

SURFERS BEACH PILOT RESTORATION PROJECT

**DRAFT Initial Study/Notice of Intent to Adopt a
Mitigated Declaration**



**Prepared by
San Mateo County Harbor District
October, 2022**



Draft
SURFERS BEACH
PILOT RESTORATION PROJECT
Initial Study/Mitigated Negative Declaration

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Cover Photo Credit: Wendy Kordesch, NOAA

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1 INTRODUCTION

As lead agency under the California Environmental Quality Act (CEQA), the San Mateo County Harbor District (District) has prepared this Draft Initial Study (IS) and Notice of Intent (NOI) to adopt a Mitigated Negative Declaration (MND) to address the environmental consequences of the proposed Surfers Beach Pilot Restoration Project (Project), located in and adjacent to Pillar Point Harbor (PPH).

The proposed project would involve dredging of up to 100,000 cubic yards (CY) of clean sand accumulated along the inside of Pillar Point Harbor's East Breakwater and a one-time placement of that sand to form an elevated berm along an approximately 1,000-foot-long section of shoreline at Surfers Beach in Half Moon Bay. In addition to the opportunistic placement of sand on Surfers Beach and conducting maintenance dredging inside the harbor to ensure safe navigation and anchorage, the overall Project also involves implementing a plan to mitigate for impacts to eelgrass beds in the dredging areas by establishing new eelgrass habitat and transplants within PPH's west basin.

This document includes the:

- IS with completed Environmental Checklist (consistent with Appendix G of the CEQA Guidelines); and,
- Proposed Notice of Intent (NOI) to adopt a MND to satisfy CEQA requirements.

This document will be available for public comment from at the PPH Harbormaster Office at One Johnson Pier Rd, El Granada, CA 94016 seven days a week from 9 a.m. to 5 p.m. Following completion of the required public comment period, and before taking action on the proposed project, the District will consider the MND together with any comments provided during the public comment period and will adopt the MND if, based on the whole of the record: (1) there is no substantial evidence that the proposed project will have a significant effect on the environment; and (2) that it represents the Harbor District's independent judgement and analysis. The District will also prepare and adopt a Mitigation Monitoring Reporting Program (MMRP) as part of the approval process as required under Public Resources Code Section 21081.6(c) for mitigation measures identified in the MND.

2 PROJECT DESCRIPTION

Surfers Beach is a popular beach and recreation area located on the San Mateo County coast, just south of PPH, immediately north of the City of Half Moon Bay, and west of the unincorporated community of El Granada (Figure 1). In addition to general beach recreation, Surfers Beach is a very popular surf spot for surfers of all levels of experience, and in particular beginners because of its sheltered location.

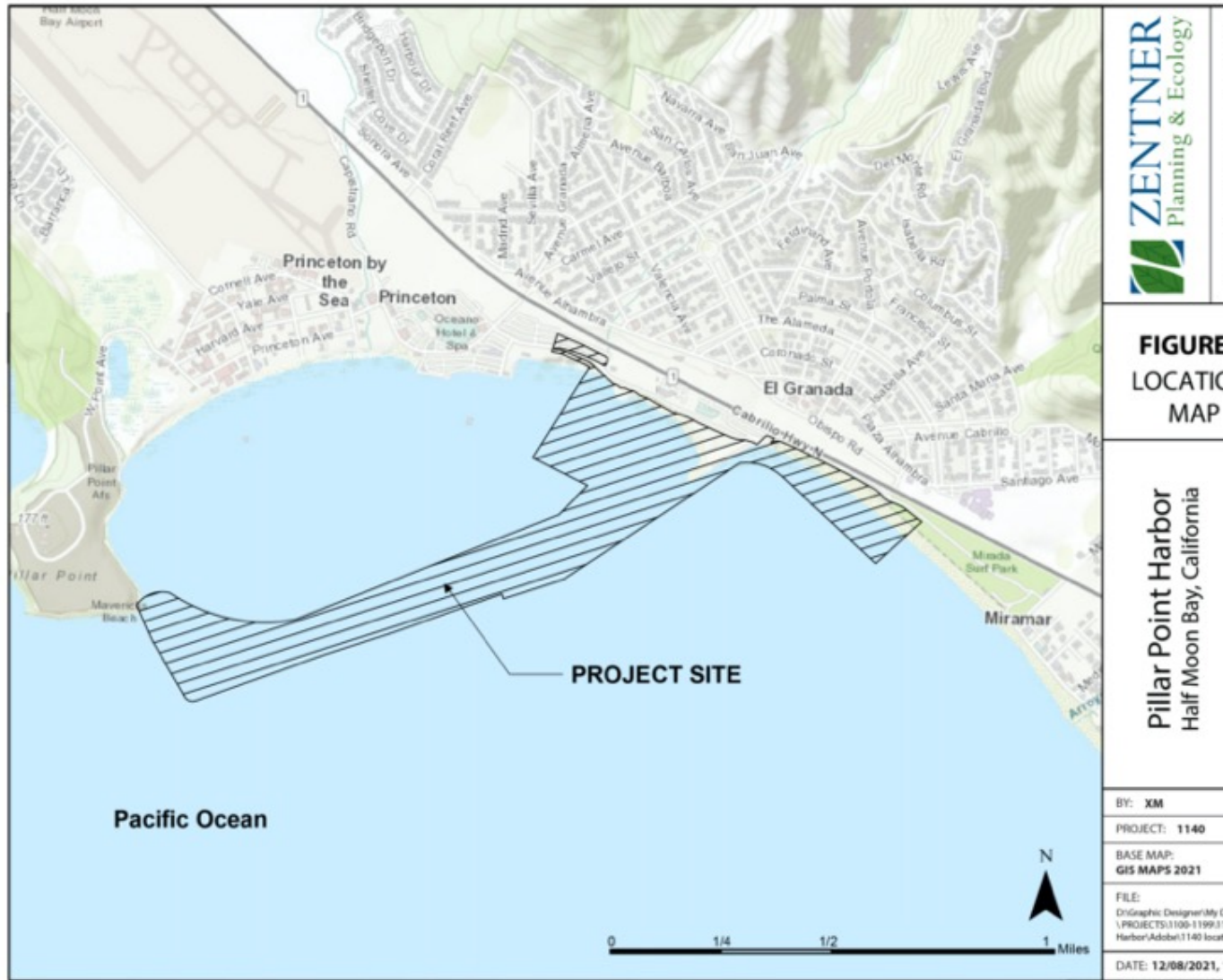


Figure 1: PROJECT LOCATION AND AREA OF POTENTIAL EFFECT

1.1 Background and Need for the Project

Since construction of the PPH breakwater in 1961 by the U.S. Army Corps of Engineers (USACE), Surfers Beach has experienced a significant amount of beach and bluff erosion, leading to a recent permanent loss of sandy intertidal beach area and bluff-top coastal scrub and grassland, as well as an increased exposure of Highway 1 to erosion and flood hazards during coastal storms (**Figure 2**). While the shore at Surfers Beach eroded, significant accretion and deposition of sediment inside PPH has resulted in impacts on navigation and use of the boat launch ramp (**Figure 3**). As subtidal areas in PPH filled in, eelgrass beds established and spread to areas where the depths were conducive to their growth. Growth and expansion of the eelgrass beds has added another constraint to harbor maintenance dredging, as eelgrass habitat is protected by federal and state law, and impacts would require mitigation. If no dredging occurs in the future, then ultimately the harbor would not be available for navigation or anchoring.



Figure 2: Photo of Surfers Beach on January 13, 2021 at low tide, showing Highway 1 at left with rock revetment, eroded beach and exposed rocks



Figure 3: Photograph showing significant accumulation of sand near boat launch ramp in foreground and along the East Breakwater in background (1/13/21)

The erosion at Surfers Beach and the impacts of sand shoaling (i.e., accretion) inside the harbor generated significant interest and concern of local community members over the past several decades. A recent Army Corps of Engineers study concluded that the bluffs along Surfers Beach eroded at an average rate of 1.64 feet per year between 1993 and 2012 (Lin et. al., 2015). This erosion rate was determined to be approximately seven times higher than the rate of erosion at a geologically similar stretch of shoreline farther down the coast. Powerful storms during recent winter seasons have resulted in even more severe erosion, causing major threats to Highway 1, Mirada Road and other coastal infrastructure, and leading to emergency repairs by Caltrans and the County of San Mateo. While the Surfers Beach area has eroded, areas immediately inside the harbor have significantly shoaled, which often results in the temporary closure of one or more of the boat launch ramps until the material is dredged and moved elsewhere. The loss of active boat launch ramps significantly reduces the ability of recreational boats to be launched. Community members have voiced concerns at this situation and support the ideas of implementing a multi-benefit solution where the sand that has accumulated in the harbor is used to nourish the beach at Surfers Beach.

Following a 2009 request by the District, the USACE conducted a series of studies and evaluations to assess the cause of the erosion and whether there was a federal interest in mitigating for damages that occurred after construction of the harbor. Specifically, the USACE conducted coastal engineering and economic studies for a range of project alternatives, including beach nourishment where sand is dredged from the harbor and

placed as a berm along the shore of Surfers Beach (Lin et. al., 2015, USACE 2015a). The USACE efforts culminated in a *Continuing Authorities Program (CAP) Section 111 Detailed Project Report and Draft Environmental Assessment*, which concluded that while the beach nourishment project alternatives considered would be feasible, effective, and have less than significant environmental impacts, there was no economic justification for a federal interest in the project (USACE, 2016). With no federal partner on the project, the San Mateo County Harbor District Board of Commissioners voted unanimously to move forward with planning for a District-led pilot project to design and implement a scaled-down version of the USACE project (San Mateo County Harbor District, 2015). The Surfers Beach Pilot Restoration Project was proposed as an opportunity to evaluate the effectiveness of the beneficial reuse of dredged harbor sediments as beach nourishment at Surfers Beach, in addressing coastal erosion, and to demonstrate that such a project can be implemented with no significant impacts to marine resources in the Monterey Bay National Marine Sanctuary (MBNMS or Sanctuary; GFNMS 2017). The District has since grant funding from the California Ocean Protection Council (OPC) to help fund the project planning, design and implementation, and received a grant from the California Division of Boating and Waterways (DBW) to assist with Project construction.

1.2 Project Goal and Objectives

The goal of the Project is to study the potential benefits and impacts of implementing a pilot project that beneficially reuses up to 100,000 cubic yards of sand dredged from Pillar Point Harbor and placed at Surfers Beach. Objectives include:

- Prevent or mitigate beach erosion and sea cliff retreat
- Improve protection of Highway 1 and other structures
- Increase quality and quantity of public access and recreation
- Reduce the need for coastal armoring
- Improve biological habitat
- Design and implement project to minimize biological impacts and disturbances
- Maintain safe navigation for boats in Pillar Point Harbor
- Mitigate for impacts to eelgrass due to maintenance dredging activities in the PPH East Basin.

1.3 Project Description

The action being proposed by the District consists of a pilot restoration “demonstration” project that would dredge up to 100,000 cubic yards of sand from the harbor and place it at Surfers Beach. The extensive sand shoals that have formed on the north side of the East Breakwater and adjacent to the PPH boat launch ramps would serve as the exclusive source of sand for this proposed action. This analysis assumes a pipeline or clamshell dredge would be used to remove and then pump the sand. The proposed action includes

only a one-time placement of sand and assumes that there will be no maintenance (additional sand placement) in the future. Sand placement is anticipated to be most effective in reducing the erosion of the unprotected bluff and in creating a beach in the immediate vicinity of the East Breakwater. Thus, sand placement would extend along the portion of shoreline extending from the root of the East Breakwater to just beyond the Caltrans revetment that protects Highway 1 from coastal erosion. Over time, coastal processes would transport sand to the south. To minimize potential impacts to the nearshore zone and recreation activities like surfing, the proposed action maximizes the amount of fill placed on the sub-aerial beach (the part of the beach uncovered by water). The sand would initially be placed in an “over-built” berm shape. This analysis assumes the berm would be shaped with equipment such as a small lightweight dozer and low ground-pressure scraper.

The purpose of the Project is to address erosion at Surfers Beach by restoring sandy beach area using dredged material from navigable areas of Pillar Point Harbor, including the boat launch ramp. The Project seeks to demonstrate the feasibility of successfully implementing a beach nourishment project at Surfers Beach in the MBNMS without having significant impacts to the coastal resources. One of the major anticipated outcomes of the proposed Project is that it will address impaired public access (including positive recreational impacts) and address damages from coastal storms. The Project will also mitigate shoaling and impacts to navigation within the Harbor by dredging the sand that has accumulated there since the construction of the outer breakwaters in the early 1960s. The Project will employ extensive physical and ecological monitoring to assess the project’s effects on the environment, which would help to establish metrics that could be used to evaluate the performance of the project and to calibrate expectations for a larger or repeated future effort.

The Harbor-wide eelgrass mitigation and management program, which will be implemented as part of the Project, is intended to significantly increase the area of suitable eelgrass habitat in the Harbor’s west basin and allow for future expansion of the beds by using clean sediment sourced from necessary maintenance dredging projects in the Harbor’s east basin. To address impacts to eelgrass beds from the proposed Project, the District contracted with Marine Taxonomic Services, Ltd. (MTS) to identify the extent of eelgrass (*Zostera marina* and *Z. pacifica*) within PPH and prepare a *Pillar Point Harbor-Wide Eelgrass Management and Mitigation Plan* (EMMP; MTS 2020). The EMMP provides a long-term strategy for the District to establish and expand eelgrass beds in the harbor’s west basin, in an area with fewer impacts from human use such as anchoring, vessel navigation and recreational shellfish harvesting and where future maintenance dredging is not required. The EMMP provides a management and mitigation plan to account for impacts to eelgrass due to Project dredging activities. It includes details on the location and methods for creating new eelgrass habitat as part of the proposed mitigation. Additionally, the plan includes a five-year monitoring plan to assess establishment of the created eelgrass habitat to ensure that the minimum coverage and density obligations are met per the California Eelgrass Mitigation Policy (CEMP; NMFS, 2014).

The proposed Surfers Beach project is a pilot demonstration project, meaning that a major objective is to closely study and monitor the project to determine whether it is effective and to identify any environmental impacts. If post construction monitoring and review indicate that the Project is effective in mitigating erosion and does not cause unacceptable impacts, then a larger beach restoration project at Surfers Beach would be pursued in the future. The project is necessary to reduce the threat of structural damage and recreation loss along Surfers Beach. The Project is one of the two demonstration projects highlighted in the California Coastal Sediment Master Plan and included as a case study in the Greater Farallones National Marine Sanctuary's *Coastal Resilience Sediment Plan* (Kordesch et al., 2019). The Project has been supported by the Coastal Sediment Management Workgroup (CSMW) since it is being designed to evaluate the effectiveness of beach nourishment as a coastal resilience measure and assess any impacts from placing sand dredged from PPH on the beach immediately downcoast of the harbor jetty. The Project also is a recommended activity in the *Coastal Regional Sediment Management Plan for the Santa Cruz Littoral Cell* (USACE 2015b), and the site has been identified as a Beach Erosion Concern Area within the CSMW's *California Beach Erosion Assessment Survey*.

Because the project is currently in the planning and engineering phase project details such as construction timing and staging locations are not available. However, the proposed action is anticipated to require approximately six months to complete and would likely occur during the spring to summer months because of the minimal chance of rain and large, damaging waves during this period. This action would satisfy the project purpose of mitigating near-term beach and bluff erosion by providing a buffer that would reduce the erosional impacts of elevated water levels and wave attack in the placement area. Additionally, the proposed action would take advantage of the opportunity to remove excess shoaled sediment along the East Breakwater within the harbor, reducing a navigation hazard posed to vessels using the harbor's small boat launch ramp.

1.4 Project Implementation

For the beach restoration construction, the Project will utilize up to 100,000 cubic yards of clean sand that has accumulated inside the protective breakwaters of PPH for restoring Surfers Beach. The sand will be dredged and transported from the harbor to Surfers Beach in a slurry (water/sand) mixture via a pipeline. Dredging technology options include use of a suction dredge with cutterhead, transported directly to beach via slurry pipeline, or a clamshell bucket to dredge the sand and place it in a hopper that is fed into a slurry pump and through the pipeline to the placement area. The contractor that wins the bid to construct the project will determine the dredge methodology used. The sand will be contained by a sand berm constructed on the existing beach at the east end of the project site. Sand slurry will be discharged landward of the containment berm and allowed to decant. Once sufficient sand is built up, it can be mechanically spread using heavy equipment. The proposed construction methods and Project design have been developed with input from a Technical Advisory Group (TAG) consisting of coastal

experts and permitting and resource agency staff, and are based on extensive surveys, sediment sampling and analysis, and numerical modelling of various scenarios. The methods have been established with the goals of minimizing impacts to the environment and public access. To determine the degree to which multiple benefits are being achieved by beneficial reuse of sediment at Surfers Beach, extensive monitoring will be used to assess the response of physical and ecological parameters at the project site and at one geologically and ecologically similar reference site before and for at least five years after construction. Beach profiles and ecological conditions will be monitored. To determine project success, we will compare the relative responses between project and reference sites after construction, as well as to pre-project modeling of predicted physical performance. The monitoring data will be used to inform the design of future opportunistic beach nourishment episodes.

For the eelgrass mitigation, an area has been identified in PPH's west basin off the west breakwater dogleg. The proposed mitigation is based on late 2019 eelgrass survey results, and will be updated for the project based on updated eelgrass and bathymetry surveys that will be conducted in April 2023. The proposed site will be located adjacent to a currently growing eelgrass bed and as of most recent plans, will cover 7.6 acres, including 5.4 acres of planting area, which is enough to accommodate the initial mitigation need based on the late 2019 estimate of potential impacts. Proposed mitigation site modifications would result in creation of an eelgrass planting platform and would include removal (cut) of up to 18,000 cubic yards of sediment from the nearshore areas within the west basin and placing this material as fill along the offshore portion of the eelgrass beds currently growing there. A total of 17,500 cubic yards of fill material are needed to shallow deeper portions of the mitigation site. Given that 17,500 cubic yards of fill are needed, and 14,000 cubic yards would come from material cut from within the mitigation site, an additional 3,500 cubic yards of sediment would be needed to accomplish the proposed site modifications (MTS, 2020). The additional sediment would come from maintenance dredging near the boat launch ramps in the harbor's east basin, before the dredging for Surfers Beach placement occurs. After creation of the initial mitigation site future expansion could occur by opportunistically using additional fill material from maintenance dredging events at the launch ramp area (every 6-8 years). This fill material could be used to expand the mitigation site and accommodate for more eelgrass resources over time based on the success of the mitigation site proposed.

Any eelgrass harvest material required for transplanting at the proposed planting area would be salvaged from proposed dredge footprints (prior to dredging). Since all harvested eelgrass will be salvaged from areas proposed to be dredged, there is no need to designate a specific harvest site within existing eelgrass beds for collecting donor material. Donor material will be harvested by first removing loose sediment around the rhizome and then removing the rhizome using a hand raking method. Eelgrass harvested from the harvest site will be bundled into transplant units comprised of approximately 5-8 turions each. This bundling method has a high success rate in achieving self-sustaining eelgrass habitat post-transplanting. Transplant units will be installed by hand digging a hole approximately the size of the unit and placing the unit with the rhizomes approximately two inches below the surface. The unit will then be anchored to the

substrate using biodegradable stakes and the hole will be back filled. Divers will conduct planting on monumented grid system, accessing the planting area from boats. The grid layout will provide for ease of tracking and quality control of planting. Transplant units will be spaced 1 meter on centers (one unit per square meter). The mitigation site will be planted with approximately 29,000 units to fill the areas devoid of eelgrass in the mitigation site (MTS, 2020). Once the planting effort has concluded, monitoring of the mitigation site will be conducted for 60 months (5 years) to document the success of the mitigation as outlined in the CEMP. Monitoring surveys will begin immediately after transplanting has been completed at intervals of 0, 6-, 12-, 24-, 36-, and 60-months post-transplant. The monitoring program will assess the aerial extent, percent cover, and density of eelgrass in the mitigation sites by SCUBA and side-scan sonar. SCUBA divers will swim transects across the mitigation site to confirm side-scan sonar recordings and to randomly place quadrats for density. Monitoring dates will be scheduled during the active eelgrass growing season to collect information on growth and survival.

1.5 No-action alternative

The USACE Draft Environmental Assessment for a larger (150,000 c.y.) and more impactful dredging and beach nourishment project at the same site (USACE, 2016) provides the following description of a no-action alternative, which applies to the currently proposed project:

“The no-action alternative characterizes current and anticipated future conditions at the project site in the absence of the proposed action to address beach and bluff erosion. The USACE has analyzed recent bluff and beach erosion rates at the site and considered the potential impacts of “intermediate” and “high” sea level change on these rates over the next 50 years (Lin et al., 2015). These analyses suggest that high rates of erosion are present along Surfers, Vallejo, and Miramar Beaches while high accretion of sand is occurring in Pillar Point Harbor adjacent to the East Breakwater. Unabated, this erosion and accretion will result in loss of recreational opportunities as well as threats to public safety along highway one and navigational safety in Pillar Point Harbor.

The results of the current bluff erosion analysis indicate that the bluffs directly south of the East Breakwater, between the Highway 1 revetment and Mirada Road revetment, retreated at a rate of 1.64 ft/yr from 1993 to 2012. This is approximately seven times greater than the background rate of erosion as measured at a geologically similar section of shoreline further down the coast which Lin et al. (2015) found to be in the range of 0.23 ft/yr from 1993 to 2012. However, the accelerated erosion rate does not appear to extend south of Miramar Beach, as the analysis showed a slow bluff retreat rate to the south of the San Mateo County revetment. Similarly, Lin et al. (2015) found a high rate of net beach erosion (4,200 CY/yr) along and offshore of the coast extending from the East Breakwater to the Miranda Road revetment, accompanied by significant accumulation of sand within Pillar Point Harbor (approximately 2,000 CY per year). Increases in sea level to intermediate or high levels would cause the water surface in the region to rise by 0.71 ft or 2.06 ft, respectively in the study area over the course of 50

years. Under such conditions, Lin et al. (2015) find that rates of erosion of beach sands and adjacent bluffs as well as accretion of sand in the harbor would increase, as the higher water levels expose the upper beach and bluff toes to more wave attack and carry more sediment into the harbor.

Under the no-action alternative, the high rates of beach and bluff erosion along the coastline would continue unabated wherever there is not a revetment, and accretion of sediment within Pillar Point Harbor – adjacent to the East Breakwater – would continue. Extrapolating the current bluff erosion rates into the future, Lin et al. (2015) found that an approximately 80-ft-long section of the southbound shoulder of Highway 1 would be undermined in the next 10 years, with approximately 250 ft at risk in the next 50 years. This would create significant impacts to public safety and likely require relocating a portion of the highway, which would be expensive and could cause significant environmental impacts. Continued beach and bluff erosion would also threaten recreational uses in the area. Beach erosion would result in loss of recreational beach area at Surfers, Vallejo, and Miramar Beaches, while sections of the pedestrian Coastal Trail on the bluffs behind the beaches would likely be lost given that a 25-ft-long section of the pathway at the north end of the San Mateo County revetment is already being actively undermined by bluff erosion. Conversely, continued accretion of sediment in Pillar Point Harbor would increase the size of the existing shoal and pose an increasingly significant navigational risk of ship damage or stranding. These impacts could occur more quickly given potential sea level change.”

1.6 Purpose and Need for Proposed Action

The primary purposes of the proposed action are to minimize near-term bluff and beach erosion along the Surfers Beach shoreline just south of Pillar Point Harbor’s East Breakwater and to remove sand that has accreted inside the harbor along the breakwater and at the boat launch ramps. The proposed action is necessary to prevent future structural damage and loss of recreation associated with the ongoing erosion at these beaches. Additionally, removal of material inside the harbor under the proposed action is needed to help alleviate a potential navigation hazard for vessels utilizing the nearby small boat launch ramp. The project seeks to demonstrate the feasibility of successfully implementing a beach nourishment project at Surfers Beach in the Monterey Bay National Marine Sanctuary (MBNMS) without having significant impacts to the coastal resources.

Bluff retreat rates, at Surfers Beach, of several tens of feet a year led to the construction of revetments – one in front of Highway 1 at Surfers Beach and one at Miramar Beach in front of Miranda Road. A recent analysis of bluff retreat in the region from 1993 to 2012 indicates that an approximately 2,200-foot (ft) long unprotected section of bluff between the two revetments (along Vallejo Beach) is retreating at a rate of 1.64 feet (ft) per year, a significantly greater rate than at a geologically similar unprotected section of bluff down coast (Lin et al., 2015).

The proposed project is necessary to reduce the threat of structural damage and recreation loss along the Surfers Beach shoreline. It also presents the opportunity to reduce a navigation hazard in Pillar Point Harbor. Severe shoreline erosion in the 1980s destroyed one cliff-top road and threatened the integrity of California Highway 1 and several commercial and private structures. At that time, rubble-mound revetments were constructed by State and local agencies south of the East Breakwater. However, the threat of structural damage and loss of recreational public beach still exists along the shoreline directly adjacent to the East Breakwater. For example, USACE projected current bluff erosion rates 10 and 50 years into the future and determined that infrastructure, such as Highway 1 and coastal pedestrian paths leading to the beach, would be significantly threatened without action (Lin et al., 2015). The proposed project would also alleviate some of the shoaling of sediment in Pillar Point Harbor adjacent to the East Breakwater and the boat launch ramps. The area of excessive sedimentation inside the harbor presents a potential navigation hazard for vessels utilizing the nearby small boat launch ramp. The entire area surrounding the boat launch ramp is above the minus 10-foot North American Vertical Datum 88 (NAVD88).

2 INITIAL STUDY

- | | |
|---|---|
| 1. Project Title: | Surfers Beach Pilot Restoration Project |
| 2. Lead Agency Name and Address: | San Mateo County Harbor District, 504 Ave Alhambra, El Granada, CA 94018 |
| 3. Contact Person and Phone Number: | James Pruett, General Manager
650-583-4400 |
| 4. Project Location: | Pillar Point Harbor and Surfers Beach, Half Moon Bay CA |
| 5. Project Sponsor's Name and Address: | San Mateo County Harbor District,

<u>Physical address:</u> 504 Ave Alhambra, El Granada, CA 94018
<u>Mailing address:</u> P.O. Box 1449, El Granada, CA 94018 |
| 6. General Plan Designation(s): | Open Space, Recreation, Public Recreation |
| 7. Zoning: | The Pillar Point Harbor facilities in and adjacent to the project action area are Marina/Recreation land uses (Dyett & Bhatia, 2014). The public access beach within the harbor as well as Surfer's, Vallejo, and Miramar Beaches are open space (Dyett & Bhatia, 2014). Neither the proposed action nor the no-action alternatives would affect land use classification in the region. |

8. Description of Project:

See Project Description above in Section 2.

9. Surrounding Land Uses and Setting. (Briefly describe the project's surroundings.)

The project area is located at Pillar Point Harbor (PPH) in Half Moon Bay, California. Half Moon Bay lies approximately 25 miles south of San Francisco in San Mateo County, California. PPH, which encloses 1.6 miles of shoreline, is a 369-berth mixed-use harbor supporting both commercial fishing and recreational boating. In 1948, Congress authorized the construction of two breakwaters (west and east) and designated it as a

Federal Harbor of Refuge. Between 1948 and 1960, the District acquired lands necessary for breakwater construction and for harbor development. In 1960, by statutory grant, the State conveyed 1,235 acres of tidelands and submerged lands to the District upon condition that the harbor be developed. The outer breakwater was completed in 1961 by the U.S. Army Corps of Engineers, with an extension added in 1967 to decrease the amount of wave energy coming into the harbor. Pillar Point Harbor is a very active facility and the only protected ocean harbor between Bodega Bay and Santa Cruz. Pillar Point Harbor serves a large commercial fishing fleet, recreational boating, kayaking and standup paddling opportunities, and other public waterfront experiences at the various restaurants, shops, piers, trails, and promenades.

The surrounding area includes an airport as well as agricultural, commercial, and residential areas. The unincorporated community of Princeton borders the harbor to the north and the community of El Granada lies east of the harbor (Figure 1). An Air Force facility is situated on the bluff overlooking the harbor. The study area encompasses part of Pillar Point's outer harbor adjacent to the East Breakwater and extends 1000 feet southeast of the breakwater along the shoreline. South of the East Breakwater lie Surfers Beach, Vallejo Beach, and Miramar Beach respectively. The study area also includes the eelgrass mitigation area off the Harbor's West Breakwater. The area outside of Pillar Point Harbor is within the northern part of the Monterey Bay National Marine Sanctuary (MBNMS), and the Greater Farallones National Marine Sanctuary (GFNMS) lies farther north, off the coast of San Francisco.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

California Coastal Commission; Regional Water Quality Control Board; U.S. Army Corps of Engineers, City of Half Moon Bay, and; County of San Mateo.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

No

2.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

- ☐ 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

Date

Signature

Date

2.2 Environmental Checklist

2.2.1 Aesthetics

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
1. AESTHETICS — Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The overall aesthetic character of the project area is comprised primarily of ocean, beaches, and harbor facilities bordered by Highway 1 and residential neighborhoods to the north. The natural resources in the area provide a visually attractive setting with commercial fishing and recreational boating and vessel traffic, which are common scenes in the harbor.

Discussion

The temporary presence of a dredge in the harbor could affect the aesthetics of the region, but given the common vessel traffic and operations, this impact would be negligible. The staging and use of beach nourishment equipment such as the hydraulic pumping pipeline, bulldozer, and scraper would be inconsistent with the existing visual character of the region and would likely result in short-term aesthetic impacts. But these would be temporary and are expected to be less than significant. In the long-term, the proposed action would provide beneficial aesthetic impacts by creating more beach area to add to the natural visual characteristics of the region. The no-action alternative would result in no change to existing aesthetics in the region.

- a) **No Impact.** The proposed project would place sand on an existing beach, which would have a beneficial aesthetic effect by replenishing eroded shoreline. Although dredging operations and construction such as spreading of sand would occur, these activities would be temporary and short term and would not obscure

the scenic vista of the Pillar Point Harbor and Half Moon Bay. There would be no impacts on scenic vistas.

- b) **No Impact.** The proposed receiver site would be located along a designated state scenic highway (Caltrans 2011). However, the project is not expected to affect the current traffic conditions and the proposed project would not damage or alter the existing viewshed along Highway 1 and surrounding areas. Therefore, no impacts on scenic resources within a state scenic highway would occur.
 - c, d) **No Impact.** The proposed project would transport sand from the harbor to Surfers Beach in order to mitigate ongoing coastal erosion that have been exacerbated by the East Breakwater since it was constructed over 50 years ago. Beach replenishment would not substantially degrade the existing visual character or quality of the area or result in sources of temporary or permanent sources of light and glare. Furthermore, a beneficial aesthetic effect would occur from restoring a highly eroded beach. Accordingly, no impacts on the existing visual character or quality of the sites and surroundings would occur.
-

2.2.2 Agricultural and Forest Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
2. AGRICULTURAL AND FOREST RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. 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 of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- (a - d) **No Impact.** The proposed project involves dredging and restoring eelgrass inside of Pillar Point Harbor and beach nourishment at the adjacent Surfers Beach and therefore will not affect any Agricultural or Forest Resources, convert prime farmland, conflict with existing zoning, or result in loss of forest land.

2.2.3 Air Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
3. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>

Environmental Setting

The Pillar Point Harbor project area lies within the nine-county San Francisco Bay Area Air Basin (SFBAAB). The Bay Area Air Quality Management District (BAAQMD) regulates onshore (stationary) air pollution sources in the SFBAAB, including San Mateo County. Presently, BAAQMD is in “attainment” of all National Ambient Air Quality Standards (NAAQS) except the 8-hour ozone standard and the 24-hour particulate matter 2.5 micron (PM_{2.5}) (BAAQMD, 2022).

BAAQMD published CEQA Guidelines, last updated in 2017, to assist CEQA lead agencies in evaluating air quality impacts of projects and plans proposed in the San Francisco Bay Area Air Basin (SFBAAB). The Guidelines provides BAAQMD-recommended procedures for evaluating potential air quality impacts during the environmental review process consistent with CEQA requirements. These Guidelines were followed in completing the analysis for the Surfers Beach Project in this IS/MND.

California Air Resources Board defines sensitive receptors as “children, elderly, asthmatics and others whose are at a heightened risk of negative health outcomes due to exposure to air pollution. The locations where these sensitive receptors congregate are considered sensitive receptor locations. Sensitive Receptor locations may include hospitals, schools, and day care centers, and such other locations as the air district board or California Air Resources Board may determine (California Health and Safety Code § 42705.5(a)(5)).”

The Clean Air Act (CAA) requires that any federally funded project must conform with the air quality standards and regulations that have been established by federal, state, and local regulatory agencies, unless an exemption is applicable to that proposed action.

All emissions associated with the proposed project are from maintenance dredging to existing authorized depths and associated placement of material. In accordance with 40 CFR § 51.853(c)(2)(ix), requirements for preparation of conformity determination under the CAA do not apply to maintenance dredging and debris disposal where no new depths are required, applicable permits are secured, and placement will be at an approved site. This analysis assumes that all applicable permits for the project will be secured and the placement of material at Surfers Beach for nourishment will be approved. Therefore, the proposed dredging and placement activities are considered exempt from conformity determination requirements and in compliance with the CAA.

Discussion

- a) **No Impact.** According to guidelines in the most recent BAAQMD Clean Air Plan, “if approval of a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation (if necessary), the project would be considered consistent with the Clean Air Plan” (BAAQMD 2017). Therefore, since the project would not result in significant air quality impacts, it is consistent with the plan.
- b) **Less than Significant Impact.** Project related dredging, material transport and earthmoving activities would result in some air emissions from vehicles and work equipment, however not at the level that would violate air quality standards or contribute substantially to an existing or projected air quality violation. Since the sand that will be dredged and placed will be wet, and not subject to aeolian (wind based) transport, there are no impacts expected from fugitive dust.
- c) **No Impact.** The Project will not result in considerable net increase of any criteria pollutant for which the project region is non-attainment.
- d) **No Impact.** Due to the temporary nature of the construction activities, absence of permanent air quality impacts, and the locations of Project work areas being relatively remote and not in the vicinity of residential areas, this Project would not result in impacts to sensitive receptors.
- e) **Less than Significant Impact.** The project will not result in objectionable odors, except for temporary odorous emissions from operation of diesel equipment, which would be rapidly dispersed in the coastal environment. New odors would not be introduced following beach nourishment and eelgrass restoration activities. Therefore, this impact would be less than significant.

2.2.4 Biological Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
4. BIOLOGICAL RESOURCES — Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input 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, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2.2.4.1 Introduction

The Environmental Setting section describes the existing conditions for biological resources present within the proposed project area. The analysis identifies special status habitats, species, and other important biological resources for the Surfers Beach Project (hereafter referred to as the “project” or “project site”). The Discussion section discusses the potential project impacts on biological resources and the applicant’s mitigation measures for the potential impacts. Overall, this section assesses the biological and associated regulatory issues relevant to the proposed work at the site.

The Biological Resources Assessment for the Project was completed by Zentner Planning and Ecology (Zentner, 2022). The information presented draws from, and updates, the larger-scale study USACE previously conducted in 2015 titled, “DRAFT Environmental Assessment and 404(b)(1) Analysis for the N. Half Moon Bay (Princeton) Pillar Point Harbor CAP §111 Feasibility Study”(USACE, 2016).

Zentner Planning and Ecology completed site analyses and reviewed online databases to assess the project site and the surrounding study area for jurisdictional and other special status habitats and species. These site surveys took place on November 10, 2021. Along

with site analyses, Zentner Planning and Ecology reviewed online databases to determine the special- status plant and animal species that could occur in the project vicinity. The databases include the most recent versions of the: i) California Department of Fish and Wildlife (CDFW; formerly California Department of Fish and Game; CDFG) California Natural Diversity Database (CNDDDB), ii) United States Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (iPaC) special status species list, iii) California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Plants and, iv) National Oceanic and Atmospheric Administration (NOAA) Fisheries West Coast managed species. Each database was searched for the project site and the greater project area (i.e. the surrounding USGS 7.5- minute quadrangles in San Mateo County).

2.2.4.2 Environmental Setting

The site is located within the northern end of Half Moon Bay; encompassing the portions of the harbor within the breakwater and Surfers Beach adjacent to and just south of the breakwater. The project area includes a portion of coastal strand habitat that is dominated by ice plant (*Carpobrotus edulis*) as well as bluff habitat, dominated by a highly maintained grassland. Historically, the bluffs would have been dominated by mesic coastal prairie habitat, with occasional creeks surrounded riparian woodland, which carry water from the coast range to the east and deliver water to the Pacific. In lower elevation such as the harbor, it is likely that coastal salt marshes would have dominated in the mouths of some of these creek systems. Currently, most of these systems are highly managed and maintained and dominated by non-native species.

The relatively long and narrow project site is approximately 143 acres in extent. It is composed on the outer breakwaters and easternmost inner breakwater that make up Pillar Point Harbor, the associated tidal waters within the harbor as well as Surfers Beach just outside and south of the breakwaters, a portion of tidal waters adjacent to the beach, and a portion of the bluff above Surfers Beach. Much of the remainder of the site are constructed breakwaters and paths. The remaining habitats are fragmented, including a section of weedy coastal strand habitat, small seasonal wetlands, a patch of riparian wetland, channel fragment, and the highly maintained grassland on the bluff above Surfers Beach. The Pacific Ocean lies west of the site while the terrestrial areas to the north east and to the south are predominantly developed with commercial and residential structures.

A relatively narrow band of beach is situated on the east end of the site between the two breakwaters as well as a fragment of beach on the northwest corner adjacent to the outer western breakwater. Surfers beach, just outside the eastern outer breakwater, is highly scoured by wave action, and rocks were previously placed along the inner edge by the existing pathway to prevent further erosion.

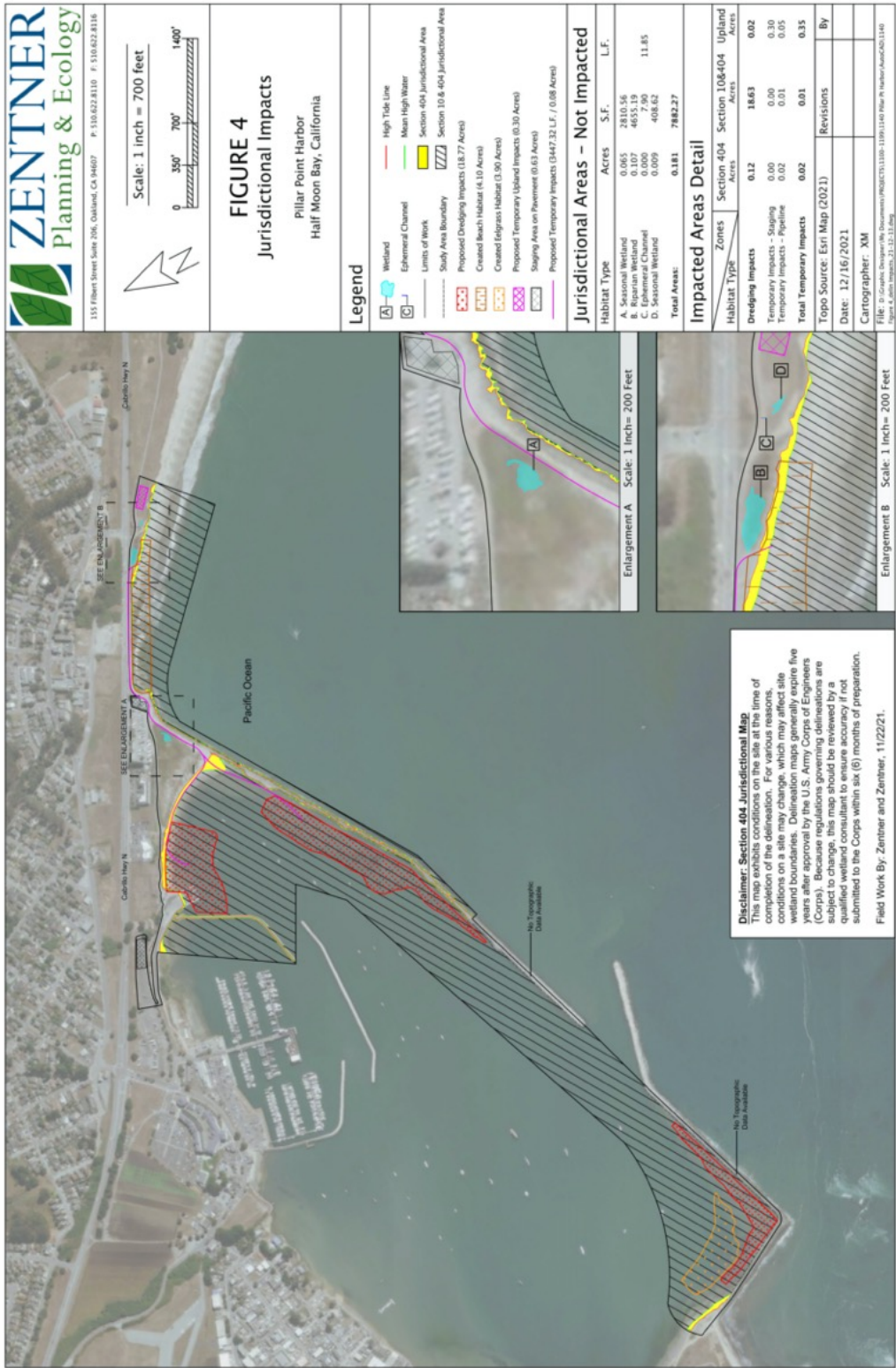


Figure 4: Map, Jurisdictional Impacts

HABITATS

As noted above, the site contains an unusually large number of habitats within the relatively confined limits of the project site. The aquatic habitats on the site include intertidal and subtidal habitats. The freshwater habitats include some small seasonal wetlands and a fragment of riparian wetland. Other habitats include beach, rocky habitat, ruderal coastal strand, maintained grassland, and developed areas. These habitats are discussed in detail below.

Nomenclature for wildlife follows the California Department of Fish and Wildlife's (CDFW) *Complete list of amphibian, reptile, bird, and mammal species in California* (2016) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW's list.

a. Intertidal

The intertidal habitat on site is located along Surfers Beach, Pillar Point Harbor's east breakwater and Pillar Point Harbor's shore. This habitat is characterized by the area of land that meets the ocean. More specifically, the intertidal zone is covered at high tide and above water level at low tide. The intertidal habitat on the project site is mostly sandy but has a small portion of rocky intertidal section on the east breakwater. Common intertidal wildlife which could occur on site include sea stars, black abalone (*Haliotis cracherodii*), littorine snails, limpets, sea urchins, crabs, chitons, whelks, sea slugs, barnacles, and mussels. Intertidal plants include various species of algae including sea lettuce (*Ulva sp*), tar spot algae (*Mastocarpus sp*), and green pin cushion alga (*Cladophora columbiana*). Shore birds on site also use this habitat for feeding such as black oystercatchers (*Haematopus bachmani*) and western sandpipers (*Calidris mauri*).

b. Subtidal

The subtidal habitat on site includes Surfers Beach and Pillar Point Harbor. This habitat is characterized by being submerged under water most of the time. The subtidal zone is home to a range of species. Some of the plants include kelp beds, which are not present on the project site but are located in the region. The wildlife ranges from benthic animals such as shrimp and polychaetae worms to fishes such as rockfish, northern anchovy (*Engraulis mordax*), sardines (e.g. *Sardinops sagax*), and mackerel. Other wildlife which might be present on site in the subtidal habitat includes marine mammals (e.g. *Phoca vitulina*) and marine birds (e.g. *Pelecanus occidentalis californicus*, *Phalacrocorax pelagicus*, *Melanitta perspicillata*).

c. Seasonal Wetlands

The site contains two small seasonal wetlands. Wetlands are characterized by their soil, hydrology and vegetation which are discussed more definitively the following "special status habitats" section. The first wetland is located on the harbor side of the east breakwater, between the beach and the paved trail, within coastal strand habitat (**Figure**

4). A small depression in this zone holds water for extended periods despite the sand substrate, likely due to a relatively high water table. Vegetation in the zone contains salt tolerant vegetation such as pickleweed (*Salicornia pacifica*) and saltgrass (*Distichlis spicata*) as well as freshwater associated plants such as rabbitsfoot grass (*Polypogon monspeliensis*) and bucks-horn plantain (*Plantago coronopus*), along with ice plant.

The second seasonal wetland is located on the bluff above Surfers Beach. This is a very shallow wetland that appears to pond water from runoff via the adjacent maintained grassland area as well as from overflow when the adjacent culvert is blocked or partially blocked during heavy rainfall events. This wetland was ponded to a depth of approximately two inches and contained a significant biotic crust layer. The vegetation consisted of Mediterranean barley (*Hordeum marinum*), spearscale (*Atriplex patula*), and bucks-horn plantain.

d. Ruderal Coastal Strand

The coastal strand habitat lies within the harbor side of the east breakwater, between the beach and the paved trail. Coastal strand habitat is characterized by growing near beach dunes and by being adapted to salt spray, wind, and waves. This habitat on site is dominated by non- native ice plant but also contains a number of native species in areas where the ice plant is relatively sparse. Ripgut brome (*Bromus diandrus*) is relatively common as is bur clover (*Medicago polymorpha*; FACU). Salt grass (*Distichlis spicata*) is found sparsely in some areas as is horseweed (*Erigeron canadensis*). Wildlife observed in this habitat include the Santa Cruz garter snake (*Thamnophis altratus*) and songbirds such as savannah sparrows (*Passerculus sandwichensis*) and white crowned sparrows (*Zonotrichia leucophrys*). Other wildlife that may use the habitat include long tailed weasels (*Mustela frenata*) and California meadow voles (*Microtus californicus*).

e. Maintained Grassland

The maintained grassland is located on top of the bluff above Surfer's Beach in a narrow strip between the bluff to the west and a paved trail that runs adjacent to Highway 1. This grassland is highly maintained as to give the appearance of turf, complete with picnic tables and benches. The grassland is dominated by ripgut brome and includes weedy broadleaves such as mustard (*Brassica nigra*), bur clover, Italian ryegrass (*Festuca perennis*) and storksbill (*Erodium cicutarium*). Wildlife that may use this habitat include long tailed weasels (*Mustela frenata*), California meadow voles (*Microtus californicus*), mice (e.g. *Peromyscus californicus*), coyotes (*Canis latrans*), foxes (e.g. *Urocyon cinereoargenteus*), songbirds, and raptors.

f. Riparian Wetland

A relatively small fragment of riparian wetland lies between Highway 1 and the Pacific Ocean on the bluff above Surfers Beach. The riparian vegetation is dominated by arroyo willow (*Salix lasiolepis*) with an understory of poison hemlock (*Conium maculatum*), spearscale, and iceplant. A large, dense area of willow woodland is located on the east

side of Highway 1 and there is obviously some drainage connection between the east and west side of the highway where this fragment is located, before it drains into the Pacific. Wildlife that may use this habitat include long tailed weasels (*Mustela frenata*), California meadow voles (*Microtus californicus*), mice (e.g. *Peromyscus californicus*), coyotes (*Canis latrans*), foxes (e.g. *Urocyon cinereoargenteus*), songbirds, and raptors.

g. Developed Areas

The project site mostly runs through developed habitat. The developed areas include parking lots, trails in the harbor, trails along the bluffs, and the top of the rock breakwaters. The developed areas are paved so there is a lack of plant species in these areas. Common wildlife that occurred were mainly birds such as gulls and brewer's blackbird (*Euphagus cyanocephalus*).

h. Rocky

The rocky habitat on site includes the terrestrial area on top of the breakwaters. This habitat is composed of similar species to those in the developed areas. Sea birds might use this habitat to perch further out on the breakwater such as gulls (e.g. *Larus occidentalis*) and cormorants (e.g. *Phalacrocorax penicillatus*).

i. Beach

The project site includes beach habitat on the harbor side of the east breakwater and at Surfer's Beach. This habitat is characterized by being above the high tide mark. Most of the beach at Surfer's Beach does not exist anymore due to erosion, except for a small portion at the southern end.

1. SPECIAL-STATUS SPECIES

a. Definitions

Special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the California Native Plant Society [CNPS]). Special-status species are defined as:

- Plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 et seq.; 14 CCR §670.1 et seq.) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);
- Plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-

57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- Plants and animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;
- Plants occurring on Lists 1A, 1B, 2, 3, and 4 of CNPS' Electronic Inventory (CNPS 2015). The California Department of Fish and Wildlife (CDFW) recognizes that Lists 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFW requests their inclusion in EIRs. Plants occurring on CNPS Lists 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2015). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information;
- Migratory non-game birds of management concern listed by U.S. Fish and Wildlife Service (Migratory Non-Game Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);
- Animals that are designated as "species of special concern" by CDFW (2010);
- Animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

b. Special Status Species Potentially Occurring Within the Study Area

A total of 71 special status species occur or have the potential to occur in the region. The CDFW's California Natural Diversity Database (CNDDB) lists a total of 11 special status animal species and 23 special status plant species from a 5-mile area around the property (**Figures 6 and 7**). The state and federal species lists are provided in **Appendix A**.

Animals

A total of 26 special status wildlife species were reviewed for their potential to occur within the study area. Figure 5 shows the known occurrences of special status wildlife species within five miles of the study area from the CNDDB and other sources.

Appendix A provides information on each of these species as well as information on the likelihood of their occurrence within the study area. There are several species included in this table which do not have CNDDB recorded occurrences and are therefore not shown on the CNDDB map, though they are known from the region.

Table 1: Special Status Wildlife

**Table 1
Special Status Wildlife**

<i>Charadrius nivosus nivosus</i>	Western snowy plover	FT, CDFW:SSC, NABCI:RWL, USFWS:BCC	Great Basin standing waters, sandy shores, wetlands, salt pond levees and shores of large alkali lakes	Yes	Along the Pacific coast of the U.S., but more numerous in valleys and deserts in southern California.	Yes	Marginal: Preferred habitat south of project site	Yes/ Lack of plovers in project area noted. No adverse effects expected
<i>Pelecanus occidentalis californicus</i>	Brown pelican	F: Delisted, S: Delisted, BLM:S CDFW:FP USFS:S	Nearshore waters and islands, nest in rocky coastal islands	Yes	Atlantic, Pacific and Gulf Coasts of North and South America	Yes	Likely: Occurrences within proximity to site	Yes/ Roosting, but no nesting habitat; No impacts expected
<i>Geothlypis trichas sinuosa</i>	Saltmarsh common yellowthroat	CDFW:SSC USFWS:BCC	Fresh and saltwater marshes & swamps	No	Breeds in the San Francisco Bay area from the Tomales Bay to Carquinez Strait and San Jose. Non-breeding range extends down to San Diego.	Yes	None: No habitat	No
FISH								
<i>Acipenser medirostris</i>	Green sturgeon - Southern DPS	FT, CDFW:SSC, AFS:VU, CDFW:SSC, IUCN:NT, NMFS:SC	Found in nearshore waters. Critical habitat includes all coastal marine waters, bays, and estuaries	Yes	From Vancouver Island, British Columbia to Monterey Bay, California.	Yes	Marginal	Yes/ Foraging habitat present; Impacts not expected
<i>Oncorhynchus kisutch</i> pop. 4	Coho salmon - Central California Coast ESU	FE, SE, AFS:EN	Found in coastal waters, estuaries, and freshwater streams. Critical habitat includes all water, substrate and adjacent riparian zones of all accessible river reaches and estuarine habitat	Yes	From Punta Gorda in northern California to the San Lorenzo River, which empties into Monterey Bay at Santa Cruz.	Yes	Marginal	Yes/ No breeding habitat; No significant impacts expected
<i>Oncorhynchus mykiss irideus</i> pop. 8	Steelhead - central California coast DPS	FT, AFS:TH	Streams and rivers, deep low velocity pools, freshwater bodies, estuaries, Pacific ocean	Yes	Streams from the Russian River to Aptos Creek, Santa Cruz County, CA; drainages of San Francisco and San Pablo Bays	Yes	Marginal	Yes/ No breeding habitat; No significant impacts expected

Table 1
Special Status Wildlife

Scientific name	Common name	Status	Habitat	Potential habitat on-site	Range	Known range/ Critical habitat	Potential for occurrence on-site	Previously Evaluated (USACE 2015)/ Conclusion
AMPHIBIANS								
<i>Rana draytonii</i>	California red-legged frog	FT, CDFW:SSC, IUCN:VU	Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetlands	No	Mendocino County to Baja California, primarily west of the Cascade-Sierra crest.	Yes	None: No habitat	Yes/ Species presence not expected
BIRDS								
<i>Rallus obsoletus</i> (formerly <i>Rallus longirostris obsoletus</i>)	California ridgway's rail (formerly California clapper rail)	FE, SE, CDFW:FP NABCI:RWL	Saltwater and brackish marshes traversed by tidal sloughs	No	The San Francisco Bay area, including all 9 counties that border the bay.	No	None: No habitat	Yes/ Species presence not expected
<i>Sterna antillarum browni</i>	California least tern	FE, SE, CDFW:FP NABCI:RWL	Alkali playa, Wetland	No	Breeds along the California coast from the San Francisco Bay to Baja California. Winters in Baja or Mexico.	No	None: No habitat, out of range	Yes/ Species presence not expected
<i>Brachyramphus marmoratus</i>	Marbled murrelet	FT, SE, CDF: S, IUCN:EN, NABCI:RWL	Feeds nearshore; nests inland in old growth redwood dominated forests, up to six miles inland, often in douglas-fir	Yes	Along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz	Yes	Likely: Occurrences within proximity to site, however no nesting habitat	Yes/ No impacts expected
<i>Phaethastria (=Diomedea) albatrus</i>	Short-tailed albatross	FE, CDFW:SSC IUCN:VU NABCI:RWL	Open ocean near island and mainland coastlines; nests primarily on the volcanic Torishima Island, Japan	No	US historic range is along the North Pacific and Bering Sea in Alaska, California, Hawaii, Oregon, Washington; CA Counties include Del Norte, Humboldt, Los Angeles, Marin, Mendocino, Monterey, Orange, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Cruz, Sonoma, Ventura	No	None: No habitat, out of range	Yes/ Species presence not expected

Table 1
Special Status Wildlife

<i>Oncorhynchus mykiss</i> pop. 9	Steelelead - South Central California DPS	FT, AFS:TH	Streams and rivers, deep low velocity pools, freshwater bodies, estuaries, Pacific ocean	Yes	All accessible river reaches and coastal river basins from the Pajaro River (inclusive), Santa Cruz County, south to the Santa Maria River	Yes	Marginal	Yes/ No breeding habitat; No significant impacts expected
<i>Hypomesus transpacificus</i>	Delta smelt	FT, SE, AFS:TH, IUCN:EN	Open waters of bays, tidal rivers, channels, and sloughs. Rarely occurs in salt water with a salty greater than 10-12ppt.	No	The upper San Francisco Estuary, particularly the upper Sacramento-San Joaquin Delta and Suisun Bay.	No	None: Outside of range	Yes/ Species presence not expected
<i>Eucyclogobius newberryi</i>	Tidewater goby	FE, AFS:EN, IUCN:VU	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters, South coast flowing waters	No	Coastal streams from Oregon to San Diego, although it is possibly extirpated from the San Francisco Bay.	No	None: Outside of range	Yes/ Species presence not expected
INVERTEBRATES								
<i>Danaus plexippus</i> pop. 1	Monarch butterfly - California overwintering population	FC, USFS:S	Breed in habitats with dense milkweed cover; overwinter in areas of dense, wind-protected tree groves (Eucalyptus trees, Cypress, Monterey pine, and other conifer species) with nectar and water sources nearby	No	Roost sites along the coast of Northern Mendocino to Baja California, Mexico	Yes	None: No habitat	No
<i>Bombus caliginosus</i>	Obscure bumble bee	IUCN:VU	Near food plant genera including baccharis, cirsiium, lupinus, lotus, grindelia, and pachelia	No	Coastal areas from Santa Barbara County to North Washington State	Yes	Unlikely: No habitat	No
<i>Callophrys mossii bayensis</i>	San Bruno elfin butterfly	FE	Coastal Mountainous areas with grassy ground cover. Colonies are located on steep, north-facing slopes within the fog belt. Larval host plant is <i>Sedum spathulifolium</i>	No	Within the vicinity of San Bruno Mountain, San Mateo County	No	None: No habitat	Yes/ Species presence not expected
<i>Bombus occidentalis</i>	Western bumble bee	USFS:S	Once relatively widespread	Marginal	Once relatively widespread, now in serious decline in central to southern California	Yes	Unlikely: Historic range	No
<i>Haliotis cracherodii</i>	Black Abalone	FE, IUCN:CR	Rocky substrates in intertidal and shallow subtidal reefs along the coast	Yes	Point Arena, California, to Bahia Tortugas and Isla Guadalupe, Mexico	Yes	Marginal	Yes/ No significant impacts expected
MAMMALS								

Table 1
Special Status Wildlife

<i>Taxidea taxus</i>	American badger	CDFW:SSC IUCN:LC	Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Coastal prairie, Coastal scrub, Meadow & seep, Riparian forest, Riparian scrub, Riparian woodland, Ultramafic, Valley & foothill grassland.	No	Throughout California and North American; from British Columbia to the Great Lake Region and south to Central Mexico.	Marginal	Unlikely: No habitat	No
<i>Reithrodontomys raviventris</i>	Salt marsh harvest mouse	FE, SE, CDFW:FP IUCN:EN	Marsh & swamp, wetland	No	Primarily in salt marshes in south San Francisco Bay including San Mateo, Santa Clara, Contra Costa Alameda, Marin, Napa,	No	None: No habitat	Yes/ Species presence not expected
<i>Enhydra lutris nereis</i>	Southern sea otter	FT, CDFW:FP IUCN:EN MMC:SSC	Nearshore waters adjacent to rocky coasts, points of land, or bays where kelp beds are present	Yes	From Ano Nuevo, San Mateo County, to Point Sal, Santa Barbara County	Yes	Likely: Occurrences within proximity to site	Yes/ No effects expected
REPTILES								
<i>Thamnophis sirtalis tetrataenia</i>	San Francisco gartersnake	FE, SE, CDFW:FP	Vicinity of freshwater marshes, ponds and slow-moving streams with dense cover and water depths of at least one foot with upland areas near water	No	San Mateo County and extreme northern Santa Cruz County	No	None: No habitat	Yes/ Species presence not expected
<i>Chelonia mydas</i>	Green sea turtle - East Pacific DPS population	FT, IUCN:EN	Migrate in open ocean but otherwise are found in nearshore shallow waters including reefs, bays, and inlets; often with an abundance of marine algae and grasses. Nest on open beaches with sloping platform	Yes	The East Pacific DPS population is bounded by the following: 41 degrees N., 143 degrees W. in the northwest; 41 degrees N. Lat. in the north; along the western coasts of the Americas; 40 degrees S. Lat. in the south; and 40 degrees S., 96 degrees W. in the southwest	Yes	Marginal	Yes/ No effects expected
<i>Dermochelys coriacea</i>	Leatherback Sea Turtle	FE	Open ocean, nest on sandy beaches with vegetation and sloped platform	Yes	Critical habitat includes the California Coast from Point Arena to Point Arguello. Nest in South America	Yes	Marginal	Yes/ No effects expected
<i>Caretta caretta</i>	Loggerhead Sea Turtle	FE	From open ocean to inshore bays, lagoons, salt marshes, creeks, ship channels and river mouths. Nest on open beaches or narrow bays	Yes	Individuals reported as far north as Alaska and as far south as Chile, with numerous records off the coast of California.	Yes	Marginal	Yes/ No effects expected

The wildlife species that have potential to occur on the project site are described in more detail below; the remaining species shown on Figure 5 and included in Table 1 are not more fully described as they are highly unlikely to occur on-site due to a lack of suitable habitat and local occurrences.

The following species have at least some potential to move through or otherwise depend on the site for some function given the presence of potentially suitable habitat and known occurrences in the surrounding area.

Birds

Marbled murrelet (*Brachyramphus marmoratus*)

FT, SE, CDF:S, IUCN:EN, NABCI:RWL

The marbled murrelet (*Brachyramphus marmoratus*) is a small sea bird, 9.4 to 9.8 inches and 9.1 to 12.6 ounces, with a short neck, tail and wings. Their coloration on top of their body is brown with spotted dark grey and white patches on their underside. Nonbreeding adults are colored more uniformly with a dark gray on top and a white underside, collar, and bar over their shoulder (Cornell Lab of Ornithology 2019).

Marbled murrelets historically live along the Pacific Coast in Alaska, California, Oregon, British Columbia and Washington. They live most of their life at sea and retreat inland to nest in old growth coniferous forests with slightly open canopy cover. In California, they usually make nests in Douglas fir and coastal redwoods. Fledglings fly from their nests, about 28 days after hatching, directly to the ocean (USFWS 2020). At sea, the marbled murrelet eats primarily fish, shrimp, squid, and zooplankton (Cornell Lab of Ornithology 2019).

There is one CNDDDB observation of the marbled murrelet within five miles of the project site. The CNDDDB record describes a nesting pair east of the project site along Pilarcitos Creek, both downstream and west of the dam. This occurrence is approximately four miles from the project site.

Although the project site contains suitable foraging habitat, there is no nesting habitat on site. Therefore, marbled murrelets only have the potential to be found in the ocean near the project site. Project noise could disturb the species if they are nearby, but it is likely that the species is accustomed to the daily noise and activity that the Pillar Point Harbor receives. Additionally, there is an abundance of suitable foraging habitat nearby where marbled murrelets could temporarily relocate to.

This species was also reviewed by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps concluded that no effects to this species were expected from this more impactful project. We concur with the Corps conclusions and find that the currently proposed, less-impactful project is not likely to impact this species.

Western snowy plover (*Charadrius nivosus nivosus*) FT, CDFW:SSC, NABCI:RWL, USFWS:BCC

The western snowy plover (*Charadrius alexandrinus nivosus*) is a small shorebird distinguished from other plovers (family Charadriidae) by its small size, pale brown upper parts, dark patches on either side of the upper breast, and dark gray to blackish legs. Snowy plovers weigh approximately 1.4 ounces and are about 6.25 inches long (Sibley 2001).

The Pacific coast population of the western snowy plover is defined as those individuals that nest beside or near tidal waters, and includes all nesting colonies on the mainland coast, peninsulas, offshore islands, adjacent bays and estuaries from southern Washington to southern Baja California, Mexico (USFWS 2001). Habitats used by nesting and non-nesting birds include sandy coastal beaches, salt pans, coastal dredged spoils sites, dry salt ponds, salt pond levees and gravel bars. Historic records suggest that nesting western snowy plovers were once more widely distributed in coastal California.

Fledging of late-season broods may extend into the third week of September throughout the breeding range. Nests typically occur in flat, open areas with sandy or saline substrates (USFWS 2001). Vegetation and driftwood are usually sparse or absent. The typical clutch size is three eggs but it can range from two to six.

Snowy plover chicks leave the nest within hours after hatching to search for food (USFWS 2001). They are not able to fly for approximately 4 weeks after hatching. Adult plovers do not feed their chicks, but lead them to suitable feeding areas. Adults use distraction displays to lure

predators and people away from chicks. Adult plovers signal the chicks to crouch, with calls, as another way to protect them. They may also lead chicks, especially larger ones, away from predators. Most chick mortality occurs within 6 days after hatching.

CNDDDB lists one record of the western snowy plover within 5 miles of the project site. CNDDDB recorded the occurrence in 2016 at Half Moon Bay State Beach which they described as a wintering site with two active nests and up to 50 snowy plovers. This occurrence is roughly 3 miles south of the project site.

While snowy plovers could be present on site, it is much more likely that they will occupy shorelines south of the project site where there is less beach erosion, and they are known to exist. Beach shoreline at the Surfer's Beach portion of the project site is nearly absent and does not provide ideal nesting or foraging habitat relative to the beaches south of the site. Additionally, noise from the project would likely encourage snowy plovers to avoid the area as they can be sensitive to sound, especially since the harbor is highly trafficked and noisy daily.

This species was also reviewed by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps

acknowledged that there was potential to impact snowy plovers with equipment, project noise, while the sand berm is built, and while the sand slurry pipeline is installed/deinstalled (USACE 2015). The Corps concluded that this project could help snowy plovers by providing more habitat and that it is unlikely for them to occur on site. However, if they were present, best management practices would need to be implemented. We concur with the Corps conclusions and find that the currently proposed, less-impactful project is not likely to impact this species if best management practices are implemented.

Brown pelican (*Pelecanus occidentalis californicus*) F: Delisted, S: Delisted, BLM:S, CDFW:FP, USFS:S

The California brown pelican (*Pelecanus occidentalis californicus*) is a large bird with an average wingspan of 79 inches and weight of 8.2 pounds (Sibley 2001). The adult has a white head and dark body, but immature birds are dark with a white belly. They have long, dark bills with big pouches for catching and holding fish. The brown pelican is easily distinguished from the American white pelican, the only other pelican in its range, which is white with black primary and secondary flight feathers.

The California brown pelican, *P. o. californicus*, breeds in western North America primarily on islands off southern California and western Mexico, and including the Gulf of California (Anderson et al. 2007). It is found along the California Coast and nests from the Channel Islands of southern California southward along the Baja California coast and in the Gulf of California to coastal southern Mexico (CDFG 2000).

Roosting and loafing sites provide important resting habitat for breeding and non-breeding birds. Important roosting sites include offshore rocks and islands, river mouths with sand bars, breakwaters, pilings, and jetties along the Pacific Coast and San Francisco Bay. Pelicans breed in nesting colonies on islands without mammal predators. The only breeding population in United States waters consists of breeding birds on the Channel Islands and several islands off Baja California: West Anacapa Island, Santa Barbara Island, Isla Coronado Medio, and Isla Coronado Norte. Nest sites generally occur on the ground or low shrubbery of steep coastal slopes on small islands, isolated from ground predators and human disturbance; the brown pelicans utilize local vegetation to build nests of sticks, grasses, and other debris each year (USFWS 1983). All courtship occurs at the nest site. The male brings nesting materials to the female and she builds the nest. Normal clutch size is three eggs, which are laid in March or April. Both take turns incubating the eggs and rearing the chicks.

The California brown pelican is listed because of widespread pollutant-related reproductive failures but was petitioned to delisted in 2005. They are extremely sensitive to bioaccumulation of the pesticide DDT, which causes reproductive failure by altering calcium metabolism and thinning eggshells. Although California breeding populations have rebounded since the elimination of DDT use, persistent residues in the coastal environment continue to cause chronic reproductive problems. Despite the banning of

DDT, some birds still show relatively high levels of pesticides in their tissues. Pelicans are also threatened by the possibility of oil spills from tanker traffic in the Santa Barbara Channel, disturbance at post-breeding roosts on the central California coast, entanglement with hooks and fishing line, and disease outbreaks resulting from overcrowding in harbors. Pelicans are dependent on northern anchovies and Pacific sardines, which have declined due to over-fishing by humans. Breeding populations and nesting productivity vary dramatically from year to year depending on El Niño events and other climatic changes (Tangley 2009).

There are not any CNDDDB records of the California brown pelican within 5 miles of the project site. However, the birds are known to occupy Pillar Point Harbor and Zentner Planning and Ecology observed the species flying over the site during surveys.

This species is likely to occur on or near the project site, however, the site provides only roosting habitat but no nesting habitat. In addition, Pillar Point Harbor is a busy location with lots of people, boats, noises and other disturbance activities continually taking place. Because of this, the pelicans and other wildlife that use the site are habituated to ongoing disturbance activities. The dredging work and placement of the dredging pipeline is likely to be perceived as just another of these similar types of disturbance activities. In addition, this species was also reviewed by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps concluded that no effects to this species were expected from this more impactful project but that informal consultations should be conducted with USFWS and CDFW. Since the 2015 USACE review, however, this species has been delisted both federally and at the state level. For all of the above reasons, we concur with the Corps conclusions and find that the currently proposed, less-impactful project is not likely to impact this species.

Nesting Raptors (various species); generally protected under the CDFW Code and the Migratory Bird Treaty Act (MBTA)

The site does not contain suitable nesting habitat. However, the site does contain moderately suitable foraging habitat and moderately suitable nesting habitat adjacent to the site. Therefore, a preconstruction survey should be completed to determine the presence/absence of nesting raptors prior to the start of construction for any work conducted within the nesting season.

Other Nesting Birds (various species), protected by the Migratory Bird Treaty Act (MBTA)

This site supports moderately suitable habitat for nesting birds protected by the MBTA, primarily in the small portion of riparian wetland on site and within shrubs of the coastal strand habitat. Accordingly, there is some limited potential for migratory nesting birds to nest on or adjacent to the site and a preconstruction nesting bird survey should be completed for any work conducted within the nesting season.

Fish

Anadromous Fish

Green sturgeon - Southern DPS (*Acipenser medirostris*) - FT, CDFW:SSC Steelhead - central California coast DPS (*Oncorhynchus mykiss irideus* pop. 8) - FT, AFS:TH; south central California coast DPS (*Oncorhynchus mykiss irideus* pop. 9) - FT, AFS:TH; Coho salmon - Central California Coast ESU (*Oncorhynchus kisutch* pop. 4) -FE, SE, AFS:EN

Green sturgeon, steelhead trout and Coho salmon all migrate from the ocean to freshwater sources to spawn, which classifies them as anadromous fish. Each of the previously listed fishes have a distinct population segment (DPS) or evolutionary significant unit (ESU) that could occur within the project site. Their individual ecologies are discussed below.

Green sturgeon is a large benthic feeder, up to 7 feet long and 350 pounds, found near-shore in marine and estuarine waters from Mexico to southeast Alaska (Moyle *et al.* 1995, Davies 2004). The southern population is principally comprised of the Sacramento River and San Francisco Bay area spawning stock. Adult green sturgeon typically migrate into freshwater beginning in late February and spawning occurs every 2 to 5 years in April to June in deep, turbulent river main stems (Moyle *et al.* 1995). Spawning is presently known to occur in only two rivers in California; these consist of the Klamath and Sacramento River systems (EPIC 2001, CDFG 2002, Moyle *et al.* 1992, 1994). San Francisco Bay, San Pablo Bay, Suisun Bay and the Delta support the southernmost reproducing population of green sturgeon.

The coastal steelhead is an anadromous trout. Steelhead that do mature in the ocean typically return to home streams between December and April, although dam releases with the concomitant lower water temperatures have been known to trigger returns between August and March (Leidy 2003). Steelhead spawn and then do not die like salmon but return to the ocean. The young stay in freshwater for one to four years and then migrate downstream, typically during spring and early summer. Steelhead numbers have declined drastically throughout the North Pacific in the past several decades due to habitat loss, over-fishing, predation, and other factors. The central California coast and south central California coast distinct population segments (DPS) of steelhead are similar in size and ecology but are distinguished by their ranges.

Coho salmon may grow to 2 feet in length and up to 35 pounds, though they average about 8 pounds. They have dark metallic blue or greenish backs with silver sides and a light underside. Spawning individuals are dark with reddish sides. They may be marked with dark spots towards the dorsal side and faint horizontal stripes. Coho salmon in California are distributed in coastal streams from the Smith River, Del Norte County, south to the Big Sur River, Monterey County (Moyle 2002). Coho salmon also were occasionally recorded from California's Central Valley, where the species historically was considered the rarest of the five salmon species known to inhabit the Sacramento

River (Hallock and Fry 1967). It is believed Coho salmon populations were sustained by estuary watersheds and that at least thirteen Estuary watersheds historically supported Coho salmon, although these populations now appear to be extirpated (Leidy 1984, 2002).

According to CNDDDB, there are two occurrences of the central California steelhead DPS within five miles of the project. These occurrences were recorded in 1997 and 1999 and were located south of the project site, at Frenchman's Creek and Apanolio Creek. Aside from these two occurrences, no other anadromous species have been recorded within five miles of the project site.

The project site falls within Critical Habitat for green sturgeon. Critical Habitat for the southern DPS of green sturgeon includes all marine waters from Monterey Bay, California to Cape Flattery Washington and includes some additional rivers, bays and estuaries outside of the project area. The project activities could lead to minor temporary impacts to this species. For example, dredging could temporarily decrease the clarity of the water affecting foraging or reduce benthic prey. However, these impacts are not likely to affect green sturgeon since the impacts are temporary and the species would likely avoid the area and use other suitable habitat that exists near the project.

These species were also reviewed by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps discusses that site's nearshore habitat could be used by the anadromous species for foraging or passage.

Additionally, the central California coast DPS has critical habitat at Denniston Creek near the project site, however the creek has a barrier that impedes any fish passage into Pillar Point Harbor (USACE 2015). The Corps concluded that no effects to these species were expected from this more impactful project. We concur with the Corps conclusions and find that the currently proposed, less-impactful project is not likely to impact these species.

Other Pacific Salmonids (various species); protected by the Pacific Salmonid Fishery Management Plan (FMP) under the Magnuson-Stevens Fisheries Conservation and Management Act (MSFCMA)

This site contains suitable habitat for salmonids protected under the Pacific Salmonid FMP. The only protected salmonid that might occur in the project site is the Coho salmon central California coast ESU (*Oncorhynchus kisutch* pop. 4). We expect that the project will not impact this species which is described above in the anadromous fish section.

Pacific Groundfish (various species); protected by the Pacific Groundfish FMP under the MSFCMA

This site contains suitable habitat for species protected under the Pacific Groundfish FMP. NOAA Fisheries has designated eelgrass as a Habitat Area of Particular Concern

(HAPC) for groundfish and the project proposes to remove eelgrass habitat. However, as part of the project work, biologists will remove the eelgrass prior to the dredging work. The fine sands that eelgrass prefer will be moved to the west end of the harbor where eelgrass restoration will take place, which will create more habitat than is proposed to be impacted. Therefore, no long-term impacts to pacific groundfish are expected as a result of the project, though there may be some minor, short-term, indirect impacts to this species.

Pacific groundfish were reviewed by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps concluded that there HAPCS: estuary, sea grass, kelp canopy, and rocky habitats. As this is a scaled down project, the only habitats the project will encounter from the previous list are rocky and sea grass habitats. The rocky habitat may be temporarily affected by dredging as it could reduce water quality interfere with species visibility. However, there are no long-term impacts expected. Additionally, the sea grass habitat will be restored as a part of the project plan. Therefore, the currently proposed, less-impactful project is not likely to significantly impact these species.

Coastal Pelagic Fishes (various species); protected by the Coastal Pelagic FMP under the MSFCMA

This site contains suitable habitat for species protected under the Coastal Pelagic FMP. These species might endure minor temporary impacts like those we have discussed in the previous

fish sections. These species might experience reduced visibility, their prey may be temporarily covered by disturbed sediment, and noise might induce stress. However, these impacts are all temporary or are similar to the impacts they already experience from daily noise and activity in the harbor.

This habitat and species were reviewed by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps concluded that temporary minor impacts would occur to these species and an essential fisheries habitat (EFH) consultation with the National Marine Fisheries Service (NMFS) would be necessary. We concur with the Corps conclusions and, following NMFS guidelines, the currently proposed, less- impactful project is not likely to significantly impact these species.

Invertebrates

Black Abalone (*Haliotis cracherodii*)

FE, IUCN:CR

Black abalone (*Haliotis cracherodii*) are marine mollusks that live in the rocky intertidal and subtidal reefs along California and Baja California's coasts. Black abalone grow up to 2 inches in length, have a large muscular foot, a dark black or blue colored shell, and

sensory tentacles. Their shell has nine holes which they use to breathe, eat and broadcast spawn for reproduction (NOAA Fisheries 2021a). Broadcast spawners release eggs and sperm into water where the egg becomes fertilized externally. Abalone broadcast spawn in spring and early summer, the eggs hatch one day after fertilization, and juveniles drift for up to 14 days until they attach to rocky substrate (USACE 2015, NOAA Fisheries 2021a). They primarily eat plants such as algae and kelp and occupy deep rock crevices which they use for shelter. Black abalone were once widely spread but their population has dramatically declined. Threats to the species include disease, overfishing, low reproductive rates, spills, and sedimentation (NOAA Fisheries 2021a).

According to CNDDDB, there are not any occurrences of black abalone within five miles of the project site. However, at least a portion of the project site is located within Critical Habitat for black abalone, which includes rocky intertidal and subtidal habitats as well as all water from MHHW to a depth of 20 ft (USACE 2015). In addition, it is possible that black abalone could occupy the rocky east breakwater adjacent to the dredging work, though they are much more likely to inhabit the outer portion of the breakwater. The proposed dredge pipeline is proposed to run parallel to the breakwater, but well away from the rocky edge and, therefore, is not expected to result in any direct impacts to abalone. The beach nourishment work at Surfers Beach will include a containment berm, which is expected to greatly reduce turbidity as well as potential impacts to black abalone.

This species was also reviewed by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps concluded that no effects to this species were expected from this more impactful project if dredging occurred outside of

abalone spawning season and preconstruction surveys were implemented before choosing the pipeline route. We concur with the Corps conclusions and find that the currently proposed, less-impactful project, is not likely to impact this species if preconstruction surveys are implemented and beach nourishment work directly adjacent to the outer east breakwater is timed to occur outside of abalone spawning season.

Marine Mammals

Southern sea otter (*Enhydra lutris nereis*)

FT, CDFW:FP, IUCN:EN, MMC:SSC

Southern sea otters (*Enhydra lutris nereis*) are a small marine mammal that grow to an average of 3 to 5 feet. They are found in nearshore waters along the central California coastline, often near kelp beds (Kenyon 1969). Sea otters prey on marine invertebrates such as abalone, sea urchins, crabs and clams. Sea otters breed year-round but peak in December through March (Wild and Ames 1974). Sea otter populations initially declined as a result of the fur trade in the early 1900s and current threats include biotoxins, fishing, oil spills and climate change.

CNDDDB does not have any occurrence records of the southern sea otter within five miles of the project vicinity. However, sea otters have been observed in Pillar Point Harbor before and it is possible that they will occur near the project site. Pillar Point Harbor is a busy location with lots of people, boats, noises and other disturbance activities continually taking place. Because of this, otters and other wildlife that use the site are habituated to ongoing disturbance activities. The dredging work and placement of the dredging pipeline is likely to be perceived as just another of these similar types of disturbance activities.

This species was also reviewed by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps noted that the closest kelp bed is outside of the project area, where sea otters tend to be near, and concluded that no effects to this species were expected from this more impactful project. We concur with the Corps conclusions and find that the currently proposed, less-impactful project is not likely to impact this species.

Other Marine Mammals (various species) protected by the Marine Mammal Protection Act (MMPA)

This site provides suitable habitat for some additional marine mammals protected under the MMPA. The additional marine mammals, which are could be found near the project site include California sea lions (*Zalophus californianus*), stellar sea lions (*Euotopias jubatus*), northern elephant seals (*Mirounga angustirostris*), Pacific harbor seals (*Phoca vitulina*). Pillar Point Harbor is a busy location with lots of people, boats, noises and other disturbance activities continually taking place. Because of this, the mammals that use the site are habituated to ongoing

disturbance activities. The dredging work and placement of the dredging pipeline is likely to be perceived as just another of these similar types of disturbance activities.

These species were evaluated by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps concluded that dredging noise might create behavioral disturbance to marine mammals, but the noise is similar to what they already experience from boat traffic. Additionally, dredging noise will remain under their injury threshold. We concur with the Corps conclusions and find that the currently proposed, less- impactful project is not likely to impact these species.

Sea Turtles

**Green sea turtle - East Pacific DPS population (*Chelonia mydas*) - FT, IUCN:EN;
Leatherback**

Sea Turtle (*Dermochelys coriacea*) – FE; Loggerhead Sea Turtle (*Caretta caretta*) – FE

The east pacific green sea turtle DPS population, leatherback sea turtle and loggerhead sea turtle all inhabit open ocean, nearshore habitat, and nest on sandy sloped tropical and subtropical beaches. Their ranges overlap in the Atlantic, Pacific and Indian Oceans, though are most common in subtropical waters (NOAA Fisheries 2021b, c, d). The east pacific DPS green sea turtle is mainly herbivorous but also eats sponges, invertebrates and fish debris (NOAA Fisheries 2021b). In contrast, loggerhead and leatherback sea turtles are primarily carnivorous. Loggerhead sea turtles have a powerful jaw which allows them to predate on hard bodied invertebrates whereas leatherbacks lack a powerful jaw and eat soft bodied open ocean prey (NOAA Fisheries 2021c, d). Of the three sea turtles, leatherback sea turtles spend the most time in the open ocean (NOAA Fisheries 2021c). All three sea turtle populations are threatened by loss of nesting habitat, bycatch, harvest of turtles and their eggs, vessel collision, ocean pollution and climate change (NOAA Fisheries 2021b, c, d).

There are no CNDDDB records of the east pacific DPS green sea turtle, leatherback sea turtle or loggerhead sea turtle within five miles of the project vicinity. However, the project lies within leatherback sea turtle Critical Habitat. Leatherback sea turtles spend most of their time in deep open ocean, where they feed, and their nesting habitat is absent on site. Consequently, it is unlikely that the species or their critical habitat will be affected by the project activities.

These species were also reviewed by the Corps as part of a larger and more impactful dredging and beach restoration project at the site (USACE 2015). The Corps acknowledged that sea turtles could pass through the site, but their presence is unlikely due to the shallow project site, high activity in the harbor, and lack of nesting habitat. Thus, the Corps concluded that no effects to these species were expected from this more impactful project. We concur with the Corps conclusions and find that the currently proposed, less-impactful project is not likely to impact this species.

Plants

There are 45 special status plant species that are known to occur in the project region. **Table 2** provides information on each of these species as well as information on the likelihood of their occurrence within the study area.

The plant species that have a potential to occur on the project site are described in more detail below; the remaining species shown on Figure 6 and included in Table 2 are not described in more detail as they are highly unlikely to occur on-site due to a lack of suitable habitat, or local or recent occurrences. The species below have not been observed within the study area though they have at least some likelihood to occur within the study area given the presence of potentially suitable habitat and known occurrences in the surrounding area.

Table 2
Special Status Plants

Scientific name	Common name	Status	Habitat	Potential Habitat On-Site	Range	Known Range	Elevation	Life Form	Potential for Occurrence On-site	Flowering/ Survey Period
<i>Agrostis blasdalei</i>	Blasdale's bent grass	CRPR 1B.2, BLM:S	Coastal bluff scrub, coastal dunes, coastal prairie; sandy or gravelly soil close to rocks, often in nutrient poor soil with sparse vegetation	Yes	Marin, Mendocino, Monterey, San Mateo, Santa Cruz, Sonoma	Yes	0 - 150 meters	perennial rhizomatous herb	Moderate	May - July
<i>Allium peninsulare</i> var. <i>franciscanu</i> m	Franciscan onion	CRPR 1B.2	Cismontane woodland, valley and foothill grassland; clay soils, often on serpentine soils, volcanic soil	Marginal	Mendocino, Napa, San Mateo, Santa Clara, Sonoma	Yes	52 - 305 meters	perennial bulbiferous herb	Marginal	April - June
<i>Arabis blepharophylla</i>	Coast rockcress	CRPR 4.3	Broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub, rocky substrate	Marginal	Contra Costa, Marin, Monterey, San Francisco, San Mateo, Santa Cruz, Sonoma	Yes	3 - 1100 meters	perennial herb	Marginal	February - May
<i>Arctostaphylos montaraensis</i>	Montara manzanita	CRPR 1B.2	Chaparral, coastal scrub	No	San Mateo	Yes	80 - 500 meters	perennial evergreen shrub	Unlikely: No Habitat	January - March
<i>Arctostaphylos regismontana</i>	Kings Mountain manzanita	CRPR 1B.2	Broadleaved upland forest, chaparral, north coast coniferous forest, granitic and sandstone outcrops	No	San Mateo, Santa Clara, Santa Cruz	Yes	305 - 730 meters	perennial evergreen shrub	Unlikely: No Habitat	December - April
<i>Astragalus nuttallii</i> var. <i>nuttallii</i>	ocean bluff milk- vetch	CRPR 4.2	Coastal bluff scrub, coastal dunes	Yes	Marin, Monterey, San Francisco, San Luis Obispo, San Mateo, Santa Barbara	Yes	3 - 120 meters	perennial herb	Moderate	January - November
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk- vetch	CRPR 1B.2, BLM:S	Coastal dunes, coastal scrub, marshes and swamps; mesic sites in dunes or along streams or coastal salt marshes	Yes	Humboldt, Marin, San Luis Obispo, San Mateo	Yes	0 - 30 meters	perennial herb	Moderate	April - October
<i>Castilleja ambigua</i> var. <i>ambigua</i>	johnny-nip	CRPR 4.2	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools	Yes	Alameda, Contra Costa, Del Norte, Humboldt, Marin, Mendocino, Napa, San Mateo, Santa Cruz, Solano, Sonoma	Yes	0 - 435 meters	annual herb	Moderate	March - August
<i>Centromadia parryi</i> ssp. <i>parryi</i>	papoose tarplant	CRPR 1B.2, BLM:S	Chaparral, Coastal prairie, Marshes and swamps, Meadows and seeps, Valley and foothill grassland; often in alkaline conditions	Marginal	Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano, Sonoma, Yolo	Yes	0 - 420 meters	annual herb	Marginal	May - November
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	San Francisco Bay spineflower	CRPR 1B.2	Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, sandy substrate	Yes	Alameda, Marin, San Francisco, San Mateo, Sonoma	Yes	3 - 215 meters	annual herb	Moderate	April - August
<i>Cirsium andrewsii</i>	Franciscan thistle	CRPR 1B.2	Broadleaved upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, mesic conditions, sometimes on serpentine seeps	No	Contra Costa, Marin, San Francisco, San Mateo, Sonoma	Yes	0 - 150 meters	perennial herb	Unlikely: No Habitat	March - July

Figure 5: Special Status Plants

Table 2
Special Status Plants

<i>Hosackia gracilis</i>	harlequin lotus	CRPR 4.2	Broadleafed upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland	Marginal	Del Norte, Humboldt, Marin, Mendocino, Monterey, San Francisco, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Sonoma	Yes	0 - 700 meters	perennial rhizomatous herb	Marginal	March - July
<i>Hypogymnia schizidata</i>	island tube lichen	CRPR 1B.3	Chaparral, Closed-cone coniferous forest; on bark and wood of hardwoods and conifers	No	Marin, Mendocino, San Mateo, Santa Barbara	No	306 - 405 meters	foliose lichen	Unlikely: No Habitat	-
<i>Iris longipetala</i>	coast iris	CRPR 4.2	Coastal prairie, Lower montane coniferous forest, Meadows and seeps	No	Alameda, Contra Costa, El Dorado, Glenn, Humboldt, Marin, Mendocino, Merced, Monterey, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Ventura	Yes	0 - 600 meters	perennial rhizomatous herb	Unlikely: No Habitat	March - June
<i>Lasthenia californica ssp. macrantha</i>	perennial goldfields	CRPR 1B.2, BLM: S	Coastal bluff scrub, Coastal dunes, Coastal scrub	Marginal	Del Norte, Humboldt, Marin, Mendocino, San Luis Obispo, San Mateo, Santa Cruz, Sonoma	Yes	5 - 520 meters	perennial herb	Marginal	January - November
<i>Leptosiphon croceus</i>	coast yellow leptosiphon	CRPR 1B.1, SE	Coastal bluff scrub, Coastal prairie	Marginal	San Mateo	Yes	10 - 150 meters	annual herb	Marginal	April - June
<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	CRPR 4.3	Broadleafed upland forest, Cismontane woodland	No	Colusa, Del Norte, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Benito, San Francisco, San Mateo, Shasta, Sonoma, Tehama, Trinity, Yolo	No	170 - 1500 meters	annual herb	Unlikely: No Habitat	April - June
<i>Leptosiphon rosaceus</i>	rose leptosiphon	CRPR 1B.1	Coastal bluff scrub	No	Marin, San Francisco, San Mateo, Sonoma	Yes	0 - 100 meters	annual herb	Unlikely: No Habitat	April - July
<i>Lessingia arachnoidea</i>	Crystal Springs lessingia	CRPR 1B.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland	Marginal	San Mateo, Sonoma	Yes	60 - 200 meters	annual herb	Marginal	July - October
<i>Lessingia hololeuca</i>	woolly-headed lessingia	CRPR 3	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland	Marginal	Alameda, Fresno, Marin, Mendocino, Monterey, Napa, San Diego, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Tehama, Tuolumne, Yolo	Yes	15 - 305 meters	annual herb	Marginal	June - October
<i>Limnanthes douglasii ssp. arnduffii</i>	Omduff's meadowfoam	CRPR 1B.1	Meadows and seeps, agricultural fields	Marginal	San Mateo	Yes	10 - 20 meters	annual herb	Marginal	November - May
<i>Lupinus arboreus var. eximius</i>	San Mateo tree lupine	CRPR 3.2	Chaparral, Coastal scrub	No	San Mateo	Yes	90 - 550 meters	perennial evergreen shrub	Unlikely: No Habitat	April - July

Table 2
Special Status Plants

<i>Callisia multicolor</i>	San Francisco collinsia	CRPR 1B.2	Closed-cone coniferous forest, Coastal scrub; sometimes on serpentine soils	No	Marin, Monterey, San Francisco, San Mateo, Santa Clara, Santa Cruz	Yes	30 - 275 meters	annual herb	Unlikely; No Habitat	February - March
<i>Cypripedium fasciculatum</i>	clustered lady's-slipper	CRPR 4.2, BLM/S, IUCN/VU, USFSS	Lower montane coniferous forest, North Coast coniferous forest; usually in seeps and serpentine soils, streambanks	No	Butte, Del Norte, Glenn, Humboldt, Lassen, Mendocino, Nevada, Plumas, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Tehama, Trinity, Yuba	No	100 - 2435 meters	perennial rhizomatous herb	Unlikely; No Habitat	March - August
<i>Dirca occidentalis</i>	western leatherwood	CRPR 1B.2	Broadleaved upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North Coast coniferous forest, Riparian forest, Riparian woodland; mesic conditions	Marginal	Alameda, Contra Costa, Marin, San Mateo, Santa Clara, Sonoma	Yes	25 - 425 meters	perennial deciduous shrub	Marginal	January - April
<i>Elymus californicus</i>	California bottle-brush grass	CRPR 4.3	Broadleaved upland forest, Cismontane woodland, North Coast coniferous forest, Riparian woodland	Marginal	Marin, San Diego, San Mateo, Santa Cruz, Sonoma	Yes	15 - 470 meters	perennial herb	Marginal	May - November
<i>Eriophyllum latilobum</i>	San Mateo Woolly Sunflower	FE, SE, CRPR 1B.1	Cismontane woodland, Coastal scrub, Lower montane coniferous forest	No (USACE 2015)	San Mateo	Yes	45 - 330 meters	perennial herb	No (USACE 2015)	May - June
<i>Erysimum franciscanum</i>	San Francisco wallflower	CRPR 4.2	Chaparral, Coastal dunes, Coastal scrub, Valley and foothill grassland	Marginal	Marin, San Francisco, San Mateo, Santa Clara, Santa Cruz, Sonoma	Yes	0 - 550 meters	perennial herb	Marginal	March - June
<i>Fritillaria biflora</i> var. <i>ineziana</i>	Hillsborough chocolate lily	CRPR 1B.1	Cismontane woodland, Valley and foothill grassland	Marginal	San Mateo	Yes	150 meters	perennial bulbiferous herb	Marginal	March - April
<i>Fritillaria liliacea</i>	fragrant fritillary	CRPR 1B.2, USFSS	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland; often on serpentine, various soils reported though usually on clay in grassland	Marginal	Alameda, Contra Costa, Marin, Monterey, San Benito, San Francisco, San Mateo, Santa Clara, Solano, Sonoma	Yes	3 - 410 meters	perennial bulbiferous herb	Marginal	February - April
<i>Grindelia hirsutula</i> var. <i>maritima</i>	San Francisco gumplant	CRPR 3.2	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; sandy or serpentine slopes, sea bluffs	Yes	Marin, San Francisco, San Luis Obispo, San Mateo	Yes	15 - 400 meters	perennial herb	maybe	June - September
<i>Horkelia cuneata</i> var. <i>sericea</i>	Kellogg's horkelia	CRPR 1B.1, USFSS	Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub; sandy or gravelly soils	Yes	Alameda, Marin, Monterey, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Cruz	Yes	10 - 200 meters	perennial herb	Moderate	April - September
<i>Horkelia marinensis</i>	Point Reyes horkelia	CRPR 1B.2	Coastal dunes, Coastal prairie, Coastal scrub	Yes	Marin, Mendocino, Monterey, San Mateo, Santa Cruz, Sonoma	Yes	5 - 755 meters	perennial herb	Moderate	May - September

Table 2
Special Status Plants

<i>Malacothamnus arcuatus</i>	arcuate bush-mallow	CRPR 1B.2	Chaparral, Cismontane woodland	No	San Mateo, Santa Clara, Santa Cruz	No	perennial deciduous shrub	Unlikely: No Habitat	April - September
<i>Monolopia gracilens</i>	woodland woollythreads	CRPR 1B.2	Broadleaved upland forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland	Marginal	Alameda, Contra Costa, Monterey, San Benito, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz	Yes	annual herb	Marginal	February - July
<i>Pentachaeta bellidiflora</i>	White-rayed Pentachaeta	CRPR 1B.1, FE, SE	Cismontane woodland, Valley and foothill grassland	No (USACE 2015)	Marin, San Mateo, Santa Cruz	Yes	annual herb	No (USACE 2015)	March - May
<i>Plagiobathrys charisianus</i> var. <i>charisianus</i>	Choris' popcornflower	CRPR 1B.2, BLM/S	Chaparral, Coastal prairie, Coastal scrub	No	Alameda, Monterey, San Francisco, San Mateo, Santa Clara, Santa Cruz	Yes	annual herb	Unlikely: No Habitat	March - June
<i>Plagiobathrys charisianus</i> var. <i>hickmanii</i>	Hickman's popcornflower	CRPR 4.2	Chaparral, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps, Vernal pools	Marginal	Monterey, San Mateo, Santa Clara, Santa Cruz	Yes	annual herb	Marginal	April - June
<i>Polemonium carneum</i>	Oregon polemonium	CRPR 2B.2	Coastal prairie, Coastal scrub, Lower montane coniferous forest	No	Alameda, Del Norte, Humboldt, Marin, San Francisco, San Mateo, Siskiyou, Sonoma	Yes	perennial herb	Unlikely: No Habitat	April - September
<i>Potentilla hickmanii</i>	Hickman's cinquefoil (also called Hickman's potentilla)	CRPR 1B.1, FE, SE	Closed-cone coniferous forest, Coastal bluff scrub, Marshes and swamps, Meadows and seeps	No (USACE 2015)	Monterey, San Mateo	Yes	perennial herb	No (USACE 2015)	April - August
<i>Silene scouleri</i> ssp. <i>scouleri</i>	Scouler's catchfly	CRPR 2B.2	Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	Marginal	Del Norte, Humboldt, Marin, San Francisco, San Mateo, Sonoma	Yes	perennial herb	Marginal	March - September
<i>Silene verecunda</i> ssp. <i>verecunda</i>	San Francisco campion	CRPR 1B.2	Chaparral, Coastal bluff scrub, Coastal prairie, Coastal scrub, Valley and foothill grassland	Marginal	San Francisco, San Mateo, Santa Cruz	Yes	perennial herb	Marginal	February - August
<i>Triphysaria floribunda</i>	San Francisco owl's-clover	CRPR 1B.2	Coastal prairie, Coastal scrub, Valley and foothill grassland	Marginal	Marin, San Francisco, San Mateo	Yes	annual herb	Marginal	April - June
<i>Triquetrella californica</i>	coastal triquetrella	CRPR 1B.2, USFS/S	Coastal bluff scrub, Coastal scrub	No	Contra Costa, Del Norte, Marin, Mendocino, San Diego, San Francisco, San Mateo, Sonoma	Yes	moss	Unlikely: No Habitat	-
<i>Zostera marina</i>	Eelgrass	PFMC: HAPC	Nearshore marine habitats that are shallow and protected; estuaries	Yes	Washington, California, Oregon	Yes	seagrass	Yes: on site	late spring

Eelgrass (*Zostera marina*; *Zostera pacifica*) – PFMC: HAPC

Eelgrass (*Zostera marina* and *Z. pacifica*) are types of seagrass that grow along the West Coast in Washington, California and Oregon. The seagrass is among one of the sole angiosperms that can live in marine habitats. Eelgrass can be found in nearshore shallow, protected, and estuarine habitats. Eelgrass beds are essential habitat for many marine species because they provide shelter and foraging opportunity (NOAA Fisheries 2020).

There are no CNDDDB records for this species within five miles of the project site. However, eelgrass (*Z. marina*) and eelgrass habitat are known to exist within the project site just within the outer breakwaters of the harbor. Eelgrass is primarily found on the fine-textured sands, which occur within portions of the harbor. Eelgrass is planned to be impacted and mitigated by the project. Eelgrass is known to exist within and outside portions of the harbor where dredging will occur. Prior to dredging, however, biologists will remove the eelgrass. The fine sands that are dredged will then be brought to the eelgrass mitigation site on the west end of the harbor to provide a suitable substrate for planting. A larger amount of eelgrass mitigation will occur than the area that is impacted. Therefore, there should be an overall increase in eelgrass in the harbor after the project is complete (see MTS 2020). Given all of the above, the project includes suitable measures to ensure adequate eelgrass mitigation for the impacts.

Blasdale's bent grass (*Agrostis blasdalei*)- CRPR 1B.2, BLM:S

Blasdale's bent grass (*Agrostis blasdalei*) is a perennial, rhizomatous herb in the Poacea family and is endemic to California. It is known from Marin, Mendocino, Monterey, San Mateo, Santa Cruz, and Sonoma. It is found in coastal bluff scrub, coastal dunes, and coastal prairie (CNPS 2021).

Blasdale's bent grass grows up to 30 centimeters tall with short thread like leaves. This species blooms from May to July with clusters of brown spikelets up to 4 millimeters long (CNPS Calscape 2021).

There is one CNDDDB record of this species within five miles of the project site. The CNDDDB observation occurred in 2015 and is described as fewer than 50 plants in a 4x45 area on the cliff edge of Vallemar Bluff. This occurrence is north of the project site and west of Highway 1 at Moss Beach. CNDDDB notes that the blasdale's bent grass was crowded out by *Carpobrotus edulis* and was associated with *Armeria maritima*, *Bromus carinatus*, *Castilleja ambigua* ssp. *ambigua*, and *Danthonia californica*.

The project site contains moderate habitat for this species. Though the species generally grows in colonies connected by rhizomes and would likely have been observed, the surveys conducted on the site were outside of the blooming period. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur within the project site and will not be impacted by the project.

Franciscan onion (*Allium peninsulare* var. *franciscanum*) - CRPR 1B.2

Franciscan onion (*Allium peninsulare* var. *franciscanum*) is a perennial bulbiferous herb in the Alliaceae family and is endemic to California. It is known from Mendocino, Napa, San Mateo, Santa Clara, and Sonoma. It is found in cismontane woodland, and in valley and foothill grasslands. It grows on clay soils, often on serpentinite soils, and volcanic soil (CNPS 2021).

Franciscan onion blooms with clusters of pink umbel flowers from April to June (CNPS Calscape 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains marginal habitat for this species and though there are no observations in the vicinity, they are known from the region. No signs of bulb species were observed on the project site during site surveys. However, the surveys of the site were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Coast rockcress (*Arabis blepharophylla*) - CRPR 4.3

Coast rockcress (*Arabis blepharophylla*) is a perennial herb in the Brassicaceae family and is

native to California. It is known from Contra Costa, Marin, Monterey, San Francisco, San Mateo,

Santa Cruz, and Sonoma. It is found in broadleaved upland forest, coastal bluff scrub, coastal prairie, and coastal scrub with rocky substrate (CNPS 2021).

Coast rockcress blooms February through May with four pink to purple flowers that are sweetly fragrant. The species has a thin hairy stem and fuzzy leaves (CNPS Calscape 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains marginal habitat for this species and though there are no known observations in the vicinity, they are known from the region. This species is perennial and it is likely that any individuals would have been observed during surveys of the site. However, the surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Ocean bluff milk-vetch (*Astragalus nuttallii* var. *nuttallii*) - CRPR 4.2

Ocean bluff milk-vetch (*Astragalus nuttallii* var. *nuttallii*) is a perennial herb in the Fabaceae family and is native to California. It is known from Marin, Monterey, San

Francisco, San Luis Obispo, San Mateo, and Santa Barbara. It is found on coastal bluff scrub and coastal dunes (CNPS 2021).

Ocean bluff milk-vetch grows 0.7 to 3.3 feet tall (CNPS Calscape 2021). The species blooms from January to November with cream or green yellow bell flowers. The plant has fine hairs and its leaves spread the stem crowdedly and are arched (Jepson eFlora 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site, which were conducted within the blooming period for this species. Therefore, this species is unlikely to be found on the project site or be impacted by the project activities.

Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*) - CRPR 1B.2, BLM:S

Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*) is a perennial herb in the Fabaceae family and is native to California. It is known from Humboldt, Marin, San Luis Obispo, and San Mateo. It is found in coastal dunes, coastal scrub, marshes, and swamps (CNPS 2021).

Coastal marsh milk-vetch grows 1.3 to 3 feet tall. The species blooms densely clustered yellow white or cream flowers from April to October (CNPS Calscape 2021).

According to CNDDDB, there is one occurrence of the coastal marsh milk-vetch within five miles of the project site. The observation is described from a collection in 1902 on the west end of Pillar Point, near the marsh, approximately 1.5 miles from the project site. However, the plants were not found again during a survey conducted in 2004 at Pillar Point Marsh.

This species has not been observed in the surrounding project area since 1902, however, the project site contains moderate habitat for this species. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Johnny-nip (*Castilleja ambigua* var. *ambigua*) - CRPR 4.2

Johnny-nip (*Castilleja ambigua* var. *ambigua*) is an annual herb in the family Orobanchaceae and is native to California. It is known from Alameda, Contra Costa, Del Norte, Humboldt, Marin, Mendocino, Napa, San Mateo, Santa Cruz, Solano, and

Sonoma. It is found in coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, and vernal pools (CNPS 2021).

Johnny-nip blooms from March to August with yellow flowers surrounded by rounded bracts that become pink with age (CNPS 2021, Jepson eFlora 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Papoose tarplant (*Centromadia parryi* ssp. *parryi*) - CRPR 1B.2, BLM:S

Papoose tarplant is an annual herb in the Asteraceae family that is native to California. It is known from Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano and Sonoma County. It is found in a variety of habitats including chaparral, coastal prairie, meadows, seeps, coastal salt marshes and swamps, valley and foothill grassland, and alkaline coastal prairies (CNPS 2007). This species can be found at elevations from two to 420 meters.

Papoose tarplant blooms May through November with yellow aster flowers. The species has small spiny and hairy leaves and inflorescence sepals.

There are no CNDDDB records for this species within five miles of the project site.

The project site contains marginal habitat for this species and though there are none in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site, which were conducted within the blooming period for this species. Therefore, this species is unlikely to be found on the project site or be impacted by the project activities.

San Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*) - CRPR 1B.2

San Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*) is an annual herb in the Polygonaceae family and is native to California. It is known from Alameda, Marin, San Francisco, San Mateo, and Sonoma. It is found in coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub (CNPS 2021).

San Francisco Bay spineflower is grows to 1.9 to 5.9 inches tall. The species blooms from April through August with clusters of small hairy white and pink flowers (CNPS Calscape 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Western leatherwood (*Dirca occidentalis*) - CRPR 1B.2

Western leatherwood is a perennial deciduous shrub that is native and endemic to California. It is the only member of the daphne family, Thymeleaceae, within the state. It is restricted to the Bay Area, growing on moist slopes in partial shade, within Alameda, Contra Costa, Marin, Santa Clara, and San Mateo counties (Hickman 1993). It is found in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest and riparian woodland habitats in association with buckeye, madrone, and coast live oak.

Western leatherwood individuals may grow to 6 feet tall and 3 feet wide. The species has oval, entire, leaves 3 to 7 centimeters in length. Small, pendulous yellow flowers emerge from the tips of branches before the leaves. It blooms from January to April (CNPS 2007).

There are two CNDDDB records for this species within five miles of the project site. The observations are based off collections which occurred in 1969 and 1975, both east of the project site. The locations are approximate and mapped at CNDDDB's best guess. CNDDDB describes the first observation 0.9 miles from the Pilarcitos dam on the way to Montara Mountain growing with *Actostaphylos montaraensis*. The second observation was 0.5 miles below the Pilarcitos Lake Dam in a Douglas fir forest and wooded canyon.

There are no records of this species near the project site since 1975, which occurred in the Santa Cruz Mountains and in a different habitat from those present on site. However, the project site contains marginal habitat for this species. No observations of this plant were made during surveys conducted at the site, though they were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

California bottle-brush grass (*Elymus californicus*) - CRPR 4.3

California bottle-brush grass (*Elymus californicus*) is a perennial herb in the Poaceae family and is native to California. It is known from Marin, San Diego, San Mateo, Santa Cruz, and Sonoma. It is found in broadleaved upland forest, cismontane woodland, north coast coniferous forest, and riparian woodland (CNPS 2021).

California bottle-brush grass grows 3.3 to 7 feet tall with sheathed leaves. It blooms from May through November with brown flower clusters, each with three to four nodes and three to four small spikelets (CNPS Calscape 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains marginal habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site, which were conducted within the blooming period for this species. Therefore, this species is unlikely to be found on the project site or be impacted by the project activities.

San Francisco wallflower (*Erysimum franciscanum*) - CRPR 4.2

San Francisco wallflower (*Erysimum franciscanum*) is a perennial herb in the Brassicaceae family and is native to California. It is known from Marin, San Francisco, San Mateo, Santa Clara, Santa Cruz, and Sonoma. It is found in chaparral, coastal dunes, coastal scrub, valley and foothill grassland. It is often in granitic and serpentine soils and sometimes on roadsides (CNPS 2021).

San Francisco wallflower blooms from March to June with four cream petals and four sepals (CNPS Calscape 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains marginal habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Hillsborough chocolate lily (*Fritillaria biflora* var. *ineziana*) - CRPR 1B.1

Hillsborough chocolate lily (*Fritillaria biflora* var. *ineziana*) is a perennial bulbiferous herb in the Liliaceae family and is native to California. It is only known to occur in San Mateo County. It is found in cismontane woodland, valley and foothill grassland and often grows in serpentine soils (CNPS 2021).

Hillsborough chocolate lily blooms from March through April with a bell-shaped chocolate colored flower (CNPS 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains marginal habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were

conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Fragrant fritillary (*Fritillaria liliacea*) - CRPR 1B.2, USFS:S

Fragrant fritillary is a perennial herb (bulb) that is native and endemic to California. The range of this wildflower is over parts of southwestern Northern California, especially Solano and Sonoma Counties and at coastal locations south to Monterey County. It found in coastal scrub, valley and foothill grassland, and coastal prairie. It occurs typically in open hilly grasslands at altitudes less than 370 meters in elevation. The species prefers heavy soils including clays; for example, andesitic and basaltic soils derived from the Sonoma Volcanic soil layers are suitable substrate for this species.

The bell-shaped white flowers have greenish stripes and are set on a nodding pedicel of about 37 centimeters in height. The blossoms are odorless to faintly fragrant. Its blooming period is between February and May. The species is threatened by grazing, agriculture, urbanization and non-native plants (CNPS 2007).

There is one CNDDDB record of this species within five miles of the project site. The CNDDDB observation is described from a collection in 1931. The exact location is unknown but is estimated to be at the head of Pilarcitos Creek, which is approximately five miles east from the site in the Santa Cruz Mountains.

The only record of the species in the greater project area is historic (1931) and it occurred in a different habitat than those at the project site. The project site contains marginal habitat for this species and no observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

San Francisco gumplant (*Grindelia hirsutula* var. *maritima*) - CRPR 3.2

San Francisco gumplant (*Grindelia hirsutula* var. *maritima*) is a perennial herb in the Asteraceae family and is endemic to coastal California. It is known from Marin, San Francisco, San Luis Obispo, and San Mateo. It is found in coastal bluff scrub, coastal scrub, valley and foothill grassland, sandy or serpentine slopes, and sea bluffs (CNPS 2021).

San Francisco gumplant blooms from June to September with bright yellow aster flowers (CNPS 2021).

CNDDDB lists one occurrence of the San Francisco gumplant within five miles of the project site. The record is from 1972 approximately five miles north of the project site along the ocean bluff.

Although this species has not been recorded in the area since 1972, the project site contains marginal habitat for this species. No observations of this species were made during surveys of the site, which were conducted outside of the blooming period for this species. Though this species is perennial and would like have been observed had it been present on the site, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Kellogg's horkelia (*Horkelia cuneata* var. *sericea*) - CRPR 1B.1, USFS:S

Kellogg's horkelia (*Horkelia cuneata* var. *sericea*) is a perennial herb in the Rosaceae family and is native to California. It is known from Alameda, Marin, Monterey, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, and Santa Cruz. It is found in chaparral, closed-cone coniferous forest, coastal dunes, and coastal scrub (CNPS 2021).

Kellogg's horkelia blooms from April to September with several small white flowers which have five petals. The species has dense hairs and grows 0.7 to 2.3 feet tall (CNPS Calscape 2021).

There are two CNDDDB observations of Kellogg's horkelia within five miles of the project vicinity. The first observation occurred in 2000 a grassland along a ridgetop between Frenchmans Creek and Apanilio Creek, approximately four miles southeast of the site. The second record of this species occurred in 2001 on Montana Mountain about 5 miles north of the project site.

Both CNDDDB records occurred in the Santa Cruz Mountains, which is a different habitat than those that occur on the project site. The project site contains moderate habitat for this species though no observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Point Reyes horkelia (*Horkelia marinensis*) - CRPR 1B.2

Point Reyes horkelia (*Horkelia marinensis*) is a perennial herb in the Rosaceae family and is endemic to California's coastline. It is known from Marin, Mendocino, Monterey, San Mateo, Santa Cruz, and Sonoma. It is found in coastal dunes, coastal prairie, and coastal scrub (CNPS 2021).

From May to September, Point Reyes horkelia blooms dense clusters of white flowers. The flowers emerge from red green stems, have fuzzy sepals, a ring of stamens, and 20 to 30 pistils. The species grows up to 11.8 inches tall with toothy hairy leaves up to 10 centimeters long (CNPS Calscape 2021).

There are no CNDDDB records for this species within five miles of the project site. The project site contains moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Harlequin lotus (*Hosackia gracilis*) - CRPR 4.2

Harlequin lotus (*Hosackia gracilis*) is a perennial rhizomatous herb in the Fabaceae family and is native to California. It is known from Del Norte, Humboldt, Marin, Mendocino, Monterey, San Francisco, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, and Sonoma. It is found in broadleafed upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes, swamps, meadows, seeps, north coast coniferous forest, valley and foothill grassland (CNPS 2021).

Harlequin lotus blooms from March to July with pea like flowers which have a yellow upper petal and pink or white lower petals. The plant grows from 0.66 to 1.6 feet tall and has leaves composed of a few leaflets (CNPS Calscape 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains marginal habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Perennial goldfields (*Lasthenia californica* ssp. *macrantha*) - CRPR 1B.2, BLM:S

Perennial goldfields (*Lasthenia californica* ssp. *macrantha*) is a perennial herb in the Asteraceae family and is native to California. It is known from Del Norte, Humboldt, Marin, Mendocino, San Luis Obispo, San Mateo, Santa Cruz, and Sonoma. It is found in coastal bluff scrub, coastal dunes, and coastal scrub (CNPS 2021).

Perennial goldfields bloom from January to November with bright yellow aster flowers (CNPS Calscape 2021). This species' stem branches at its base and has linear leaves (Jepson eFlora 2021).

There are two CNDDDB records of perennial goldfields within five miles of the project site. Both records are from 2015 along bluffs with dirt trails. One of the observations was at Montara State Beach, west of Highway 1 and about four miles north of the project site. CNDDDB describes the observation as more than 500 plants in coastal prairie. The species

was present on both sides of the trail and was denser at the northern end of the bluff. The second record occurred between Seymore Bridge and Francis State Beach which is about four miles south of the project site. This observation had more than 100 plants which were spread along the western edge of the bluff and cliff faces.

The previous CNDDDB perennial goldfields observations occurred in similar conditions to the project site, which includes marginal habitat for this species. No observations of this plant were made during surveys conducted at the site, which were conducted within the blooming period for this species. Therefore, this species is unlikely to be found on the project site or be impacted by the project activities.

Coast yellow leptosiphon (*Leptosiphon croceus*) - CRPR 1B.1, SE

Coast yellow leptosiphon (*Leptosiphon croceus*) is an annual herb in the Polemoniaceae family and is native to California. It is only known from San Mateo. It is found in coastal bluff scrub and coastal prairie (CNPS 2021).

Coast yellow leptosiphon is low growing, up to 0.8 to 2.8 inches tall. The species blooms from April to June with brightly colored yellow flowers which have fused petals and two red dots at the base of the petal (CNPS Calscape 2021, CDFW 2021).

There is one CNDDDB record of this species within five miles of the project vicinity. The record, observed in 2015, was west of the trail on Vallemar Bluff in coastal prairie and in the cliff's edge. CNDDDB states that the plants in this observation decreased from 1000 plants in 1998 to less than 400 plants in 2015. This record is approximately three miles north of the project site.

The project site contains marginal habitat for this species and similar habitat described in the CNDDDB record. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Crystal Springs lessingia (*Lessingia arachnoidea*) - CRPR 1B.2

Crystal Springs lessingia (*Lessingia arachnoidea*) is an annual herb in the Asteraceae family and is native to California. It is known from San Mateo and Sonoma. It is found in cismontane woodland, coastal scrub, valley and foothill grassland (CNPS 2021).

Crystal Springs lessingia grows up to 2.6 ft tall and has a thin stem that becomes woolier towards the top with occasionally toothy narrow leaves. The species blooms from July to October with a single lavender flower that has ray like lobes (CNPS Calscape 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains marginal habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted just outside

of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Woolly-headed lessingia (*Lessingia hololeuca*) - CRPR 3

Woolly-headed lessingia (*Lessingia hololeuca*) is an annual herb in the Asteraceae family and is native to California. It is known from Alameda, Fresno, Marin, Mendocino, Monterey, Napa, San Diego, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Tehama, Tuolumne, and Yolo. It is found in clay and serpentine soils in broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland (CNPS 2021).

Woolly-headed lessingia is a woolly textured plant that grows 0.1 to 1.3 feet tall with a thin stem. The flower has many pink to purple funnel shaped petals which bloom from June to October in clusters (CNPS Calscape 2021).

There are no CNDDDB records for this species within five miles of the project site.

The project site contains marginal habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*) - CRPR 1B.1

Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*) is an annual herb in the Limnanthaceae family and is native to California. It is only known from San Mateo and is restricted to a single agricultural field. It is found in meadows, seeps, and agricultural fields (CNPS 2021).

Ornduff's meadowfoam bloom in November through May with small white flowers that have four petals, stamen, and pistils (CNPS 2021).

There are two CNDDDB occurrences of Ornduff's meadowfoam within five miles of the project vicinity. Both observations occurred northeast of the project site. One record says the species was last seen in 2008 in a cultivated field west of the Half Moon Bay Airport. The record stated there were originally three plants but that the species is "possibly extirpated" because they were not found during site visits in 2009, 2010, or 2011. The

other record described the species as last seen in 2011 east of Highway 1 in saturated soil of a fallow field. CNDDDB states that there

was nearly absolute cover of this species over about 18 acres in 1998 but has now diminished to about 90% cover.

This species is currently confined to a single agricultural field and the project site contains marginal habitat for this species. No observations of this plant were made during surveys conducted at the site, which were conducted within the blooming period for this species. Therefore, this plant is unlikely to occur on the project site or be impacted by project activities.

Woodland woollythreads (*Monolopia gracilens*) - CRPR 1B.2

Woodland woollythreads (*Monolopia gracilens*) is an annual herb in the Asteraceae family and is native to California. It is known from Alameda, Contra Costa, Monterey, San Benito, San Luis Obispo, San Mateo, Santa Clara, and Santa Cruz. It found in broadleaved upland forest, chaparral, cismontane woodland, north coast coniferous forest, valley and foothill grassland (CNPS 2021).

Woodland woollythreads grow approximately 2.6 feet tall and are woolly textured. This species blooms from February to July with inflorescence that has white flower heads and bright yellow ray florets which surround numerous disc florets (CNPS Calscape 2021).

There is one CNDDDB record of this species within five miles of the project. The observation is from 1949 about five miles east of the project site at Pilarcitos Lake and Canyon in the Santa Cruz Mountains. The exact location is unknown but is based off collections in 1893 and 1949.

There are no records of this species near the project site since 1949, which occurred in the Santa Cruz Mountains and within a different habitat than those present on site. The project site contains marginal habitat for this species, though no observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Hickman's popcornflower (*Plagiobothrys chorisianus* var. *hickmanii*) - CRPR 4.2

Hickman's popcornflower (*Plagiobothrys chorisianus* var. *hickmanii*) is an annual herb in the Boraginaceae family and is native to California. It is known from Monterey, San Mateo, Santa Clara, and Santa Cruz. It is found in chaparral, closed-cone coniferous forest, coastal scrub, marshes, swamps, and vernal pools (CNPS 2021).

Hickman's popcornflower grows 0.33 to 1.33 feet tall. The species blooms from April to June with small white flowers which have a yellow center and five petals (CNPS Calscape 2021).

There are four CNDDDB records of Hickman's popcorn flower within five miles from the project site. Three of the records occurred south of the project site, and one north of the site. These occurrences were last seen in 2007, 2015 and 2016. Two of these records occurred along a coastal bluff in annual grasslands. The remaining two records were located west of Farallone View Elementary School and along a muddy road with mesic deciduous shrubs.

The project site contains marginal habitat for this species. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Scouler's catchfly (*Silene scouleri* ssp. *scouleri*) - CRPR 2B.2

Scouler's catchfly (*Silene scouleri* ssp. *scouleri*) is a perennial herb in the Caryophyllaceae family and is native to California. It is known from Del Norte, Humboldt, Marin, San Francisco, San Mateo, and Sonoma. It is found in coastal bluff scrub, coastal prairie, valley and foothill grassland (CNPS 2021).

Scouler's catchfly grows many stems and blooms from March to April with clusters of flowers which have a tubular veined calyx and five bi-lobed pink petals (CNPS 2021).

There is one CNDDDB record of this species within five miles of the project site. The exact location is unknown but is northeast of the project site and is described between San Pedro Mountain and Montara Mountain. The record is based off a collection in 1983 and a photo taken in 2003.

The CNDDDB record of this species occurred in the Santa Cruz Mountains and within different habitat than those present at the project site. The project site contains marginal habitat for this species, though no observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

San Francisco campion (*Silene verecunda* ssp. *verecunda*) - CRPR 1B.2

San Francisco campion (*Silene verecunda* ssp. *verecunda*) is a perennial herb in the Caryophyllaceae family and is endemic to coastal California. It is known from San Francisco, San Mateo, and Santa Cruz. It is found in chaparral, coastal bluff scrub, coastal prairie, coastal scrub, valley and foothill grassland (CNPS 2021).

San Francisco campion grows 0.33 to 1.6 feet tall (CNPS Calscape 2021). This species has thin flexible upward reduced leaves that are 3 to 6 centimeters long (Wilkens 1993). Flowers bloom

from February to August with a short and hairy calyx and bi-lobed pink petals (CNPS 2021, Wilkens 1993).

There is one CNDDDB record of this species within five miles of the project. This observation occurred northeast of the project site with an unknown exact location but was near Montara Mountain. The record is based off a collection in 1900 with vague site descriptions.

The single CNDDDB record of this species is historic and has not been seen since 1900. Further, this known occurrence was within a different habitat than those found at the project site. The project site contains marginal habitat for this species, though no observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

San Francisco owl's-clover (*Triphysaria floribunda*) - CRPR 1B.2

San Francisco owl's-clover (*Triphysaria floribunda*) is an annual herb in the Orobanchaceae family and is native to California. It is known from Marin, San Francisco, and San Mateo. It is found in coastal prairie, coastal scrub, valley and foothill grassland (CNPS 2021).

San Francisco owl's-clover grows to approximately 11.8 inches tall with a yellow brown stem and long pointed leaves. This species blooms from April to June with clusters of yellow white flowers which have a wide lower lip that pouches (CNPS Calscape 2021).

There is one CNDDDB record of this species within five miles of the project. The record is based off a collection in 1900 where the exact location is unknown. CNDDDB describes the location near Seal Cove in a field above a schoolhouse. This estimated location is approximately two miles north of the project site.

There are no records of this species in the greater project area since the one historic observation (1900), however, the project site contains marginal habitat for this species, though no observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

2. SPECIAL STATUS HABITATS

a. Wetlands and Waters

Zentner Planning and Ecology completed wetland delineations for the USACE (Zentner, 2021a) and the California Coastal Commission (Zentner, 2021b). As defined by the Army Corps of Engineers (Corps), “wetlands” are areas periodically or permanently saturated by surface or groundwater and typically support vegetation adapted to life in saturated (hydric) soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and floodwaters, promotion of groundwater recharge, and their water filtration and purification functions. “Other waters” include tributaries or drainage ditches which exhibit perennial or ephemeral flow to a navigable waterway, wetland, or other significant water feature. Other waters may not necessarily be wetlands.

The results of the delineation are detailed in the Pillar Point/ Surfer’s Beach Sections 10 and 404 Jurisdictional Delineation (Zentner, 2021a) and the Coastal Commission Jurisdictional Delineation (Zentner, 2021b). The USACE delineation is summarized below. See **Figure 4** for locations of the areas described below.

b. Jurisdictional Areas

Tidal Waters (Sections 10 and 404 Jurisdictions)

Total Area: 126.75 acres

The majority of the site is tidal water that was mapped to the edge of Mean High Water (MHW). Outside of the breakwater, this area is nearly always open water. The exception is the area along Surfers Beach, which has been well scoured and is a mix of water and sand depending upon the tide. Inside the harbor, which is located within the breakwater, portions of this zone are exposed sand during low tides, especially adjacent to and just north of, the breakwater.

No terrestrial vegetation is present in this habitat. Hydric substrates are present as indicated by frequent and prolonged inundation during high tides and prolonged saturation during low tides. The tidal waters habitat is not a wetland as there is no vegetation, however it is jurisdiction under Sections 10 and 404 as a “Water of the US” since it is a navigable water.

High Tidal Areas (Section 404 Jurisdiction)

Total Area: 3.29 acres

The next largest jurisdictional habitat is the area between MHW at the low elevation up to the High Tide Line (HTL) at its upper elevation. In tidally influenced estuaries, this zone is usually inhabited by tidal marsh vegetation. Along the coast, however, this area is often characterized as an upper zone along the beach, as it is with the majority of the project site. Along the breakwaters, however, the zone between MHW and the HTL,

which delineate this habitat, is very narrow. Though this zone is also unvegetated, it is not navigable and thus, it falls within Section 404 jurisdiction.

Ephemeral Channel

Area: C (see **Figure 4**)

Total Area: 7.9 square feet Total length: 11.85 linear feet

A very small channel fragment runs between two culverts within the project boundary. The culverts originate from the area around Highway 1 and outfall into the Pacific. The channel appears to be very ephemeral and the bed only approximately 8 inches in width. The channel and immediate surroundings are dominated by upland vegetation and therefore, the channel was mapped to the ordinary high water mark (OHWM).

Seasonal Wetland

Areas: A and D (see **Figure 4**)

Total Area: 0.074 acres Data Points: 1 and 6

The site contains two small seasonal wetlands. The first is located within a zone of ruderal coastal strand vegetation that is dominated by ice plant. A small depression in this zone holds water for extended periods despite the sand substrate, likely due to a relatively high water table. Vegetation in the zone contains salt tolerant vegetation such as pickleweed (*Salicornia pacifica*; OBL) and saltgrass (*Distichlis spicata*; FACW) as well as freshwater associated plants such as rabbitsfoot grass (*Polypogon monspeliensis*; FACW) and bucks-horn plantain (*Plantago coronopus*; FAC), along with ice plant.

The second seasonal wetland is located on the bluff above Surfers Beach. This is a very shallow wetland that appears to pond water from runoff via the adjacent maintained grassland area as well as from overflow when the adjacent culvert is block or partially blocked during heavy rainfall events. This wetland was ponded to a depth of approximately two inches and contained a significant biotic crust layer. The vegetation consisted of Mediterranean barley (*Hordeum marinum*; FAC), spearscale (*Atriplex patula*; FACW), and bucks-horn plantain.

Soils: Seasonal wetland A is located within a zone of CF or Coastal Beaches, which is composed of sand. Though these areas are well-drained, the basin was low enough to be near the water table and contained some light redox. Seasonal wetland D, located on the bluff, is within an area of Denison Clay loams. These soils do not appear to be very well drained and contained an upper layer of very dark material (7.5YR 2/0).

Hydrology: The seasonal wetlands are all found within relatively obvious depressional features on the site, which contained indicators of ponded water.

Riparian Wetland

Area: B (see Figure 4)

Total Area: 0.107 acres Data Points: 8

A relatively small fragment of riparian wetland lies between Highway 1 and the Pacific Ocean on the bluff above Surfers Beach. The riparian vegetation is dominated by arroyo willow (*Salix lasiolepis*; FACW) with an understory of poison hemlock (*Conium maculatum*; FAC), spearscale, and iceplant. A large, dense area of willow woodland is located on the east side of Highway 1 and there is obviously some drainage connection between the east and west side of the highway where this fragment is located, before it drains into the Pacific.

Soils: The riparian wetland B, is located on the bluff, within an area of Denison Clay loams. These soils do not appear to be very well drained despite being on a relatively shallow layer above the bedrock and contained an upper layer of very dark material (7.5YR 2/0).

Hydrology: The riparian wetland is found within relatively obvious depressional feature on the site, which contained indicators of ponded water.

c. Non-jurisdictional Areas

The remaining habitat within the project site is upland and non-jurisdictional. The upland habitats consist of developed areas such as parking lots, trails and the tops of the rock breakwaters. More natural, but heavily disturbed upland habitats consist of coastal strand and maintained grassland habitats. The coastal strand lies within the harbor between the beach and the paved trail, while the maintained grasslands are located on the bluff east of and above, Surfers Beach.

Coastal Strand: The non-jurisdictional coastal strand habitat lies within the harbor side of the breakwater between the beach and the paved trail. This habitat is dominated by non-native ice plant, but does contain a number of native species in areas where the ice plant is relatively sparse. Ripgut brome (*Bromus diandrus*; UPL) is relatively common as is bur clover (*Medicago polymorpha*; FACU). Salt grass (*Distichlis spicata*; FACW) is found sparsely in some areas as is horseweed (*Erigeron canadensis*; FACU).

The substrate of the coastal strand is sand that is relatively quick draining outside of the very low basin that is located within the coastal strand and showed no hydrologic indicators. The sample points in these areas failed to satisfy the three technical wetland criteria with vegetation, soils, and hydrology failing to show wetland indicators.

Maintained Grassland: As noted above, the non-jurisdictional maintained grasslands are located on top of the bluff in a narrow strip between the bluff to the west and a paved trail that runs adjacent to Highway 1. This grassland is highly maintained as to give the appearance of turf, complete with picnic tables and benches. The grassland is dominated by ripgut brome and includes weedy broadleaves such as mustard (*Brassica nigra*; UPL),

bur clover, Italian ryegrass (*Festuca perennis*; FAC) and storksbill (*Erodium cicutarium*; UPL).

Rainfall sheet flows off the site primarily to the west off the bluff, but also north into the small drainage ditch. The area is relatively level and slopes gently to the west and, therefore, does not provide a place for water to collect to form any seasonally wet areas. The sample point in this area failed to satisfy the three technical wetland criteria with vegetation, soils, and hydrology failing to show wetland indicators.

d. Other Special Status Habitats

A total of two special status habitats are known from the region: northern coastal salt marsh and northern maritime chaparral. Neither of these habitats occur within the study area.

Northern coastal salt marsh habitat is not present within the study area. This tidal habitat is present on the west side of Pillar Point Harbor, opposite from the project site. Both seasonal wetlands on site are geographically separated from the tide line either by sand dunes or a coastal bluff, inhibiting tidal mixing. Only one of seasonal wetlands contains some of the species found within north coastal salt marsh, most notably pickleweed (*Salicornia pacifica*), but also lack the suite of species found within tidal salt marshes. Additionally, it is composed of freshwater plants and ice plant which are not characteristic of northern coastal salt marsh.

Northern maritime chaparral does not exist on the project site. This habitat is mainly composed of dense shrub cover including plants like manzanita and chamise. There are few shrubs on the project site which are few and far between. This habitat is known from the project area because it exists more inland but not close enough to the site to be impacted by project activities.

e. Wildlife Movement Corridors

Wildlife corridors are generally described as pathways or habitat linkages that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural or human induced factors such as urbanization. The fragmentation of natural habitat creates isolated “islands” of vegetation that may not provide sufficient area or resources to accommodate sustainable populations for a number of species and thus, adversely affecting both genetic and species diversity. Corridors often partially or largely eliminate the adverse effects of fragmentation by 1) allowing wildlife to move between remaining habitats to replenish depleted populations and increase the gene pool available; 2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fire or disease) will result in population or species extinction; and 3) serving as travel paths for individual animals moving throughout their home range in search of food, water, mates, and other needs, or for dispersing juveniles in search of new home ranges.

The study area is generally surrounded by barriers to wildlife movement on all sides, including Highway 1, Pillar Point Harbor, and the Pacific Ocean. The area is highly trafficked by humans and consequently, there is little terrestrial wildlife cover aside from birds. The Pacific Ocean is used as a wildlife corridor; however, it is unlikely that the ocean in the project area will be used as one since it is within Pillar Point Harbor which is mostly geographically secluded by breakwaters and is shallow. For these reasons, the site is unlikely to be utilized as a movement corridor for wildlife in the area. However, the salt marsh west of the site and local creeks such as Denniston Creek and Deer Creek may provide movement pathways for some common wildlife species. Common wildlife species, such as coyote, that find their way into the region around the study area may forage before leaving the area. In short, however, the proposed project is unlikely to be used as a wildlife movement corridor and it will have very little to no impact on any common, urban adapted species that may occasionally utilize the study area.

3. REGULATORY SETTING

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

1. Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.
2. Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.
3. Section 9 (§1538): Prohibition on Take: prohibits the “taking” of a listed species by anyone, including private individuals, and State and local agencies.
4. Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of saltwater fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Section 9 of FESA as amended, prohibits the “take” of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, “take” of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. “Take,” as defined by FESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” “Harm” includes not only the direct taking of a species itself, but the destruction or modification of the species’ habitat resulting in the potential injury of the species. As such, “harm” is further defined to mean “an act which actually kills or injures

wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR 17.3).

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If “take” of a listed species is necessary to complete an otherwise lawful activity, this triggers the need to obtain an incidental take permit either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal “nexus”). Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species.

The Section 7 consultation process applies only to actions taken by federal agencies, or actions by private parties that require federal agency permits, approval, or funding (for example, a private landowner applying to the Corps for a permit). Section 7’s consultation process is triggered by a determination of the “action agency” (i.e., the federal agency that is carrying out, funding, or approving a project) that the project “may affect” a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation with the USFWS is required.

Federal Migratory Bird Treaty Act (FMBTA)

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to “take” (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Federal Clean Water Act

Section 404: Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into “waters of the United States” (33 CFR Part 320 *et seq.*). This requires project applicants to obtain authorization from the USACE prior to discharging dredged or fill material into any water of the United States. The “waters of the United States” are defined in federal regulations at 33 CFR section 328.3, and may include wetlands, ponds, drainages, creeks, streams, and other types of waterbodies, depending on whether any such aquatic feature meets current jurisdictional standards.

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to acquire authorization from the USACE

prior to discharging or otherwise impacting “waters of the United States.” This authorization is typically given by reference to compliance with an existing Nationwide Permit(s) or by issuance of a project-specific Individual Permit.

Section 401: Prior to issuance by a Section 404 authorization by the USACE, Section 401 of the federal Clean Water Act requires the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB) to certify, conditionally certify, or waive certification on the question of whether issuance of the USACE permit will violate water quality standards of the State. This certification (or waiver thereof) applies only to the proposed impacts to the "waters

of the United States" that are at issue in the proposed Section 404 permit. Potential impacts to "waters of the State" that may not be jurisdictional for the USACE are addressed under the RWQCB's Porter-Cologne Water Quality Control Act statutory authority (see below).

a. State Framework

California Endangered Species Act

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats.

If proposed projects would result in impacts to a State listed species, an “incidental take” permit pursuant to §2081 of CDFG Code would be necessary (versus a Federal incidental take permit for Federal listed species). No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of “take.”

State and federal incidental take permits are typically only authorized if applicants are able to demonstrate that impacts on the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review.

California Fish and Game Code

Section 4700: In accordance with California Fish and Game Code, Section 4700, “fully protected” mammals or parts thereof may not be taken or possessed (held in captivity) at any time (a) (1), except as provided in Section 2081.7. No provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected mammal, and no permits or licenses heretofore issued shall have any force or effect for that purpose. However, subject to certain notice requirements, the department may authorize the taking of those species for necessary scientific research, including efforts to recover fully protected, threatened, or endangered species.

Sections 3503, 3503.5, 3511, and 3513: CDFG Code §§ 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of the nest or eggs of any bird. Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered “take.” Take of any migratory nongame bird is also prohibited, except in compliance with rules promulgated under the Migratory Bird Treaty Act.

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, “fully protected” birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under CDFG Code (§3511). “Fully protected” birds may not be taken or possessed (that is, kept in captivity) at any time.

Section 1602: Pursuant to Section 1602 of the Fish and Game Code, CDFG regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream. CDFG's jurisdiction includes the outer extent of any riparian vegetation associated with the stream. Any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with CDFG prior to commencing work in the stream.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that “any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge” with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1)). The SWRCB and its several RWQCBs have interpreted this authority to extend to proposed fills of “waters of the State” that include all “waters of the United States” that are subject to the jurisdiction of the USACE, and any other “isolated” waters that are beyond the reach of the USACE claim of jurisdiction.

b. CEQA Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the proposed project would have significant impacts on biological resources if it would:

1. 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 CDFG or U.S. Fish and Wildlife Service (USFWS).
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFG or USFWS.

3. Have a substantial adverse effect on federally protected “wetlands” or “Waters of the U.S.” as defined by Section 404 of the Clean Water Act or “Waters of the State” as defined by the Porter-Cologne Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. 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.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

2.2.4.3 Discussion

a) **Less Than Significant with Mitigation Incorporated.**

Western Snowy Plover

Impact Analysis

Snowy plovers are not known to be present within the Surfers Beach project area due to the erosion of sand and the presence of disturbance activities in the area. However, they are known to occur approximately 1 mile south of this area. Therefore, it is possible that a Section 7 consultation regarding this species will be initiated as part of the USACE permitting process. Though the project is expected to result in long-term benefits to snowy plover, the following impacts shall be implemented to reduce potential short-term impacts to a level considered less than significant.

Mitigation Measure BIO-1a: Snowy Plover Avoidance and Minimization Measures

- A qualified biologist (knowledgeable and experienced in snowy plover ecology and identification) shall conduct a pre-construction survey for snowy plovers within 7 days prior to the initiation of construction or equipment use, including pipeline placement and removal, and any beach nourishment activities. A survey report detailing the survey findings shall be prepared and submitted to the biological permitting agencies prior to the start of construction. If disturbance activities are delayed following a survey, then an additional pre-construction survey should be conducted such that no more than one week will have elapsed between the last survey and the commencement of ground disturbance activities at each discrete project location

- Prior to the initiation of work, the qualified biologist will conduct Worker Environmental Awareness Training (WEAT) for all personnel conducting work at the project. At a minimum, the training will include written and oral information regarding special status species and habitats that have the potential to occur on the site, a description of the species and their habitat, and the importance of these species. The training will include the general measures that are being implemented to conserve the species as they relate to the project and the penalties for non-compliance. A fact sheet or other supporting materials containing this information will be prepared and distributed to all personnel conducting work at the project. Upon completion of the training, construction personnel will sign a form stating that they have attended the training and understood all of the conservation protection measures. The signed form will be kept onsite at all times and available for agency staff review if requested. Interpretation shall be provided for non-English speaking workers.
- If snowy plovers were found to be located within the Surfers Beach project area, the following measures shall be initiated to reduce the potential impacts to a less than significant level:
 1. A biological monitor shall be present during any construction activities in and around Surfers Beach during the first week. If snowy plovers continue to be observed near the construction area, the monitor will advise the work crews on how to avoid or minimize impacts to plover, which may include temporarily halting activities, until the plovers have left the site. The minimization measures shall continue throughout the beach nourishment activities.
 2. The qualified biologist will conduct surveys of Surfers Beach and immediate surroundings until the snowy plovers have left the work area. Project work may resume after snowy plovers have left the work area.
- During project activities, all trash that may attract predators will be properly contained, removed from the construction area and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
- Vehicle and equipment refueling, repair, and lubrication will only be permitted in designated areas where accidental spills will be contained.

Level of Significant After Mitigation: Less Than Significant

Coastal Pelagic Fish and Groundfish.

Impact Analysis

Eelgrass beds are known to provide habitat for coastal pelagic fish and groundfish. However, it is expected that fish will be able to swim away to avoid impacts from either clamshell or suction type dredges, especially to adjacent eelgrass beds, which won't be impacted by the project. Disturbance of the eelgrass beds could cause temporary, minor disturbances to these fish species, though the eelgrass mitigation proposed by the project is expected to result in increased habitat for these same fish species over the long-term.

It is assumed that a Section 7 consultation regarding these species will be initiated as part of the USACE permitting process. However, the following measures shall be implemented to reduce potential impacts. With the implementation of these measures, the impacts can be mitigated to a level considered less than significant.

Mitigation Measure BIO-1b: Coastal Pelagic Fish and Groundfish Avoidance and Minimization Measures

- Worker Environmental Awareness Training (WEAT), as described in Mitigation Measure BIO-1a, will be provided.
- Prior to dredging work a qualified biologist (knowledgeable and experienced in pelagic fish species and groundfish identification) shall remove eelgrass from the proposed dredge footprint in order to remove potential habitat prior to dredging activities.
- The project will create approximately 3.90 acres of eelgrass habitat using the fine sands that will be dredged as part of the project work. As soon as feasible, the harvested eelgrass will be replanted within the newly created habitat.

Level of Significance After Mitigation: Less than Significant

Black Abalone

Impact Analysis

The portions of the project including rocky intertidal and subtidal habitats and all water from MHHW to a depth of 20 ft exist are critical habitat for black abalone. Project activities are likely to result in minor amounts of increased turbidity in these habitats, but the increase will be short duration and temporary and are not expected to cause significant impacts on abalone or their food supply. A containment berm is expected to significantly reduce turbidity during beach nourishment activities along Surfers Beach.

It is assumed that a Section 7 consultation regarding this species will be initiated as part of the USACE permitting process. However, the following mitigation measures are necessary to ensure that project impacts will be mitigated to a less than significant level.

Mitigation Measure BIO-1c: Black Abalone Avoidance and Minimization Measures

- Worker Environmental Awareness Training (WEAT), as described in Mitigation Measure BIO-1a, will be provided.
- A qualified biologist (knowledgeable and experienced in black abalone identification) with experience surveying for abalone shall conduct preconstruction surveys within potential habitat inside the project area in order to ensure that they avoid sensitive abalone habitat and existing individuals. If black abalone are not found, then no additional measures are necessary.
- If black abalone are found, then beach nourishment work at Surfers Beach shall proceed such that work taking place directly adjacent to (within 25 feet) the outer breakwater shall take place outside of the spring to early summer abalone spawning season to avoid effects on larval settlement or on juvenile abalone.

Level of Significant After Mitigation: Less Than Significant

Nesting Raptors and other Migratory Nesting Birds

Impact Analysis

The project site contains potentially suitable habitat for migratory nesting birds, primarily in the riparian wetland habitat, but also in the coastal strand habitat. In addition, though there is no potential nesting habitat onsite for nesting raptors, there is suitable habitat adjacent to the site. These birds are protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their nest, eggs, and young are protected under California CDFW Code §§3503, 3503.5, 3800, and 3513.

Potential impacts from the proposed project include disturbance to nesting birds. Any project-related impacts on the nesting success of these species would be considered a significant adverse impact. These impacts could be mitigated to a level considered less than significant by employing the mitigation measures below.

Mitigation Measure BIO-1d: Nesting Raptors and other Migratory Nesting Birds Avoidance and Minimization Measures

- Worker Environmental Awareness Training (WEAT), as described in Mitigation Measure BIO-1a, will be provided by a qualified biologist.
- If construction would commence anytime during the nesting/breeding season for raptors, or other bird species listed in the Migratory Bird Treaty Act (typically February through September 15), a pre-construction survey of the project vicinity for nesting birds should be conducted. This survey should be conducted by a qualified biologist (experienced with the nesting behavior of bird species of the region) within

7 days prior to the commencement of construction activities at each discrete project location that would occur during the nesting/breeding season. The intent of the survey should be to determine if active nests are present within or adjacent (within 100 feet) to the construction zone. If ground disturbance activities are delayed following a survey, then an additional pre-construction survey should be conducted such that no more than one week will have elapsed between the last survey and the commencement of ground disturbance activities at each discrete project location.

- If active nests are found in areas that could be directly or indirectly affected by the project, a no-disturbance buffer zone should be created around active nests during the breeding season or until a qualified biologist determines that all young have fledged. The size of the buffer zones and types of construction activities restricted within them should be determined through consultation with the CDFW depending on the species, taking into account factors such as the following:
 - a. Noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity;
 - b. Distance and amount of vegetation or other screening between the construction site and the nest; and
 - c. Sensitivity of individual nesting species and behaviors of the nesting birds.

The buffer zone around an active nest should be established in the field with orange construction fencing or another appropriate barrier and construction personnel should be instructed on the nest areas' sensitivity. The qualified biologist should serve as a construction monitor during those periods when construction activities would occur near active nest areas of special status bird species to ensure that no impacts on these nests occur.

Level of Significance After Mitigation: Less Than Significant

Special Status Plant Species

Impact Analysis

The November survey of the project site occurred during the blooming period for only a handful of the plant species with the potential to occur on site. Therefore, the project site provides potentially suitable habitat for 23 special status species, including: Blasdale's bent grass (*Agrostis blasdalei*), Franciscan onion (*Allium peninsulare* var. *franciscanum*), Coast rockcress (*Arabis blepharophylla*), Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*), Johnny-nip (*Castilleja ambigua* var. *ambigua*), San Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*), Western leatherwood

(*Dirca occidentalis*), San Francisco wallflower (*Erysimum franciscanum*), Hillsborough chocolate lily (*Fritillaria biflora* var. *ineziana*), Fragrant fritillary (*Fritillaria liliacea*), San Francisco gumplant (*Grindelia hirsutula* var. *maritima*), Kellogg's horkelia (*Horkelia cuneata* var. *sericea*), Point Reyes horkelia (*Horkelia marinensis*), Harlequin lotus (*Hosackia gracilis*), Coast yellow leptosiphon (*Leptosiphon croceus*), Crystal Springs lessingia (*Lessingia arachnoidea*), Woolly-headed lessingia (*Lessingia hololeuca*), Woodland woollythreads (*Monolopia gracilens*), Hickman's popcornflower (*Plagiobothrys chorisianus* var. *hickmanii*), Scouler's catchfly (*Silene scouleri* ssp. *scouleri*), San Francisco campion (*Silene verecunda* ssp. *verecunda*), and San Francisco owl's-clover (*Triphysaria floribunda*). The project could, consequently, result in the loss of these species if the appropriate blooming period surveys are not completed. Therefore, the following measures shall be implemented to reduce potential impacts to these special status species.

Mitigation Measure BIO-1e: Special Status Plants

- A qualified biologist shall complete bloom season surveys for special-status plant species prior to initiation of project activities. The survey shall be completed during the appropriate blooming periods for the above listed species that have the potential to occur on site. These surveys shall be in compliance with all CDFW (2009), USFWS (1996), and CNPS (2001) published survey guidelines.
- If the surveys find that there are no special-status plants on the property that would be impacted or within the proposed project site, then there would be no further mitigation and the project may proceed, provided all other applicable permits and authorizations are obtained for the project.
- If special-status plant species are found, populations will be mapped and enumerated. If any populations are found within the proposed development area, project development plans shall consider avoidance to the extent practicable. If avoidance is not practicable while otherwise obtaining the project's objectives, then other suitable measures and mitigation shall be implemented as detailed below. If impact to the area is unavoidable all activity in that area shall halt and not proceed until CDFW has been consulted and the follow measures shall be implemented:
 - A. Initially the practicability of avoidance shall be evaluated as noted above.
 - B. If avoidance is not practicable, a mitigation plan shall be developed and approved by the CDFW for implementation of steps 1 through 3 below prior to site disturbance.

The mitigation plan shall include the following elements:

1. Prior to construction within the project area, a qualified botanist shall collect the seeds, propagules, and top soils, or other part of the plant that would ensure successful replanting of the population elsewhere. The seeds,

propagules, or other plantable portion of all plants shall be collected at the appropriate time of the year.

2. At least 2/3 of the seeds, propagules, or other plantable portion of all plants shall be planted at the appropriate time of year (late-fall months). Half of the seeds and top soils collected shall be appropriately stored and propagated at a native plant nursery to ensure germination. This material will be planted at an approved and protected area during the appropriate season. Planting location, timing, collection methods etc... will be detailed in the mitigation plan required by Measure B above.
3. The applicant shall hire a qualified biologist to conduct annual monitoring surveys of the transplanted plant population for a five-year period and shall prepare annual monitoring reports reporting the success or failure of the transplanting efforts. These reports shall be submitted to the City no later than December 1st each monitoring year.
4. These steps shall be implemented prior to site disturbance.

A CNDDDB form shall be filled out and submitted to CDFW for any special-status plant species identified within the project site.

When implemented, these measures would reduce potentially significant adverse impacts on special-status plant species to a level considered less than significant.

Level of Significance After Mitigation: Less Than Significant

Eelgrass

Impact Analysis

The project would impact a total of 2.7 acres of existing and potential eelgrass habitat (**Figure 5**). Eelgrass, which is a type of seagrass, is designated as a Habitat of Particular Concern by NOAA Fisheries. It is also protected under the Clean Water Act and managed by NOAA in California through adherence to the California Eelgrass Mitigation Policy (NMFS 2014). Therefore, the loss of 2.7 acres of eelgrass and eelgrass habitat would be a potentially significant impact. These impacts could be mitigated to a level considered less than significant by employing the mitigation measures below.

Mitigation Measure BIO-1f: Eelgrass

- The project involves eelgrass mitigation efforts that will create approximately 3.90 acres of eelgrass habitat (nearly a 1.5:1 ratio of created to impacted) using the fine sands that will be dredged as part of the project work. In addition, prior to dredging, qualified biologist (knowledgeable and experienced with eelgrass) shall harvest as much of the existing eelgrass from the dredge footprint as practicable. As soon as feasible, the harvested eelgrass will be replanted within the newly created habitat.
- The qualified biologists who are conducting the eelgrass harvesting, will obtain a CDFW collection permit and follow all the measures required by the permit.
- Prior to project approval, a plan describing the constructed locations, construction methods, mitigation measures, and monitoring and success criteria will be submitted to the permitting agencies for review and approval.

Level of Significance After Mitigation: Less Than Significant

b) Less Than Significant.

Temporary pipeline impacts

Placement of the dredge pipeline itself, will temporarily impact upland (Maintained Grassland) habitats (0.05 ac) as well as small amounts of Sections 10/404 (0.01 ac) and 404 tidal (0.02 ac) habitats. The majority of these temporary impacts will occur along heavily disturbed upland areas and paved areas and the majority of the remaining areas are sandy beach habitat. These sandy beach habitats are constantly changing due to tidal action, including sand scour and accretion, as well as a variety of debris that are brought in by the tides. Outside of the upland habitats that are already disturbed in on on-going basis, the sandy beach and tidal habitats are largely unvegetated and the temporary placement of the pipeline is unlikely to cause any direct impacts. The temporary placement of the pipeline is unlikely to pose disturbances to wildlife in the area, which are habituated to ongoing noise and activities by people, boats, cars, and other vehicles. As well, there are an abundance of such habitats within and outside of the project area in the region and the wildlife in the area are capable of using these areas. Therefore, the temporary impacts to the pipeline are not expected to be significant.

Temporary impacts to Maintained Grassland (upland) Habitat from project staging

The proposed project will result in a small amount of temporary impacts (0.30 acre) to the Maintained Grassland habitat due to staging and storage. The remainder of the staging areas will occur on already paved areas, which will not result in impacts. This Maintained Grassland habitat is currently disturbed by ongoing maintenance activities and experiences a lot of foot traffic and use by people. This grassland is dominated by weedy, non-native species, though a small number of common native plants are also present.

The temporary impacts to this habitat are not a significant impact as they are relatively negligible and there is an abundance of non-native grassland and less disturbed grassland habitats in the region. Similarly, impacts to wildlife species that may potentially use this habitat are not significant as the species that use these areas are common and capable of using adjacent lands.

c) Less Than Significant with Mitigation Incorporated

Waters of the U.S. and State Waters.

Impact Analysis

The proposed project will result in dredging impacts to 0.12 acres of Section 404 habitats within the High Tide Line (HTL) and 18.63 acres to Section 10/404 habitats within Mean High Water (MHW). “Wetlands” or “waters of the U.S.” as defined by Section 404 of the Clean Water Act are specially protected under CEQA and loss of or impacts to these habitats must be mitigated to ensure that the project does not result in a substantial adverse effect. However, these dredging impacts are relatively short-lived and sand accretion within the harbor will continue. As well, directly after the dredging work, these habitats will continue to be jurisdictional and can be used by fish and other wildlife. When the mitigation measures below are implemented the potential impacts would be reduced to less than significant.

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When implemented, these measures would reduce potentially significant adverse impacts to a less than significant level.

Level of Significance After Mitigation: Less Than Significant

d) **No impact.** The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

e) **No impact.** The project would not conflict with any local policies or ordinances protecting biological resources.

f) **No impact.** The project would not occur within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan area, so would not conflict with any provisions of these plans.

2.2.5 Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
5. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic 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 type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

In general, a project would have significant effects on cultural resources if it would disturb, remove from original context, or introduce incompatible elements out of character with any property considered eligible for the National Register of Historic Places. In 1996 and 2006, USACE conducted a literature and records search for any existing or eligible cultural and archaeological resources in the vicinity of the Pillar Point marina to analyze the potential for impacts from a breakwater repair project proposed at the time (USACE, 1996; USACE, 2006). This survey included review of archaeological site records, maps, and project files from the Northwest Information Center located at Sonoma State University in Rohnert Park, California; the National Register of Historic Places; California Historical Landmarks; California Inventory of Historical Resources; and the Minerals Management underwater surveys of California, Oregon, and Washington. Archaeological resource studies were also investigated for any cultural resources which might be present in the project area but were not recorded with the Northwest Information Center. A site visit which included interviews with local citizens was undertaken to obtain information on historic and prehistoric resources within the general project area. In 2006, an updated records search was conducted for an area of potential effects in the vicinity of the East Breakwater using USACE records and maps (USACE, 2006).

Discussion

a – d) **No Impact.** Based on the results from the USACE analyses, no resources listed on or eligible for the National Register of Historic Places are known to occur within the vicinity of the proposed action area. The proposed project area consists only of areas previously disturbed by construction activities (e.g. Pillar Point Harbor) and beach sites that are not known to contain listed cultural resources. If previously unknown cultural resources are identified during project implementation, all activity will cease until requirements of 36 CFR 800.11, *Discovery of Properties During Implementation of an*

Undertaking, are met. Moreover, the proposed action involves dredging to existing authorized depths and nourishment of existing beach areas and thus would not introduce elements out of character with the regional surroundings. Thus, the proposed action would not have the potential to cause effects to National Register listed or eligible properties. The no-action alternative would result in no change in the project area and thus no effects to cultural resources.

These searches identified no archaeological resources or unique geological features in the proposed action area (USACE, 2006). Therefore, the project would not cause a substantial adverse change in the significance of any known archaeological or historical resource, nor would it disturb any human remains. Moreover, the proposed dredging activities will take place inside the harbor to previously authorized depths and include only areas that have been previously dredged so no new archaeological resources are expected to be encountered. Similarly, beach nourishment activities are not anticipated to result in any affects to archaeological resources as none are known to occur in the receiver site footprint. In the event that any archaeological resources are encountered during the proposed action, the vicinity would be avoided and the State Historic Preservation Office (SHPO) will be notified for further action. Thus, no significant impacts to archaeological resources or sites are expected from the proposed action. The no-action alternative would result in no changes in the project region and thus no effects to archaeological sites.

2.2.6 Geology, Soils, and Seismicity

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
6. GEOLOGY and Soils — Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is located on the Half Moon Bay coastal terrace, which extends from Montara to Seal Rock, at varying widths between the ocean and the Santa Cruz mountain range (Dyett & Bhatia, 2014). The Pillar Point region is underlain by a wide variety of soils, ranging from beach sand to clay loam and sandy loam. Most soil in the area of the harbor is Denison loam, which is considered deep and well-drained. No changes or impacts to geology or soils are expected from the proposed action or the no-action alternative.

There are several significant faults that could be the source of a seismic event in the vicinity of the project action area. The San Andreas Fault system is considered the most likely source of a major earthquake in California's future; however, the closest fault to the project action area is the San Gregorio Fault system, which crosses the Fitzgerald Marine Reserve and trends northwest to southeast. The San Gregorio Fault is a mapped Alquist-Priolo Special Studies Zone and is considered an active fault with a potential earthquake moment magnitude of 7 or greater.

Discussion

- a.i-iv) **No Impact.** The proposed project would dredge sand inside the harbor and relocate that sand to Surfers Beach to mitigate ongoing coastal erosion. There are no known active or potentially active faults within the project area. The proposed project would not result in or expose people to seismic ground shaking beyond the conditions that currently exist within the region.
- b) **No Impact.** The proposed beach replenishment project would beneficially reuse sand dredged from Pillar Point Harbor to mitigate ongoing coastal erosion at Surfers Beach. Therefore, it would reduce erosion rather than result at the proposed beach receiver site. The proposed program would result in minor changes to topography that are beneficial and not causing impact.

- c) **No Impact.** The proposed sites are not located on unstable geologic units or soils and the proposed project would not affect existing beach sand stability. There would be no impact.
 - d) **No Impact.** The proposed beach fill site is a highly eroded sandy beach with no soil cover. Expansive soils are not documented at the proposed project sites. Therefore, the project does not have the potential to create risk to human life or property due to expansive soils and there would be no impact.
 - e) **No Impact.** The proposed project would not include any septic tanks or alternative waste disposal systems. Therefore, the proposed program would not have any impacts relating to the use of septic systems or alternative wastewater disposal systems at the proposed sites.
-

2.2.7 Greenhouse Gas Emissions

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
7. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Greenhouse gases (GHGs) trap heat by preventing some of the solar radiation that hits the earth from being reflected into space. Some GHGs occur naturally and are needed to keep the earth's surface habitable. Over the past 100 years, human activities have substantially increased the concentration of GHGs in our atmosphere. This has intensified the natural greenhouse effect, increasing average global temperatures.

Carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) are the principal GHGs associated with land use projects. CO₂, CH₄, and N₂O occur naturally, and through human activity. Emissions of CO₂ are largely by-products of fossil fuel combustion and CH₄ results from off gassing associated with agricultural practices and landfills.

CO₂ is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas contributes to global warming relative to how much warming would be predicted to be caused by the same mass of CO₂. CH₄ and N₂O are substantially more potent GHGs than CO₂, with 100-year GWPs of 28 and 265 times that of CO₂, respectively.

In emissions inventories, GHG emissions are typically reported as metric tons of CO₂ equivalents (CO₂e). CO₂e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH₄ and N₂O have much higher GWPs than CO₂, CO₂ is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO₂e.

Discussion

- a) **Less than Significant Impact.** The proposed project operations would generate GHG emissions from a variety of sources, including off-road construction equipment, dredging equipment, and on-road trips for material transport and worker commutes. No further impacts would occur after construction is complete.

Therefore, these project activities will be temporary and any increase in GHG emissions would represent a less than significant cumulative GHG impact.

- b) **Less than Significant Impact.** The project would not conflict with any applicable plan, policy or regulations on reducing greenhouse gases.
-

2.2.8 Hazards and Hazardous Materials

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
8. HAZARDS AND HAZARDOUS MATERIALS — 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 type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

State agencies regulating hazardous materials are the California Environmental Protection Agency (CalEPA) and the Office of Emergency Services (OES). The California Highway Patrol and Caltrans enforce regulations for hazardous materials transport. Within the CalEPA, the California Department of Toxic Substances Control (DTSC) has primary regulatory authority for hazardous materials regulation enforcement. State hazardous waste regulations are contained primarily in the California Code of Regulations Title 22. The California Occupational Health and Safety Administration has developed rules and regulations regarding worker safety around hazardous and toxic substances.

The DTSC defines the Hazardous Waste and Substance Sites List (also known as the “Cortese Sites” List) as a planning document used by State, local agencies and developers to comply with CEQA by providing information about the location of hazardous material sites. No Cortese Sites were located within or immediately adjacent to the proposed Project area (CalEPA, 2016).

Discussion

- a) **No Impact.** No hazardous materials would be transported as part of this project. It would not result in a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials.
- b) **Less than Significant Impact.** No hazardous materials would be used other than standard fuels and lubricants for construction equipment. Accidental release of these materials could enter waterways, the ocean, or contaminate soil. However, the contractor will develop and implement a plan to safely store potentially hazardous materials away from waterways and sensitive receptors, and handle them according to local, State, and federal regulations, thus reducing this potential impact to less than significant.
- c) **No Impact.** The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste, except for fuel to power equipment. Additionally, there are no schools located within a quarter-mile of the project area.
- d) **No Impact.** The proposed project sites are not located on a hazardous materials site and would not create a significant hazard to the public or the environment.
- e) **No Impact.** The proposed sites are located within 2 miles of the Half Moon Bay Airport. However, the proposed program is not anticipated to affect current airport operations, and no cranes will be used. The project would not result in a safety hazard from airport operation for people residing or working in the program area and no impact would occur.
- f) **No Impact.** The proposed sites are not located within 2 miles of a private airstrip and no impact would occur.
- g) **No Impact.** Project implementation would not interfere with an emergency response or evacuation plan and impacts would be less than significant.
- h) **No Impact.** The project area is not within wildland fire areas. Therefore, implementation of the proposed program would not expose people or structures to increased potential of wildland fires and no impact would occur.

2.2.9 Hydrology and Water Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
9. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting and Projected Impacts

Most of the information in this Environmental Setting section addressing hydrology and water quality is excerpted and adapted/updated from a 2015 USACE Draft Environmental Assessment that was completed for a feasibility study of a larger and more impactful dredging and beach restoration project design at the site (USACE 2015).

Water Quality - temperature, salinity patterns, and other parameters: Typical water quality indicators include temperature, salinity, pH, turbidity, suspended solids, natural light transmission (transmissivity), and dissolved oxygen (DO) (USACE, 2006).

Water quality in Pillar Point Harbor has also been considered chronically impaired by the State Water Resources Control Board because of the presence of coliform bacteria, primarily in the vicinity of Capistrano Beach (upcoast of the inner harbor). In 2013, the San Mateo County Resource Conservation District conducted a study to identify the sources of bacteria, and opportunities for remediation are being developed with the goal of reducing the number of days beaches in the harbor are posted or closed for excessive fecal bacteria levels (Dyett & Bhatia, 2014).

Dredging or beach nourishment activities in general have the potential to affect water quality, primarily through sediment suspension and re-suspension (Science Applications International Corporation [SAIC], 2007). This analysis assumes a hydraulic pipeline dredge will be used for beach placement activities associated with the proposed action. Studies have shown placement of dredged material from hydraulic dredges into the water column does not cause significant short- or long-term changes in salinity, temperature, or pH (USACE 1976a; USACE 1976b). Moreover, a temporary berm will be used to contain the pumped slurry allowing it to percolate and the sand to remain in place. Thus, the proposed dredging and placement activities are not expected to result in changes to ambient temperature, salinity, or pH levels in the action area. Additionally, the proposed action would not contribute to increased bacterial loads. Potential effects on turbidity, suspended solids, and light transmission are discussed in the “Turbidity, suspended particulates” section below.

While dredging projects that significantly increase water depths have the potential to result in decreased DO concentrations in the dredge area vicinity, significant reduction of DO is not expected from the proposed action. Dissolved oxygen concentrations naturally decrease with depth because of losses from biological respiration and decomposition (SAIC, 2007). Increased water depth can similarly result in a decrease in biological production of oxygen from photosynthesis when the depth is beyond light compensation ranges of submerged aquatic vegetation (SAIC, 2007). Very deep dredging holes have been found to create these conditions and result in long-term reduction of DO (NRC, 1995 as cited in SAIC, 2007). The maximum increase in depth associated with dredging under the proposed action would be 10 ft, which would restore the depth of the water column within a portion of the currently shoaled region of Pillar Point Harbor to approximately match the surrounding bathymetry. Dissolved oxygen levels may experience minor and temporary reductions (1-2 parts per million) because of sediment suspension; however, studies have shown ambient conditions are shortly regained following settlement of the suspended sediment (USACE 1976a). Given the relatively shallow proposed dredging depth, the existing depth of the surrounding harbor, and the fact that any reductions in DO from sediment suspension would be minor and temporary, the proposed dredging of shoaled sand adjacent to the East Breakwater is not expected to significantly alter DO concentrations.

Minor oil spills or leaks from dredges, vehicles, and equipment used during dredging and placement activities could potentially adversely affect water quality as well. This analysis

assumes that best management practices (BMPs) would be developed and exercised throughout the proposed action to ensure no oil, petroleum products, other potential fluid leaks, or debris from project activities significantly impact water quality. Fueling of marine-based equipment would take place offsite at designated locations adjacent to the project. If fueling were to occur adjacent to the project site, marine-fueling BMPs would be implemented to avoid discharge of pollutants to marine waters. Similarly, fueling of land-based equipment would occur in staging areas, and BMPs would be implemented to ensure that no water pollution occurs. Storage, maintenance, and staging of such equipment would also occur in the designated staging areas and in a manner that would not result in a discharge of any substance to marine waters. Furthermore, a spill prevention plan would be developed prior to project implementation, and spill response equipment would be onsite for immediate implementation to minimize the impacts of any accidental spills.

In addition to BMPs, pursuant to Section 401 of the Clean Water Act (33 U.S.C. Part 1251), the proposed action will require a Waste Discharge Requirements (WDRs) / 401 Certification from the Regional Water Quality Control Board (RWQCB) to ensure the project meets State water quality standards. The District will work with the RWQCB to obtain the necessary permits. Generally, some combination of visual observations, receiving water limitations, effluent limitations, and water quality monitoring at the dredge and discharge sites is required by the RWQCB (SAIC, 2007). The project would comply with all provisions of the certification to ensure project implementation meets permitted requirements.

Turbidity, suspended particulates: Turbidity is related to water clarity and based on factors such as suspended sediment concentration, shape, size, refractive index, color, and absorption spectra. Increased turbidity levels can affect flora and fauna by preventing light transmission, injuring fish gills, and interfering with prey or predator recognition or egg and larvae development. Furthermore, sediment suspension can mobilize sediment-bound contaminants into the water column. There is general consensus that the potential for impacts increases as project size and exposure concentration (a function of sediment characteristics) increase (SAIC, 2007). Additionally, the equipment employed for dredging and placement, including how that equipment is operated, affects the nature of these potential impacts.

Dredging and beach nourishment associated with the proposed action are likely to result in temporary but minor turbidity, sediment suspension, and light transmission impacts associated with removal and placement of sand in aquatic habitats. This analysis assumes that a cutterhead-hydraulic pipeline method will be used to dredge sand from Pillar Point Harbor and place it at Surfer's and Vallejo Beaches. SAIC (2007) report total suspended solids (TSS) concentrations measured 100 ft from cutterhead dredges range from ≤ 150 mg/L near the surface to ≤ 500 mg/L near the bottom. LaSalle et al. (1991, as cited in SAIC, 2007) found general suspended sediment plume lengths around hydraulic suction cutterhead dredges ranged from 0 to 328 ft near the surface, to ≤ 1640 ft near the bottom. Turbidity (TSS) measurements associated with beach sand placement tend to show greater variation but were reported by SAIC (2007) to range from 452 mg/L at the discharge location to 45 mg/L at mid depth approximately 500 ft offshore of the discharge location. The turbidity plume associated with sand placement tended to remain

close to shore and most pronounced within the swash zone, its direction of displacement being associated with tide stage and currents.

These turbidity concentrations are similar to those experienced during storms, high river runoff, or other vessel activities (SAIC, 2007) and would likely represent minor increases relative to ambient conditions in the action area. During storms off California, TSS concentrations may range from 50 to >1,000 mg/L near river discharges and were measured at 340 mg/L in the nearshore (39 ft) off central California's coast during high waves (SAIC, 2007). Moreover, turbidity levels and suspended sediment concentrations in harbors generally range higher than in the open ocean because of creek, river, or stream discharges; relatively shallow depths; or re-suspension by vessel traffic. Similarly, although turbidity is the primary factor affecting light penetration, light transmittance in enclosed bays and harbors may also range lower than in the open ocean because of vessel traffic.

Turbidity also generally dissipates rapidly after construction ceases. TSS concentrations, turbidity values, and associated water quality depressions generally decrease within one hour after dredging operations or beach nourishment activities cease, with ambient conditions returning within one tide cycle (SAIC 2007). This is especially true for sandy material with low silt or clay content (SAIC, 2007). Sediment testing in Pillar Point Harbor in 2007, 2012, 2017 and 2019 found that sediment samples and composites were predominantly sand (Kinnetic Laboratories, 2007, 2012, and 2020). Given the high sand content of the material in Pillar Point Harbor, any turbidity or suspended solid increases caused by the proposed actions are expected to quickly return to ambient conditions after the activity ceases. Moreover, the material was found to be largely clear of contaminants (Kinnetic Laboratories, 2007, Eurofins, 2018), and contaminants generally bind to finer sediment such as silt, clay, and organic matter. The lack of contamination and high sand content of the tested sediments suggests any suspension is unlikely to mobilize sediment-bound contaminants.

Measures would be used to minimize any impacts from turbidity and suspended particulates. The sand will be pumped in a slurry from the dredge area and will be contained by a sand berm constructed initially on the existing beach at the east end of the project site and extended to the west incrementally as the beach nourishment construction proceeds. Sand slurry will be discharged landward of the containment berm and allowed to decant, eliminating turbidity impacts from the beach nourishment activities.

Although the proposed action includes dredging and placement of a moderate amount of sand (up to 100,000 CY), the changes in turbidity, suspended particulates, and light transmission associated with these actions are expected to be temporary, very short-term, and not significantly greater than certain ambient conditions in the action area. Given this, the high sand content and lack of contamination in tested materials from the harbor, and the assumed measures that would be employed to minimize turbidity, the proposed action is not anticipated to have any significant adverse turbidity or suspended particulate effects.

Discussion

- a) **Less-Than-Significant Impact.** The sand material that will be dredged from the harbor and placed on Surfers Beach has been tested and is free of contaminants. Further, this analysis assumes that the project would obtain all necessary permits prior to implementation, including review and approvals from Coastal Commission, Regional Water Quality Control Board and Army Corps of Engineers. Therefore, it would be required to meet all water quality standards.
- b) **No Impact.** The proposed project would not require any use of groundwater or interfere with groundwater recharge.
- c) **No Impact.** The project would replenish the sand on Surfers Beach, helping to address significant coastal erosion, and construct an eelgrass mitigation area in the west basin of the Harbor. It would not alter any existing drainage patterns or alter the course of a stream or river. It would not result in substantial erosion or siltation, increase the rate or amount of surface runoff in a manner which would result in flooding, create or contribute runoff water or impede or redirect flood flows. Therefore, no impact would occur.
- d) **No Impact.** The proposed project would not modify any streams or increase the amount of impervious surface. No impact would occur.
- e) **No Impact.** The proposed program would not alter the direction, quantity, or quality of stormwater runoff. No impact would occur.
- f) **Less-Than-Significant Impact.** As discussed in detail in the above Environmental Setting and Project Impacts section, the proposed dredging and placement activities are not expected to result in changes to ambient temperature, salinity, or pH levels in the action area, or cause impacts due to turbidity. Additionally, the proposed action would not contribute to increased bacterial loads. Moreover, Given the lack of expected effects to water quality parameters, the BMPs this analysis assumes would be implemented, and the fact that the project would comply with any WDRs/ 401 certification issued by the RWQCB, no significant detrimental impacts to water quality are expected from the proposed action.
- g,h) **No Impact.** The proposed project does not include housing or structures. No impact would occur.
- i) **No Impact.** The proposed program would not expose people or structures to a significant risk of loss, injury, or death from flooding. In addition, the program may offer added protection from 100-year flood hazards as the program proposes to raise and widen existing beaches. No impact would occur.

- j) **No Impact.** All project sites are potentially exposed to tsunamis; however, the proposed project would not cause inundation by tsunami beyond the conditions that currently exist. Additionally, greater protection would be provided by widening Surfers Beach. No impact would occur.
-

2.2.10 Land Use and Land Use Planning

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
10. LAND USE AND LAND USE PLANNING — 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, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) **No Impact.** The project only involves dredging in Pillar Point Harbor, beach nourishment at the adjacent Surfers Beach, and construction of an eelgrass mitigation area. Therefore, implementation of the project will not divide any established community and would therefore cause no significant impacts.
- b) **No Impact.** The project would not conflict with any applicable land use plan policy or regulation.
- c) **No Impact.** The project would not conflict with any habitat conservation plan or natural community conservation plan since there are no such plans that are applicable to the project area.

2.2.11 Mineral Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
11. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a, b) There are no known mineral resources in the Surfers Beach project area therefore no mineral resources related impacts would occur.

2.2.12 Noise

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
12. NOISE — Would the project result in:				
a) Exposure of persons to or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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 or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Ambient sources of noise in the vicinity of the project action area include Pillar Point Harbor vessel traffic and operations and recreation activities along Surfer's, Vallejo, and Miramar Beaches, breaking waves along the shoreline, air traffic from the Half Moon Bay Airport, and vehicular traffic noise from the adjacent Highway 1. Sensitive noise receptors in the project area include a few facilities located along Highway 1: a restaurant (Sam's Chowder House), a hotel (the Beach House) and an RV park (Pillar Point RV Park).

Discussion

- a) **Less Than Significant.** Noise levels associated with the proposed dredging, beach nourishment, and eelgrass mitigation activities would be temporary and are not expected to significantly exceed ambient noise levels in the project area. Generally, noise levels above 70 decibels (dB) produce the following human responses: 80 to 90 dB (annoying), 90 to 110 dB (very loud), 110 to 120 dB (extremely loud), 130 to 140 dB (painfully loud) (SAIC, 2007). Reported airborne noise levels of dredges range from 76 to 88 dBA at 50 ft from the source while average noise levels during beach nourishment have been estimated to be around 85 to 90 dBA (SANDAG, 2000 as cited in SAIC, 2007). This analysis assumes the beach restoration to be constructed from the placed material would be shaped

with equipment including a small lightweight dozer and low ground pressure scraper. The Washington Department of Transportation (2006, as cited in SAIC 2007) suggests that the airborne noise associated with a bulldozer can range from 85 to 103 dB at 50 ft and that of a grader can range from 79 to 93 dB at 50 ft. Given these noise levels, both the proposed dredging and placement activities would remain at or below levels that could annoy people who are more than 50 ft from the activities. Noise levels would be lower at greater distances from the activities.

This analysis assumes that all construction equipment would be professional maintained and fitted with standard manufacturers' mufflers and silencing devices. In light of these measures along with the relatively noisy ambient conditions at the project site and the temporary nature of the proposed construction activities, any potential increase in noise levels created by the proposed action are expected to be less than significant.

- b) **Less Than Significant.** The project involves use of dredging equipment and machinery such as dozers and/or scraper that may result in a temporary increase in groundborne vibration and noise levels during construction, but this effect would be temporary during construction and would not be significant.
- c) **No Impact.** The moderate increase in noise levels would only be temporary during the dredging and beach nourishment operations. No permanent increase in ambient noise levels would occur.
- d) **Less Than Significant.** There would be a moderate temporary increase in noise levels due to operation of machinery during working hours. However due to work hour restrictions and the existing noise levels from Pillar Point Harbor activities and Highway 1, this impact would be less than significant.
- e) **No Impact.** The project will not expose people residing or working in the project area to excessive noise levels.
- f) **No Impact.** N/A, the project is not located near a private airstrip.

2.2.13 Population and Housing

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
13. POPULATION AND HOUSING — Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a - c) The proposed Surfers Beach project is a dredging, beach nourishment and eelgrass restoration project and does not propose development. Therefore, there would be no impact to population and housing.

2.2.14 Public Services

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
14. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Public facilities in the vicinity of the project action area include Pillar Point Harbor, the small boat launch and adjacent public access beach inside the harbor, and Surfers, Beache. Utilities and services common in the region include electrical lines, water and sewer, and waste management services. Neither the proposed action nor the no-action alternative would result in any change to public facilities, utilities or services.

Discussion

- a.i – a.v) The proposed Surfers Beach project is a dredging, beach nourishment and eelgrass restoration project that would not affect existing public services.

2.2.15 Recreation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
15. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project vicinity supports a variety of recreational activities including boating, swimming, surfing, fishing, kayaking, windsurfing, walking, bird watching, and beach going. The small boat launch and portion of the outer harbor adjacent to the East Breakwater are used for recreational boating, kayaking, and fishing; the public access beach area on the eastern shore of the harbor is popular for picnicking, jogging, cycling, and bird watching; Surfers, Vallejo, and Miramar Beaches are popular sites for surfing; and the California Coastal Trail on the bluffs behind Vallejo Beach is used by pedestrians as a walking and hiking trail. While signs posted on the East Breakwater prohibit the public from climbing on the revetment rocks, in practice, visitors climb on the breakwater for a variety of recreational uses.

Discussion

- a) **Less Than Significant Impact.** The proposed action would have minor and temporary effects on recreational activities within and around the proposed action area during construction but would provide multiple benefits to recreation in the longer term. During construction, the dredge would occupy a portion of the outer harbor adjacent to the East Breakwater that is currently available for recreational activities such as boating and kayaking. During the eelgrass mitigation components of the Project, the dredge and other equipment would be located at the mitigation site, in a remote location along the West Breakwater that is not used by boaters. The dredge would not prevent normal usage of the small boat launch but boaters and others utilizing this east basin outer harbor area would need to remain a safe distance from the dredging vessel. Given the large size of the outer harbor, this impact would be minor and would cease once dredging is completed. Beach nourishment activities along Surfers Beach would require temporary closure of portions of the beach to recreational activities. This analysis assumes fencing, barricades, and associated warning signs would be erected to warn and prevent the public from accessing work areas. Impacts on visitors who

use these beaches for recreational activities would be temporary and localized. Visitors would be able to use other parts of the beach for recreational activities. The proposed project would not result in any permanent beach closures. Temporary closure of a portion of the parking areas north of the East Breakwater for construction staging, if utilized, could also affect recreational users wishing to park in the lots. This potential impact is discussed in the “transportation and traffic” section. Overall, impacts to recreation during construction would be temporary and less than significant.

In the long term the proposed action would benefit recreation by creating more usable beach area along Surfers Beach and facilitate continued recreational surfing at the popular Surfers Beach break. By providing erosion mitigation to protect the bluffs behind these beaches, the proposed action would also benefit pedestrian recreational activities along the California Coastal Trail located on the bluffs. Moreover, the removal of shoaled material along the East Breakwater inside Pillar Point Harbor would benefit recreational boaters, kayakers, and others who use the area by removing the navigational hazard posed by the built-up sediment.

- b) **No Impact.** The project does not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

2.2.16 Transportation and Traffic

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
16. TRANSPORTATION/TRAFFIC — Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

State Highway 1, which runs along the coast adjacent to the project site, is a vital traffic artery. A paid parking area is located adjacent of Highway 1, north of the East Breakwater between the breakwater and the Pillar Point RV Park. Dredging activities associated with the proposed action are not expected to affect ground transportation or traffic volumes as the dredging vessel will access the project site from the ocean. During beach nourishment activities, heavy machinery will require staging and access to Surfers Beach, however all staging areas will be located on the same side of Highway 1 as the Harbor. Worker vehicles will also make trips to and from the project site and require parking areas. All of the sediment used for the beach nourishment and eelgrass mitigation will be dredged onsite in the Harbor and no materials will be hauled to the site using local roads. This analysis assumes that staging areas would include one or more of the following options: a portion of the San Mateo County Parks property on the bluff above Surfers Beach, within the Harbor in lot C-3, above the boat launch ramps, and the small parking lot between Surfers Beach and the RV Park. A minimal number of worker vehicle trips along Highway 1 are anticipated in association with the proposed action and would be an insignificant addition to existing traffic levels on the highway. Therefore,

any effects on transportation and traffic from the proposed action would be minor, temporary, and less than significant.

The proposed action would also benefit transportation in the long term by providing added protection to Highway 1 against erosion of the shoreline. The USACE projected current bluff erosion rates 10 and 50 years into the future and determined that infrastructure, such as Highway 1 and coastal pedestrian paths leading to the beach, would be significantly threatened without action. While the California Department of Transportation (CalTrans) has placed some riprap to protect portions of the highway behind Surfers Beach, the proposed beach nourishment will also help protect the highway into the future thus benefiting transportation in the region.

Discussion

- a, b) **Less-Than-Significant Impact.** The proposed project involves dredging in the harbor, beach nourishment at Surfers Beach, and eelgrass mitigation within the Harbor. The sand will be delivered as a slurry by pipeline—dump trucks would not be used. Implementation of the project would not conflict with an applicable traffic plan, ordinance, or policy, nor would it impact the performance circulation system. It would also not conflict with an applicable congestion management program, or other standards established by for designated roads or highways.
 - c) **No Impact.** The proposed project is limited to dredging in the harbor, beach nourishment at Surfers Beach, and eelgrass mitigation within the Harbor. Therefore, it would not result in a change in air traffic patterns or substantial safety risks.
 - d, e) **No Impact.** The proposed project only involves dredging, beach nourishment, and eelgrass mitigation. No other development will occur. The project would not increase hazards due to a design feature or incompatible uses. It would also not affect emergency access in the area.
 - f) **No Impact.** Implementation of the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. The pedestrian trail that is located between Highway 1 and Surfers Beach will remain open throughout the project.
-

2.2.17 Tribal Cultural Resources

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

Discussion

- a, b) **No Impact.** Tribal cultural resources are: 1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing in the California Register of Historical Resources (California Register), or local register of historical resources, as defined in PRC Section 5020.1(k); or, 2) a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). For a cultural landscape to be considered a tribal cultural resource, it must be geographically defined in terms of the size and scope of the landscape (PRC Section 21074[b]). A historical resource, as defined in PRC Section 21084.1, unique archaeological resource, as defined in PRC Section 21083.2(g), or non-unique archaeological resource, as defined in PRC Section 21083.2(h), may also be a tribal cultural resource.

Based on the results from analyses completed by USACE, and more recently by ESA for the PPH West Trail Living Shoreline Project, no archeological resources listed on or eligible for the National Register of Historic Places are known to occur within the vicinity of the proposed action area (USACE, 2006; ESA 2021). The proposed project area consists only of areas previously disturbed by construction activities (e.g. Pillar Point Harbor) and beach sites that are not known to contain listed cultural resources. Moreover, the proposed dredging activities will take place inside the harbor to previously authorized depths and include only areas that have been previously dredged so no new archaeological resources are expected to be encountered. Similarly, beach nourishment activities

are not anticipated to result in any affects to archaeological resources as none are known to occur in the receiver site footprint. In the event that any archaeological resources are encountered during the proposed action, the vicinity would be avoided and the State Historic Preservation Office (SHPO) would be notified for further action and all activity will cease in that area until requirements of 36 CFR 800.11, Discovery of Properties During Implementation of an Undertaking, are met. Thus, no significant impacts to tribal cultural resources or sites are expected from the proposed action.

2.2.18 Utilities and Service Systems

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
18. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a - g) **No Impact.** The Pilot Surfers Beach Restoration Project is a dredging, beach nourishment and eelgrass restoration project that does not include development and would not have any effect on utilities and service systems.

2.3 Mandatory Findings of Significance

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

Discussion

- a) **Less Than Significant with Mitigation Incorporated.** The Project is being designed to improve the quality of the environment at Surfers Beach and inside Pillar Point Harbor by restoring beach habitat and enhancing eelgrass habitat. With the mitigation measures being proposed, the Project would not substantially reduce the habitat of any fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. Potential negative biological impacts could occur on a temporary basis, as discussed in the above analysis, however with implementation of the proposed mitigation measures these impacts would be reduced to less than significant.
- b) **Less Than Significant.** The Surfers Beach project was designed as a pilot project that will not result in cumulative impacts. Any impacts from the Project are anticipated to be short-term and temporary.
- c) **Less Than Significant.** Numerous potential human impacts were evaluated in the above CEQA checklist analysis. As a result of this analysis, the District has determined that the Project would not result in any significant direct or indirect

impacts to human beings. Conversely, the Project will result beneficial impacts to humans and the environment.

3 REFERENCES

- Anderson, D.W., C.J. Henny, C. Godinez-Reyes, F. Gress, E.L. Palacios, K. Santos del Prado, and J. Bredy. 2007. Size of the California brown pelican metapopulation during a non-El Niño year: Reston, Virginia, U.S. Geological Survey, Open-File Report 2007-1299. 35 pp.
- Bay Area Air Quality Management District (BAAQMD), 2022. *Air Quality Standards and Attainment Status Webpage*. <https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status#five>
- BAAQMD, 2017. *Final 2017 Clean Air Plan*. April 2017. Available: https://www.baaqmd.gov/~/_media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-_proposed-final-cap-vol-1-pdf.pdf?la=en .
- California Coastal Commission (CCC), 2018, Sea-level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea-level Rise in Local Coastal Programs and Coastal Development Permits, adopted on August 12, 2015; update adopted November 7, 2018.
- California Department of Fish and Game (CDFG). 2002. California Department of Fish and Game Comments to NMFS regarding green sturgeon listing.
- California Department of Fish and Wildlife (CDFW). 2021. Coast Yellow Leptosiphon <https://wildlife.ca.gov/Conservation/Plants/Endangered/Leptosiphon-croceus> [Accessed 12/14/21]
- California Environmental Protection Agency (CalEPA), 2018. Cortese List Data Resources. Available: <https://calepa.ca.gov/sitecleanup/corteselist/>. Accessed January 2022.
- California Native Plant Society (CNPS). 2007. *Electronic Inventory of Rare and Endangered Plants of California*. Sacramento, California.
- California Native Plant Society, Rare Plant Program (CNPS). 2021. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.0). Website: <https://www.rareplants.cnps.org> [Accessed 11/17/21].
- California Native Plant Society (CNPS) Calscape. 2021. Online Inventory of Plants Native to California. <https://calscape.org/> [Accessed on 12/15/21]
- California Natural Diversity Database (CNDDDB). 2021. RareFind 5, Version 5.2.14. California Department of Fish and Wildlife. Sacramento, CA.
- Caltrans, 2014, *Surfer's Beach Sand Supply Study*, Report prepared for Caltrans and the County of San Mateo County, November 26, 2014.
- Cornell Lab of Ornithology. 2019. Marbled Murrelet. All About Birds. Cornell Lab of Ornithology, Ithaca, New York. https://www.allaboutbirds.org/guide/Marbled_Murrelet/lifehistory [Accessed on 12/14/21]

- Davies, T.D. 2004. Update COSEWIC status report on green sturgeon (*Acipenser medirostris*). Committee on the Status of Endangered Wildlife in Canada (COSEWIC). CWS, Ottawa, ON, CA.
- Dyett & Bhatia. 2014. *Plan Princeton Community Plan, Local Coastal Program, and Zoning Regulations Update: Existing Conditions Report*. Retrieved from https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/princeton_ecr_compiled_051414_low.pdf
- Environmental Science Associates (ESA), 2021. Pillar Point Harbor West Trail Living Shoreline Project, CEQA Initial Study and Mitigated Negative Declaration, Prepared for San Mateo County Harbor District and GHD, Inc., November 2021
- Environmental Science Associates (ESA), 2021b. Surfer's Beach Pilot Restoration Project Preliminary Design Report.
- EPIC. 2001. Environmental Protection Information Center, Center for Biological Diversity, and Waterkeepers Northern California. Petition to list the North American Green Sturgeon (*Acipenser medirostris*) as an endangered or threatened species under the Endangered Species Act.
- Eurofins, 2018. Results of chemical analysis of sediments at the Boat Launch Ramp.
- Greater Farallones National Marine Sanctuary (GFNMS), 2017, White Paper on the Potential for Beneficial Reuse of Dredged Sediment for Restoration at Surfer's Beach, in San Mateo County, in the Monterey Bay National Marine Sanctuary, Prepared by Max Delaney and Doug George, GFNMS, December 6, 2017.
- Hallock, R. J., and D. H. Fry, Jr. 1967. Five species of salmon, *Oncorhynchus*, in the Sacramento River, California. *California Fish and Game* 53:5-22.
- Hickman, James C. (ed.). 1993. *The Jepson Manual*. Berkeley, CA: University of California Press.
- Jepson Flora Project (eds.), Jepson eFlora. 2021. <https://ucjeps.berkeley.edu/eflora/> [Accessed on 12/15/21]
- Kinnetic Laboratories, Incorporated. 2007. *Initial dredge material evaluation for the construction of a new boat basin in Pillar Point Harbor*. Retrieved from <http://static1.1.sqspcdn.com/static/f/1461275/18844395/1340136790720/2007-06-Harbor-Dredging-Report.pdf?token=7bSmTT8WtDzihqOGN2eCJwZJYD0%3D>
- Kinnetic Laboratories, Incorporated. 2012. *Investigation of Dredge Sediments at the Pillar Point Harbor Launch Ramps*.
- Kinetic Laboratories, Inc., 2020, Sediment Sampling and Analysis Plan, Pillar Point Harbor, Pilot Surfers Beach Restoration Project, Prepared for San Mateo County Harbor District, February, 2020.

- Kordesch, W.K., M. Delaney, S. Hutto, M. Rome, and S. Tezak. 2019. *Coastal Resilience Sediment Plan*. Report of Greater Farallones National Marine Sanctuary. NOAA. San Francisco, CA. 104 pp.
- Leidy, R. A., USEPA. 2002. Unpublished stream survey data 1992-2002
- Leidy, R. A. and Leidy, G. R. 1984. Life Stage Periodicities of Anadromous Salmonids in the Klamath River Basin, Northwestern California. U.S. Fish and Wildlife Service.
- Lin, L., Li, H., Zoulas, J., Andes, L., and Wu, F. 2015. *North Half Moon Bay shoreline improvement project, Pillar Point Harbor, CA, coastal engineering appendix*. Final Report.
- Marine Taxonomic Service. Ltd. (MTS), 2020, Pillar Point Harbor-Wide Eelgrass Management and Mitigation Plan. Prepared for San Mateo County Harbor District, July 27, 2020.
- Moyle, P.B., Williams, J.E. and Wikramanayake, E.D. 1989. Fish species of special concern of California. Final report submitted to California Department of Fish and Game, Inland Fisheries Division. Rancho Cordova, California.
- Moyle, P.B., Yoshiyama, R.M., Williams, J.E. and Wikramanayake, E.D. 1995. Fish Species of Special Concern in California. Second edition. Final report to CA Department of Fish and Game, contract 2128IF.
- Moyle, P.B., Foley, P.J. and Yoshiyama, R.M. 1992. Status of green sturgeon, *Acipenser medirostris*, in California. Final report to National Marine Fisheries Service by University of California at Davis.
- Moyle, P.B., Foley, P.J. and Yoshiyama, R.M. 1994. Status and Biology of the Green sturgeon, *Acipenser medirostris*. *The Sturgeon Quarterly*. 2(1):7.
- National Marine Fisheries Service (NMFS), 2014, California Eelgrass Mitigation Policy and Implementing Guidelines, Prepared by NOAA Fisheries West Coast Region, October 2014.
- National Oceanic and Atmospheric Administration (NOAA) Fisheries. 2021a. Black Abalone. NOAA Fisheries West Coast Region. <https://www.fisheries.noaa.gov/species/black-abalone> [Accessed on 12/13/21]
- National Oceanic and Atmospheric Administration (NOAA) Fisheries. 2021b. Green Turtle. NOAA Fisheries West Coast Region. <https://www.fisheries.noaa.gov/species/green-turtle> [Accessed on 12/13/21]
- National Oceanic and Atmospheric Administration (NOAA) Fisheries. 2021c. Leatherback Turtle. NOAA Fisheries West Coast Region. <https://www.fisheries.noaa.gov/species/leatherback-turtle>. [Accessed on 12/13/21]
- National Oceanic and Atmospheric Administration (NOAA) Fisheries. 2021d. Loggerhead Turtle. NOAA Fisheries West Coast Region. <https://www.fisheries.noaa.gov/species/loggerhead-turtle>. [Accessed on 12/13/21]

- National Oceanic and Atmospheric Administration (NOAA) Fisheries. 2020. Seagrass on the West Coast. NOAA Fisheries West Coast Region. <https://www.fisheries.noaa.gov/west-coast/habitat-conservation/seagrass-west-coast> [Accessed on 12/14/21]
- San Mateo County Harbor District, 2015. Resolution 48-15, Authorize Agreement with Brad Damitz for the Planning and Implementation of the Surfer's Beach Nourishment Pilot Project.
- Science Applications International Corporation (SAIC). 2007. *Draft report: Review of biological impacts associated with sediment management and protection of California coastal biota*. Unpublished. 1008p.
- Sheilds, M. 2002. *The Birds of North America*. Ithaca, NY: Cornell Lab of Ornithology.
- Sibley, David Allen. 2001. *National Audubon Society, The Sibley Guide to Books*. New York; Alfred A. Knopf Inc.
- Spahr, R., L. Armstrong, D. Atwood, and M. Rath. 1991. Threatened, Endangered, and Sensitive species of the Intermountain Region. Fisheries and Wildlife Management, Intermountain Region, U.S. Forest Service.
- Tangley, L. 2009. Oil Spill Hammers Brown Pelicans. *National Wildlife*, 48/6: 12-14.
- US Army Corps of Engineers (USACE). 1976a. *Dredge Disposal Study, San Francisco Bay and Estuary, Appendix C, Water column*.
- US Army Corps of Engineers (USACE). 1976b. *Dredge Disposal Study, San Francisco Bay and Estuary, Appendix I, Pollutant availability study*.
- U.S. Army Corps of Engineers (USACE). 1996. *Final Environmental Assessment for the Pillar Point Harbor O&M Breakwater Repair, San Mateo County, CA*. San Francisco
- U.S. Army Corps of Engineers (USACE). 2006. *Draft and final environmental assessment, biological assessment, essential fish habitat analysis, application for 401 water quality certification and consistency determination for Pillar Point Harbor operations & Maintenance East Breakwater repair project*. San Mateo County, CA.
- U.S. Army Corps of Engineers (USACE), 2009, Initial Appraisal, Section 216 Review of Completed Projects, North Half Moon Bay Shoreline Improvement Project, Pillar Point Harbor, CA, July 2009.
- U.S. Army Corps of Engineers (USACE), 2015a, Economic Analysis Northern Half Moon Bay Section 111 CAP Study, prepared for U.S. Army Corps of Engineers San Francisco District by Noble Consultants, Inc.
- U.S. Army Corps of Engineers (USACE), 2015b, Coastal Regional Sediment Management Plan for the Santa Cruz Littoral Cell, Pillar Point to Moss Landing, prepared for the California Coastal Sediment Management Workgroup, Prepared by USACE, Monterey Bay National Marine Sanctuary, Noble Consultants, Inc.

- U.S. Army Corps of Engineers (USACE), 2016, Continuing Authorities Program, Section 111 Detailed Project Report and Draft Environmental Assessment, North Half Moon Bay Shoreline Improvement Project, Pillar Point Harbor, CA, April 2016.
- U.S. Fish and Wildlife Service. 1983. California Brown Pelican Recovery Plan. Prepared by F. Gress and D.W. Anderson. U.S. Fish Wildl. Serv., Portland, OR.
- U.S. Fish and Wildlife Service (USFWS). 2020. Marbled Murrelet. Arcata Fish and Wildlife Office, Arcata, California. https://www.fws.gov/arcata/es/birds/mm/m_murrelet.html [Accessed 12/14/21]
- U.S. Fish and Wildlife Service IPaC - Information for Planning and Consultation. 2021. <https://ecos.fws.gov/ipac/>
- U.S. Fish and Wildlife Service. 2001. Western Snowy Plover (*Charadrius alexandrinus nivosus*) Pacific Coast Population Draft Recovery Plan. Portland, Oregon. xix + 630 pp.
- Wilken, D. H. 1993. *Silene*, in The Jepson manual: vascular plants of California, J. C. Hickman (ed.). University of California Press, Berkeley, CA.
- Zentner. 2021a. *Pillar Point/Surfers Beach U.S. Army Corps of Engineering Jurisdictional Delineation*. December 2021.
- Zentner. 2021b. *Pillar Point/Surfers Beach Coastal Commission Jurisdictional Delineation*. December 2021.
- Zentner. 2022. *Pillar Point/Surfers Beach Pilot Restoration Project Biological Assessment*. January 2022.