authorizations required to conduct such work.

Project construction activities may result in temporary impacts to water quality which could temporarily degrade habitat conditions for tidewater goby. Temporary water quality impacts include increases in downstream turbidity and sedimentation levels, short-term suspension and dispersal of oxygen-demanding substances, and accidental spills of hazardous materials. Implementation of construction BMPs including BMP-1 through BMP-9 (see Chapter 2, *Project Description*), as well as the proposed use of aeration measures, water quality monitoring for dissolved oxygen levels, temporary water control dams, and dredge water recirculation dams to isolate the construction area from the rest of the Pescadero Lagoon system, are expected to reduce temporary adverse water quality effects on tidewater goby. While dissolved oxygen levels and turbidity would be monitored during dredging operations, as described in Section 3.8, *Hydrology and Water Quality*, there is potential for dissolved oxygen and turbidity levels to be temporarily degraded such that RWQCB's Water Quality Control Plan (Basin Plan) standards are exceeded, which could have temporary adverse effects on tidewater goby. Implementation of **Mitigation Measure HYD/WQ-1 (Water Turbidity Monitoring)** and **HYD/WQ-2 (Dissolved Oxygen Monitoring)** would ensure that turbidity and dissolved oxygen levels in Butano Marsh, Butano Creek and the lagoon before, during, and after construction meet acceptable water quality standards and that adaptive measures are conducted to ensure those standards are met. Implementation of the above-referenced BMPs and Mitigation Measures HYD/WQ-1 and HYD/WQ-2 would reduce temporary adverse effects on tidewater goby to less than significant with mitigation.

Dredging and filling activities associated with the Project would result in short-term and long-term loss of potential habitat for tidewater gobies (e.g., marsh habitat to be filled). While this fill may result in some loss of deeper-water habitat, most of the areas that would be filled are currently subject to hypoxic/anoxic conditions and are not expected to provide high-

quality habitat for tidewater goby. The existing Butano Marsh Control Structure would be upgraded but the current crest elevation would be maintained at 5.9 feet (NAVD). As such, tidewater goby access to Butano Channel and Lower Butano Marsh would continue to be restricted at lagoon water surface elevations below 5.9 feet NAVD, but the newly expanded habitat in Butano Creek would be accessible to tidewater gobies at these lower elevations. During high tides (i.e., >5.9 ft) and closed lagoon stands, tidewater gobies would continue to be able to access Lower and Middle Butano Marshes and Butano Channel. Following Project completion, tidewater gobies would be significantly less vulnerable to being flushed into the ocean during lagoon breaching events, due to the less efficient drainage of Lower Butano Marsh. The Project is expected to result in a net gain in aquatic habitat in Butano Creek, both in terms of improved water quality within existing habitat as well as the expansion of available habitat through the removal of the significant fish passage impediment caused by excessive aggradation within the Project area (expanding tidewater goby habitat by approximately 2.8 acres). Thus, upon completion of construction activities, the Project is expected to improve aquatic habitat conditions for tidewater gobies.

Manual breaching activities at the Pescadero Lagoon mouth would be triggered by water surface elevations exceeding 6.5 feet. If necessary, breaching activities would likely occur in September or October as mouth closures generally occur in August or September. However, although rare, mouth closures can occur as early as July and as late as October so breaching could occur in July or August. Once manually opened, the open mouth condition would be maintained as necessary for the duration of construction activities. It is expected that manual work may be required every 3 to 5 days; this is slightly different than the current permitted breaching protocol which limits the number of actions per season. The avoidance and minimization measures, as well as reasonable and prudent measures specified in the current Biological Opinion for the State Parks' existing breaching program would be implemented. Although the proposed Project may require more frequent manual breaches than currently authorized, the 3- to 5-day breaching intervals would prevent significant build-up of lagoon water surface elevations between breaches, thus reducing the severity of flushing effects that may displace tidewater gobies to the ocean.

Steelhead. Steelhead are known to occur in the Project area, and the Pescadero Lagoon system is known to be used extensively by rearing steelhead (Smith 1990, Jankovitz 2015, 2016). Fish kills (including steelhead) have occurred almost annually since 1995, typically in response to fall/winter sandbar breach events (Jankovitz 2016). Hayes et al. (2011) showed that many of the juvenile steelhead that recruit to a lagoon to rear in summer return upstream to the stream environment in the fall prior to the first winter sandbar breach when water quality conditions deteriorate, and subsequently migrate back down to the estuary the following spring. More recent research showed that juveniles rearing in a seasonally closed estuary may retreat upstream and then return back down to the estuary several times during the summer and fall closed period, presumably in response to changing water quality conditions (Frechette et al. 2016). Due to the presence of excessive aggradation in the upper reaches of Butano Creek, this common escape strategy is currently not available to steelhead rearing within the Project area, likely exacerbating the severity of fish kill events.

Short-term construction-related effects to steelhead are expected to be similar to those discussed above for tidewater gobies, and the proposed fish relocation effort, use of a Water Control Dam #1, and implementation of standard water-quality-related BMPs would also minimize adverse effects to steelhead. Implementing the fish relocation effort, BMPs, and

Mitigation Measures HYD/WQ-1 and HYD/WQ-2 would reduce construction-related effects on steelhead to a level that is less than significant with mitigation.

The expected long-term effects of the Project on steelhead are expected to be beneficial. In addition to reducing the likelihood and/or severity of fish kills resulting from water quality deteriorations associated with the development of hypoxic/anoxic conditions within the Project area and downstream portions of Pescadero Lagoon, as well as opening an escape route from the Project area to the freshwater portions of Butano Creek, the Project would reestablish potential access to an estimated seven miles of intrinsic potential steelhead habitat in the Butano Creek watershed.

Coho salmon. Coho salmon occurrences within the Pescadero Creek watershed have been rare over the past two decades. Recent studies suggest that the coho salmon population in the Project area continues to be functionally extirpated (Jankovitz 2015; 2016, Williams et al. 2016). Based on the apparent absence of the species from the Pescadero Creek watershed, the species is not expected to occur in the Project area.

Due to the expected absence of the species from the Project area, no adverse effects to the species are expected to occur. In the unlikely event that juvenile coho salmon are present in the Project area at the time of project construction, implementation of the fish relocation efforts described above for tidewater goby and steelhead would minimize potential construction-related effects to the species and ensure that such impacts are less than significant. If coho salmon re-colonize the watershed in the future (e.g., through straying and/or broodstock reintroductions), the expected improvements in water quality conditions, as well as improved fish passage into the Butano Creek subbasin, would benefit the species both in terms of improved estuarine habitat quality as well as expanded freshwater spawning and rearing habitat availability. Similar to tidewater goby and steelhead, in the long-term, the Project would improve aquatic habitat conditions for coho salmon and result in a beneficial effect.

Special-status Birds

Several special-status bird species may nest within the Project area, including the northern harrier (*Circus cyaneus*, California Species of Special Concern), white-tailed kite (*Elanus leucurus*, California fully protected species), San Francisco common yellowthroat (*Geothlypis trichas sinuosa*, California Species of Special Concern), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*, California Species of Special Concern), and yellow warbler (*Setophaga petechia*, California Species of Special Concern). The northern harrier, San Francisco common yellowthroat, and Bryant's savannah sparrow nest within Butano Marsh. The white-tailed kite and yellow warbler may nest in shrubs or trees within woody riparian habitat along Butano Creek.

The Project has the potential to affect the above-described nesting special-status birds through habitat modification and disturbance of active nests. All grading, fill, access, and staging impacts on these species' habitats would be temporary. The marsh control structure would be a permanent modification within an open channel in Lower Butano Marsh, which would not provide nesting habitat for special-status birds. Included in these temporary impacts is the removal of up to 3.53 acres of woody riparian vegetation and approximately 2.02 acres of marsh vegetation along Butano Creek for channel dredging, and an additional 4.35 acres of riparian vegetation would be temporarily disturbed due to placement of

sediment in proposed sediment placement areas. Vegetation would not be removed from sediment placement areas, and while some understory vegetation may be covered with sediment, canopy vegetation is not anticipated to be adversely affected. Additionally, restoration of Butano Creek would expand edge habitat for birds. Clearing of approximately 0.35 acre of scrub and riparian vegetation for construction of and access to the augmented berm upstream from Pescadero Creek Road would also occur. These habitats could collectively support one or two pairs each of white-tailed kite and yellow warbler, and multiple pairs of San Francisco common yellowthroats. However, riparian habitat would regenerate along the newly dredged Butano Creek channel and portions of the natural levee analog and marsh habitat would regenerate within filled areas of lower. As a result, little to no long-term loss of habitat for these bird species would occur.

Placement of slurry into approximately 20.3 acres of marsh and 5.0 acres of open water is not expected to result in loss of habitat, or impacts to any active nests, as nests of marsh-nesting birds such as northern harriers, San Francisco common yellowthroats, and Savannah sparrows would be elevated somewhat above the areas where sediment would be placed.

In the absence of BMPs, Project construction activities that occur during the nesting season (roughly February 15 to August 15 in the Project vicinity) could result in impacts to active nests of these special-status birds, either from clearing of habitat containing active nests or disturbance that leads to abandonment of eggs or young by adults. However, implementation of the BMPs, which include worker environmental awareness training (BMP-17), and BMP-22 which includes avoidance of construction during most of the nesting season, pre-construction surveys for any activities that occur during the nesting season, and maintenance of buffers around active nests, would avoid loss or excessive disturbance of active bird nests. Additionally, emergent vegetation in the creek channel footprint of Reach 2 may be pruned to near the water level in late February or early March using hand equipment such as machetes and power trimmers order to avoid potential impacts to marsh nesting birds during the 2019 dredging activities.

Western snowy plover. Western snowy plovers (*Charadrius alexandrinus nivosus*) occur regularly at Pescadero State Beach in the coastal strand west of State Route 1, but the species rarely forages, and does not breed, in the Pescadero Marsh and lagoon areas east of State Route 1 (Sequoia Audubon Society 2001, USFWS 2001, CNDDDB 2018, ebird 2018). No suitable open, sandy habitat is present in Butano Marsh and therefore the species is not expected to even forage (let alone nest) in the Project area east of State Route 1. Nesting of western snowy plovers on Pescadero State Beach was documented in 2012, which was the first nest on this beach documented in approximately 25 years (State Parks 2012). Project activities west of State Route 1 are limited to possible manual breaching of the lagoon mouth. On the west coast, western snowy plovers typically breed between early March through late September (USFWS 2007). Breaching activities could occur between July and October. Therefore, breaching could disrupt nesting, which in the absence of BMPs would be significant. Implementation of environmental awareness training (BMP-17) and a nesting survey per BMP-22 avoid or minimize potential impacts to western snowy plover to a less-than-significant level.

The Project would result in the temporary loss of nesting and foraging habitat for special-status nesting birds. However, the number of nesting pairs that could be affected, and the extent of habitat that could be impacted by the Project, represents a very small proportion of

these species' regional populations and their regional habitat availability. As a result, Project impacts on nesting special-status birds would be less than significant.

Special-status Mammals

San Francisco Dusky-footed Woodrat. San Francisco Dusky-footed Woodrat (*Neotoma fuscipes annectens*), a California Species of Special Concern, has been observed within the Project area. During field surveys for the San Mateo County's Butano Creek at Pescadero Creek Road Sediment Removal Project (Horizon Water and Environment 2015), as well as during a November 27, 2017 site visit for the Project, several dusky-footed woodrat nests were observed in riparian habitat (both on the ground and in trees) along Butano Creek on either side of Pescadero Creek Road. This species is expected to nest fairly abundantly in riparian habitat along Butano Creek elsewhere on the Project site as well.

Impacts to habitat types within the Project site are summarized in Table BIO-1 and described in detail below in Sections 3.4.3(b) and 3.4.3(c). Up to 3.53 acres of woody riparian vegetation along Butano Creek would be removed for channel dredging, and an additional 4.35 acres of riparian vegetation would be temporarily disturbed due to placement of sediment. Riparian vegetation would not be removed in sediment placement areas. In addition, clearing of approximately 0.35 acre of scrub and riparian vegetation would occur for construction of the berm upstream from Pescadero Creek Road. However, riparian habitat would regenerate along the newly dredged Butano Creek channel.

Clearing of riparian vegetation would result in the loss of a number of woodrat houses and nests, both on the ground and in trees that are to be removed. Disturbance of houses and nests may result in the injury and/or mortality of individual woodrats. Relocation of all woodrat houses and nests is infeasible due to the dense nature of riparian vegetation and poor footing (for humans) within the Butano Creek riparian corridor, particularly downstream from Pescadero Creek Road. However, to minimize impacts to woodrats, BMP-23 would be implemented to allow for the relocation of materials from some houses and to reduce the potential for destruction of houses that cannot be relocated to result in mortality of individual woodrats.

The Project would result in temporary and permanent loss of habitat for woodrats due to clearing of riparian vegetation. However, San Francisco dusky-footed woodrats are abundant in suitable habitat in the region. The number of individuals and houses that could be affected and the extent of habitat that could be impacted by the Project, represents a very small proportion of this species regional populations and its regional habitat availability. With implementation of BMP-23, which would reduce such impacts further, residual impacts (e.g., on nests that cannot be relocated) do not meet the CEQA significance criterion of having a *substantial* effect on this species, and Project impacts on San Francisco dusky-footed woodrats would be less than significant.

Pacific Harbor Seal and California Sea Lion. Pacific Harbor Seal (*Phoca vitulina richardsi*) and California Sea Lion (*Zalophus californianus*) are both federally protected under the Marine Mammal Protection Act. Small numbers (with counts of up to 20 individuals) of harbor seals are known to occur at Pescadero State Beach and utilize the beach and nearby rocks as haul out and breeding location (Codde and Allen 2015). Sea lions are also observed hauling out at Pescadero State Beach year-round, although they are not known to breed there. The Project has no potential to injure or kill harbor seals or sea lions. Manual breaching of

the estuary mouth would result in temporary modification of habitat used by these species. If any individuals are present in lowermost Butano Creek when Project construction occurs, the activity of humans and heavy equipment may cause such individuals to move downstream to the lagoon or into lower Pescadero Creek, but Project activities would not preclude the use of any important habitat in the lagoon or in marine areas. These mammals would not be adversely affected by any water-quality impacts that may result from the Project. Therefore, Project impacts on harbor seals and California sea lions would be less than significant.

Special-status Invertebrates

San Francisco tree lupine moth. The San Francisco tree lupine moth (*Grapholitha edwardsiana*) has no federal or state protected status, but it is considered a rare species by the San Mateo County Local Coastal Program. This species is associated with coastal sand dunes where its larval host plant, the San Francisco tree lupine (*Lupinus arboreus*), occurs. While the San Francisco tree lupine is more likely to occur within sand dune habitats at the adjacent Pescadero State Beach, a stand of this species is present on the Lower Butano Marsh Levee within the Project site. This stand would be cleared as part of the project. This stand consists of fewer than 100 individuals. Clearing of this stand of the lupine is anticipated to result in limited impacts to the tree moth due to the life history of the lupine. San Francisco tree lupine tends to act as a boom and bust species, so the San Francisco tree lupine moth is anticipated to be mobile and adapted to lupine populations temporarily disappearing. Additionally, the lupine is adapted to disturbance and the numbers of plants in the immediate vicinity of the Project is anticipated to increase following Project construction. Thus, impacts on the San Francisco tree lupine moth would not be significant.

California brackish water snail. The California brackish water snail (*Tryonia imitator*) has no federal or state protected status, but it is considered a rare species by the San Mateo County Local Coastal Program. This species is known to occur within Butano Marsh (Kellogg 1985, CNDDDB 2018). The Project may benefit the California brackish water snail by reducing low-oxygen conditions within aquatic habitats, as described above for CRLF. Improving water quality both within the Project area and, during sandbar breaches at the mouth of Pescadero Lagoon, in downstream areas is thus expected to benefit this species.

During construction, some individuals may be lost due to dredging of Butano Creek or may be covered by slurry deposited into artificial open water areas including drainage channels and relic borrow pits in Butano Marsh, if individual snails are unable to move above the slurry. However, the Project would not result in the long-term loss of habitat for this species, and water-quality benefits of the Project may outweigh any adverse effects during construction. Because the species is not known to be particularly rare or local in occurrence, the Project would not result in a substantial impact to the species' populations. Therefore, overall Project impacts on the California brackish water snail would be less than significant.

Conclusion

In conclusion, based on the above discussion, with implementation of water quality control measures, BMPs listed in Table 5 of Chapter 2, and Mitigation Measures HYD/WQ-1 and WQ-2, Project-related impacts on special-status plant and wildlife species would be **less than significant with mitigation**.

b. Substantial adverse effect on any riparian habitat or other sensitive natural community

Sensitive natural communities that would be affected by the proposed Project include various wetland and riparian habitats. Wetlands and impacts to sensitive natural communities due to changes in water quality are addressed separately in Section 3.4.2(c) below. Freshwater forested/shrub wetland habitat in the Project area is a type of riparian habitat. Anthropogenic disturbances in the watershed have led to large sediment loads entering the Project area and subsequent filling of the historically present Butano Creek channel. Freshwater forested/shrub wetland has colonized areas that were once open channel. Dredging of the Butano Creek channel would result in impacts to colonized riparian habitat through clearing of approximately 3.53 acres of riparian vegetation, which would be converted to riverine freshwater habitat. Based on a tree survey conducted by SMRCD staff on December 11, 2017, it is estimated that a total of 302 trees with a diameter-at-breast height (dbh) of 12 inches or greater would require removal within this area. Of these trees planned for removal, 38 trees are arroyo willow, 151 trees are Pacific willow, and 113 trees are white alder. None of these trees is larger than 24 inches in dbh. As described in Section 3.4.3(a), above, restoration of the creek channel would result in increased area of riverine habitat (approximately 3.53 acres) and improved water quality within the Project area. Such conditions would thereby improve habitat value for wildlife within the Project area through increased functionality of the habitat, with increased direct freshwater and riparian interactions and available edge habitat. The loss of canopy cover due to tree removal within the restored area of Butano Creek channel is not anticipated to result in significantly higher water temperatures due to the presence of remaining canopy adjacent to the restored creek channel. Additionally, canopy closure over the restored Butano Creek channel is anticipated to be rapid, as the trees remaining on the banks of the channel would expand into the newly available canopy space.

Placement of sediment in the proposed fill areas of Butano Marsh would result in temporary impacts to an additional 4.35 acres of riparian habitat. Vegetation would not be removed from these areas and woody riparian vegetation on-site (willows and alders) is specifically adapted to survive significant sediment deposition events, similar to what would occur with application of the dredge slurry. As such, while some understory vegetation may be covered with sediment, canopy vegetation is not anticipated to be adversely affected by sediment placement. Understory vegetation is anticipated to regenerate quickly within these temporarily disturbed areas. Type 1 and 2 Marsh fill in Lower and Middle Butano Marshes would beneficially reuse dredged sediment to fill a number of artificial open water areas including drainage channels and relic borrow pits. Type 1 Marsh fill would place sediment in Butano Marsh to elevations equivalent to adjacent bank elevations while Type 2 Marsh fill would place sediment to elevations 1 foot below adjacent bank elevations. Type 1 Marsh fill would temporarily impact 0.10 acre of Freshwater Forested/Shrub Wetland (Table BIO-1). Type 2 Marsh fill would temporarily impact 0.01 acre of Freshwater Forested/Shrub Wetland. Type 3 Marsh fill (natural levee analog) would place sediment along the left floodplain of Butano Creek (in Middle and Upper Butano Marsh) to enhance the existing higher elevation ground beyond the top of the proposed left bank and mimic a natural river levee. The natural levee analog would temporarily impact 3.64 acres of Freshwater Forested/Shrub Wetland. Type 4 Marsh fill would temporarily impact 0.60 acre of Freshwater Forested/Shrub Wetland.

The berm augmentation that would take place on the right bank of Butano Creek upstream of the Pescadero Creek Road bridge would result in temporary impacts on riparian habitat through vegetation clearing for access (0.17 acre) and construction (0.18 acre), but would also result in increased scour in the channel bed downstream of the berm and increased water surface elevations upstream of the berm during high flow conditions. As described in Chapter 2, *Project Description*, this scouring of the channel bed is anticipated to manage sedimentation and provide adequate channel depths for flow conveyance and fish passage. A similar floodplain project (Butano Creek Floodplain Restoration Project) located upstream of the proposed berm augmentation site has been very successful. Additional small areas of riparian habitat totaling approximately 0.12 acre would be temporarily impacted through creation of access routes from Access Points 5 and 6.

Temporary impacts would be offset by increased functionality of the remaining riparian habitat, as well as the anticipated long-term expansion of riparian habitat in to Upper Butano Marsh. Additionally, riparian habitat is anticipated to regenerate quickly on the margins of the newly restored Butano Creek channel. Over time, riparian habitat is also anticipated to expand along portions of the proposed natural levee analog, which covers approximately 10.3 acres and 3.64 acres of the existing area consists of freshwater forested/shrub wetland habitat. The expansion of trees such as willows and alders onto the levee analog and adjacent areas of the upper marsh is anticipated to occur in a 1 to 5-year timeframe.

The project has been conceived, planned, and designed through many years of ecological investigations and input from scientists with extensive knowledge of Butano Creek and the larger Pescadero Marsh ecosystem. The short-term, construction-related impacts to existing habitats would be vastly outweighed by the long-term improvements in hydrologic and ecological functions. Therefore, the Project would have a beneficial impact on riparian habitat and sensitive natural communities and the impacts described above would be less than significant.

c. Substantial adverse effects on federally protected wetlands

Construction-related Impacts to Wetlands

The Project would result in short-term adverse effects on wetlands through construction access, grading, and beneficial sediment reuse. The Project would disturb approximately 14.1 acres of estuarine and marine wetlands and approximately 9.9 acres of freshwater emergent wetlands. Disturbance of riparian habitat is described above in item 3.4.2(b). Construction activities and their effects on wetlands are described in more detail below.

Butano Creek channel dredging would result in conversion of 0.97 acre of Estuarine and Marine Wetland and 1.05 acres of Freshwater Emergent Wetland to Estuarine and Marine Deepwater habitat in the footprint of the restored channel (Table BIO-1).

As described above, Type 1 and 2 Marsh fill in Lower and Middle Butano Marshes would reuse dredged sediment to fill a number of artificial open water areas. Type 1 Marsh fill would temporarily impact 2.22 acres of Estuarine and Marine Wetland and 1.05 acres of Freshwater Emergent Wetland. Type 2 Marsh fill would temporarily impact 2.94 acres of Estuarine and Marine Wetland and 0.34 acres of Freshwater Emergent Wetland. The impact of sediment placement on the marsh is anticipated to be short-term, as emergent marsh vegetation is typically adapted to some degree of sedimentation, and sediment would be placed to target

elevations that would continue to support emergent wetlands. Fill placement within Estuarine and Marine Deepwater habitat (a total of approximately 5 acres from Type 1 and 2 Marsh Fill) is anticipated to create an elevation within the marsh that is more suited for colonization of wetland vegetation. In the long-term, expansion of marsh vegetation into these areas is expected. Specifically, Type 2 fill would result in a shallower and narrower Butano Channel (changing from existing depths of 5-8 feet to approximately 1-2 feet deep following sediment placement). Open water would remain in the channel, and development of emergent marsh along the margins is anticipated.

Type 3 Marsh fill (natural levee analogue) would place sediment along the left floodplain of Butano Creek to enhance the existing higher elevation ground beyond the top of the proposed left bank and mimic a natural river levee. Type 3 Marsh fill would place sediment within 2.15 acres of Estuarine and Marine Wetland and 4.48 acres of Freshwater Emergent Wetland. Type 4 Marsh fill would place sediment in 4.31 acres of Estuarine and Marine Wetland and 2.84 acres of Freshwater Emergent Wetland. Sediment would be placed as a thin, 6-inch to 2-foot deep layer on top of the existing vegetation. As described for Type 1 and 2 fill above, the impacts of sediment placement on the marsh is anticipated to be short-term due to anticipated rapid recovery of marsh vegetation through reemergence and recolonization. Type 3 fill would provide a gradual slope that would allow for the creation of an ecotone (transitional zone) between wetland and riparian habitats. In the long term, riparian vegetation is anticipated to expand within the levee analog, due to higher elevations that would favor woody vegetation.

Placement of sediment within wetlands is unlikely to result in a conversion from wetlands to uplands, with the exception of possible conversion to upland along the upper portions of the levee analog. Permanent direct impacts to wetlands would be limited to the footprint of the marsh control structure that would be upgraded as part of the Project. The footprint of this structure is small – approximately 0.02 acre.

Temporary placement of material may occur in approximately 0.2 acre of Estuarine and Marine Wetland between Butano Creek and the Butano Marsh Levee, along Reach 2. Vegetation and root/soil material cleared from Butano Creek may be temporarily stored in this area to facilitate transfer to the vegetation dispersal area. Materials would not be stored for longer than one day and impacts to this habitat are anticipated to be minimal. These materials would be transferred to the vegetation dispersal area, located on the opposite side of the Butano Marsh Levee. The vegetation dispersal would occur within approximately 1.09 acres of Estuarine and Marine Wetland. Impacts to wetlands within the vegetation dispersal area are anticipated to be temporary, as the existing habitat would not be removed and vegetation (anticipated to consist of bulrush and cattails) would be placed on top to slowly degrade over time.

Impacts to Wetlands related to Changes in Water Quality and Hydrology

Implementation of the Project would have beneficial effects to wetlands because man-made depressions and artificial channels present from past agricultural efforts would be filled to at or 1-foot below the adjacent marsh plain elevation, creating an elevation within the marsh that is more suited for colonization of wetland vegetation. This is anticipated to reduce the anoxic water quality issues that have resulted in fish and invertebrate mortality in the past and reduce the artificial hydraulic efficiency of the marsh during breaching events. Indirect effects of the Project on the Lower Butano Marsh could result in an increased seasonal

difference in salinity (fresher conditions in the winter and more saline conditions in the summer). In the vicinity of the existing pedestrian footbridge, the water quality in Lower Butano Marsh is anticipated to become fresher overall compared to current conditions due to perennial freshwater contributions from Butano Creek. Over time, Upper Butano Marsh is anticipated to evolve towards a drier system, with likely expansion of riparian habitat, especially in the vicinity of the natural levee analog. Following completion of the Project, the connection between Butano Marsh and Butano Creek would still exist in winter as high flows over-top the existing levees and flows naturally access the Upper and Middle Butano Marsh. The surface connection would be significantly muted in the dry season compared to existing conditions, with the exception of periods of high water when the lagoon mouth is closed and flows begin to fill the marsh and marsh plains. Lower Butano Marsh and portions of the Middle Butano Marsh are anticipated to continue to be inundated during these high-water periods (e.g., when lagoon water levels rise above the crest of the marsh control structure). Water in the marsh is anticipated to be less anoxic and would drain more slowly out of the marsh without the deep channels that are currently present. These changes may result in vegetation shifts within the wetlands over time.

Sensitive natural communities within Butano Marsh (e.g., *Sarcocornia pacifica* [*Salicornia depressa*] Herbaceous Alliance - Pickleweed mats and *Bolboschoenus maritimus* Herbaceous Alliance - Salt marsh bulrush marshes) are likely to be affected by the Project. As described above, short-term adverse effects would occur within the sensitive natural communities in Lower Butano Marsh. There may be a shift over time in vegetation communities within Lower Butano Marsh related to the change in seasonal salinity. For example, there could be a shift in the spatial distribution between or dominance of pickleweed mats compared to salt marsh bulrush marsh; however, long-term beneficial effects on these communities are anticipated due to the increased substrate available for vegetation colonization and improved water quality conditions.

Due to the long-term beneficial impacts effects of the Project on wetlands within the Project, impacts to wetlands are considered **less than significant**.

d. Substantial interference with wildlife movement, established wildlife corridors, or the use of native wildlife nursery sites

Butano Creek in the Project area was historically used by steelhead as a migratory corridor to access spawning and rearing habitat in the watershed. Fish passage into the Butano Creek watershed for anadromous and other native fish through Butano Creek is nearly impossible due to sedimentation within the channel. The proposed Project would reestablish potential access to an estimated seven miles of intrinsic potential steelhead habitat in the Butano Creek watershed. This would result in substantial improvement to wildlife corridors.

Many bird species are known to nest within Butano Marsh and along the Butano Creek riparian corridor. As described above for special-status birds, in the absence of BMPs, Project construction that occurs during the nesting season (roughly February 15 to August 15 in the Project vicinity) could result in impacts to active nests, either from clearing of habitat containing active nests or disturbance that leads to abandonment of eggs or young by adults. However, implementation of the BMPs described in Chapter 2, which include worker environmental awareness training (BMP-17) and BMP-22, which includes avoidance of construction during most of the nesting season, pre-construction surveys for any activities

that occur during the nesting season, and maintenance of buffers around active nests, would avoid loss or excessive disturbance of active bird nests. This impact would be **less than significant**.

e. Conflict with local policies or ordinances protecting biological resources

The Project would not affect County Heritage Trees (e.g., oaks and redwoods as defined in Ordinance No. 2427) but may require removal of trees considered Significant Trees by the County (trees 12 inches in diameter or larger, or 38 inches or more in circumference at a height of 4.5 feet as defined in Part 3, Division VIII of the San Mateo County Ordinance Code). As described in Section 3.10, *Land Use and Planning*, the sediment removal work area, proposed marsh fill areas, and berm augmentation work area are zoned as Planned Agricultural District/Coastal Development (PAD/CD). The proposed Project would require removal of trees within the Butano Creek channel riparian corridor. Under the County's Significant Tree Ordinance, a tree removal permit is not required within parcels zoned as PAD, except within 100 feet of any County or State scenic road or highway such as Pescadero Creek Road. Based on a phone conversation with the County Planning Department, a County tree removal permit would not be required for the Project since the Project site is within the Coastal Zone and thus subject to the County's Coastal Development permit requirements (Schaller, pers. comm., 2018). Since NOAA Restoration Center (RC) is a federal partner on this Project, NOAA RC will serve as the Project's federal lead agency for permitting purposes and the Coastal Development Permit requirements would be met through a consistency determination submitted to California Coastal Commission. Consistency with local ordinances and policies, including the County's Significant Tree Ordinance would be addressed through NOAA RC's permitting process with the California Coastal Commission.

As the Project site is in the Coastal Zone, it must comply with policies contained in the San Mateo County Local Coastal Program (LCP). The County General Plan and the LCP contain numerous goals, policies, and action items to protect biological resources. The Project would implement BMP-11 to comply with San Mateo County Local Coastal Program policy 8.9, which pertains to tree protection. As described above, the Project would impact fewer than 100 individuals of San Francisco tree lupine and would thus comply with the LCP provisions regarding this species. The proposed Project incorporates a variety of other BMPs to avoid or minimize impacts to sensitive habitats, wildlife, and fisheries resources. Additionally, as described above, the proposed Project is specifically designed to be beneficial for biological resources in the long-term. Thus, the Project is consistent with the General Plan and LCP's priority on conservation of biological resources and this impact related to conflicts with local policies or ordinances for biological protection would be **less than significant**.

f. Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state HCP

The Project is located within the Pacific Gas and Electric Company Bay Area Operations & Maintenance Habitat Conservation Plan (HCP) boundary. The proposed Project is not a covered activity under this HCP. CRLF and San Francisco garter snake are covered species under this plan that could potentially be affected by the proposed Project (ICF 2017). The Project would not conflict with the plan's conservation strategy for these species. Therefore, impacts would be **less than significant**.

3.5 CULTURAL RESOURCES

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.5.1 Discussion of Checklist Responses

a. Adverse change in the significance of a historical resource

An archival review at the Northwest Information Center (NWIC) of the California Historical Resources Information System identified the presence of two archaeological sites within the Project area of potential effects (APE): CA-SMA-251/H and CA-SMA-367 (Hylkema 2018). CA-SMA-251/H is primarily a historic era homestead site, although a scatter of chert flakes was noted in the original site record for the resource. The site is located south of Pescadero Creek and east of State Route 1 near Pescadero Creek Road. CA-SMA-367 is an ancestral Native American site that has previously been evaluated and appears eligible for listing in the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR). CA-SMA-367 is located northwest of CA-251/H above the south bank of Pescadero Creek adjacent to State Route 1. The site consists of a large lithic scatter of Monterey chert and other materials, including obsidian. Analyses of the site's artifacts suggests that it contains materials from multiple temporal components (Hylkema 2018).

A pedestrian archaeological survey was conducted of the entire Project APE by State Parks in the fall of 2017 (Hylkema 2018). The survey effort included visiting the previously recorded archaeological sites and preparing site record updates. In addition to the archaeological sites, the levee system within the Project APE was recorded as a historic resource and assigned number P-41-002602 by the NWIC. Research indicates that the process of building the earthen levees in both Pescadero and Butano Marsh began in the early 1920s and continued into the 1990s. All of the levees were made from dredged sediments, are about four feet above high water, and are approximately 16 feet wide at the top with a wider base. Local lore claims

1 that duck clubs sponsored some of the levee construction to improve standing water
2 wetlands attractive to waterfowl (Hylkema 2018).

3 As previously noted, site CA-SMA-367 was previously evaluated and determined eligible for
4 listing in the NRHP/CRHR. Site CA-SMA-251/H and P-41-002602 have not been formally
5 evaluated, but State Parks considers them eligible for the purposes of this Project.

6 As described in Chapter 2, *Project Description*, the area around the sites CA-SMA-251/H and
7 CA-SMA-367 would be delineated as an environmentally sensitive area (ESA) where work
8 would not be allowed, although the existing access road through the ESA would be used to
9 access the work areas. Conditions of the ESA are as follows:

- 10 1. No surface collecting of artifacts or otherwise moving them from their original
11 position.
- 12 2. No stockpiling of gravels or soils within the ESA.
- 13 3. No stockpiling of dredging sediments within the ESA.
- 14 4. No additional grading or other subsurface alterations- or excavations within the ESA.
- 15 5. Parking vehicles and mobile equipment on existing roads within the ESA is
16 permissible.
- 17 6. Clearing invasive vegetation by mowing or using other hand tools along existing
18 travel routes within the ESA for a width of approximately 16 feet is permissible.
- 19 7. A qualified archaeologist must monitor at intervals the project activities within the
20 ESA

21 Any other actions not specifically identified under these conditions must be evaluated by the
22 California State Parks District Archaeologist prior to proceeding.

23 The establishment of an ESA would protect sites CA-SMA-251/H and CA-SMA-367 from
24 construction impacts. Regarding site P-41-002602, the levees would not be modified during
25 project construction. As a result, the Project would have a **less than significant** to known
26 cultural resources that have been determined, or are considered eligible, as a historical
27 resource as defined in Section 15064.5. Note that on March 7, 2018, the NOAA RC sent a letter
28 to the State Historic Preservation Officer (SHPO) to initiate the Project's process under
29 Section 106 of the National Historic Preservation Act of 1966. SHPO subsequently issued a
30 letter on April 6, 2018 indicating that the Project would have no adverse effects to historic
31 resources.

32 It is important to note, however, that historical resources that are archaeological in nature
33 may be accidentally discovered during project construction. Archaeological resources
34 discovered during construction are discussed further in item 3.5.1(b) below.

b. Adverse change in the significance of an archaeological resource

An archaeological survey of the Project area was conducted in the fall of 2017 by a qualified archaeologist from State Parks. No archaeological resources, as defined in Section 15064.5 of the State CEQA Guidelines, were identified within the project footprint other than sites CA-SMA-251/H, CA-SMA-367, described above. These resources would be protected by the establishment of an ESA in their proximity. However, the possibility remains that excavation activities could uncover unknown buried archaeological materials. Prehistoric materials most likely would include obsidian and chert flaked-stone tools (e.g., projectile points, knives, and choppers), tool-making debris, or milling equipment such as mortars and pestles. Historic-era materials that might be uncovered include cut (square) or wire nails, tin cans, glass fragments, or ceramic debris.

If archaeological remains are accidentally discovered that are determined eligible for listing in the CRHR, and project activities would affect them in a way that would render them ineligible for such listing, a potentially significant impact would result. Should previously undiscovered archaeological resources be found, implementation of BMP-28 would require the contractor to immediately halt work in the vicinity of the discovery, evaluate the finds for NRHP/CRHR eligibility, and implement appropriate protection measures, as necessary. Implementation of BMP-28 would reduce impacts related to accidental discovery of significant archaeological resources and ensure that potential impacts are **less than significant**.

c. Destruction of a unique paleontological resource or site or unique geological feature

The Project's construction footprint is underlain by Quaternary stream channel sediments, primarily Coquille loam (Natural Resources Conservation Service 2018). The recent and active nature of the soils of the construction area indicates a very low probability for the existence of paleontological resources. Furthermore, the Project site does not contain any unique geological features. As a result, the Project would have **no impact** on paleontological resources.

d. Disturbance of any human remains, including those interred outside of formal cemeteries

No evidence of human remains was observed in the APE, nor are human remains known to exist in or near the Project area. Although unlikely, there is the possibility that excavations associated with construction could uncover burials, if they are present. Impacts on accidentally discovered human remains would be considered a potentially significant impact. Implementation of BMP-29 would require that, if human remains are uncovered, work must be halted and the San Mateo County Coroner must be contacted. Adherence to these procedures and provisions of the California Health and Safety Code would reduce potential impacts on human remains and ensure this impact is **less than significant**.

1 3.6 GEOLOGY, SOILS, AND SEISMICITY

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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 Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2

3.6.1 Discussion of Checklist Responses

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Seismic-related rupture of a known earthquake fault

While the Project area is not located in a mapped Alquist-Priolo Earthquake Fault Zone, several faults associated with the active San Gregorio Fault Zone have been mapped or are inferred (concealed) through the Pescadero-Butano Marsh complex. Project elements would be limited to shallow sediment dredging and excavation of the Butano Creek channel, beneficial reuse of sediment to fill artificial channels and deeper ponded areas in Lower and Middle Butano Marshes, construction of a levee analog using dredged sediment, enhancement of existing berms, and upgrades to an existing marsh control structure. No habitable structures would be involved as part of the Project. In addition, Project activities would not exacerbate seismic conditions or fault stability. Therefore, potential impacts related to earthquake fault rupture would be **less than significant**.

ii. Strong seismic ground shaking

Strong seismic ground shaking in the Project area could result from an earthquake along the San Gregorio Fault Zone or San Andreas Fault Zone, both located in the Project vicinity. The risk of loss, injury, or death involving strong seismic ground shaking is greatest in dense population areas. As stated above, the proposed Project would not involve habitable structures that would be subject to major structural damage or could create a public health hazard. Workers could be exposed to strong seismic ground shaking during construction activities but the proposed Project would not exacerbate seismic safety risks above existing conditions. Therefore, potential impacts related to strong seismic ground shaking would be **less than significant**.

iii. Seismic-related ground failure, including liquefaction

The Project area is located within a seismic hazard area determined to have moderate to high susceptibility to liquefaction (USGS 2006); however, the proposed Project proposes only grade-level physical changes to the Project area through channel dredging and sediment redistribution within the marsh and reuse for levee augmentation. As stated above, the proposed Project would not involve habitable structures that would be subject to major structural damage or could create a public health hazard. Therefore, the potential impacts related to seismic-related ground failure would be **less than significant**.

iv. Landslides

The Project area within the Butano-Pescadero marsh complex and alluvial plain is relatively flat with elevations ranging from 2 to 18 feet above mean sea level (msl). The Project area would be categorized as flat land and not be susceptible to landslides. Although not considered landslides, small scale slumps or sluffing may potentially occur along stream banks, terrace margins, or steep, unconsolidated levees. To minimize the potential for localized slumping of the levee analog during berm enhancement activities, slopes would be

graded at a 2H:1V ratio or gentler with occasional spatial variation due to local differences in soil properties as well as the presence of dense riparian vegetation and associated root structure. Therefore, potential impacts related to landslides would be **less than significant**.

b. Substantial soil erosion or the loss of topsoil

The proposed Project includes sediment dredging over 7,400 linear feet of Butano Creek and sediment reuse to create a natural levee analog, reinforce an existing berm, and fill artificial channels and deeper ponded areas in Lower and Middle Butano Marshes. Channel excavation, dredging, spoils drying, and sediment relocation would occur during the summer months, outside of the rainy season when erosion could be more substantial. During the site clearing phase, there is potential for erosion as vegetative cover is removed and soils are disturbed. Implementation of BMP-1 (Non-Hazardous Materials), BMP-4 (Construction Entrances and Perimeter), BMP-7 (Sediment Control), BMP-10 (Timing of Work), and BMP-14 (Area of Disturbance), and BMP-16 (Site Stabilization) would reduce any impacts associated with soil erosion or loss of topsoil. Temporary access routes and staging areas disturbed during Project construction activities would be hydroseeded with native grasses and forbs or other suitable erosion control measures to minimize post-construction erosion. As a result, with implementation of these BMPs and restoration measures, this impact would be **less than significant**.

c. Location on a geologic unit or soil that is unstable or that would become unstable as a result of the proposed Project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse

In general, the Project area is underlain by relatively young, unconsolidated marine sediments and Holocene alluvium (Wagner et al. 1991). Soils in the Project area include (NRCS 2018):

- *Coquille loam, nearly level, saline*. This unit derives from alluvium deposition in tidal flats. Soil texture consists of peaty loam, clay loam, and sandy loam. This unit is very poorly drained. These soils are projected to underlie roughly one-third of the Project area.
- *Soquel loam, nearly level, imperfectly drained*. Soquel loam has a relatively uniform composition. This unit is somewhat poorly drained with a low expansivity and no to slight erosion hazard. These soils are projected to underlie roughly one-third of the Project area.
- *Corralitos sandy loam, over clay*. This unit derives from alluvium deposition over alluvial fans and floodplains. Soil texture consists of sandy loam, stratified sand to loamy sand, and clay. This unit is somewhat poorly drained.
- *Mixed alluvial land*. This soil type is relatively uniform, excessively drained, and with low expansivity.

The topography of the Project area is relatively flat, with nominal risk of landslides. Lateral spreading is specific to the lateral movement of gently to moderate sloping, saturated soils, frequently along the toe slope of hills or along terraces and riverbanks. Proposed levee enhancements (e.g., the levee analog, berm improvements in Butano Marsh, and upper floodplain berm augmentation work) may be prone to lateral spreading during seismic events if slopes are not compacted properly or consists of unconsolidated material. As described in Chapter 2, *Project Description*, to reduce the potential for slope instability and lateral spreading of the proposed levee analog during construction, the size, height, and slope of the levee analog would be measured and adjusted in the field by a qualified engineer. Such properties would be determined by the expansion factor of reused sediment, the percentage of solids in the dredge slurry, and sediment properties. Straw bales would be placed along the top of the finished grade of the levee to provide temporary reinforcement of the fill material. After the sediment has settled, the natural levee analog would be hydroseeded with a locally sourced native seed mix. Similarly, as described in Chapter 2, the augmented upper floodplain berm would be graded and compacted with 3:1 slopes. Once construction of this augmented berm is complete, a native seed mix would be applied and poles/stakes of woody vegetation would be installed to fortify the toe of the berm in select areas.

Local subsidence of marshland can occur if the Project area is drained, thereby exposing previously inundated soils and creating an aerobic environment that results in rapid decomposition of the organic material. Some streambed areas (e.g., in Reach 3 of Butano Creek) would be exposed to aerobic conditions during dewatering activities. However, dewatering activities would be temporary. The proposed Project would not affect local groundwater elevations or lower surface water elevations. Thus, the potential for subsidence and/or collapse is discountable.

As stated above in item 3.6.1(a), the Project area is located in an area categorized as moderate to high susceptibility to liquefaction (USGS 2006). However, the proposed Project proposes only grade-level physical changes to the Project area through channel dredging and beneficial sediment reuse within Butano Marsh. As stated above, the proposed Project does not involve habitable structures that would be subject to major structural damage or could create a public health hazard. Therefore, the potential impacts related to on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse would be **less than significant**.

d. Location on expansive soil, creating substantial risks to life or property

In general, soils within the Project area exhibit a low to moderate shrink-swell potential (NRCS 2018). As described in items 3.6.1(a) and 3.6.1(c), the proposed Project is limited to grade-level physical changes in Butano Creek and in Lower and Middle Butano Marshes. In addition, there are no habitable structures in the Project vicinity. As such, potential risks to life or property due to expansive soils would be considered **less than significant**.

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

Septic tanks or alternative wastewater disposal systems would not be installed as part of the proposed Project. **No impacts** are expected to occur as a result of the proposed Project.

3.7 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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"/>

3.7.1 Discussion of Checklist Responses

a. Generate a net increase in greenhouse gas emissions which may have a significant impact on the environment

The proposed Project would generate greenhouse gas (GHG) emissions during project construction and operation. Construction-related GHG emissions would result from the combustion of fossil-fueled construction equipment, material hauling, and worker trips. Estimated emissions associated with the Project's construction activities in 2019 would be 397 metric tons of CO₂ equivalents per year (MTCO₂e/yr) and a total of approximately 408 MTCO₂e over the Project's entire construction period (2018-2019). Construction-related emissions were estimated using the California Emission Estimator Model (CalEEMod) version 2016.3.2, which uses estimates from CARB's models for off-road vehicles and EMFAC2014. Project construction assumptions, including equipment usage and schedule, used for this analysis are based on input from the Project design team (cbec eco engineering) and Chapter 2, *Project Description*. Appendix B contains compiled construction assumptions and the proposed Project's GHG emissions estimates for construction- and maintenance-related activities.

Once construction is completed, emissions generated during the Project's operation and maintenance phase would be substantially less than the 408 MTCO₂e generated during construction since the volume of sediment removed during maintenance activities would be much lower than the construction-related transported soil and sediment volumes. In addition, emission factors associated with equipment and vehicle turnovers would continue to decrease over time and result in decreased emissions as well. Estimated emissions associated with the Project's maintenance activities for the earliest maintenance year (2020) would be up to 18 MTCO₂e/yr, based on the assumptions included in Appendix B.

The BAAQMD does not have a recommended threshold for construction-related GHG emissions but does have an operational GHG threshold of 1,100 MTCO₂e/yr (BAAQMD 2017). Construction and operational emissions (i.e., from post-construction Project maintenance)

would both be substantially below the operational threshold. Therefore, the proposed Project would not generate substantial GHG emissions. This impact would be **less than significant**.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

The State of California implemented Assembly Bill (AB) 32 to reduce GHG emissions to 1990 levels by 2020. Senate Bill (SB) 32 codified an overall goal for reducing California's GHG emissions to 40 percent below 1990 levels by 2030. Executive Orders (EOs) S-3-05 and B-16-2012 further extend this goal to 80 percent below 1990 levels by 2050. The 2017 Scoping Plan (CARB 2017) mentions water as a key focus area and calls for effective regional integrated planning that maximizes efficiency and conservation efforts in the water sector and calls for measures that reduce GHG emissions and maintain water supply reliability. The proposed Project is consistent with the water focus area in the Scoping Plan Update in that this project would maintain the structural and functional integrity of Butano Creek. The Project is not one that would be required to report emissions to CARB. The Project would be consistent with the measures outlined in the San Mateo County's General Plan (1986), Energy Efficiency Climate Action Plan (2013), and the County's Government Operations Climate Action Plan (2012). In particular these plans encouraged limits to vehicle idling and reductions in off-road and on-road equipment fleets through use of newer, more efficient, and/or alternatively-fueled equipment. The proposed Project would be consistent with these goals by limiting idling times (BMP-12) and making use of alternatively-fueled (vegetation-based oils) equipment (BMP-15) (see Table 5 in Chapter 2). Therefore, for the above-described reasons, the Project would not conflict with any plans, policies, or regulations adopted to reduce GHG emissions, including AB 32 and local plans. Therefore, this impact would be **less than significant**.

1 3.8 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the Project:				
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 checked="" type="checkbox"/>	<input 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 involve handling 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 that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport and result in a safety hazard for people residing or working in the study area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the study 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 checked="" type="checkbox"/>	<input 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.8.1 Discussion of Checklist Responses

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

During construction, the proposed Project would require the use of certain hazardous materials such as fuels and oils when operating construction equipment. During routine transport and use of equipment, small amounts of fuels and oils could be accidentally released. Implementation of BMP-2 (Hazardous Materials), BMP-3 (Waste Management), BMP-5 (Maintenance and Parking), BMP-6 (Spill Prevention and Control), BMP-8 (Containment), BMP-9 (Equipment Maintenance/Fueling), and BMP-15 (Equipment Maintenance and Inspection) require employment of measures for the safe handling, storage, and disposal of chemicals used during the construction phase. Note that BMP-16 also requires that terrestrial equipment used in Butano Creek and Butano Marsh be retrofitted with vegetable-based oils, which would minimize potential adverse effects on the environment in the event that any leaks or spills occur. A summary of these measures is listed in Table 5 in Chapter 2, *Project Description*. With implementation of these BMPs, the impact to the public or environment through the routine transport and use of hazardous materials would be **less than significant**.

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

As discussed above, project construction would require the use of certain hazardous materials such as fuels and oils. Accidental release of these materials into the environment could adversely affect soil, surface waters, or groundwater quality. Implementation of BMPs listed under item 3.8.1(a), above, require employment of measures for the safe handling, storage, and disposal of chemicals used during the construction process. Specifically, BMP-15 (Equipment Maintenance and Inspection) requires that terrestrial equipment to be used in Butano Creek and Butano Marsh be retrofitted with vegetation-based oils and that all vehicles operated within 250 feet of Butano Creek would be inspected daily for leaks and, if necessary, repaired before leaving the staging area. BMP-6 (Spill Prevention and Control) and BMP-8 (10.8 Containment) includes measures to be implemented in response to an accidental release of hazardous materials. With implementation of these BMPs, potential impacts to the public or environment through accidental release of hazardous materials would be **less than significant**.

c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

The proposed Project is not located within one-quarter mile of an existing or proposed school. Pescadero Elementary is the nearest school, approximately one mile east of the Project site. The proposed Project is expected to have **no impact** on an existing or proposed school should hazardous materials be released.

d. Located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, create a significant hazard to the public or the environment

The proposed Project is not located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The closest listed site is the Pigeon Point lighthouse, approximately 4.5 miles south of the Project area (California Department of Toxic Substance Control 2018). The State Water Resources Control Board (SWRCB) lists several former leaking underground storage tanks (LUSTs) near the Project area, including the Pescadero Fire Station at the corner of Pescadero Creek Road and Bean Hollow Road (SWRCB 2018). Environmental contamination related to these listed LUST sites have been successfully remediated. The proposed Project is expected to have **no impact** on the public or the environment due to its location on a hazardous materials site pursuant to Government Code Section 65962.5.

e, f. Located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a private airport or public airport and result in a safety hazard for people residing or working in the study area

The Project site is not located within an airport land use plan or within two miles of a public airport or private airstrip. The closest known airport is the Half Moon Bay Airport, approximately 19 miles northwest of the Project site. The proposed Project would have **no impact** on people residing or working in the Project area with respect to airport compatibility.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

The Project area downstream of Pescadero Creek Road bridge is mapped as a tsunami inundation area by the California Emergency Management Agency (2009). However, the County Office of Emergency Services (OES) has not mapped the area as a tsunami inundation area due to the low population density of the region (County of San Mateo 2005). The County's "Operational Area" Emergency Operations Plan encompasses the entire county, including the Project area. Within the Project area, emergency response is provided by California Department of Forestry and Fire Protection (CAL FIRE) and the County Sheriff's Office. None of the Project elements would have an effect on the County's emergency operations plan. Construction-related lane closures and traffic flow disruptions that would affect the provision of emergency services in the vicinity of the work area is discussed in Section 3.16, *Transportation/Traffic*, below. Therefore, the proposed Project is expected to have **no impact** on adopted emergency response plans or emergency evacuation plans.

1 ***h. Expose People or Structures to a Significant Risk of Loss, Injury, or Death***
2 ***Involving Wildland Fires, Including Where Wildlands Are Adjacent to***
3 ***Urbanized Areas or Where Residences Are Intermixed with Wildlands***

4 The Project area upstream of Pescadero Creek Road bridge is designated as a moderate fire
5 hazard zone (CAL FIRE 2007). The remainder of the Project area is not within a state or local
6 designated fire hazard severity zone (CAL FIRE 2008). The proposed Project does not involve
7 habitable structures and removing vegetation within Reach 3 would help reduce the potential
8 for wildland fire within the Project area. Thus, any potential wildland fires would not expose
9 people or structures to a significant risk or loss, injury or death. The proposed Project is
10 expected to have a **less than significant** impact associated with wildland fire.

1 3.9 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the Proposed Project:				
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, resulting in 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 that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 that would result in substantial erosion or siltation on site or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 that would result in flooding on-site or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 that would impede or redirect floodflows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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 type="checkbox"/>	<input checked="" type="checkbox"/>
j. Contribute to inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.9.1 Discussion of Checklist Responses

a, f. Violate any water quality standards, waste discharge requirements or otherwise substantially degrade water quality

Construction activities are expected to result in locally poor water quality conditions due to increased turbidity, dissolved oxygen depletion, and potential ammonia and sulfide toxicity within the in-channel work areas.

Butano Creek is listed as impaired for sedimentation/siltation under the CWA Section 303(d) list (RWQCB 2017). During project construction activities, water quality could be temporarily reduced in the immediate in-channel work areas and areas downstream since ground-disturbing activities could result in the release of fine sediment and/or other contaminants. To minimize adverse water quality effects outside the construction work area, the Project includes water quality control measures such as installation of water control dams in Butano Creek at the downstream and upper extents of the Project site; silt curtains; and aerators.

Turbidity Effects

As described in Section 2.5, Water Control Dam #1 would be installed in Butano Creek at the downstream extent of the dredging area and would serve as the primary means for containing poor water quality conditions during construction. The crest elevation of Water Control Dam #1 would be higher than the top of the right bank of Butano Creek, and thereby direct high flows over the right bank and into Lower Delta Marsh (instead of over Water Control Dam #1 and into Butano Creek). Turbid water spilling into the Lower Delta Marsh is expected to naturally deposit sediment within the marsh as it migrates north and west towards the flow outlet into Butano Creek. The marsh is also expected to allow overflow water to spread out, increasing the surface area of water in contact with the atmosphere and otherwise slowing the delivery of water back to Butano Creek and ultimately the Pescadero Lagoon. This is expected to enable natural aeration of oxygen-depleted water. If installed, optional Water Control Dam #2 and the Dredge Water Recirculation Containment Dams for Butano Marsh may also help limit transport of fine sediment downstream of the project site by containing turbid water further upstream in the construction footprint. As shown in Figure 6 and Appendix A, in addition to the water control dams, silt curtains would be installed in several locations to prevent the downstream transport of turbid waters. Silt curtains would be installed immediately downstream of the marsh control structure (i.e., near the existing

pedestrian bridge over the Butano Channel outlet), immediately upstream of Water Control Dam #1 (i.e., downstream most), at the Lower Delta Marsh outlet into Butano Creek downstream of the Water Control Dam #1, and within Butano Creek immediately upstream of the Pescadero Creek confluence.

To ensure that in-water construction activities do not substantially degrade water quality downstream of the Project area and/or exceed RWQCB's water quality standards with respect to turbidity (i.e., 20 percent above baseline conditions or 10 percent above baseline conditions if turbidity levels are greater than 50 Nephelometric Turbidity Units [NTUs], as established in the Water Quality Control Plan [Basin Plan] for the San Francisco Bay Basin), Mitigation Measure HYD/WQ-1 (Water Turbidity Monitoring), would be implemented. This mitigation measure requires that turbidity levels in Butano Marsh, Butano Creek and the lagoon downstream of the Project area be monitored and assessed in response to Project-related construction activities.

Mitigation Measure HYD/WQ-1: Water Turbidity Monitoring

The SMRCD and/or State Parks will retain staff to monitor turbidity levels in Butano Marsh and Butano Creek within 150 feet downstream of the Project area prior to- and during construction activities. Observations recorded prior to construction will be used to establish baseline conditions for the Project area. During construction activities, turbidity levels downstream of the Project area will be monitored hourly and will not increase more than 20 percent above baseline conditions or 10 percent if turbidity levels are greater than 50 NTUs. If at any point turbidity exceeds the response threshold limit (i.e., 20 percent above baseline conditions or 10 percent if baseline turbidity levels are greater than 50 NTUs), instream work activities will halt until turbidity levels fall below this threshold and additional response measures are implemented. Additional response measures may include repair or augmentation of silt fences, installation of additional silt fences, modification to instream work methods, and/or other turbidity control measures. Turbidity levels are not to exceed 20 percent above baseline conditions or 10 percent above baseline conditions if turbidity levels are greater than 50 NTUs during any phase of the Project.

Effects on Dissolved Oxygen

During dredging operations in Reaches 1 and 2, oxygen depletion is expected to occur via both chemical demand and biological demand pathways. As part of the Project, a spray aeration system with a capacity of at least 90-100 pounds of oxygen per hour would be employed. Other aeration devices may also be installed, such as bubbler systems, solar-powered aerators (e.g., a SolarBee), and pond aerators. Aeration devices would be installed at strategic locations in Butano Creek and the marsh. As shown in Appendix A (Sheet 5), the aeration devices may be placed downstream of the marsh control structure, downstream of the Water Control Dam #1, at the Lower Butano Marsh flow outlet where overflow water would likely return to Butano Creek, and in Butano Creek upstream of the Pescadero Creek confluence. At a minimum, dissolved oxygen monitoring and aeration response measures would continue until the first significant runoff event of the season. While SMRCD and/or State Parks would retain staff to monitor dissolved oxygen levels, Mitigation Measure HYD/WQ-2 (Dissolved Oxygen Monitoring and Response Measures), would be implemented to ensure that dissolved oxygen levels in Butano Marsh, Butano Creek and the lagoon before, during, and after construction meet acceptable water quality standards, as defined in the

Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin for waters designated cold freshwater habitat (RWQCB 2017). This mitigation measure also provides potential adaptive management strategies to address low levels of dissolved oxygen.

Mitigation Measure HYD/WQ-2: Dissolved Oxygen Monitoring and Response Measures

The SMRCD and/or State Parks will retain staff to monitor dissolved oxygen levels in Butano Marsh, Butano Creek and the lagoon downstream of the Project area before, during, and after construction. Pre-construction monitoring will be used to indicate baseline dissolved oxygen levels. As part of the Project, a spray aeration system will be installed at strategic levels in Butano Creek and Butano Marsh. If dissolved oxygen levels in Butano Marsh, Butano Creek, and or the lagoon drop below 8.0 mg/L, additional aeration devices will be installed. Efforts will be made to maintain dissolved oxygen levels in Butano Creek and open water area in the marsh at or above 7.0 mg/L.

Accidental Release of Hazardous Materials and Effects due to Other Ground-Disturbing Activities

Project construction would involve use of heavy equipment including long reach excavators, bulldozers, dump trucks, loaders, skid steers, a dredger, and a dredge tender. Fuel and lubricants such as oil and grease are used in excavation and transportation equipment and vehicles. Equipment and worker vehicles would be stored and refueled at staging areas in upland areas. Nonetheless, potential impacts on water quality could result from accidental releases of fuels, lubricants, hydraulic fluids or other chemicals associated with operating equipment. Pursuant to BMP-15, terrestrial equipment operated within Butano Marsh and Butano Creek would be required to be retrofitted with vegetable-based oils. As such, in the event of a spill or leak, effects on water quality due to accidental leaks of terrestrial equipment would be relatively minor.

In addition, while project construction would occur during the summer months when there is little risk for sediment erosion and transport, an intense wind or rain event could result in substantial erosion within the Project area. Sediment or pollutants from equipment stored at construction staging areas could be accidentally released into Butano Creek or Butano Marsh.

The following BMPs would be implemented to minimize potential water quality impacts related to accidental release of hazardous materials and construction-related erosion, as described in Chapter 2, Project Description, Table 5:

- | | |
|---|--|
| ▪ BMP-1: Non-Hazardous Materials | ▪ BMP-8: 10.8 Containment |
| ▪ BMP-2: Hazardous Materials | ▪ BMP-9: 10.12 Equipment Maintenance & Fueling |
| ▪ BMP-3: Waste Management | ▪ BMP-10: 10.29 Timing of Work |
| ▪ BMP-4: Construction Entrances and Perimeter | ▪ BMP-14: Area of Disturbance |

- BMP-5: Maintenance and Parking
- BMP-6: Spill Prevention and Control
- BMP-7: Sediment Control
- BMP-15: Equipment Maintenance and Inspection
- BMP-16: Site Stabilization

Implementation of these BMPs would substantially reduce the potential for adverse water quality impacts during construction. For example, BMP-14 limits the areas of disturbance to the smallest footprint necessary, as specified in the design plans and shown on Figures 6 and 7. Similarly, BMP-10 would require that ground-disturbing activities occur during the dry season to minimize potential release of sediment and other construction-related water quality contaminants, while BMP-2, BMP-6, and BMP-8 would require on-site hazardous materials management and spill response measures, thereby limiting potential for hazardous materials to be accidentally released or discharged to the surface water system.

Additionally, because the proposed Project would disturb greater than one acre of land, it would be subject to the National Pollutant Discharge Elimination System (NPDES) General Construction Permit, which requires preparation of a SWPPP. The SWPPP would include erosion-control and hazardous materials management measures that would further ensure the proposed Project would not result in substantial adverse effects on water quality in respect to sedimentation and turbidity.

Overall, with implementation of applicable BMPs, Mitigation Measures HYD/WQ-1 and HYD/WQ-2, and by complying with SWPPP requirements, the proposed Project would not violate water quality standards or waste discharge requirements. Over the long term, following completion of construction, the proposed Project's effects on water quality would likely be beneficial as the Project would reduce anoxic conditions in Butano Creek and throughout Butano Marsh. As a result, this impact would be **less than significant with mitigation**.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or lowering of the local groundwater table level

The proposed Project would not withdraw groundwater or use groundwater resources during construction or operation. In addition, the proposed Project would not increase impervious surface area nor interfere with groundwater recharge. There would be **no impact** to groundwater resources or groundwater recharge.

c, e. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, resulting in substantial erosion or siltation on-site or off-site, or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff

The proposed Project would alter existing drainage patterns by excavating sediment from the Butano Creek channel, reusing sediment to create a natural levee analog and enhance existing berms, and fill in depressions and deeper ponded areas within Butano Marsh, as described in Chapter 2, *Project Description*. These modifications would affect drainage patterns in the Project area and the lower reaches of Butano Creek and throughout other areas of Butano Marsh; however, none of the Project elements would result in substantial erosion, siltation, or flooding on- or off-site. The primary purpose of the proposed Project is to restore and enhance the effective hydrologic connectivity of Butano Creek through the marsh to Pescadero Lagoon to more closely resemble historic drainage patterns. This would reduce the excessive siltation/sediment deposition that is currently occurring within the Project area and marsh/lagoon system and transport sediment to the coastal area. The natural levee analog would be constructed with gradual slopes and hydroseeded to help prevent bank erosion. Due to the Project's location in the lower Butano Creek watershed and the gradual slope of the channel and surrounding land, the Project area would likely remain a depositional environment but with enhanced natural geomorphic processes.

During construction, drainage patterns would be temporarily altered by ground-disturbing activities, such as excavation and use of heavy construction equipment within the channel area. These activities could result in localized erosion and siltation because loosened soil may be more easily dislodged and transported downstream by streamflows. To minimize potential increases in localized erosion and siltation, the following BMPs would be implemented, as described in Table 5 of Chapter 2:

- BMP-4: Construction Entrances and Perimeter
- BMP-7: Sediment Control
- BMP-10: 10.29 Timing of Work
- BMP-14: Area of Disturbance
- BMP-15: Equipment Maintenance and Inspection
- BMP-16: Site Stabilization

During Project construction activities, manual breaching of the Pescadero Lagoon mouth may be required during construction if (a) the mouth closes and (b) marsh water levels increase beyond 6.5 feet NADV. Construction activities would require water surface elevations at or below 6.5 feet NADV to protect water quality downstream of the Project and to ensure feasibility of terrestrially-based earthmoving activities. Lagoon mouth management activities would be similar to current permitted breaching activities and entail use of an excavator to manually breach the sandbar at the mouth of Pescadero Creek. A channel for the breach would be dug with excavated sand placed in 40- to 60-foot sections along both sides of the channel. Since beach conditions change, the channel dimensions may vary and would be adaptively altered to maintain water quality and feasibility objectives of the breaching activities. Breaching would occur at the same permitted location on Pescadero State Beach and would be similar to the effects described in the Initial Study/Negative Declaration for the

Pescadero State Beach Lagoon Ecological Function Project (State Parks 2012). If necessary, breaching activities would likely occur in September or October as mouth closures generally occur in August or September. However, although rare, mouth closures can occur as early as July and as late as October so breaching could occur in July or August. Once manually opened, the open mouth condition would be maintained as necessary for the duration of construction activities. It is expected that manual breaching work may be required every 3 to 5 days; this is slightly different than the current permitted protocol which limits the number of actions per season (two per season).

In addition, as described in item 3.9.1(a), SMRCD and/or State Parks would be required to prepare and implement a SWPPP for NPDES Construction General Permit compliance. These regulatory requirements and above-described BMPs would minimize potential effects regarding alteration of drainage patterns. Overall, the long-term effects of the proposed Project on drainage patterns would be largely beneficial, and short-term construction effects would not be significant with implementation of BMPs and compliance with conditions in the Project's Construction General Permit. Therefore, this impact would be **less than significant**.

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 resulting in flooding on-site or off-site

The proposed Project includes augmentation of a berm in the upstream extent of the Project area, construction of the levee analog along the left bank of Butano Creek, and improvements to existing berm features in Butano Marsh. The augmented levee at the upstream extent of the Project area would help contain flood waters in the Butano Creek channel that would otherwise spill onto the right (eastern) floodplain/agricultural field. In addition, the berm would help increase scour of the Butano Creek stream bed in the vicinity of the berm which would help maintain adequate channel depths for flow conveyance. The proposed levee analog would also help contain flood flows in the Butano Creek channel and the proposed improvements to two existing berm features in Butano Marsh would help limit the hydrologic connectivity between Butano Creek and Butano Marsh. In addition, the proposed Project would increase the conveyance capacity of Butano Creek by increasing the cross-sectional area of the creek channel. The Project would encourage floodwaters to flow within or near the historic channel pathway (or the alignment that has been actively managed over the last 100 years). The proposed Project would not result in an increase of impermeable surface area, nor would it substantially change surface runoff rates. Therefore, based on the above, this impact regarding alteration of drainage patterns and associated flooding effects would be considered **less than significant**.

g. Place housing within a 100-year-flood hazard area, as mapped on a federal flood hazard boundary or flood insurance map or other flood hazard delineation map

The Project area is within a designated regulatory floodway subject to inundation by a 1-percent chance of annual flood (100-year flood) (FEMA 20012). However, the proposed Project would not involve the construction of housing. Therefore, **no impact** would occur.

Place structures within a 100-year-flood hazard area resulting in impeding or redirect flood flows

As described in item 3.9.1(g), the Project area is within a designated regulatory floodway (FEMA 2012) and includes upgrades to existing levees and construction of a natural levee analog within the floodway along Butano Creek and Butano Marsh. The augmented levee system would help contain flood waters in the Butano Creek channel. In addition, the proposed Project would increase the conveyance capacity of Butano Creek by creating a uniform, 25-foot bottom width and increasing the cross-sectional area of the channel and creating a uniform slope of 0.04 percent. Upon completion, the proposed Project would have a beneficial impact by reducing flooding risks at the Pescadero Creek Road crossing as well as portions of the neighboring community of Pescadero. Therefore, this impact would be considered **less than significant**.

i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding resulting from the failure of a levee or dam

The proposed Project includes sediment excavation in Butano Creek, upgrades to existing levees, and construction of a natural levee analog to restore and enhance the effective hydrologic connectivity of Butano Creek through the marsh to the lagoon and re-establish salmonid fish passage. During the Project's design process, a two-dimensional hydrodynamic model was used to estimate differences in water surface elevations and inundation extents under both low flow (non-flood conditions) when the lagoon mouth is open and closed, and during a 2-year flood event. In comparison to existing conditions during a 2-year event, the extent of flooding associated with the Project's design conditions would be slightly reduced due to lower water surface elevations immediately upstream of Pescadero Creek Road and thus an overall smaller flooding inundation footprint and shallower inundation depths. Downstream of Pescadero Creek Road, under the Project's design conditions, the extent of flooding inundation would be reduced compared to existing conditions because more water would be contained within the Butano Creek channel (cbec 2018). For additional discussion about the hydrodynamic modeling effort, refer to the Project's 65% Basis of Design Report in Appendix A.

Overall, the Project would have a beneficial impact by increasing the conveyance capacity of Butano Creek and consistent with one of the primary objectives of the Project, it would reduce the extent, duration, and frequency of flooding at Pescadero Creek Road. As such, the proposed Project would reduce the risk of flooding in the Pescadero community and resulting risk of loss, injury, or death involving flooding. In the event that the natural levee analog or upgraded berms failed during a flood event, the effects would be similar to existing conditions.

In addition, the Project site is not located within a dam inundation zone (BeyondSearsvilleDam.org 2018). Therefore, the proposed Project would have **no impact** from flooding resulting from the failure of a levee or dam.

1 ***j. Contribute to inundation by seiche, tsunami, or mudflow***

2 The proposed Project is not in a location affected by seiche or mudflow. Most of the Project
3 area is in a designated tsunami inundation area (California Emergency Management Agency
4 2009). However, the proposed Project would not create new habitable structures subject to
5 inundation by tsunami. Rather, the Project is limited to sediment removal, beneficial reuse of
6 sediment to improve existing levees and fill artificial channels and ponded areas in Butano
7 Marsh. The Project would not substantially alter local topography such that it would intensify
8 or contribute to the effects of a tsunami. Therefore, the proposed Project would have **no**
9 **impact.**

3.10 LAND USE AND PLANNING

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the Project:				
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 a 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 checked="" type="checkbox"/>	<input type="checkbox"/>

3.10.1 Discussion of Checklist Responses

a. Divide an established community

The Project includes sediment removal in Butano Creek, sediment reuse in Butano Marsh, berm modifications, modifications to the marsh control structure, and replacement of the pedestrian bridge in Butano Marsh. The Project would alleviate flooding at Pescadero Creek Road and improve water quality and fish passage throughout Butano Creek. Project activities would primarily occur on lands owned by State Parks, the County, and private land owners. Prior to construction, the SMRCD would need to coordinate with private property owners to obtain access and construct the berm augmentation upstream of Pescadero Creek Road. Once construction is complete, the Project would not disrupt any adjacent land uses. If necessary, ongoing sediment maintenance activities proposed immediately upstream and downstream of Pescadero Creek Road bridge would occur from the road itself. While temporary lane closure may be needed, future sediment removal work would be brief and would not substantially disrupt adjacent land uses. Therefore, there would be **no impact** associated with division of an established community.

b. Conflicts with land use plans or policies

The San Mateo County General Plan has designated land uses in the Project area as "Agriculture" and "Institutional/Open Study/Future Study" (County of San Mateo 2018a). The proposed upper floodplain berm augmentation and nearby sediment stockpile area are designated as Agriculture and the remaining portions of the Project area are "Institutional/Open Study/Future Study." The sediment removal work area, proposed marsh fill areas, and berm augmentation work area are zoned as Planned Agricultural

District/Coastal Development (PAD/CD). The intent of the “PAD” District is to preserve and foster existing and potential agricultural land and all other lands suitable for agriculture in agricultural production and minimize conflicts between agricultural and non-agricultural land uses (County of San Mateo 2018b). The Project would involve temporary stockpiling of removed sediment on private property currently used for agricultural uses. Prior to construction, the SMRCD would need to obtain permission from the landowner to use those lands for stockpiling and to construct the berm. Once project construction is complete, the stockpiling area would be restored and could be used for agricultural land uses.

The “CD” District and lands within the Coastal Zone were established by the Coastal Act of 1976. Projects planned to occur within the CD District are required to obtain a Coastal Development Permit in accordance with the County’s Local Coastal Program. However, since the NOAA RC would serve as the federal lead agency for the Project’s CWA Section 404 permit, NOAA RC would submit a consistency determination to California Coastal Commission consistent with Section 307 of the Coastal Zone Management Act. The consistency determination requires that activities within the Coastal Zone be consistent with enforceable policies of California’s Coastal Management Program. By undergoing this federal review process, the Project would be exempt from a Coastal Development Permit.

The County’s General Plan includes policies that support abatement of flooding hazards including debris clearance and silt removal in a manner that disrupts existing riparian communities (Policy 15.45) (County of San Mateo 1986). The County’s Local Coastal Program Policies (2013) also permits flood control projects including selective removal of riparian vegetation, where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety (Policy 7.9). Policy 7.9 of the Local Coastal Program Policies permits repair or maintenance of roadways or road crossings. Given that one of the main objectives of the Project is to alleviate flooding on Pescadero Creek Road by removing accumulated sediment beneath the bridge, the Project would be consistent with the above-described policies.

In addition, the Local Coastal Program includes a policy focused on permitted uses in wetlands (Policy 7.16), which includes dredging and filling in any wetlands when such activities are necessary for the protection of pre-existing dwellings from flooding or where the activity would enhance or restore the biological productivity of Pescadero Marsh. As described in Section 3.4, *Biological Resources*, in the short-term and long-term, the Project is expected to improve habitat conditions for special-status species including coho salmon, steelhead, California red-legged frog, San Francisco garter snake, and western pond turtle. Thus, the Project would not result in any conflicts with applicable land use plans, policies or regulations; there would be **no impact**. For discussion regarding the project’s consistency with the County’s Significant Tree Ordinance and Heritage Tree Ordinance, refer to Section 3.4, *Biological Resources*, above.

c. Conflicts with any habitat conservation plan or natural community conservation plan

As discussed in Section 3.4, *Biological Resources*, although the Project is within the Pacific Gas and Electric Company Bay Area Operations & Maintenance HCP boundary, the Project is not a covered activity under this HCP and although CRLF and San Francisco garter snake are covered species under the HCP, the Project would not conflict with the plan’s conservation

1 strategy for those species. Therefore, potential conflicts with these plans would be **less than**
2 **significant.**

3.11 MINERAL RESOURCES

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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"/>

3.11.1 Discussion of Checklist Responses

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

There is no known mineral resource that would be of value regionally or statewide within the Project area (CDOC 1999). Pescadero Quarry, a former rock quarry, is located west of Bean Hollow Road, approximately 0.2 miles south of Pescadero Creek Road. This quarry is closed with no intent to resume operations (CDOC 2018). Consequently, the proposed Project would have **no impact** with respect to mineral resources.

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

There is no known mineral resource that would be of value regionally or statewide within the Project area (CDOC 1999). Consequently, the proposed Project would have **no impact** with respect to mineral resources.

1 3.12 NOISE

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the Project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. For a project located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport, would the project expose people residing or working in the project site 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 site to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 3.12.1 Overview of Noise and Vibration Concepts and Terminology

3 **Noise**

4 In the CEQA context, noise can be defined as unwanted sound. Sound is characterized by
5 various parameters, including the rate of oscillation of sound waves (frequency), the speed
6 of propagation, and the pressure level or energy content (amplitude). In particular, the sound
7 pressure level is the most common descriptor used to characterize the loudness of an ambient
8 sound level, or sound intensity. The decibel (dB) scale is used to quantify sound intensity.
9 Because sound pressure can vary enormously within the range of human hearing, a
10 logarithmic scale is used to keep sound intensity numbers at a convenient and manageable
11 level. The human ear is not equally sensitive to all frequencies in the spectrum, so noise

measurements are weighted more heavily for frequencies to which humans are sensitive, creating the A-weighted decibel (dBA) scale.

Different types of measurements are used to characterize the time-varying nature of sound. Below are brief definitions of these measurements and other terminology used in this chapter.

- **Decibel (dB)** is a measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
- **A-weighted decibel (dBA)** is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Maximum sound level (L_{max})** is the maximum sound level measured during a given measurement period.
- **Minimum sound level (L_{min})** is the minimum sound level measured during a given measurement period.
- **Equivalent sound level (L_{eq})** is the equivalent steady-state sound level that, in a given period, would contain the same acoustical energy as a time-varying sound level during that same period.
- **Percentile-exceeded sound level (L_{xx})** is the sound level exceeded during x percent of a given measurement period. For example, L_{10} is the sound level exceeded 10 percent of the measurement period.
- **Day-night sound level (L_{dn})** is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels during the period from 10:00 p.m. to 7:00 a.m. (typical sleeping hours). This weighting adjustment reflects the elevated sensitivity of individuals to ambient sound during nighttime hours.
- **Community noise equivalent level (CNEL)** is the energy average of the A-weighted sound levels during a 24-hour period, with 5 dB added to the A-weighted sound levels between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels between 10:00 p.m. and 7:00 a.m.

In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level. **Table NOI-1** presents approximate noise levels for common noise sources, measured adjacent to the source.

Table NOI-1. Examples of Common Noise Levels

Common Outdoor Activities	Noise Level (dBA)
Jet flyover at 1,000 feet	110
Gas lawnmower at 3 feet	100
Diesel truck at 50 feet traveling 50 miles per hour	90
Noisy urban area, daytime	80
Gas lawnmower at 100 feet, commercial area	70
Heavy traffic at 300 feet	60
Quiet urban area, daytime	50
Quiet urban area, nighttime	40
Quiet suburban area, nighttime	30
Quiet rural area, nighttime	20

Source: Caltrans 2009

Vibration

Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). Most environmental vibrations consist of a composite, or “spectrum,” of many frequencies. The normal frequency range of most ground-borne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration information for this analysis has been described in terms of the peak particle velocity (PPV), measured in inches per second, or of the vibration level measured with respect to root-mean-square vibration velocity in decibels (VdB), with a reference quantity of 1 micro-inch per second.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High-frequency vibrations reduce much more rapidly than do those characterized by low frequencies, so that in a far-field zone distant from a source, the vibrations with lower frequency amplitudes tend to dominate. Soil properties also affect the propagation of vibration. When ground-borne vibration interacts with a building, a ground-to-foundation coupling loss usually results but the vibration also can be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. In some cases, the vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise.

Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Road vehicles rarely create enough ground-borne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human sensitivity to vibration varies by

frequency and by receiver. Generally, people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes.

3.12.2 Discussion of Checklist Responses

a. Noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state or federal standards

The proposed Project would generate noises associated with construction activities (e.g., vegetation clearing, dredging, excavation, and material transportation), which would be temporary and cease once construction is complete. Following construction, maintenance-related noise sources would include periodic vehicle traffic and construction equipment for any necessary sediment removal in Butano Creek immediately upstream and downstream of Pescadero Creek Road bridge.

Noise from operation of construction equipment could affect sensitive receptors (e.g., residents) in the Project vicinity. The nearest residences along Reservoir Road and Water Lane are located 1,800 feet or more from the center of the Project area where excavation, dredging, and material transportation activities would take place. Pescadero State Beach is located approximately 3,500 feet from the center of the Project site, while the nearest church (Pescadero Community Church) and school (Pescadero Elementary School) are located more than a mile from the center of the Project site. No clinics, hospitals, daycares, or assisted living facilities are located in the area.

The San Mateo County Noise Control Ordinance and the Noise Element of the County General Plan establish a daytime exterior noise level threshold of 75 dBA at sensitive receptors; however, the San Mateo County Noise Control Ordinance provides an exemption for demolition and construction activities taking place weekdays 7:00 a.m. – 6:00 p.m. or Saturdays 9:00 a.m. – 5:00 p.m. (County of San Mateo 1986, County of San Mateo 2018). No exemption is provided for construction on Sundays, Thanksgiving, or Christmas. Construction activities conducted at parks owned and operated by a public entity are also exempt from the County's Noise Ordinance (County of San Mateo 2018). Construction work that complies with the time-of-day restrictions for construction activities would result in less-than-significant noise impacts with regard to the generation of noise in excess of thresholds.

As described in Chapter 2, Section 2.5.1, the Project's construction activities would generally occur between 7:00 a.m. and 6:00 p.m., Monday through Friday, which is allowable per the San Mateo County Noise Control Ordinance exemption for construction activities. If after hours work or weekend work outside of the exempted Saturday hours of 9:00 a.m. – 5:00 p.m. is necessary, the work would only occur with justification included in relevant contracts, change orders, or bid documents as specified and allowed under the San Mateo County Noise Control Ordinance exemption. No nighttime work is anticipated. Maintenance of the proposed Project may involve occasional and limited sediment removal work immediately upstream and downstream of the Pescadero Creek Road bridge. This work would be conducted within the same construction hour limits established for the Project's construction phase noted above. Ongoing sediment removal work at this location would be temporary, infrequent, and of a much smaller scale than took place during the construction phase. The

amount of sediment removed from Butano Creek would be limited to no more than 1,455 cubic yards per year over a 5-year period after project construction is complete. Therefore, the Proposed Project would be in compliance with applicable thresholds, and this impact would be **less than significant**.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels

Vibration thresholds for buildings occur at a PPV of 0.12 in/sec for buildings extremely susceptible to vibration damage; the human perception and annoyance thresholds are at 65 VdB and 80 VdB, respectively. Vibration and ground-borne noise levels were estimated following methods described in the FTA Noise and Vibration Impact Assessment (FTA 2006) to determine the peak particle velocity (PPV) that would potentially impact buildings and the vibration velocity in decibels (VdB) for annoyance. For the purposes of this analysis, it was assumed that the Project's construction equipment would have similar vibration sound levels as a large bulldozer or loaded trucks. Loaded trucks generate lower vibration sound levels than large bulldozers but would pass closer to sensitive receptors during the Project's construction activities. Therefore, both loaded trucks and large bulldozers were considered in this analysis. **Table NOI-2** below shows relevant parameters for the construction equipment that would be used for the proposed Project and the distance to sensitive receptors necessary to be below vibration thresholds.

Table NOI-2. Construction Equipment and Vibration Distance

Equipment	PPV at 25 ft	Distance to PPV of 0.12 in/sec	Noise Vibration Level at 25 ft	Distance to Noise Vibration of 65VdB	Distance to Noise Vibration of 65VdB
Large Bulldozer	0.089 in/sec	20.5 feet	87 VdB	135 feet	43 feet
Loaded Trucks	0.076 in/sec	18.4 feet	86 VdB	125 feet	40 feet

For the evaluation of vibration and vibration-related noise impacts from the large bulldozer, the distances from the nearest sensitive receptors (residences) were compared to the center of the Project site (assumed to be located near the Triple Junction indicated on Figure 6). The center of the Project site was chosen because, on average, that is where bulldozers and other similar noise-generating equipment would be operated over the duration of the Project's construction activities. The nearest residences would be approximately 1,800 feet from the center of the Project site and would not be located within the building vibration threshold distance or the noise vibration threshold distances noted in Table NOI-2.

The loaded trucks' vibration evaluation considered the nearest sensitive receptors to anticipated hauling truck routes. Loaded trucks transporting material to the soil stockpile and handling area for the upper floodplain berm would travel along Pescadero Creek Road to Access Point #7, passing multiple residences. While loaded, these trucks would pass these sensitive receptors at distances within the human perception threshold, but outside of the

annoyance threshold. Empty trucks returning to the excavation and dredging areas would pass these residences at a distance closer to or within the calculated annoyance threshold. Construction of the upper floodplain berm is expected to last roughly 10 days, so the period of time trucks would be traveling along this route would be temporary and the duration they would be within the annoyance threshold distance would be brief. Vibration noise levels generated by trucks are influenced by vehicle speed and weight. While in the vicinity of these homes, the trucks would likely be traveling at reduced speeds given the proximity to the turn at the access point. Thus, potential vibration-related noise annoyance impacts of loaded or empty hauling trucks would not generate excessive groundborne vibration or groundborne noise levels. Therefore, this impact would be **less than significant**.

c. Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

After construction activities are complete, the proposed Project would involve periodic sediment maintenance activities immediately upstream and downstream of the Pescadero Creek Road bridge. Apart from these infrequent vehicle and construction equipment-related noise sources, the proposed Project would not involve the use or installation of any noise-generating equipment. Therefore, the proposed Project would not result in a permanent substantial increase in ambient noise levels and the impact would be **less than significant**.

d. Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

The proposed Project would result in temporary increases in ambient noise levels during the day from proposed construction activities. Noise calculations are detailed in **Appendix D**. As described in item 3.12(a), the County has established a daytime exterior noise level threshold of 75 dBA at sensitive receptors. Modeling of construction equipment noise levels demonstrates that this threshold is exceeded within a distance of approximately 359 feet from the center of the Project site. No sensitive receptors are located within this distance from the center of the Project. However, multiple residences on Pescadero Creek Road are located within an area that would temporarily and briefly exceed 75 dBA when construction trucks pass by during construction of the upper floodplain berm (roughly a 10-day period).

As discussed under item 3.12(a), construction associated with the proposed Project would generally occur between 7:00 a.m. and 6:00 p.m., Monday through Fridays, and between 9:00 a.m. and 5:00 p.m. on Saturdays if weekend work is necessary. As described above, these construction hours are permissible under the County Noise Control Ordinance exemption for construction activities. Given that the only sensitive receptors that would be exposed to noise levels that exceed the County's noise threshold would be brief (limited to a 10-day period) and because the proposed Project would comply with the established hours allowed under the San Mateo County Noise Control Ordinance exemption, noise impacts related to construction activities would be **less than significant**.

1 ***e. For a project located within an airport land use plan area, or, within 2***
2 ***miles of a public airport or public-use airport, would the project expose***
3 ***people residing or working in the project site to excessive noise levels***

4 The proposed Project is not located within an airport land use plan area or within 2 miles of
5 a public airport. There would be **no impact** related to public airport noise exposure.

6 ***f. For a project within the vicinity of a private airstrip, would the project***
7 ***expose people residing or working in the project site to excessive noise***
8 ***levels***

9 The proposed Project is not located within the vicinity of a private airport or airstrip. There
10 would be **no impact** related to private airstrip noise exposure.

3.13 POPULATION AND HOUSING

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the Project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.13.1 Discussion of Checklist Responses

a. Induce population growth

The proposed Project does not involve construction of new homes, businesses in the area, new road extensions or other infrastructure into undeveloped areas. Once construction is complete, all temporary access routes would be restored similar to existing conditions. Up to 20 construction workers would be temporarily employed at the Project site throughout the Project's construction phases. These jobs would likely be filled by the local work force. No new long-term, employment opportunities or substantial population growth would result from project construction. For these reasons, the Project would not induce population growth and **no impact** would occur.

b, c. Displace a substantial number of existing housing or people

The Project would not displace existing housing. Therefore, **no impact** associated with displacement of housing necessitating the construction of replacement housing would occur.

1 3.14 PUBLIC SERVICES

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the Project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following 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 checked="" type="checkbox"/>	<input 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"/>

2 3.14.1 Discussion of Checklist Responses

3 *a. Result in adverse physical impacts associated with the provision of new* 4 *or physically altered governmental facilities or a need for new or* 5 *physically altered governmental facilities*

6 The proposed Project would not create any new housing or commercial structures that could
7 contribute to population growth. Rather, the proposed Project would be limited to
8 improvements/modifications to the Butano Creek channel and Butano Marsh. As a result, the
9 proposed Project would have limited potential to adversely affect public services or increase
10 demand for public services such that construction of new or expanded public facilities would
11 be necessary. Construction activities would be performed by up to 20 construction workers
12 from the Bay Area workforce. As such, no temporary workers would relocate to the area
13 during the construction period who could potentially increase demand for public services.

i. Fire protection

As noted above, the proposed Project would not increase the local population and, therefore, would not contribute to any long-term/permanent increase in demand for fire protection services. During project construction, operation of power equipment and vehicles in vegetated areas could increase potential for accidental ignition of materials. Although the Pescadero area is not designated as a Very High Fire Hazard Severity Zone (VHFHSZ) by the California Department of Forestry and Fire Protection (CAL FIRE) (CAL FIRE 2008), conditions could still be conducive to fire, and a spark from construction equipment or heat from vehicle exhaust could ignite a wildfire. If such an event were to occur, it would require a response from CAL FIRE Station 59 (Pescadero), as well as possibly other departments, which would temporarily decrease resources available to respond to other incidents.

The Project would not result in the need to construct or expand fire protection facilities for several reasons. In general, due to the proposed Project's location in a non-VHFHSZ and given that the majority of the proposed work would be conducted within a creek channel and surrounding lands in Butano Marsh where conditions are fairly damp, the probability of starting a fire is low. Additionally, compliance with existing laws, such as California Fire Code requirements for construction and demolition activities, would minimize risk of accidental ignition. Further, even if an incident were to occur during project construction activities, it would be a one-time occurrence and would not represent a long-term increase in demand for fire protection services. As the Project would reduce the extent, duration and frequency of flooding at Pescadero Creek Road, the Project would also improve emergency vehicle access along this road and therefore enable existing fire protection services to be more effective in addressing emergencies in the Pescadero area. Lastly, as noted in Section 3.8, *Hazards and Hazardous Materials*, removal of trees and vegetation in Reach 3 could also help reduce the fire hazard risk within the Project site. For the various reasons described above, the Project would not result in the need to construct new or expanded fire protection facilities and this impact would be **less than significant**.

ii. Police protection

The proposed Project would not increase long-term demand for police protection services in the Pescadero area. During project construction activities, it is possible that use of a truck-mounted crane on the State Route 1 bridge, as well as any other temporary construction staging activities within the public roadway, could cause or contribute to traffic incidents, although these potential impacts would be minimized through implementation of Mitigation Measure TR-1 (see Section 3.16, *Transportation and Traffic*). Such traffic incidents could require a response from the San Mateo County Sheriff's Department, California Highway Patrol (CHP), or other applicable law enforcement agency. While each additional call for service increases demands on police protection services, this situation, if it were to occur, would not result in the need to construct new or expanded police protection facilities. Therefore, this impact would be **less than significant**.

iii. Schools

The proposed Project would not increase the long-term demand for school services in the Pescadero area, as it would not increase the local population. Project activities also would not directly affect any existing school facilities. Therefore, **no impact** would occur.

iv. Parks

The proposed Project would not increase demand for parks. As shown in Figure 2 and as described in Section 3.15, *Recreation*, the Project area includes areas within and adjacent to Pescadero Marsh Natural Reserve, which is owned and managed by State Parks. Refer to Section 3.15 for discussion regarding temporary effects on the reserve and other existing parks during the Project's construction and operation phases.

As described above, the proposed Project would not cause or result in population growth, so it would not increase demand for parks in the area. Therefore, this impact would be **less than significant**.

v. Other public facilities

Other public facilities include hospitals, libraries, and community centers. None of these types of facilities are located in the Project area that could be directly affected by the Project. Additionally, as noted above, the proposed Project would not increase population such as to increase demand for these services. If a construction worker were to be injured during the project construction activities, he/she may be taken to a local hospital, but this would not require or result in the need to construct new or expanded hospital facilities. Therefore, **no impact** would occur.

3.15 RECREATION

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the Project:				
a. 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 checked="" type="checkbox"/>	<input type="checkbox"/>
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.15.1 Discussion of Checklist Responses

a. Increase use of existing parks or recreational facilities

The Project site is primarily located within the Pescadero Marsh Natural Preserve, which totals 235 acres and has 4 hiking trails (Coastside State Parks Association 2018). The construction access route from the primary staging area located closest to State Route 1 and the levee located along the left bank of Butano Creek is part of the Butano Trail. In addition, both staging areas located along Pescadero Creek Road are used as parking areas for recreationists. Throughout the Project's construction phase, the Butano Trail and parking areas would be closed to the general public and, as a result, could increase use of other recreational trails in the preserve such as the Sequoia Audubon Trail, North Pond Trail, or the Round Hill Trail. Recreationists that would otherwise use Butano Trail may also utilize other recreational facilities in San Mateo County including Pescadero State Beach and a number of other State beaches in the county.

In addition, as described in Chapter 2, manual breaching of the Pescadero Lagoon mouth may be necessary to maintain sufficient water surface elevations during dredging of Butano Creek. If necessary, an excavator would be temporarily present at Pescadero State Beach to create the breach. The presence of a few construction workers and an excavator could result in temporary partial closures of the beach where construction activities occur. As stated above, recreationists that would otherwise use this beach could easily access other portions of the beach and several other nearby State beaches.

Over the long-term, the proposed Project would be expected to improve the conditions at the Pescadero Marsh Natural Reserve by addressing existing fish passage and creek sedimentation issues, which may result in a slight increase in use of the park over time. The proposed Project also would address ongoing flooding problems along Pescadero Creek Road, which could improve access to the Pescadero Marsh Natural Reserve, as well as Pescadero State Beach, during certain times of the year.

1 Because the project construction phase would be temporary and because there are a number
2 of other recreational facilities in San Mateo County that could be utilized during the
3 construction phase, the Project is not anticipated to result in increased use of those
4 recreational facilities such that substantial physical deterioration of those facilities would
5 occur. Any long-term increase in recreational use of the Pescadero Marsh Natural Reserve as
6 a result of the Project improvements would likely be modest and would not likely increase
7 use to the degree that substantial deterioration of the reserve would occur. Therefore, this
8 impact would be **less than significant**.

9 ***b. Creation of new or altered recreational facilities***

10 As described in Chapter 2, *Project Description*, the existing footbridge in Pescadero Marsh
11 Natural Preserve (part of the Butano Trail) would be removed and replaced. Following
12 construction, the Lower Butano Marsh Levee (which is part of Butano Trail) would also be
13 restored and revegetated similar to existing conditions. Since replacement of the footbridge
14 and restoration of the Lower Butano Marsh Levee are elements of the Project and the effects
15 of the Project are described throughout Sections 3.1 through 3.14 and Sections 3.16 through
16 3.19 of this Initial Study, this section does not further describe those physical effects on the
17 environment. As described in other sections of the IS/MND, construction impacts on air
18 quality, biological resources, hydrology and water quality, and traffic are considered
19 potentially significant. Implementation of mitigation measures described in Sections 3.3, 3.4,
20 3.9, and 3.16 of this IS/MND would reduce such effects to a level that is **less than significant**
21 **with mitigation**.

1 3.16 TRANSPORTATION/TRAFFIC

	Potentially Significant Impact	Less than Significant with Mitigation Incorporat ed	Less-than- Significant Impact	No Impact
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 and bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2

3.16.1 Discussion of Checklist Responses

a, b. Conflict with applicable circulation plans, ordinances, or policies and applicable congestion management programs

During the Project's construction period, Project activities could temporarily adversely affect local roadways due to the presence of construction equipment and materials staging. A crane may be used to lower heavy equipment into Pescadero Lagoon from the State Route 1 bridge which would likely require temporary closure of one lane of traffic and could cause congestion and/or traffic safety issues if adequate precautions are not taken. While State Route 1 is not identified as a congested highway in the San Mateo County General Plan (1986), closure of one lane of traffic on State Route 1 (a two-lane highway) could quickly create traffic flow problems.

Construction materials would be staged along the shoulder of Pescadero Creek Road at Staging Area #s 1, 3, and 4, as shown in Figure 6. However, the staging of equipment and vehicles at these staging areas is not anticipated to substantially affect traffic flow.

From Pescadero Creek Road bridge, equipment would access the downstream side of Butano Creek from Access Point #5 (west end of bridge). Construction workers and equipment would access the upstream portion of Butano Creek from Access Point #6 (east end of bridge). Excavated sediment from Reach 3 would be transferred into dump trucks that would turn from Access Point #5 to Pescadero Creek Road. As described in Chapter 2, up to 2,470 truck trips would be required to transport sediment from Pescadero Creek Road to Staging Area #3 (boat launch) and roughly 670 truck trips would be required to transport excavated sediment from Reach 3 to the stockpile area near the proposed upper floodplain berm. The presence of slow-moving dump trucks turning onto Pescadero Creek Road from Access Point #5 may temporarily affect traffic flow and may temporarily increase safety hazards between cars and construction vehicles as well as between cars and bicyclists on Pescadero Creek Road. These are considered potentially significant impacts.

Over the long-term, the proposed Project would not add substantial vehicle trips to the area. As a result, it would not contribute to any long-term effects on the circulation system, such as deteriorations in level of service (LOS), due to increased vehicle traffic on area roads. As the proposed Project would address existing flooding problems on Pescadero Creek Road, it could improve traffic operations on this roadway during times of the year when flooding typically occurs. As described in Chapter 2, *Project Description*, after construction is complete, ongoing sediment removal work may occur immediately upstream and downstream of the Pescadero Creek Road bridge if conveyance capacity is reduced by 30 percent. In the event that sediment removal or vegetation management activities are necessary at this location, a few construction vehicles and equipment would be required and could temporarily affect the local road. Such effects would be similar in nature to those described above (though less severe) at Pescadero Creek Road during the Project's construction phase. In addition, as one of the primary objectives of the Project is to reduce the extent, duration, and frequency of flooding, the Project is expected to reduce the extent of road closures on Pescadero Creek Road during the rainy season.

In conclusion, the Project could temporarily conflict with traffic safety goals and objectives outlined in the County's General Plan and the San Mateo County Congestion Management

Program 2017. Implementation of BMP-12 (Dust Management Controls) would ensure that roadways are kept clear of debris. Implementation of **Mitigation Measure TR-1**, which requires preparation and implementation of traffic management plan, would reduce this impact to a level that is **less than significant with mitigation**.

Mitigation Measure TR-1: Prepare and Implement a Traffic Management Plan

SMRCD or its contractor will prepare and implement a traffic management plan to reduce potential impacts on the circulation system, including interference with local emergency response planning, potential traffic safety hazards, and impeding access for emergency responders. Development and implementation of the traffic management plan will be coordinated with Caltrans. The plan will include, but will not be limited to, the following items:

- Implement comprehensive traffic control measures, including scheduling of work within the roadway to avoid peak traffic hours, lane closure procedures, warning and detour signs (if required), flaggers, barricades, speed control devices, cones for drivers, and other measures.
- Notify adjacent property owners, CAL FIRE, and public safety personnel regarding timing of lane closures and/or work within the roadway. Coordinate with Caltrans regarding lane closures on State Route 1 and obtain an encroachment permit.

c. Change in air traffic patterns

The proposed Project would not involve any changes to air traffic patterns nor structures or land uses that could adversely affect aircraft. No airports are located within 2 miles of the Project site. Therefore, **no impact** would occur.

d. Increased hazards resulting from design features

As described under items 3.16.1(a) and 3.16.1(b) above, the lowering of project construction equipment into Pescadero Lagoon using a crane would require temporary closure of a lane of traffic. The presence of slow-moving construction equipment vehicles traveling on Pescadero Creek Road between various access points and staging areas could also temporarily increase traffic safety hazards. Without adequate precautions, these activities could create temporary hazards for motorists using State Route 1 and Pescadero Creek Road. Over the long-term, the proposed Project would not change the design of any roadways or cause hazards from incompatible uses. The proposed Project would reduce on-going flooding issues on Pescadero Creek Road, thereby reducing hazards from flooding and/or standing water in this area.

The short-term presence of construction vehicles and equipment on Pescadero Creek Road and potentially State Route 1 are considered a potentially significant impact. Implementation of BMP-12 (Dust Management Controls) would help ensure the roadway is kept clear of debris. Implementation of Mitigation Measure TR-1 would reduce roadway hazards by requiring development and implementation of a traffic management plan and would recommend warning devices, signage and other traffic controls to prevent hazards to other

users. Implementation of this mitigation measure would reduce this impact to a level that is **less than significant with mitigation.**

e. Inadequate emergency access

Similar to “d” above, temporary closure of one lane of traffic on State Route 1 for lowering equipment into Pescadero Lagoon and the presence of slow-moving construction vehicles on Pescadero Creek Road could adversely affect emergency vehicle access if adequate precautions are not taken. Without implementation of appropriate measures, congestion caused by the closure and the reduced roadway width could limit emergency vehicle’s ability to get around the crane that would be used during project construction. Over the long-term, the Proposed Project would not adversely affect emergency access, and would, in fact, improve emergency access along Pescadero Creek Road by addressing chronic flooding problems in this area. The potential impacts due to the presence of construction vehicles and equipment on Pescadero Creek Road and potentially State Route 1 are considered a potentially significant impact. Implementation of Mitigation Measure TR-1 would reduce this impact to a level that is **less than significant with mitigation.**

f. Conflict with alternative transportation policies, plans, or programs

Pescadero Creek Road has dedicated Class II bike lanes along its length in the Project area. No transit routes or facilities were identified in the Project vicinity. As described under previous impact discussions, project construction would involve temporary closure of one lane of traffic at State Route 1 to lower equipment into the lagoon/channel using a crane. This could create hazards for bicyclists along Pescadero Creek Road if adequate precautions are not taken. The presence of construction vehicles and equipment on Pescadero Creek Road could also temporarily increase hazards for bicyclists on the road. Such effects would result in a temporary conflict with alternative transportation policies, plans or programs regarding bicycle safety, which is considered a potentially significant impact. Over the long-term, the proposed Project would reduce chronic flooding along Pescadero Creek Road and thereby would improve conditions for bicyclists along this stretch of the roadway during the rainy season. Implementation of Mitigation Measure TR-1 would ensure that short-term conflicts with alternative transportation policies, plans, or programs are reduced to a level that is **less than significant with mitigation.**

3.17 TRIBAL CULTURAL RESOURCES

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

3.17.1 Discussion of Checklist Responses

a, b. Cause a Substantial Adverse Change to Tribal Cultural Resources Listed, or Eligible for Listing in the California Register of Historical Resources or a Local Register of Historical Resources, or Determined by the Lead Agency to Be Significant

The State Parks Santa Cruz District archaeologist has a long-standing relationship with the Native American tribes who are traditionally and culturally affiliated with the Project area, and the State Parks archaeologist meets regularly with tribal representatives to discuss projects. In lieu of sending letters, the archaeologist discussed the current Project with tribal representatives during one of these meetings. The tribal representatives are in support of the Project and do not have concerns about impacts to tribal cultural resources (Hylkema 2018).

1 Input from tribes with a traditional and cultural affiliation with the Project area did not
2 identify potential impacts to known tribal cultural resources, therefore there would be a **less**
3 **than significant** to known tribal cultural resources.

4 Although not anticipated, there is always the possibility that buried archaeological remains
5 that could be identified as tribal cultural resources could be discovered during project
6 construction, a potentially significant impact. If buried archaeological sites that are
7 determined to be tribal cultural resources are unearthed during project construction,
8 implementation of BMP-28 would ensure that the sites are evaluated for the CRHR and
9 treated with respect. Thus, with regard to the discovery of buried archaeological sites that
10 are determined to be tribal cultural resources, this impact would be **less than significant**.

1 3.18 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the Project:				
a. Exceed wastewater treatment requirements of the applicable RWQCB?	<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 an 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 stormwater drainage facilities or an 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 would new or expanded entitlements be needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Result in a determination by the wastewater treatment provider that serves or may serve the Project that it has inadequate 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 insufficient 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 checked="" type="checkbox"/>	<input type="checkbox"/>
h. Encourage activities that resulted in the use of substantial amounts of fuel or energy, or used these resources in a wasteful manner?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.18.1 Discussion of Checklist Responses

a. Exceed wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board

The proposed Project would not build any structures or establish any land uses that would generate wastewater or connect to the municipal wastewater system. During construction, the Project may generate small amounts of wastewater from employees using the restroom (sanitary portable restrooms would be used), washing down construction vehicles/equipment, or through other similar activities. Any wastewater from project construction activities that is disposed of at a wastewater treatment plant would not affect the ability of the provider to meet its wastewater treatment requirements. Therefore, **no impact** would occur.

b. Require the construction of new water or wastewater treatment facilities or expansion of existing facilities

The proposed Project would not generate any new water or wastewater demand. As described in Chapter 2, *Project Description*, the proposed Project would be limited to improvements to Pescadero Marsh and Butano Creek and would not build any new structures that would connect to the municipal systems. Therefore, it would not require the construction of new or expanded water or wastewater treatment facilities. As such, **no impact** would occur.

c. Require the construction of new stormwater drainage facilities or expansion of existing facilities

The proposed Project would not create any new impervious surfaces that could generate stormwater or alter any existing stormwater drainage facilities. Drainage ditches are present along Pescadero Creek Road. By reducing chronic flooding issues along Pescadero Creek Road from overtopping of the Butano Creek channel/banks, the proposed Project would improve the performance of these existing drainage features and their ability to manage stormwater on the roadway. As this scenario would be beneficial, **no impact** would occur.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources

With the exception of limited water supplies required during project construction (e.g., to spray exposed staging and unpaved areas for dust control), the proposed Project would not require water supply or include any structures or land uses that would create water demand. As a result, the Project would not require any water supplier to obtain additional water entitlements or resources. Therefore, **no impact** would occur.

e. Result in a determination by the wastewater treatment provider that 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

As described under 3.18.1(b) above, the proposed Project would not create any new long-term wastewater demand. The proposed Project would not construct any new structures or establish land uses that would generate wastewater or connect to the municipal wastewater system. During construction, Project activities may generate small amounts of wastewater (e.g., from employees using the restroom), but this would not substantially affect any wastewater treatment provider's existing capacity. Therefore, **no impact** would occur.

f-g. Comply with all applicable regulations related to solid waste and have available landfill capacity to accommodate the project's solid waste

As described in Chapter 2, *Project Description*, the Proposed Project would excavate approximately 46,300 cubic yards of sediment from Butano Creek, all of which would be beneficially reused by filling artificial channels in Lower and Middle Butano Marshes and augmenting an existing berm along Butano Channel. It is not anticipated that any excavated sediment would be disposed of at the landfill. Construction activities could generate some construction debris that would require disposal at a landfill.

Project construction would require vegetation clearing for site preparation and access road clearing. This could generate substantial amounts of vegetative debris, as up to 3.5 acres of woody vegetation would need to be cleared (mostly from Reach 3). While some of the large woody material would be reused in the construction of other project features or side cast in the adjacent areas of riparian forest, some vegetation debris may require disposal at either a nearby landfill or a composting facility.

The only active landfill in San Mateo County is the Corinda Los Trancos (Ox Mountain) Landfill located in Half Moon Bay. This landfill also operates a composting facility. As of 2015, this landfill had 22,180,000 cubic yards of remaining capacity (California Department of Resources Recycling and Recovery [CalRecycle] 2018a). Solid waste could also be taken to the Pescadero Transfer Station on Bean Hollow Road, which is permitted to accept 10 tons of waste per day (CalRecycle 2018b).

Given that all excavated sediment would be reused, a large portion of vegetative debris would be sidecast along the channel in the riparian forest or reused in adjacent areas of the marsh, and relatively small amounts of construction waste would require disposal, the proposed Project would not adversely affect capacity at any landfill or solid waste facility. SMRCD would be subject to all applicable solid waste regulations, including disposing of any hazardous waste properly at an approved site (Ox Mountain Landfill does not accept hazardous waste). Over the long-term, following construction, the proposed Project would not generate any solid waste. As a result, this impact would be **less than significant**.

h. Encourage activities that would result in the use of substantial amounts of fuel or energy, or use these resources in a wasteful manner

The proposed Project would not create any new structures or land uses that would involve use of substantial amounts of fuel or energy. Following completion of construction, operations and maintenance activities would be limited to ongoing sediment maintenance activities in the area immediately upstream and downstream of Pescadero Creek Road bridge. During construction, the Project would use fuel and energy from operation of construction equipment, such as the dredge, excavator, and airboat. In compliance with California Air Resources Board (CARB) Airborne Toxic Control Measures (ATCMs), SMRCD or its contractor would not allow off-road construction vehicles or equipment to idle unnecessarily or longer than 5 minutes. These requirements would also apply to vehicle/equipment use during operations and maintenance activities. As such, this impact would be **less than significant**.

1 3.19 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<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 checked="" type="checkbox"/>	<input 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"/>

2 3.19.1 Discussion of Checklist Responses

3 a. *Effects on environmental quality, fish or wildlife, and historic resources*

4 ***Wildlife Habitat and Populations; Rare and Endangered Species***

5 The long-term effects of the proposed Project on wildlife habitat and populations, including
6 rare and endangered species, would be beneficial. In addition, multiple benefits to local fish
7 and wildlife populations would be immediately realized once construction is completed. As
8 described in Chapter 2, *Project Description*, the Project would alleviate existing fish passage
9 barriers and anoxic conditions in the Pescadero Lagoon and Butano Creek systems. These
10 actions would benefit special-status anadromous fish species, such as Central California Coast

Coho Salmon and Central California Coast Steelhead, as well as other wildlife species that use the lagoon for refuge and foraging. In the absence of BMPs, project construction activities could result in adverse effects on special-status wildlife and plant species (e.g., dusky-footed woodrat, nesting birds, coastal marsh milk vetch, etc.) due to habitat modification (i.e., vegetation clearing) and heavy equipment use. As described in Section 3.4, *Biological Resource*, potential adverse effects special-status wildlife species would be minimized through implementation of applicable BMPs (e.g., pre-construction surveys for nesting birds and special-status species such as California red-legged frog, San Francisco garter snake, and western pond turtles, excluding and relocating fish from in-channel work areas, relocating observed special-status amphibians outside the work areas, and conducting vegetation removal activities outside of the bird nesting season). Potential adverse effects on special-status plants such as coastal milk vetch and Choris' popcornflower would also be minimized through implementation of BMPs that require focused pre-construction plant surveys, establishment of exclusion work areas, and potentially transplanting of coastal marsh milk vetch.

California History and Prehistory

Review of the proposed Project's APE revealed two documented cultural resource sites in the area: a historic era homestead site that includes a scatter of chert flakes, and a large lithic scatter of Monterey chert and other materials, including obsidian. As part of the Project, the area around these sites would be delineated as an ESA where work would not be allowed. The establishment of the ESA would protect these previously identified sites from possible adverse effects during project construction. As described in Section 3.4, *Cultural Resources*, SHPO issued a letter on April 6, 2018 indicating that with establishment of the ESA, the Project would have no adverse effects to historic resources.

In addition to the known sites, construction activities for the proposed Project could encounter buried unknown cultural resources, including those that are important relative to California history and prehistory, potentially resulting in adverse impacts to these resources. Ground-disturbing construction activities also could encounter buried human remains, potentially resulting in adverse effects if proper protocols are not followed. Implementation of BMP-28 and BMP-29 would reduce impacts related to accidental discovery of archaeological resources and human remains.

Over the long-term, following completion of project construction, the proposed Project would not adversely affect cultural resources, as it would not introduce any new land uses which could affect cultural resources. Once construction is complete, ongoing sediment removal work may occur immediately upstream and downstream of Pescadero Creek Road over a 5-year period. However, sediment and vegetation removal activities would occur within previously disturbed areas of the channel and are not expected to affect cultural resources.

b. Cumulative Impacts

A cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines § 15355). Cumulative impacts reflect "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time” (CEQA Guidelines § 15355[b]).

Lead agencies may use a “list” approach to identify related projects or may base the identification of cumulative impacts on a summary of projections in an adopted general plan or related planning document (CEQA Guidelines § 15130[b]), also known as the “projection” approach. This document utilizes a combination of the list and projection approaches. Project contributions to localized cumulative impacts (air quality, biological resources, noise and vibrations) are evaluated using the list approach, while Project contributions to regional cumulative impacts (greenhouse gas [GHG] emissions and traffic) are evaluated using the projection approach.

Projects with the potential to contribute to the same cumulative impacts as the proposed Project are to a large extent within close geographic proximity to the Project area, except for certain resources (e.g., air quality, greenhouse gas emissions). **Table MAND-1** defines the geographic scope that will be used in the impact analysis for applicable resource areas.

Table MAND-1. Geographic Scope for Resources with Potential Cumulative Impacts

Resource	Scope
Air Quality	The San Francisco Bay Area Air Basin.
Biological Resources	Migratory nesting sites and habitat in the Project site and surrounding Butano Creek and Pescadero Creek watersheds.
Greenhouse Gas Emissions	The geographic scope for GHG emissions is the State of California where GHG policies and regulations have been established. However, the true impact of GHG emissions is global in nature.
Hydrology and Water Quality	Butano Creek and Pescadero Creek watersheds.
Noise and Vibrations	Project site and surrounding area exposed to noise and vibration generated in the Project site.
Traffic and Transportation	Roadways in the vicinity of the proposed Project that may be impacted by activity associated with the Project, including State Route 1 and Pescadero Creek Road.

The list approach is applied by developing a list of past, present, and reasonably foreseeable projects. Projects considered in this analysis are listed in **Table MAND-2**. The list of projects used for this analysis was developed by identifying projects listed in the CEQANet database and on the County’s website. Several of these projects may have construction activities occurring at the same time as the proposed Project. While not every possible cumulative project is listed, the list of cumulative projects is believed to be comprehensive and representative of the types of impacts that would be generated by other projects within the geographic scope of the proposed Project.

1 **Table MAND-2.** List of Recent Past, Present, and Reasonably Foreseeable Future Projects that
2 May Cumulatively Affect Resources of Concern for the Proposed Project

Project Number	Project Title	Brief Project Description	Schedule	Distance from Project
1	Stage Road Bridge Preventive Maintenance Project	This project involves repair of the Stage Road Bridge over Pescadero Creek. The bridge driving surface was treated with a methacrylate resin deck treatment. The project was completed in November 2017 (County of San Mateo 2018a; Azzari 2018).	Completed in 2017	0.6 mile southeast
2	CSA 11 Water Supply and Sustainability Project; Storage Tank and Well	This project consists of constructing a new municipal groundwater well and a 140,000-gallon storage tank for the CSA 11 Water System, which serves approximately 100 households within the unincorporated community of Pescadero (County of San Mateo 2018b). The project would be located at the intersection of Bean Hollow Road and Pescadero Creek Road, which is roughly the location of the Pescadero Creek Road Bridge over Butano Creek. The project is scheduled for completion in February 2018.	Scheduled for completion in February 2018	Adjacent
3	Butano Creek at Pescadero Creek Road Sediment Removal Project	This project involved sediment removal from 100 linear feet of Butano Creek beneath the Pescadero Creek Road bridge, and the area immediately upstream (south) and downstream (north) of the bridge. The objective of the project was to alleviate chronic flooding at Pescadero Creek Road by removing accumulated sediment in the immediate vicinity of the bridge. Sediment removal maintenance would occur annually for up to five years through 2020. Since this maintenance area is within the Butano Creek Channel Reconnection and Resilience Project area and would be monitored by SMRCD staff in coordination with the County, annual maintenance under this project is not anticipated to be required in 2019 or 2020. Approximately 1,455 cubic yards of sediment was removed from the creek channel during the first maintenance year (CEQAnet 2018a). The lead agency for this project was San Mateo County and initial sediment removal work was completed in fall 2016.	Initial sediment removal work completed in fall 2016.	Overlapping

Project Number	Project Title	Brief Project Description	Schedule	Distance from Project
4	Pescadero Lagoon Interim Management Project	This project of the National Oceanic and Atmospheric Administration (NOAA) Restoration Center (RC) would involve manually breaching the Pescadero Lagoon sandbar up to three times per year for approximately three years (starting in 2012) and potentially up to five years. The project is designed to reduce Delta-Butano Marsh inundation prior to a natural breach event to avoid decreased water quality within Pescadero Lagoon and reduce the likelihood of a fish kill upon opening of the lagoon. Project work would involve excavating a shallow channel across the sandbar at the mouth of Pescadero Creek (CEQAnet 2018b).	Regulatory permits expire at the end of 2018	Overlapping
5	Butano Creek Floodplain Restoration Project	SMRCD and Peninsula Open Space Trust partnered on this restoration project, which involved raising the creek bed of Butano Creek to restore flooding of the area's historic 100-acre floodplain. The project was completed in fall of 2016 and took place at multiple sites along a stretch of Butano Creek where the creek became disconnected from its historic floodplain due to human activities in the watershed (e.g., logging and straightening of the channel). The project involved anchoring fallen trees, utilizing live alders, notching the creek bank to direct water to the floodplain, and construction of a rock ramp. The project is expected to store 150,000 tons of sediment over ten years and restore habitat for steelhead trout, California red-legged frog, and San Francisco garter snake. The project is also anticipated to result in less sediment build up in downstream areas of Butano Creek including the Pescadero Creek Road bridge (SMRCD 2018).	Construction completed in 2016	Approximately 0.5 mile upstream of the Project site in the Butano Creek watershed

1 Detailed analysis of a project's contribution to cumulative impacts is required when (1) a
2 cumulative impact to which a project may contribute is expected to be significant, and (2) the
3 project's contribution to the cumulative impact is expected to be cumulatively considerable,
4 or significant in the context of the overall (cumulative) level of effect. **Table MAND-3**
5 summarizes cumulatively significant impacts and identifies the proposed Project's
6 contribution. Additional analysis follows for those impacts to which the proposed Project
7 would contribute.

1 **Table MAND-3. Summary of Cumulative Significant Impacts and Proposed Project's**
2 **Contribution**

Resource Topic	Cumulatively Significant Impacts	Proposed Project's Contribution
Aesthetics	None identified.	No analysis required.
Agricultural Resources	None identified.	No analysis required.
Air Quality	The San Francisco Bay Area Air Basin is a state and federal non-attainment area for ozone and PM _{2.5} , and a state non-attainment area for PM ₁₀ .	The Project would result in emissions of ozone precursors (e.g., ROG, NOx) and particulate matter from operation of construction equipment and vehicles. While these emissions were determined to be below project levels of significance, any addition of PM _{2.5} and PM ₁₀ to the air basin could exacerbate the existing cumulative impact.
Biological Resources	Past and present projects could have temporary adverse effects on special-status species and habitat during the construction phase. These impacts would be considered potentially significant.	Project construction activities could potentially result in adverse effects on special-status plants and wildlife, which could add to on-going impacts occurring to such resources from other activities in the area. Further analysis provided below.
Cultural Resources	Throughout California, the Native American cultural legacy, including culturally important sites and traditional cultural practices, has been substantially affected by land management practices and urbanization over the past 150 years. While the County General Plan contain policies regarding preservation of important cultural resources, ongoing development could lead to the cumulative loss of significant historic, archeological, and paleontological resources. This impact is considered cumulatively significant.	The proposed Project would involve ground-disturbing activities (e.g., sediment removal) during construction, which could potentially expose buried unknown cultural resources. Adverse impacts to such resources would add to the on-going losses of, and effects on, cultural resources in California due to development activities. Further analysis provided below.
Geology, Soils, and Seismicity	None identified.	No analysis required.
Greenhouse Gas Emissions	Anthropogenic emissions of GHGs are widely accepted in the scientific community as contributing to global warming. This impact is considered cumulatively significant.	The proposed Project would result in emissions of GHGs from operation of construction equipment and construction employee vehicle commute trips. While any emission of GHGs may contribute to global warming by some immeasurable degree, the proposed Project's emissions would be below accepted threshold levels of significance.
Hazards and Hazardous Materials	None identified.	No analysis required.

Resource Topic	Cumulatively Significant Impacts	Proposed Project's Contribution
Hydrology and Water Quality	Butano Creek is listed as an impaired water body in accordance with Section 303(d) of the CWA. Past and current projects in combination with general human activity in the area and stormwater runoff from Pescadero Creek Road and Highway 1 also could contribute to existing water quality impacts in the Pescadero Creek and Butano Creek watersheds.	The proposed Project would temporarily increase turbidity levels in Butano Creek and Pescadero Lagoon. Dredging and excavation activities during project construction also would be expected to temporarily reduce dissolved oxygen levels. Further analysis provided below.
Land Use and Planning	None identified.	No analysis required.
Mineral Resources	None identified.	No analysis required.
Noise	None identified.	No analysis required.
Population and Housing	None identified.	No analysis required.
Public Services	None identified.	No analysis required.
Recreation	None identified.	No analysis required.
Transportation and Traffic	None identified.	No analysis required.
Utilities and Service Systems	None identified.	No analysis required.

The following sections provide a detailed analysis of the proposed Project's contribution to existing significant cumulative impacts. As identified in **Table MAND-3**, the following resource issues are discussed: air quality, biological resources, cultural resources, and global climate change.

Air Quality: Emissions of Criteria Air Pollutants

Construction of the proposed Project would emit criteria air pollutants from operating equipment during the Project's construction phase. Specifically, the Project would emit PM_{2.5} and PM₁₀, which are pollutants for which the SFBAB is in non-attainment. Given that the air basin is in non-attainment, any additional emissions of these pollutants could exacerbate the existing cumulative impact. However, BAAQMD's CEQA Guidelines specifically establish project-level emissions below mass emissions thresholds are considered to be less than cumulatively considerable. As described in Section 3.3, *Air Quality*, the proposed Project's emissions would be below these mass emissions thresholds, though it would exceed the BAAQMD's mass emissions thresholds for NOx. With implementation of Mitigation Measure AQ-1, the Project's construction-related emissions would be less than significant. Therefore, while the proposed Project would contribute to some degree to a cumulative air quality impact, with implementation of this mitigation measure, the Project's contribution would not be considerable. As a result, this impact would be **less than significant with mitigation**.

Biological Resources: Impacts to Special-Status Species

As noted in Table MAND-2, there are relatively few cumulative projects in the Project vicinity. The Butano Creek at Pescadero Creek Road Sediment Removal Project and the Butano Creek Floodplain Restoration Project both address sedimentation issues in the Butano Creek watershed. These projects likely resulted in temporary effects on similar biological resources as the proposed Project (e.g., temporary effects on habitat for CRLF and SFGS) due to vegetation removal and ground-disturbing activities.

Once project construction is completed, the proposed Project's effects on biological resources would be largely positive, as the Project would improve fish passage conditions and water quality in the Pescadero Creek and Butano Creek lower watersheds. As described in Section 3.4, *Biological Resources*, the Project would improve habitat conditions for special-status species including California red-legged frog (CRLF), San Francisco garter snake (SFGS) and steelhead. For example, the Project would improve CRLF habitat by reducing hypoxic conditions in Butano Marsh and Butano Channel and reducing areas where low-oxygen conditions may adversely affect survival of CRLF larvae. The Project would also reduce salinity in portions of Lower and Middle Butano Marshes, which would benefit CRLF as they are sensitive to salinity. Additionally, the expansion of freshwater conditions in Butano Marsh would benefit SFGS and their prey, and removal of riparian habitat along Butano Creek in Reach 3 would increase the extent of basking habitat for SFGS. By reducing the likelihood and/or severity of fish kills due to water quality deteriorations and development of hypoxic/anoxic conditions, the Project would also reestablish potential access for steelhead in the Butano Creek watershed.

As described above, the proposed Project would improve habitat conditions for various special-status species due to sediment accumulation and associated hypoxic/anoxic water quality conditions. Such conditions are barriers to anadromous fish passage in Pescadero Creek and Butano Creek and the expansion of freshwater conditions are expected to benefit CRLF and SFGS during certain times of the year. Similar to the proposed Project, the Butano Creek Restoration Project also addressed sedimentation issues in the Butano Creek watershed and improved habitat conditions for both steelhead and salmon. Thus, in the long-term, the proposed Project in combination with Butano Creek Restoration Project would have a beneficial effect on biological resources.

During project construction, vegetation removal and operation of heavy construction equipment in habitat areas could result in adverse effects on biological resources, including special-status plant and wildlife species and nesting birds. As described in Section 3.4, *Biological Resources*, a number of special-status species could be present or could nest within the Project area. Potential impacts to these species and their habitat, in combination with the construction impacts associated with other projects listed in Table MAND-2, could result in significant cumulative impacts on biological resources in the Pescadero area. The proposed Project's potential for impacts to biological resources would be avoided or minimized through implementation of BMPs described in Chapter 2 (e.g., pre-construction surveys for special-status species and nesting birds, excluding and relocating fish from in-channel work areas, and relocating observed special-status amphibians outside the work areas) and Mitigation Measures HYD/WQ-1 and HYD/WQ-2. As shown in Table MAND-2, there are few projects in the vicinity of the Project and several of them have been completed. Construction-related impacts on biological resources associated with the Butano Creek at Pescadero Creek Road Sediment Removal Project were reduced through implementation of similar measures

proposed in Chapter 2 of this IS/MND and involved establishment of a conservation easement to offset impacts to CRLF and SFGS habitat. Since the maintenance area of the proposed Project overlaps with the Butano Creek at Pescadero Creek Road Sediment Removal Project area, it is assumed that maintenance of the Butano Creek at Pescadero Creek Road Sediment Removal Project would not occur during construction of the Project. Given that both the Project would benefit several special-status species in the long-term, and that the Project's construction impacts to these species would be less than significant through implementation of various BMPs identified in Chapter 2, the Project's contribution to cumulative impacts on biological resources would not be considerable. Therefore, this impact would be **less than significant with mitigation**.

Cultural Resources: Impacts to Unknown Cultural Resources

As described in Section 3.5, *Cultural Resources*, project construction activities could encounter buried unknown cultural resources or human remains, which could result in adverse impacts if proper protocols are not followed. Implementation of BMP-28 and BMP-29 described in Chapter 2 would avoid or minimize these potential impacts. Establishment of an ESA would protect two existing known cultural resource sites during project construction activities.

The proposed Project is located in a relatively rural area of San Mateo County with minimal human development activities. As shown in Table MAND-2, relatively few recent past, present, and future planned project were identified in the Project vicinity. Some of these projects could have impacts on cultural resources if they were to expose buried cultural resources and fail to implement appropriate measures; however, none of these projects are especially large or would involve large amounts of excavation, such that an increased potential for cultural resources may be possible. In general, this area of San Mateo County has not been especially impacted, and cumulative impacts on cultural resources in this area have been less severe. As a result, and because the proposed Project's possible effects on cultural resources would be substantially avoided or minimized through implementation of BMP-28 and BMP-29, the Project's contribution to cumulative impacts would be less than considerable. Therefore, this impact would be **less than significant**.

Global Climate Change: Emission of GHGs

The proposed Project would emit GHGs from operation of construction equipment and related vehicle trips and activities. As described above in Table MAND-3, GHG emissions are widely accepted as contributing to increasing global temperatures. As a result, any emission of GHGs may be considered as contributing to an existing cumulative impact in the form of global warming. While relatively few other past, present, and future projects were identified in the Project vicinity, and the projects that were identified (see Table MAND-2) would not likely result in substantial GHG emissions, climate change is a global phenomenon and the effects of GHG emissions are felt on a world-wide scale.

Although the Project's emissions would contribute to cumulative impacts related to global climate change to some degree, these emissions would be below mass emission thresholds of significance established by BAAQMD, which is the applicable governing body for air pollution and GHG emissions for the San Francisco Bay Air Basin. BAAQMD states in its CEQA Guidelines that project-level emissions that are below mass emission thresholds are considered less than cumulatively considerable. As a result, following BAAQMD's guidelines,

the Project's contribution to cumulative global climate change impacts would be less than considerable. Therefore, this impact would be **less than significant**.

Hydrology and Water Quality

Construction of the proposed Project would involve removal of riparian vegetation, dredging, and operation of construction equipment within Butano Creek and Butano Marsh. Without adequate preventative measures, these activities could result in discharge of fine sediment and other contaminants, as well as oxygen depletion (from dredging), which could adversely affect water quality in these systems. Butano Creek is listed as impaired for sedimentation/siltation under the CWA Section 303(d) list. Additionally, as described in Chapter 2, *Project Description*, low dissolved oxygen is an existing concern in Pescadero Lagoon.

The Project would include measures including installation of water control dams, silt curtains, and aeration devices to avoid and minimize adverse water quality effects during construction. Additionally, SMRCD would implement Mitigation Measures HYD/WQ-1 and HYD/WQ-2, which would require water turbidity and dissolved oxygen monitoring during construction activities, and, if necessary, implementation of response measures. Additionally, SMRCD would implement a number of BMPs to minimize potential for discharge of hazardous materials and other contaminants during construction. Together, these water quality control measures and mitigation measures would reduce water quality effects of the proposed Project to less than significant at the project level.

The long-term effects of the Project on hydrology and water quality would be largely beneficial. The Project would help to alleviate existing seasonally low dissolved oxygen conditions in Pescadero Lagoon, and correct excessive sedimentation accumulation in Butano Creek, which has hindered fish passage in this area. While the proposed Project would occur in an area that has previously been impacted and upstream areas of the creek may be impacted in the future by similar creek restoration projects (see Table MAND-2), in general, the Project area is relatively sparsely developed with minimal on-going hydrology and water quality impacts from human development activities. Additionally, like the proposed Project, other cumulative projects such as the Butano Creek Floodplain Restoration Project would improve water quality conditions in the watershed.

The proposed Project would not use or deplete groundwater supplies or place housing or structures within a 100-year flood hazard area. One of the principal objectives of both the Project and the Butano Creek Floodplain Restoration Project is to reduce or alleviate seasonal flooding of Pescadero Creek Road. Therefore, the Project would beneficially affect an on-going adverse impact from flooding.

Overall, given the proposed Project's beneficial long-term effects; inclusion of measures to avoid and/or minimize adverse effects during construction, and limited number of planned projects in the area that could contribute contaminants, the proposed Project's contribution to cumulative hydrology and water quality impacts would be less than considerable. Therefore, this impact would be **less than significant with mitigation**.

Conclusion

Overall, the proposed Project would be largely beneficial for environmental resources in the Pescadero area. The Project is designed to alleviate existing deficiencies in the Pescadero Creek and Butano Creek systems, which have led to adverse impacts, such as barriers to fish passage, seasonally hypoxic/anoxic conditions in Pescadero Lagoon and Butano Marsh, and seasonal flooding along Pescadero Creek Road. As a result, the proposed Project would have beneficial effects on several existing cumulative impacts.

Project construction activities could result in adverse effects on several resource categories as operation of construction equipment could temporarily impact habitat and other sensitive biological resources, and potentially encounter buried cultural resources. Construction activities also could result in impacts on water quality. Implementation of BMPs would avoid or minimize many of these effects. Potential adverse effects would be further avoided or minimized through implementation of mitigation measures identified in Section 3.9, *Hydrology and Water Quality*. With implementation of BMPs and mitigation measures identified in this IS/MND, the Project's contribution to cumulative impacts for these resources would not be considerable (**less than significant with mitigation**).

c. Effects on Human Beings

As described in Section 3.8, *Hazards and Hazardous Materials*, the proposed Project would minimize potential for accidental releases of hazardous materials (e.g., fuel, oil) during construction through implementation of BMPs, specifically BMP-2, BMP -3, BMP BMP-5, BMP -6, BMP-8, BMP -9, and BMP-15. Among other things, these BMPs would require proper hazardous materials management on the construction site, and implementation of spill prevention and response measures. As a result, potential hazards to human beings from accidental releases of hazardous materials would be minimized. The Project would not include new houses or structures that could be placed in a hazardous area (e.g., 100-year floodplain or dam inundation area) and would not excavate soils in areas of known contamination. Likewise, the proposed Project would not include land uses that would be hazardous to aircraft or vehicle operation. Therefore, overall, the proposed Project would not have significant adverse effects on human beings. This impact would be **less than significant**.