

## 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

7

1 **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"/>

2

3 **3.1.1 Discussion of Checklist Responses**

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

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

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

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

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

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

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

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

12          ***d. New sources of light or glare***

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

1 **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"/>

2

3 **3.2.1 Discussion of Checklist Responses**

4 ***a, e. Convert Prime Farmland, Unique Farmland or Farmland of Statement***  
 5 ***Importance to non-agriculture use***

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

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

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

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

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

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

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

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

1 **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"/>

2 **3.3.1 Discussion of Checklist Responses**

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

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

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

1 BAAQMD or local general plans. Applicable air quality plans include the Bay Area 2005 Ozone  
2 Strategy, BAAQMD's *2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 Clean Air Plan)  
3 and the San Mateo County General Plan. The Bay Area 2005 Ozone Strategy includes  
4 stationary source control measures to be implemented through BAAQMD regulations; mobile  
5 source control measures to be implemented through incentive programs and other activities;  
6 and transportation control measures to be implemented through transportation programs in  
7 cooperation with Metropolitan Transportation Commission (MTC), local governments,  
8 transit agencies and others. The 2017 Bay Area Clean Air Plan presents the BAAQMD's plan  
9 for attaining federal air quality standards, particularly for ozone and particulate matter (PM)  
10 emissions (BAAQMD 2017a). This plan includes a control strategy focused on stationary  
11 source, mobile source, transportation control, land use and local impact, energy and climate,  
12 and additional measures to control ozone and its precursors (reactive organic gas [ROG] and  
13 nitrogen oxides [NO<sub>x</sub>]), particulate matter of aerodynamic radius of 10 micrometers or less  
14 (PM<sub>10</sub>), particulate matter of aerodynamic radius of 2.5 micrometers or less (PM<sub>2.5</sub>), and toxic  
15 air contaminants (TACs). For additional discussion regarding federal, state and local  
16 regulations pertaining to air quality and that are applicable to the Project, refer to **Appendix**  
17 **B**.

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

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

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

35 The SFBAAB is a state and federal non-attainment area for ozone and PM<sub>2.5</sub>, and a state  
36 nonattainment area for PM<sub>10</sub>. A project would have a significant impact if it would contribute  
37 substantially to these air quality violations. San Mateo County has determined that the mass  
38 emission thresholds of significance adopted by BAAQMD in 2010 are appropriate air quality  
39 thresholds based on substantial evidence. A substantial contribution is defined as a  
40 contribution above the BAAQMD CEQA threshold of significance for criteria pollutants  
41 including ozone precursors ROG and NO<sub>x</sub>. The BAAQMD has established mass emission  
42 thresholds of significance to determine if air emissions would contribute to an existing or  
43 projected air quality violation or result in a cumulatively considerable net increase of criteria  
44 pollutant such that the air basin is nonattainment for ambient air quality standards. These  
45 are shown in **Table AQ-1** below.

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

Pollutant Criteria Air Pollutants and Precursors	Construction-Related	Operational-Related	
	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 <sub>10</sub>	82 (Exhaust)	82	15
PM <sub>2.5</sub>	54 (Exhaust)	54	10
PM <sub>10</sub> /PM <sub>2.5</sub> (Fugitive Dust)	Best Management Practices (BMPs)	None	

2 Source: BAAQMD 2017b.

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

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

12

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

	Pollutant						
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub> Exhaust	PM <sub>10</sub> Fugitive	PM <sub>2.5</sub> Exhaust	PM <sub>2.5</sub> 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	<b>3.032</b>	1.991	0.1317	0.3236	0.1235	0.1719
Estimated Project Average Daily Emissions - 2018 (lbs/day) <sup>1</sup>	37.84	40.40	20.32	1.71	7.60	1.58	4.16
Estimated Project Average Daily Emissions - 2019 (lbs/day) <sup>1</sup>	6.42	<b>61.25</b>	40.22	2.66	6.54	2.49	3.47
BAAQMD Average Daily Emissions Threshold (lbs/day) <sup>2</sup>	54	54	None	82	BMPs	54	BMPs
Exceed Threshold?	N	<b>Y</b>	N	N	N	N	N
Mitigated Estimated Project Average Daily – 2019 Emissions <sup>3</sup>	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

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

5 <sup>1</sup> Estimates of fugitive dust emissions (PM<sub>10</sub> and PM<sub>2.5</sub>) do not account for any watering that would be performed in  
6 accordance with the BMP-12, Dust Management Controls. Therefore, actual fugitive dust emissions would be less than  
7 those shown.

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

9 <sup>3</sup> The mitigated emissions estimates assume that all off-road construction equipment, except for off-road trucks, used  
10 during the Project’s construction activities would be Tier 3, which provides an approximately 19 percent reduction in NO<sub>x</sub>  
11 emissions. San Mateo Resource Conservation District and/or its contractor may use Tier 3 equipment or another  
12 combination of mitigation measures as described in Mitigation Measure AQ-1 below to achieve the BAAQMD significance  
13 thresholds.

14 As shown in Table AQ-3, the proposed Project’s NO<sub>x</sub> emissions would exceed the BAAQMD’s  
15 NO<sub>x</sub> significance threshold and would potentially contribute substantially to an existing air  
16 quality violation (i.e., ozone nonattainment). All other projected emissions would not exceed  
17 their applicable significance thresholds and would not be considered to substantially  
18 contribute to any existing air quality violations or violate any air quality standards.  
19 Particulate matter emissions from the proposed Project would be minimized through  
20 compliance with all of the BAAQMD’s applicable regulations, particularly those summarized  
21 in BMP-12, which prescribes fugitive dust control requirements and minimizes vehicle idling.  
22 Implementation of BMP-12 would reduce the potential for and magnitude of PM-related

1 impacts. Implementation of **Mitigation Measure AQ-1** is required to reduce construction-  
2 related NO<sub>x</sub> emissions to below the BAAQMD's NO<sub>x</sub> significance threshold.

3 **Mitigation Measure AQ-1: NO<sub>x</sub> Emissions Control and Cap Measures.** SMRCD or  
4 its contractor shall implement any combination of the measures described below to  
5 reduce NO<sub>x</sub> emissions, in any given construction year, to ensure Project NO<sub>x</sub> emissions  
6 are capped below an average of 54 pounds per day. As a performance standard, the  
7 mitigation measures shall demonstrate that off-road equipment (greater than 50 hp)  
8 and material hauling vehicles used during construction (i.e., owned, leased, and  
9 subcontracted vehicles) will achieve emission reductions to the extent feasible.  
10 Equipment and material hauling vehicles shall achieve at least a project-wide fleet  
11 average of 20 percent NO<sub>x</sub> reduction compared to the most recent CARB fleet average  
12 up to a Tier IV-equivalent engine. The SMRCD or its contractor will implement any of  
13 the following examples of appropriate mitigation to achieve this reduction including,  
14 but not limited to: limit the number of daily one-way material hauling trips, use  
15 alternative-fueled equipment, alter the phasing of construction activities, use of  
16 chemical additives or after-market devices to reduce emissions on existing  
17 equipment, use higher tier (Tier 3 or greater) and/or newer models for equipment  
18 and/or material hauling trucks, use of electrically powered equipment, reduction in  
19 total equipment hours, use of alternative fuels, or engine retrofit technology.

20 As demonstrated in Table AQ-2, implementation of Mitigation Measure AQ-1 is feasible and  
21 would reduce the Project's NO<sub>x</sub> emissions to less than the average daily significance  
22 threshold (54 lbs/day). For the purposes of demonstrating feasibility, it was assumed that all  
23 off-road equipment, except for trucks, would be at least Tier 3 and achieve at least a 19  
24 percent reduction in NO<sub>x</sub> emissions. Implementation of this mitigation measure would  
25 ensure compliance with the BAAQMD's significance thresholds and ensure that the proposed  
26 Project would not substantially contribute to any existing air quality violations or violate any  
27 air quality standards. As a result, the Project's construction-related impacts would be less  
28 than significant with mitigation.

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

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

	Pollutant						
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub> Exhaust	PM <sub>10</sub> Fugitive	PM <sub>2.5</sub> Exhaust	PM <sub>2.5</sub> 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) <sup>1</sup>	0.22	2.25	2.35	0.11	0.73	0.11	0.37
BAAQMD Average Daily Emissions Threshold (lbs/day) <sup>2</sup>	54	54	None	82	BMPs	54	BMPs
Exceed Threshold?	N	N	N	N	N	N	N

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

5 <sup>1</sup> Estimates of fugitive dust emissions (PM<sub>10</sub> and PM<sub>2.5</sub>) do not account for any watering that would be performed in  
6 accordance with the BMP-12, Dust Management Controls. Therefore, actual fugitive dust emissions would be less  
7 than those shown.

8 <sup>2</sup> The average daily emissions thresholds are based on the BAAQMD’s *CEQA Air Quality Guidelines* (BAAQMD 2017a).  
9

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

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

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

24 ***d. Expose sensitive receptors to substantial pollutant concentrations***

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

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

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

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

39 ***e. Create objectionable odors affecting a substantial number of people***

40 The Project's construction activities would not result in the generation of permanent or long-  
41 term objectionable odors. Odors associated with the intermittent operation of gasoline and  
42 diesel-powered equipment might be detected by nearby sensitive receptors but these odors  
43 would be of short duration and would not affect a substantial number of people. Soil or  
44 sediment excavated from the Butano Creek channel may contain decaying organic material  
45 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

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

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

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

### 33 **3.4.2 Environmental Setting: Habitats in the Project Area**

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

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

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

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

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

16 Coastal brambles habitat is dominated by California blackberry.

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

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

23 **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

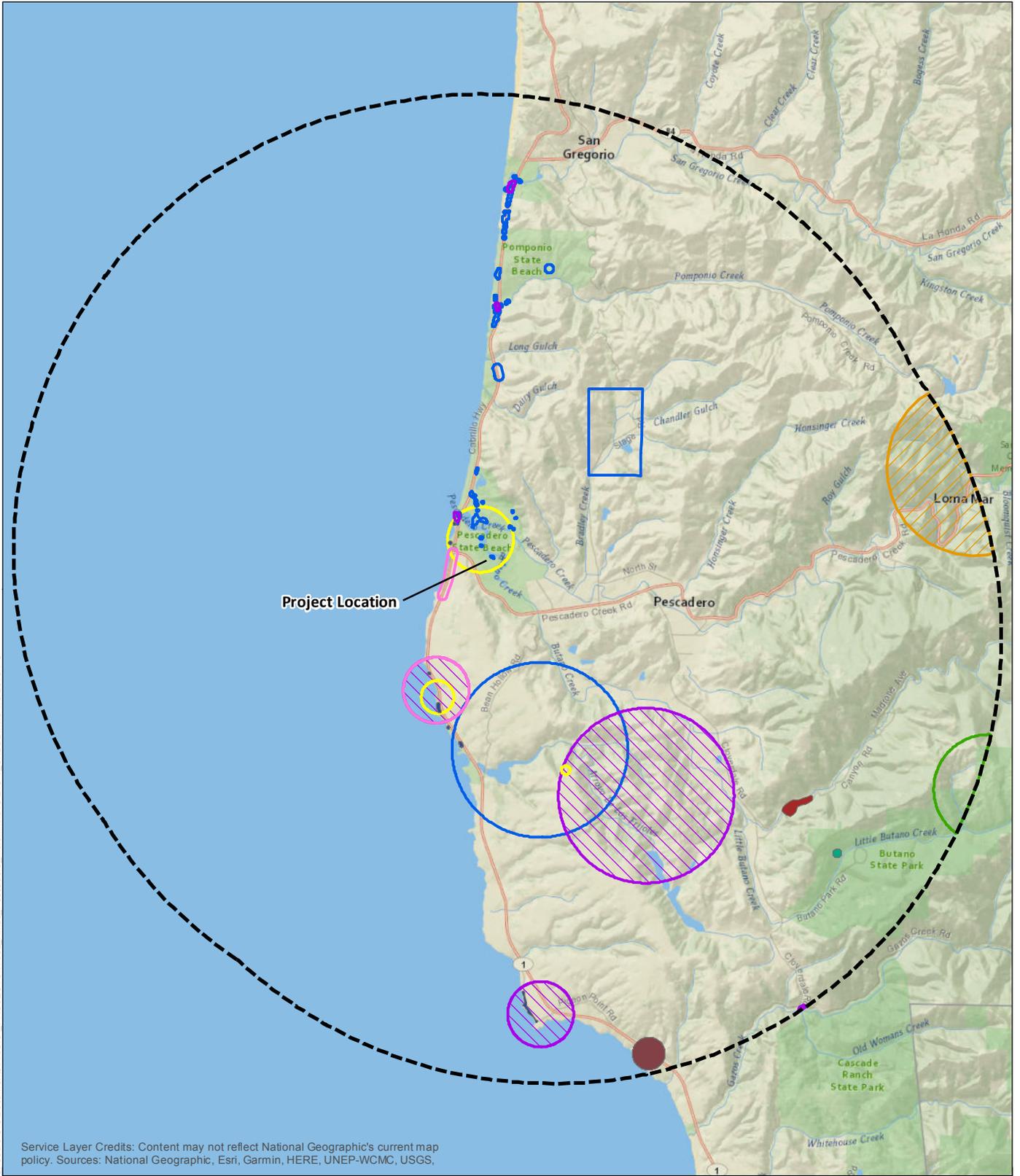
#### *a. Substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species*

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:

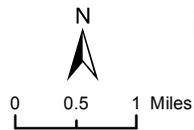
- USFWS Information for Planning and Consultation Report (USFWS 2018, Appendix C),
- California Natural Diversity Database (CNDDDB) queries for the six U.S. Geological Survey (USGS) 7.5-minute quadrangles containing and surrounding the project site: Half Moon Bay, Woodside, San Gregorio, La Honda, Pigeon 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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5-mile buffer

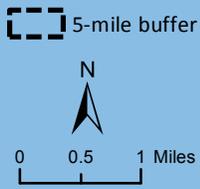
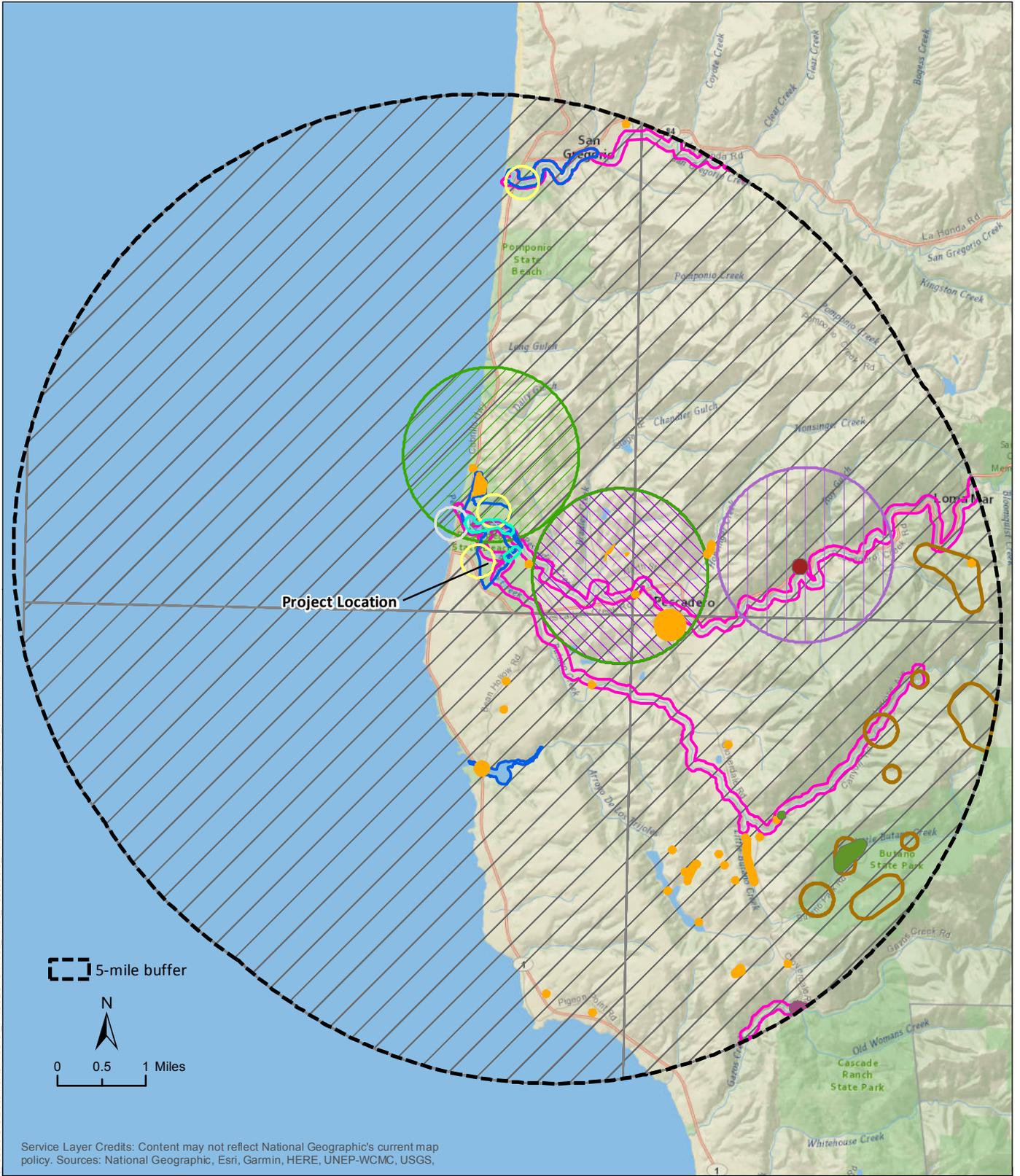
- |                            |                          |
|----------------------------|--------------------------|
| Anderson's manzanita       | coastal marsh milk-vetch |
| Blasdale's bent grass      | marsh microseris         |
| Choris' popcornflower      | minute pocket moss       |
| Point Reyes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

**Figure BIO-1**  
**Special-status Plant**  
**Species Occurrences**

Butano Creek Channel  
Reconnection and  
Resilience Project

Source: CDFW, CNDDDB, February 2018 update

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- |                               |                          |                               |
|-------------------------------|--------------------------|-------------------------------|
| 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          |

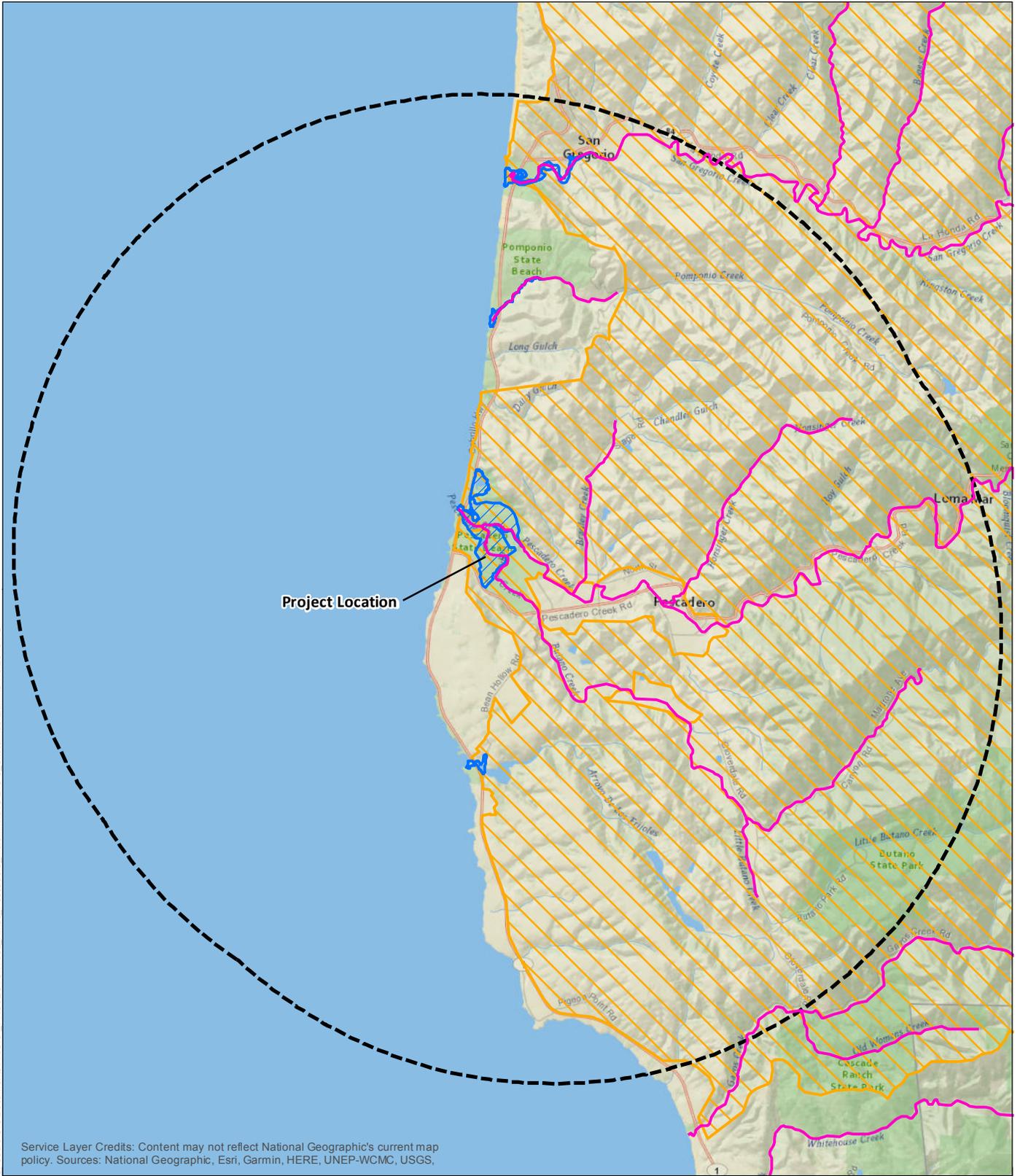
**Figure BIO-2**  
**Special-status**  
**Animal Species**  
**Occurrences**



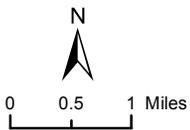
Source: CDFW, CNDDDB, February 2018 update

Butano Creek Channel  
Reconnection and Resilience Project

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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

1            **Special-status Plant Species**

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

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

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

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

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

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<sup>1</sup> 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

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

3 **Rose leptosiphon.** Rose leptosiphon (*Leptosiphon rosaceus*) (CRPR 1B.1) is known from a  
4 1943 collection but is considered possibly extirpated (CDFW 2018). This annual herb blooms  
5 from April to June and is typically found in open, grassy slopes and coastal bluff habitats  
6 (Patterson and Battaglia 2012). The Project is not located within the coastal bluff or grassland  
7 habitats where rose leptosiphon occurs, so effects on this species are not anticipated.

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

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

#### 16 **Special-status Wildlife Species**

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

21 • The Globose dune beetle (*Coleus globosus*) has no federal or state protected status,  
22 but it is considered a rare species by the San Mateo County Local Coastal Program.  
23 The species is associated with coastal sand dunes, where it lives and forages under  
24 the sand. No sand dune habitat occurs within the Project area; thus, the species is not  
25 expected to occur on the Project site.

26 • The northern elephant seal (*Mirounga angustirostris*) is a California fully protected  
27 species. Elephant seals breed colonially at Año Nuevo State Park, located  
28 approximately 12 miles south of the Project site, and haul out along coastal beaches  
29 throughout the year. The narrow strip of sandy shoreline surrounding Pescadero  
30 Lagoon does not provide high quality habitat for elephant seals, due to its limited  
31 extent and distance from shore, and elephant seals have not been observed at the  
32 lagoon. Thus, elephant seals are not expected to occur on the Project site.

33 • The southern sea otter (*Enhydra lutris nereis*) is federally threatened and a California  
34 fully protected species. Sea otters occupy coastal marine habitats where food and kelp  
35 canopies are abundant. Otters spend the majority of their lives at sea, and only rarely  
36 haul out on land where they move slowly and awkwardly. Thus, otters are not  
37 expected to occur on the Project site.

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

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

#### 4 ***Special-status Amphibians and Reptiles***

5 **California red-legged frog.** CRLF, a federally listed threatened species and a California  
6 Species of Special Concern, is known to occur in the Project area. Critical habitat for this  
7 species also occurs within the Project area. Previous studies in the Project area have detected  
8 CRLF in Lower, Middle, and Upper Butano Marshes, and Butano Creek (Jennings and Hayes  
9 1990, Smith and Reis 1997). CRLF were found more often in the upper portions of the Project  
10 area (e.g., Upper Butano Marsh and the upper portions of Butano Creek).

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

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

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

1 convert some previously perennial pools and deep water areas to seasonal habitat. The extent  
2 of sediment placement is estimated at approximately 30 acres, consisting of approximately  
3 20.3 acres of marsh, 5.0 acres of open water, and 4.4 acres of riparian habitat. While this may  
4 result in some loss of deeper-water habitat or reduction in suitability of some pools for  
5 breeding, conversion of perennial pools to seasonal pools may benefit CRLF by reducing the  
6 suitability of those pools for breeding by predatory non-native invasive bullfrogs (*Lithobates*  
7 *catesbeianus*) and, more importantly, the deep areas to be filled are currently subject to  
8 hypoxic conditions and do not provide high-quality CRLF habitat, especially for larvae. The  
9 beneficial sediment reuse areas would remain marsh habitat, and thus continue to be suitable  
10 for CRLF cover, foraging, and dispersal, and would not result in permanent habitat loss or  
11 substantial reduction in long-term habitat quality. During the construction period, the  
12 deposition of slurry in these marshes would reduce habitat quality briefly. However, CRLF  
13 within affected areas would be able to easily disperse elsewhere. Construction would occur  
14 in summer and fall, so no egg masses (which might otherwise be covered by slurry) would be  
15 present when construction occurs.

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

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

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

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

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

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

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

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

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

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

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

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

### 28 ***Special-status Fish***

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

32 **Tidewater goby.** Tidewater gobies have frequently been documented in the Pescadero Marsh  
33 Natural Preserve. However, based on available data (e.g., Smith and Reis 1997, Rischbieter  
34 2013), densities within the Project area are expected to be low. Under existing conditions, the  
35 distribution of tidewater gobies within the Project area is expected to be largely limited to  
36 Reach 1 of Butano Creek and possibly portions of Reach 2 during open sandbar (i.e., low  
37 stage) conditions. Portions of Reach 2 as well as the entirety of Reach 3 are currently  
38 inaccessible to tidewater gobies. Butano Channel and the Butano Marsh are only accessible  
39 during higher high tides or closed sandbar (i.e., high stage) conditions. Dredging of Butano  
40 Creek and beneficial sediment reuse to fill portions of Butano Channel and Butano Marsh may  
41 adversely affect tidewater goby adults and juveniles during construction.

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

1 would occur at low tides when wetted channel widths and depths in the Project area are at  
2 their lowest levels. The relocation would be conducted in three consecutive stages. First,  
3 multiple seine hauls would be conducted in Butano Creek, and to the extent possible, in  
4 Butano Channel, in accordance with the USFWS survey protocol for tidewater gobies (USFWS  
5 2005). Captured fish would be transported to suitable habitat in the northern portions of the  
6 Pescadero Marsh Natural Preserve, away from the Project site (e.g., North Pond, lower  
7 Pescadero Creek). Tidewater gobies would be targeted for capture during this first stage, but  
8 incidentally-captured salmonids would also be relocated. The second stage of the fish  
9 relocations would consist of pulling/pushing a channel-spanning seine from the head of the  
10 wetted portion of Butano Creek toward the downstream extent of disturbance to encourage  
11 remaining fish to move into the estuary and/or lower Pescadero Creek. The seine would then  
12 be secured in place downstream of the extent of dredging operations to block fish from re-  
13 entering the dredging area until Water Control Dam #1 is installed and operational. Within  
14 Butano Channel, the presence of the existing marsh control structure, as well as the deeper  
15 water depths created by that structure, preclude the downstream herding approach  
16 proposed for Butano Creek. As such, only seine hauls would be conducted to the extent  
17 feasible to capture and relocate sensitive fish species. Lastly, standard electrofishing  
18 methodologies electrofishing would be used to relocate fish from the uppermost segment of  
19 Reach 3 on Butano Creek in the vicinity of Pescadero Creek Road bridge. Tidewater gobies  
20 are not expected to be present in this area, and any salmonids captured would be relocated  
21 to suitable upstream habitat in Butano Creek prior to cofferdam installation and dewatering.  
22 Since there is potential for individual tidewater gobies to be affected by fish relocation efforts,  
23 the SMRCD would obtain all necessary regulatory permits and authorizations required to  
24 conduct such work.

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

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

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

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

30 **Steelhead.** Steelhead are known to occur in the Project area, and the Pescadero Lagoon  
31 system is known to be used extensively by rearing steelhead (Smith 1990, Jankovitz 2015,  
32 2016). Fish kills (including steelhead) have occurred almost annually since 1995, typically in  
33 response to fall/winter sandbar breach events (Jankovitz 2016). Hayes et al. (2011) showed  
34 that many of the juvenile steelhead that recruit to a lagoon to rear in summer return upstream  
35 to the stream environment in the fall prior to the first winter sandbar breach when water  
36 quality conditions deteriorate, and subsequently migrate back down to the estuary the  
37 following spring. More recent research showed that juveniles rearing in a seasonally closed  
38 estuary may retreat upstream and then return back down to the estuary several times during  
39 the summer and fall closed period, presumably in response to changing water quality  
40 conditions (Frechette et al. 2016). Due to the presence of excessive aggradation in the upper  
41 reaches of Butano Creek, this common escape strategy is currently not available to steelhead  
42 rearing within the Project area, likely exacerbating the severity of fish kill events.

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

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

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

10 **Coho salmon.** Coho salmon occurrences within the Pescadero Creek watershed have been  
11 rare over the past two decades. Recent studies suggest that the coho salmon population in  
12 the Project area continues to be functionally extirpated (Jankovitz 2015; 2016, Williams et al.  
13 2016). Based on the apparent absence of the species from the Pescadero Creek watershed,  
14 the species is not expected to occur in the Project area.

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

### 27 ***Special-status Birds***

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

37 The Project has the potential to affect the above-described nesting special-status birds  
38 through habitat modification and disturbance of active nests. All grading, fill, access, and  
39 staging impacts on these species' habitats would be temporary. The marsh control structure  
40 would be a permanent modification within an open channel in Lower Butano Marsh, which  
41 would not provide nesting habitat for special-status birds. Included in these temporary  
42 impacts is the removal of up to 3.53 acres of woody riparian vegetation and approximately  
43 2.02 acres of marsh vegetation along Butano Creek for channel dredging, and an additional  
44 4.35 acres of riparian vegetation would be temporarily disturbed due to placement of

1 sediment in proposed sediment placement areas. Vegetation would not be removed from  
2 sediment placement areas, and while some understory vegetation may be covered with  
3 sediment, canopy vegetation is not anticipated to be adversely affected. Additionally,  
4 restoration of Butano Creek would expand edge habitat for birds. Clearing of approximately  
5 0.35 acre of scrub and riparian vegetation for construction of and access to the augmented  
6 berm upstream from Pescadero Creek Road would also occur. These habitats could  
7 collectively support one or two pairs each of white-tailed kite and yellow warbler, and  
8 multiple pairs of San Francisco common yellowthroats. However, riparian habitat would  
9 regenerate along the newly dredged Butano Creek channel and portions of the natural levee  
10 analog and marsh habitat would regenerate within filled areas of lower. As a result, little to  
11 no long-term loss of habitat for these bird species would occur.

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

16 In the absence of BMPs, Project construction activities that occur during the nesting season  
17 (roughly February 15 to August 15 in the Project vicinity) could result in impacts to active  
18 nests of these special-status birds, either from clearing of habitat containing active nests or  
19 disturbance that leads to abandonment of eggs or young by adults. However, implementation  
20 of the BMPs, which include worker environmental awareness training (BMP-17), and BMP-  
21 22 which includes avoidance of construction during most of the nesting season, pre-  
22 construction surveys for any activities that occur during the nesting season, and maintenance  
23 of buffers around active nests, would avoid loss or excessive disturbance of active bird nests.  
24 Additionally, emergent vegetation in the creek channel footprint of Reach 2 may be pruned  
25 to near the water level in late February or early March using hand equipment such as  
26 machetes and power trimmers order to avoid potential impacts to marsh nesting birds during  
27 the 2019 dredging activities.

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

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

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

3 ***Special-status Mammals***

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

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

20 Clearing of riparian vegetation would result in the loss of a number of woodrat houses and  
21 nests, both on the ground and in trees that are to be removed. Disturbance of houses and  
22 nests may result in the injury and/or mortality of individual woodrats. Relocation of all  
23 woodrat houses and nests is infeasible due to the dense nature of riparian vegetation and  
24 poor footing (for humans) within the Butano Creek riparian corridor, particularly  
25 downstream from Pescadero Creek Road. However, to minimize impacts to woodrats, BMP-  
26 23 would be implemented to allow for the relocation of materials from some houses and to  
27 reduce the potential for destruction of houses that cannot be relocated to result in mortality  
28 of individual woodrats.

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

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

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

### 9 ***Special-status Invertebrates***

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

24 **California brackish water snail.** The California brackish water snail (*Tryonia imitator*) has  
25 no federal or state protected status, but it is considered a rare species by the San Mateo  
26 County Local Coastal Program. This species is known to occur within Butano Marsh (Kellogg  
27 1985, CNDDDB 2018). The Project may benefit the California brackish water snail by reducing  
28 low-oxygen conditions within aquatic habitats, as described above for CRLF. Improving water  
29 quality both within the Project area and, during sandbar breaches at the mouth of Pescadero  
30 Lagoon, in downstream areas is thus expected to benefit this species.

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

### 39 ***Conclusion***

40 In conclusion, based on the above discussion, with implementation of water quality control  
41 measures, BMPs listed in Table 5 of Chapter 2, and Mitigation Measures HYD/WQ-1 and WQ-  
42 2, Project-related impacts on special-status plant and wildlife species would be **less than**  
43 **significant with mitigation.**

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

3           Sensitive natural communities that would be affected by the proposed Project include various  
4           wetland and riparian habitats. Wetlands and impacts to sensitive natural communities due  
5           to changes in water quality are addressed separately in Section 3.4.2(c) below. Freshwater  
6           forested/shrub wetland habitat in the Project area is a type of riparian habitat.  
7           Anthropogenic disturbances in the watershed have led to large sediment loads entering the  
8           Project area and subsequent filling of the historically present Butano Creek channel.  
9           Freshwater forested/shrub wetland has colonized areas that were once open channel.  
10          Dredging of the Butano Creek channel would result in impacts to colonized riparian habitat  
11          through clearing of approximately 3.53 acres of riparian vegetation, which would be  
12          converted to riverine freshwater habitat. Based on a tree survey conducted by SMRCD staff  
13          on December 11, 2017, it is estimated that a total of 302 trees with a diameter-at-breast  
14          height (dbh) of 12 inches or greater would require removal within this area. Of these trees  
15          planned for removal, 38 trees are arroyo willow, 151 trees are Pacific willow, and 113 trees  
16          are white alder. None of these trees is larger than 24 inches in dbh. As described in Section  
17          3.4.3(a), above, restoration of the creek channel would result in increased area of riverine  
18          habitat (approximately 3.53 acres) and improved water quality within the Project area. Such  
19          conditions would thereby improve habitat value for wildlife within the Project area through  
20          increased functionality of the habitat, with increased direct freshwater and riparian  
21          interactions and available edge habitat. The loss of canopy cover due to tree removal within  
22          the restored area of Butano Creek channel is not anticipated to result in significantly higher  
23          water temperatures due to the presence of remaining canopy adjacent to the restored creek  
24          channel. Additionally, canopy closure over the restored Butano Creek channel is anticipated  
25          to be rapid, as the trees remaining on the banks of the channel would expand into the newly  
26          available canopy space.

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

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

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

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

### 27 ***c. Substantial adverse effects on federally protected wetlands***

#### 28 **Construction-related Impacts to Wetlands**

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

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

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

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

9 Type 3 Marsh fill (natural levee analogue) would place sediment along the left floodplain of  
10 Butano Creek to enhance the existing higher elevation ground beyond the top of the proposed  
11 left bank and mimic a natural river levee. Type 3 Marsh fill would place sediment within 2.15  
12 acres of Estuarine and Marine Wetland and 4.48 acres of Freshwater Emergent Wetland. Type  
13 4 Marsh fill would place sediment in 4.31 acres of Estuarine and Marine Wetland and 2.84  
14 acres of Freshwater Emergent Wetland. Sediment would be placed as a thin, 6-inch to 2-foot  
15 deep layer on top of the existing vegetation. As described for Type 1 and 2 fill above, the  
16 impacts of sediment placement on the marsh is anticipated to be short-term due to  
17 anticipated rapid recovery of marsh vegetation through reemergence and recolonization.  
18 Type 3 fill would provide a gradual slope that would allow for the creation of an ecotone  
19 (transitional zone) between wetland and riparian habitats. In the long term, riparian  
20 vegetation is anticipated to expand within the levee analog, due to higher elevations that  
21 would favor woody vegetation.

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

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

### 38 **Impacts to Wetlands related to Changes in Water Quality and Hydrology**

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

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

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

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

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

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

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

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

4 ***e. Conflict with local policies or ordinances protecting biological resources***

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

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

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

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

1 **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"/>

2

3 **3.5.1 Discussion of Checklist Responses**

4 ***a. Adverse change in the significance of a historical resource***

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

17 A pedestrian archaeological survey was conducted of the entire Project APE by State Parks in  
18 the fall of 2017 (Hylkema 2018). The survey effort included visiting the previously recorded  
19 archaeological sites and preparing site record updates. In addition to the archaeological sites,  
20 the levee system within the Project APE was recorded as a historic resource and assigned  
21 number P-41-002602 by the NWIC. Research indicates that the process of building the  
22 earthen levees in both Pescadero and Butano Marsh began in the early 1920s and continued  
23 into the 1990s. All of the levees were made from dredged sediments, are about four feet above  
24 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.

1           ***b. Adverse change in the significance of an archaeological resource***

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

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

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

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

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

31          No evidence of human remains was observed in the APE, nor are human remains known to  
32          exist in or near the Project area. Although unlikely, there is the possibility that excavations  
33          associated with construction could uncover burials, if they are present. Impacts on  
34          accidentally discovered human remains would be considered a potentially significant impact.  
35          Implementation of BMP-29 would require that, if human remains are uncovered, work must  
36          be halted and the San Mateo County Coroner must be contacted. Adherence to these  
37          procedures and provisions of the California Health and Safety Code would reduce potential  
38          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

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

4 ***b. Substantial soil erosion or the loss of topsoil***

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

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

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

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

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

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

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

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

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

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

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

1 **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"/>

2 **3.7.1 Discussion of Checklist Responses**

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

5 The proposed Project would generate greenhouse gas (GHG) emissions during project  
 6 construction and operation. Construction-related GHG emissions would result from the  
 7 combustion of fossil-fueled construction equipment, material hauling, and worker trips.  
 8 Estimated emissions associated with the Project’s construction activities in 2019 would be  
 9 397 metric tons of CO<sub>2</sub> equivalents per year (MTCO<sub>2</sub>e/yr) and a total of approximately 408  
 10 MTCO<sub>2</sub>e over the Project’s entire construction period (2018-2019). Construction-related  
 11 emissions were estimated using the California Emission Estimator Model (CalEEMod)  
 12 version 2016.3.2, which uses estimates from CARB’s models for off-road vehicles and  
 13 EMFAC2014. Project construction assumptions, including equipment usage and schedule,  
 14 used for this analysis are based on input from the Project design team (cbec eco engineering)  
 15 and Chapter 2, *Project Description*. Appendix B contains compiled construction assumptions  
 16 and the proposed Project’s GHG emissions estimates for construction- and maintenance-  
 17 related activities.

18 Once construction is completed, emissions generated during the Project’s operation and  
 19 maintenance phase would be substantially less than the 408 MTCO<sub>2</sub>e generated during  
 20 construction since the volume of sediment removed during maintenance activities would be  
 21 much lower than the construction-related transported soil and sediment volumes. In  
 22 addition, emission factors associated with equipment and vehicle turnovers would continue  
 23 to decrease over time and result in decreased emissions as well. Estimated emissions  
 24 associated with the Project’s maintenance activities for the earliest maintenance year (2020)  
 25 would be up to 18 MTCO<sub>2</sub>e/yr, based on the assumptions included in Appendix B.

26 The BAAQMD does not have a recommended threshold for construction-related GHG  
 27 emissions but does have an operational GHG threshold of 1,100 MTCO<sub>2</sub>e/yr (BAAQMD 2017).  
 28 Construction and operational emissions (i.e., from post-construction Project maintenance)

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

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

5 The State of California implemented Assembly Bill (AB) 32 to reduce GHG emissions to 1990  
6 levels by 2020. Senate Bill (SB) 32 codified an overall goal for reducing California’s GHG  
7 emissions to 40 percent below 1990 levels by 2030. Executive Orders (EOs) S-3-05 and B-16-  
8 2012 further extend this goal to 80 percent below 1990 levels by 2050. The 2017 Scoping  
9 Plan (CARB 2017) mentions water as a key focus area and calls for effective regional  
10 integrated planning that maximizes efficiency and conservation efforts in the water sector  
11 and calls for measures that reduce GHG emissions and maintain water supply reliability. The  
12 proposed Project is consistent with the water focus area in the Scoping Plan Update in that  
13 this project would maintain the structural and functional integrity of Butano Creek. The  
14 Project is not one that would be required to report emissions to CARB. The Project would be  
15 consistent with the measures outlined in the San Mateo County’s General Plan (1986), Energy  
16 Efficiency Climate Action Plan (2013), and the County’s Government Operations Climate  
17 Action Plan (2012). In particular these plans encouraged limits to vehicle idling and  
18 reductions in off-road and on-road equipment fleets through use of newer, more efficient,  
19 and/or alternatively-fueled equipment. The proposed Project would be consistent with these  
20 goals by limiting idling times (BMP-12) and making use of alternatively-fueled (vegetation-  
21 based oils) equipment (BMP-15) (see Table 5 in Chapter 2). Therefore, for the above-  
22 described reasons, the Project would not conflict with any plans, policies, or regulations  
23 adopted to reduce GHG emissions, including AB 32 and local plans. Therefore, this impact  
24 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.

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

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

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

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

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

25           The Project area downstream of Pescadero Creek Road bridge is mapped as a tsunami  
26           inundation area by the California Emergency Management Agency (2009). However, the  
27           County Office of Emergency Services (OES) has not mapped the area as a tsunami inundation  
28           area due to the low population density of the region (County of San Mateo 2005). The  
29           County's "Operational Area" Emergency Operations Plan encompasses the entire county,  
30           including the Project area. Within the Project area, emergency response is provided by  
31           California Department of Forestry and Fire Protection (CAL FIRE) and the County Sheriff's  
32           Office. None of the Project elements would have an effect on the County's emergency  
33           operations plan. Construction-related lane closures and traffic flow disruptions that would  
34           affect the provision of emergency services in the vicinity of the work area is discussed in  
35           Section 3.16, *Transportation/Traffic*, below. Therefore, the proposed Project is expected to  
36           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"/>

1 **3.9.1 Discussion of Checklist Responses**

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

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

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

14 ***Turbidity Effects***

15 As described in Section 2.5, Water Control Dam #1 would be installed in Butano Creek at the  
 16 downstream extent of the dredging area and would serve as the primary means for  
 17 containing poor water quality conditions during construction. The crest elevation of Water  
 18 Control Dam #1 would be higher than the top of the right bank of Butano Creek, and thereby  
 19 direct high flows over the right bank and into Lower Delta Marsh (instead of over Water  
 20 Control Dam #1 and into Butano Creek). Turbid water spilling into the Lower Delta Marsh is  
 21 expected to naturally deposit sediment within the marsh as it migrates north and west  
 22 towards the flow outlet into Butano Creek. The marsh is also expected to allow overflow  
 23 water to spread out, increasing the surface area of water in contact with the atmosphere and  
 24 otherwise slowing the delivery of water back to Butano Creek and ultimately the Pescadero  
 25 Lagoon. This is expected to enable natural aeration of oxygen-depleted water. If installed,  
 26 optional Water Control Dam #2 and the Dredge Water Recirculation Containment Dams for  
 27 Butano Marsh may also help limit transport of fine sediment downstream of the project site  
 28 by containing turbid water further upstream in the construction footprint. As shown in Figure  
 29 6 and Appendix A, in addition to the water control dams, silt curtains would be installed in  
 30 several locations to prevent the downstream transport of turbid waters. Silt curtains would  
 31 be installed immediately downstream of the marsh control structure (i.e., near the existing

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

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

#### 14 **Mitigation Measure HYD/WQ-1: Water Turbidity Monitoring**

15 The SMRCD and/or State Parks will retain staff to monitor turbidity levels in Butano  
16 Marsh and Butano Creek within 150 feet downstream of the Project area prior to- and  
17 during construction activities. Observations recorded prior to construction will be  
18 used to establish baseline conditions for the Project area. During construction  
19 activities, turbidity levels downstream of the Project area will be monitored hourly  
20 and will not increase more than 20 percent above baseline conditions or 10 percent  
21 if turbidity levels are greater than 50 NTUs. If at any point turbidity exceeds the  
22 response threshold limit (i.e., 20 percent above baseline conditions or 10 percent if  
23 baseline turbidity levels are greater than 50 NTUs), instream work activities will halt  
24 until turbidity levels fall below this threshold and additional response measures are  
25 implemented. Additional response measures may include repair or augmentation of  
26 silt fences, installation of additional silt fences, modification to instream work  
27 methods, and/or other turbidity control measures. Turbidity levels are not to exceed  
28 20 percent above baseline conditions or 10 percent above baseline conditions if  
29 turbidity levels are greater than 50 NTUs during any phase of the Project.

#### 30 ***Effects on Dissolved Oxygen***

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

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

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

6 The SMRCD and/or State Parks will retain staff to monitor dissolved oxygen levels in  
7 Butano Marsh, Butano Creek and the lagoon downstream of the Project area before,  
8 during, and after construction. Pre-construction monitoring will be used to indicate  
9 baseline dissolved oxygen levels. As part of the Project, a spray aeration system will  
10 be installed at strategic levels in Butano Creek and Butano Marsh. If dissolved oxygen  
11 levels in Butano Marsh, Butano Creek, and or the lagoon drop below 8.0 mg/L,  
12 additional aeration devices will be installed. Efforts will be made to maintain  
13 dissolved oxygen levels in Butano Creek and open water area in the marsh at or above  
14 7.0 mg/L.

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

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

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

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

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

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

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

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

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

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

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

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

22          During construction, drainage patterns would be temporarily altered by ground-disturbing  
23          activities, such as excavation and use of heavy construction equipment within the channel  
24          area. These activities could result in localized erosion and siltation because loosened soil may  
25          be more easily dislodged and transported downstream by streamflows. To minimize  
26          potential increases in localized erosion and siltation, the following BMPs would be  
27          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

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

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

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

16 ***d. Substantially alter the existing drainage pattern of the site or area,***  
17 ***including through the alteration of the course of a stream or river, or***  
18 ***substantially increase the rate or amount of surface runoff resulting in***  
19 ***flooding on-site or off-site***

20 The proposed Project includes augmentation of a berm in the upstream extent of the Project  
21 area, construction of the levee analog along the left bank of Butano Creek, and improvements  
22 to existing berm features in Butano Marsh. The augmented levee at the upstream extent of  
23 the Project area would help contain flood waters in the Butano Creek channel that would  
24 otherwise spill onto the right (eastern) floodplain/agricultural field. In addition, the berm  
25 would help increase scour of the Butano Creek stream bed in the vicinity of the berm which  
26 would help maintain adequate channel depths for flow conveyance. The proposed levee  
27 analog would also help contain flood flows in the Butano Creek channel and the proposed  
28 improvements to two existing berm features in Butano Marsh would help limit the hydrologic  
29 connectivity between Butano Creek and Butano Marsh. In addition, the proposed Project  
30 would increase the conveyance capacity of Butano Creek by increasing the cross-sectional  
31 area of the creek channel. The Project would encourage floodwaters to flow within or near  
32 the historic channel pathway (or the alignment that has been actively managed over the last  
33 100 years). The proposed Project would not result in an increase of impermeable surface  
34 area, nor would it substantially change surface runoff rates. Therefore, based on the above,  
35 this impact regarding alteration of drainage patterns and associated flooding effects would  
36 be considered **less than significant**.

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

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

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

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

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

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

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

38          In addition, the Project site is not located within a dam inundation zone  
39          (BeyondSearsvilleDam.org 2018). Therefore, the proposed Project would have **no impact**  
40          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.**

1 **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"/>

2 **3.10.1 Discussion of Checklist Responses**

3 ***a. Divide an established community***

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

17 ***b. Conflicts with land use plans or policies***

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

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

9 The “CD” District and lands within the Coastal Zone were established by the Coastal Act of  
10 1976. Projects planned to occur within the CD District are required to obtain a Coastal  
11 Development Permit in accordance with the County’s Local Coastal Program. However, since  
12 the NOAA RC would serve as the federal lead agency for the Project’s CWA Section 404 permit,  
13 NOAA RC would submit a consistency determination to California Coastal Commission  
14 consistent with Section 307 of the Coastal Zone Management Act. The consistency  
15 determination requires that activities within the Coastal Zone be consistent with enforceable  
16 policies of California’s Coastal Management Program. By undergoing this federal review  
17 process, the Project would be exempt from a Coastal Development Permit.

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

28 In addition, the Local Coastal Program includes a policy focused on permitted uses in  
29 wetlands (Policy 7.16), which includes dredging and filling in any wetlands when such  
30 activities are necessary for the protection of pre-existing dwellings from flooding or where  
31 the activity would enhance or restore the biological productivity of Pescadero Marsh. As  
32 described in Section 3.4, *Biological Resources*, in the short-term and long-term, the Project is  
33 expected to improve habitat conditions for special-status species including coho salmon,  
34 steelhead, California red-legged frog, San Francisco garter snake, and western pond turtle.  
35 Thus, the Project would not result in any conflicts with applicable land use plans, policies or  
36 regulations; there would be **no impact**. For discussion regarding the project’s consistency  
37 with the County’s Significant Tree Ordinance and Heritage Tree Ordinance, refer to Section  
38 3.4, *Biological Resources*, above.

39 ***c. Conflicts with any habitat conservation plan or natural community***  
40 ***conservation plan***

41 As discussed in Section 3.4, *Biological Resources*, although the Project is within the Pacific Gas  
42 and Electric Company Bay Area Operations & Maintenance HCP boundary, the Project is not  
43 a covered activity under this HCP and although CRLF and San Francisco garter snake are  
44 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.**

1 **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"/>

2 **3.11.1 Discussion of Checklist Responses**

3 ***a. Result in the loss of availability of a known mineral resource that would***  
 4 ***be of value to the region and the residents of the state***

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

10 ***b. Result in the loss of availability of a locally important mineral resource***  
 11 ***recovery site delineated on a local general plan, specific plan, or other***  
 12 ***land use plan***

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

16

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

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

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

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

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

34

1 **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

2 *Source: Caltrans 2009*

3 **Vibration**

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

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

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

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

### 4 **3.12.2 Discussion of Checklist Responses**

#### 5 ***a. Noise levels in excess of standards established in the local general plan*** 6 ***or noise ordinance, or in other applicable local, state or federal*** 7 ***standards***

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

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

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

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

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

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

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

20 **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

21  
 22 For the evaluation of vibration and vibration-related noise impacts from the large bulldozer,  
 23 the distances from the nearest sensitive receptors (residences) were compared to the center  
 24 of the Project site (assumed to be located near the Triple Junction indicated on Figure 6). The  
 25 center of the Project site was chosen because, on average, that is where bulldozers and other  
 26 similar noise-generating equipment would be operated over the duration of the Project’s  
 27 construction activities. The nearest residences would be approximately 1,800 feet from the  
 28 center of the Project site and would not be located within the building vibration threshold  
 29 distance or the noise vibration threshold distances noted in Table NOI-2.

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

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

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

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

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

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

30 As discussed under item 3.12(a), construction associated with the proposed Project would  
31 generally occur between 7:00 a.m. and 6:00 p.m., Monday through Fridays, and between 9:00  
32 a.m. and 5:00 p.m. on Saturdays if weekend work is necessary. As described above, these  
33 construction hours are permissible under the County Noise Control Ordinance exemption for  
34 construction activities. Given that the only sensitive receptors that would be exposed to noise  
35 levels that exceed the County's noise threshold would be brief (limited to a 10-day period)  
36 and because the proposed Project would comply with the established hours allowed under  
37 the San Mateo County Noise Control Ordinance exemption, noise impacts related to  
38 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.

1 **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"/>

2 **3.13.1 Discussion of Checklist Responses**

3 ***a. Induce population growth***

4 The proposed Project does not involve construction of new homes, businesses in the area,  
 5 new road extensions or other infrastructure into undeveloped areas. Once construction is  
 6 complete, all temporary access routes would be restored similar to existing conditions. Up to  
 7 20 construction workers would be temporarily employed at the Project site throughout the  
 8 Project’s construction phases. These jobs would likely be filled by the local work force. No  
 9 new long-term, employment opportunities or substantial population growth would result  
 10 from project construction. For these reasons, the Project would not induce population growth  
 11 and **no impact** would occur.

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

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

15

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.

1            **i. Fire protection**

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

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

28           **ii. Police protection**

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

40           **iii. Schools**

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

1            ***iv. Parks***

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

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

10          ***v. Other public facilities***

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

1 **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"/>

2 **3.15.1 Discussion of Checklist Responses**

3 ***a. Increase use of existing parks or recreational facilities***

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

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

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

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

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

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

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

20 ***c. Change in air traffic patterns***

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

24 ***d. Increased hazards resulting from design features***

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

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

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

3 ***e. Inadequate emergency access***

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

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

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

1 **3.17 TRIBAL CULTURAL RESOURCES**

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>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:</p>				
<p>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)?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>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.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2

3 **3.17.1 Discussion of Checklist Responses**

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

8 The State Parks Santa Cruz District archaeologist has a long-standing relationship with the  
 9 Native American tribes who are traditionally and culturally affiliated with the Project area,  
 10 and the State Parks archaeologist meets regularly with tribal representatives to discuss  
 11 projects. In lieu of sending letters, the archaeologist discussed the current Project with tribal  
 12 representatives during one of these meetings. The tribal representatives are in support of  
 13 the Project and do not have concerns about impacts to tribal cultural resources (Hylkema  
 14 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"/>

1 **3.18.1 Discussion of Checklist Responses**

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

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

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

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

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

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

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

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

1        ***e. Result in a determination by the wastewater treatment provider that***  
2        ***serves or may serve the project that it has adequate capacity to serve the***  
3        ***project's projected demand in addition to the provider's existing***  
4        ***commitments***

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

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

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

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

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

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

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

3           The proposed Project would not create any new structures or land uses that would involve  
4           use of substantial amounts of fuel or energy. Following completion of construction,  
5           operations and maintenance activities would be limited to ongoing sediment maintenance  
6           activities in the area immediately upstream and downstream of Pescadero Creek Road  
7           bridge. During construction, the Project would use fuel and energy from operation of  
8           construction equipment, such as the dredge, excavator, and airboat. In compliance with  
9           California Air Resources Board (CARB) Airborne Toxic Control Measures (ATCMs), SMRCD or  
10          its contractor would not allow off-road construction vehicles or equipment to idle  
11          unnecessarily or longer than 5 minutes. These requirements would also apply to  
12          vehicle/equipment use during operations and maintenance activities. As such, this impact  
13          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

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

## 16 ***California History and Prehistory***

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

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

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

## 38 ***b. Cumulative Impacts***

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

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

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

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

15 **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 Butuno 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.

16 The list approach is applied by developing a list of past, present, and reasonably foreseeable  
17 projects. Projects considered in this analysis are listed in **Table MAND-2**. The list of projects  
18 used for this analysis was developed by identifying projects listed in the CEQANet database  
19 and on the County’s website. Several of these projects may have construction activities  
20 occurring at the same time as the proposed Project. While not every possible cumulative  
21 project is listed, the list of cumulative projects is believed to be comprehensive and  
22 representative of the types of impacts that would be generated by other projects within the  
23 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

<b>Resource Topic</b>	<b>Cumulatively Significant Impacts</b>	<b>Proposed Project’s Contribution</b>
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 <sub>2.5</sub> , and a state non-attainment area for PM <sub>10</sub> .	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 <sub>2.5</sub> and PM <sub>10</sub> 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.

1  
2 The following sections provide a detailed analysis of the proposed Project's contribution to  
3 existing significant cumulative impacts. As identified in **Table MAND-3**, the following  
4 resource issues are discussed: air quality, biological resources, cultural resources, and global  
5 climate change.

6 ***Air Quality: Emissions of Criteria Air Pollutants***

7 Construction of the proposed Project would emit criteria air pollutants from operating  
8 equipment during the Project's construction phase. Specifically, the Project would emit PM<sub>2.5</sub>  
9 and PM<sub>10</sub>, which are pollutants for which the SFBAB is in non-attainment. Given that the air  
10 basin is in non-attainment, any additional emissions of these pollutants could exacerbate the  
11 existing cumulative impact. However, BAAQMD's CEQA Guidelines specifically establish  
12 project-level emissions below mass emissions thresholds are considered to be less than  
13 cumulatively considerable. As described in Section 3.3, *Air Quality*, the proposed Project's  
14 emissions would be below these mass emissions thresholds, though it would exceed the  
15 BAAQMD's mass emissions thresholds for NOx. With implementation of Mitigation Measure  
16 AQ-1, the Project's construction-related emissions would be less than significant. Therefore,  
17 while the proposed Project would contribute to some degree to a cumulative air quality  
18 impact, with implementation of this mitigation measure, the Project's contribution would not  
19 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

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

### 11 ***Cultural Resources: Impacts to Unknown Cultural Resources***

12 As described in Section 3.5, *Cultural Resources*, project construction activities could  
13 encounter buried unknown cultural resources or human remains, which could result in  
14 adverse impacts if proper protocols are not followed. Implementation of BMP-28 and BMP-  
15 29 described in Chapter 2 would avoid or minimize these potential impacts. Establishment  
16 of an ESA would protect two existing known cultural resource sites during project  
17 construction activities.

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

### 30 ***Global Climate Change: Emission of GHGs***

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

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

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

### 3 ***Hydrology and Water Quality***

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

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

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

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

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

1           **Conclusion**

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

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

17          **c. Effects on Human Beings**

18          As described in Section 3.8, *Hazards and Hazardous Materials*, the proposed Project would  
19          minimize potential for accidental releases of hazardous materials (e.g., fuel, oil) during  
20          construction through implementation of BMPs, specifically BMP-2, BMP -3, BMP BMP-5, BMP  
21          -6, BMP-8, BMP -9, and BMP-15. Among other things, these BMPs would require proper  
22          hazardous materials management on the construction site, and implementation of spill  
23          prevention and response measures. As a result, potential hazards to human beings from  
24          accidental releases of hazardous materials would be minimized. The Project would not  
25          include new houses or structures that could be placed in a hazardous area (e.g., 100-year  
26          floodplain or dam inundation area) and would not excavate soils in areas of known  
27          contamination. Likewise, the proposed Project would not include land uses that would be  
28          hazardous to aircraft or vehicle operation. Therefore, overall, the proposed Project would not  
29          have significant adverse effects on human beings. This impact would be **less than significant**.