Public Draft Initial Study & Mitigated Negative Declaration

Capitola Wharf Resiliency and Public Access Improvement Project

April 2020

Lead Agency:

City of Capitola
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LIST OF ACRONYMS AND ABREVIATIONS

AB	Assembly Bill
ACZA	Ammoniacal Copper Zinc Arsenate Wood
AQMP	Air Quality Management Plan
BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practices
CAAQS	California Ambient Air Quality Standards
CAP	Climate Action Plan
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
City	City of Capitola
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CSLC	California State Lands Commission
CWA	Clean Water Act
CV	Central Village
dB	Decibel
DDT	Dichlorodiphenyltrichloroethane
DPM	Diesel Particulate Matter
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESH	Environmentally sensitive habitat
ESHA	Environmentally sensitive habitat area
ESI	Environmental Sensitivity Index
FEMA	Federal Emergency Management Agency
FMP	Fishery Management Plan
FTA	Federal Transit Administration's

GHG	Greenhouse Gas
HCP	Habitat Conservation Plan
HDPE	High-Density Polyethylene
IP	Individual Permit
IPaC	Information, Planning, and Conservation
IS	Initial Study
IS/MND	Initial Study / Mitigated Negative Declaration
lb	Pound
lb/day	Pounds per day
LCP	Local Coastal Program
LOP	Letter of Permission
LOS	Level of Service
LUST	Leaking Underground Storage Tank
M&N	Moffatt & Nichol
Management Plan	Monterey Bay national Marine Sanctuary Management Plan
MBNMS	Monterey Bay national Marine Sanctuary
MBTA	Migratory Bird Treaty Act
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MLD	Most Likely Descendant
MLLW	Mean Lower Low Water
MMPA	Marine Mammal Protection Act
MND	Mitigated Negative Declaration
MSA	Magnuson-Stevens Fishery Conservation and Management act
mty	Metric Tons Per Year
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCAB	North Central Coast Air Basin
ND	Negative Declaration
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_x	Nitrogen Oxides
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O_3	Ozone
OHWM	Ordinary High Water Mark
P/OS	Parks/ Open Space
PF	Public Facility
PM	Particulate Matter
PM_{10}	Particulates 10 microns or less in diameter
$PM_{2.5}$	Particulates 2.5 microns or less in diameter

PPM	Parts Per Million
PRC	Public Resources Code
the "Project"	Capitola Wharf Resiliency and Public Access Improvement Project
RMS	Root Mean Square
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SEL	Sound Energy Levels
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminants
µg/m3	Micrograms per Cubic Meter
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
V/C	Volume/ Capacity
VdB	Vibration Decibels
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
The "Wharf"	Capitola Wharf

1.0 INTRODUCTION

1.1 Summary

The City of Capitola (City) has determined that the proposed Capitola Wharf Resiliency, Public Access, and New Restroom Project (Project), and the required discretionary actions of the City for the Project, require compliance with the guidelines and regulations of the California Environmental Quality Act (CEQA). This Initial Study and Mitigated Negative Declaration (IS/MND) addresses the direct, indirect, and cumulative environmental effects associated with the proposed Project.

This IS/MND has been prepared in conformance with the California Environmental Quality Act of 1970, as amended (Public Resources Code Section 21000 *et seq.*); Section 15070 of the State Guidelines for Implementation of the California Environmental Quality Act of 1970 ("CEQA Guidelines"), as amended (CCR, Title 14, Chapter 3, Section 15000 et seq.), and applicable requirements of the Lead Agency, the City of Capitola (https://www.cityofcapitola.org/communitydevelopment/page/permit-information-and-guidance).

This IS/MND has determined that the proposed Project would result in potentially significant environmental impacts; however, mitigation measures are proposed that would reduce any potentially significant impact to less than significant levels. As such, an IS/MND is deemed as the appropriate document to provide the necessary environmental evaluations and clearance.

1.2 Statutory Authority and Requirements

In accordance with CEQA (Public Resources Code Sections 21000-21177) and pursuant to Section 15063 of the CEQA Guidelines set forth at Title 14 of the California Code of Regulations (CCR), the City is the Lead Agency for the Project undergoing environmental review in this document. Acting in the capacity of CEQA Lead Agency, the City is required to undertake the preparation of an Initial Study (IS) to provide the City with information to use as the basis for determining whether an Environmental Impact Report (EIR), Negative Declaration (ND), or Mitigated Negative Declaration (MND) would be appropriate for providing the necessary environmental documentation for the proposed Project.

The purpose of an IS is to: (1) identify potential environmental impacts; (2) provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR or ND; (3) enable the project sponsor/applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared; (4) facilitate environmental assessment early in the design of a project; (5) provide documentation of the factual basis for the finding in a ND that a project would not have a significant environmental effect; (6) eliminate needless EIRs; (7) determine whether a previously prepared EIR could be used for a project; and (8) assist in the preparation of an EIR, if required, by focusing the EIR on the effects determined to be significant, identifying the effects determined not to be significant, and explaining the reasons for determining that potentially significant effects would not be significant.

Section 15063 of the CEQA Guidelines identifies global disclosure requirements for inclusion in an IS. Pursuant to those requirements, an IS must include: (1) a description of the project, including the location

of the project; (2) an identification of the environmental setting; (3) an identification of environmental effects by use of a checklist, matrix or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries; (4) a discussion of ways to mitigate significant effects identified, if any; (5) an examination of whether the project is compatible with existing zoning, plans, and other applicable land use controls; and (6) the name of the person or persons who prepared or participated in the preparation of the IS.

According to Section 15065(a) of the CEQA Guidelines, an EIR must be prepared for a project if any of the following conditions occur:

- The project has the potential to: substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory.

- The project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.

- The project has possible environmental effects that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

- The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.

According to Section 15070(a) of the CEQA Guidelines, a ND is deemed appropriate if the IS shows that there is no substantial evidence, in light of the whole record before the Lead Agency, that the project may have a significant effect on the environment.

According to Section 15070(b), a MND is deemed appropriate if it identifies potentially significant effects, but:

- Revisions in the project plans or proposals made by or agreed to by the sponsor/applicant before a proposed IS/MND is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and

- There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

1.3 Intended Uses of this Initial Study and Mitigated Negative Declaration

This IS/MND is intended to be an informational document for the City as Lead Agency, the general-public, and for responsible agencies to review and use when approving subsequent discretionary actions for the Project. The resulting documentation is not a policy document, and its approval and/or certification neither presupposes nor mandates any actions on the part of those agencies from whom permits and other discretionary approvals would be required.

The Notice of Intent (NOI) to Adopt a MND and supporting analysis is subject to a **30-day public and agency review period (April 9, 2020 to May 9, 2020)**. During this review, comments on the document should be addressed to the City. Following review of any comments received, the City will consider these comments as a part of this Project's environmental review and include them with the IS/MND documentation for consideration by the Capitola Planning Commission and City Council if needed. This document is available at the City Community Development Department, 420 Capitola Avenue, Capitola, CA 95010.

1.4 Supportive Documentation

1.4.1 Tiered Documents

As permitted in Section 15152(a) of the CEQA Guidelines, information and discussions from other documents can be included into this document. Tiering is defined as follows:

> "Tiering refers to using the analysis of general matters contained in a broader EIR (such as the one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project."

For this document, the Capitola General Plan Update (Capitola 2019), referred to as the General Plan, serves as the broader document since it analyzes the entire City that contains the Project site. However, as discussed, site-specific impacts, which this broader document could not adequately address, are provided in this IS/MND for certain issue areas. This IS/MND evaluates each of those site-specific environmental issue areas and will rely upon analysis contained within the General Plan and General Plan Update EIR with respect to remaining issue areas where appropriate.

Tiering also allows this document to comply with Section 15152(b) of the CEQA Guidelines, which discourages redundant analyses, as follows:

> "Agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects including the general plans, zoning changes, and development projects. This approach can eliminate repetitive discussion of the same issues and focus the later EIR or negative declaration on the actual issues ripe for

> decision at each level of environmental review. Tiering is appropriate when the sequence of analysis is from an EIR prepared for a general plan, policy or program to an EIR or negative declaration for another plan, policy, or program of lesser scope, or to a site-specific EIR or negative declaration."

Section 15152(d) of the CEQA Guidelines further states:

> "Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program, plan, policy, or ordinance should limit the EIR or negative declaration on the later project to effects which:
>
> 1. Were not examined as significant effects on the environment in the prior EIR; or
>
> 2. Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means."

1.4.2 Incorporation by Reference

Incorporation by reference is a procedure for reducing the size of environmental documents and is most appropriate for including long, descriptive, or technical materials that provide general background information but do not contribute directly to the specific analysis of the project itself. This procedure is particularly useful when an EIR or ND relies on a broadly drafted EIR for its evaluation of cumulative impacts of related projects. (*Las Virgenes Homeowners Federation v. County of Los Angeles* (1986) 177 Cal.App.3d 300.) If an EIR or ND relies on information from a supporting study that is available to the public, the EIR or ND cannot be deemed unsupported by evidence or analysis (*San Francisco Ecology Center v. City and County of San Francisco* (1975) 48 Cal.App.3d 584, 595.). This document incorporates by reference the document from which it is tiered, the Capitola General Plan Update (Capitola 2019) and General Plan Update EIR (Capitola 2013).

When an EIR or ND incorporates a document by reference, the incorporation must comply with Section 15150 of the CEQA Guidelines as follows:

The incorporated document must be available to the public or be a matter of public record (CEQA Guidelines Section 15150(a)). The General Plan is available, along with this document, at the City Community Development Department, 420 Capitola Avenue, Capitola, CA 95010.

- This document must be available for inspection by the public at an office of the lead agency (CEQA Guidelines Section 15150(b)). This document is available at the City Community Development Department, 420 Capitola Avenue, Capitola, CA 95010.

- This document must summarize the portion of the document being incorporated by reference or briefly describe information that cannot be summarized. Furthermore, this document must

describe the relationship between the incorporated information and the analysis in the General Plan (CEQA Guidelines Section 15150(c)). As discussed above, the General Plan addresses the entire City and provides background and inventory information and data which apply to the Project site. Incorporated information and/or data will be cited in the appropriate sections.

- This document must include the State identification number of the incorporated document (CEQA Guidelines Section 15150(d)). The State Clearinghouse Number for the General Plan EIR is 2013072002.

- The material to be incorporated in this document will include general background information (CEQA Guidelines Section 15150(f)).

1.4.3 Technical Studies

This IS/MND also utilizes information provided in the following documents:

- Biological Technical Report for the Capitola Wharf Resiliency and Public Access Improvement Project (Dudek 2020).
- Capitola Wharf Department of Parks and Recreation Primary Record (Dill, Leslie. 2019a)
- Proposed Replacement Pile Material, Capitola Wharf Rehabilitation Project, Initial Secretary of the Interior's Standard Review (Dill, Leslie. 2019b)

2.0 INITIAL STUDY / ENVIRONMENTAL CHECKLIST

2.1 Project Title

Capitola Wharf Resiliency and Public Access Improvement Project

2.2 Lead Agency

City of Capitola
420 Capitola Avenue
Capitola, CA 95010

2.3 Project Contact

Kailash Mozumder, Public Works Project Manager
420 Capitola Avenue
Capitola, CA 95010

2.4 Project Sponsor

City of Capitola
420 Capitola Avenue
Capitola, CA 95010

2.5 Project Location

The Project site is in the City of Capitola, Santa Cruz County, California (Figure 1: Regional and Vicinity Map, Figure 2: Project Location Map, and Figure 3: Project Boundaries).

2.6 General Plan / Zoning Designations

Land Use Designation: Parks and Open Space (P/OS) (Capitola Land Use Map 2010).

General Plan Zoning: Public Facility (PF); Central Village (CV); Residential Overlay; Transient Rental Overlay (Capitola Zoning Map 2018).

2.7 Environmental Setting and Surrounding Land Uses

The Project is located at the Capitola Wharf (Wharf) in the City of Capitola, Santa Cruz County, California. The Wharf extends from Capitola Beach into Monterey Bay and supports one lane of both vehicular and foot traffic. Vehicular and foot traffic is not separated. The Wharf is primarily used for recreational activities and contains a bait shop, boat rentals, boat launch, restaurant, restroom facilities on the backside of the restaurant, and fish cleaning stations. Motor vehicle access is open to the public and primarily serves public boat launching, handicap parking, and restaurant employee and patron parking. A floating dock with access onto the Wharf is available in the summer.

The Wharf is approximately 866 feet long from the Wharf foot, where it connects to the road and beach parking area, to the Wharf face, and can be divided into two sections: the trestle and Wharf head. The Wharf trestle is approximately 543 feet long. The trestle is approximately 20 feet wide for the majority of the trestle. There is a small 85-foot-long section at the front of the trestle that is approximately 36 feet wide. The trestle connects the shore to the larger Wharf head, which is approximately 323 feet long and 60 feet wide. The restaurant, boat rentals, boat launch, summer dock, parking area, and restroom facilities are located on the Wharf head.

The Wharf is supported on piles that are 12 to 14-inch diameter creosote treated timbers aligned in rows ("bents") perpendicular to the Wharf centerline at 12-foot nominal spacing. There are typically three piles per bent along the trestle, and six piles at the Wharf head. The Wharf head also includes twelve 14-inch diameter steel piles (six plumb and six batter) at the face. These steel piles were installed to increase the stiffness of the Wharf end to resist wave forces and resulting deflection. The piles support timber cap (10 x 12) beams (pile caps) that span across the bent. The caps support stringers (6 x 12) that support the Wharf decking (3 x 12). Photograph 2 shows the structural framing configuration.

The Wharf is zoned as "Public Use." To the east of the Wharf the beachfront area is zoned as Parks and Open Space. To the east and west of the Wharf the area is zoned as "Neighborhood Mixed Use," which generally supports a mix of residential, hotel, and commercial uses. There is residential housing immediately to the west of the Wharf. Further north, past Cliff Drive, the area is zoned for Single-Family Residential.

2.8 Project Background

The elevation of the Wharf's deck structure, 20 feet Mean Lower Low Water (MLLW), is below the crest elevation of incoming waves that are experienced during large storm events. As a result, the Wharf is at risk of being damaged by relatively frequent storms. The Wharf experiences damage to the supporting foundation piles in winter storms when floating logs batter the piles. Depending on the severity of the storm, the resulting damage can require Wharf closure. The section of the pier containing the narrow trestle with only three supporting piles per row is the most susceptible element to damage that has historically required Wharf closure (Photograph 2). Wharf closures can happen up to two times a year and can have negative impacts on the community through loss of business and through restriction of over water access along the Wharf, which is a regular activity for many residents and visitors. Wharf widening is proposed as a measure to increase resiliency to future pile damage.

Wharf widening would also improve public access and safety by allowing for separate vehicle and pedestrian travel areas. Currently, approximately 458 linear feet of the existing Wharf structure is 20 feet wide. This current configuration creates pedestrian and vehicle conflicts for pier users and vehicles traveling between the Wharf foot and Wharf head.

Capitola Beach and the Wharf also currently lack adequate restroom facilities to serve beach goers and Wharf-users. The only existing restrooms serving these populations is the bathroom at the back of the restaurant, which is outdated and difficult to find. During the summer months porta potties are added at

the beach end of the Wharf. The addition of restroom facilities would better accommodate residents and visitors by providing improved access to restroom facilities.

2.9 Project Description

The proposed Project would increase Wharf resiliency and improve public safety by expanding a section of the Wharf's existing narrow trestle system and by completing necessary repairs (Appendix A). The Project would also provide improved public access with an expanded bridge deck that reduces pedestrian and vehicular conflicts and by constructing two new restroom facilities for beach and Wharf users.

Wharf expansion would add resiliency to the most vulnerable portion of the Wharf that has sustained the most critical damage in the past. Expansion would include a new composite pile and timber structure expansion area. The new expansion area would widen the trestle 16 feet for approximately 458 feet. This would widen the trestle to 36 feet to match the first 85-foot long portion of the trestle at the foot of the Wharf. Up to 120, 16-inch composite (fiberglass) piles would be added as part of the expansion. Fiberglass piles would have High-density polyethylene (HDPE) sleeves to provide UV and battering protection. The timber decking expansion area would be constructed with Ammoniacal Copper Zinc Arsenate (ACZA) treated timber. The expansion would result in an overwater increase of approximately 7,400 square feet. As part of the expansion, two separate travel areas would be created, one for pedestrians and one for vehicles. This is anticipated to improve public access and safety.

Existing deteriorated Wharf elements would be repaired and/or replaced as needed. Maintenance and repairs would include:

- Approximately 21, 12-inch damaged creosote treated piles would be repaired or replaced with 12-inch round timber or fiberglass piles;
- The 12 steel piles at the Wharf head would be repaired by either splicing on new steel pipe to the existing piles above the bay bottom, or by placing fiberglass jackets around these piles and grouting the inside;
- The exposed existing ACZA treated timber decking (approximately 26,500 square feet) would be replaced and 4,500 square feet of ACZA treated timber decking would be placed on top of the decking to serve as vehicle runners;
- Up to 260 linear feet of pile caps and 680 linear feet of stringers would be replaced;
- The hoist landing area would be repaired by replacing damaged timber or fiberglass members and metal connection hardware in kind; and
- Wharf utilities (water, sewer, and electric) would be relocated above deck to protect the utility lines from wave damage. They would be placed within the brace of the rail system, similar to the existing gas line.

The Project also proposes public use and access improvements including the following:

- A new security gate (used to maintain the existing operations schedule) on the trestle where the foot of the Wharf meets the head of the Wharf;
- Modification of the decorative Wharf gate at the foot of the Wharf near the shore;
- Pedestrian improvements such as improved lighting and increased number and size of benches; and
- The bathroom at the Wharf head behind the restaurant would be replaced. A new bathroom at the Wharf foot would be constructed.

Once Project construction is complete, the Wharf would continue to operate similar to existing conditions. No change in use or intensity of use is proposed or anticipated.

Construction Methods

Wharf widening, repairs, and improvements would be completed concurrently. Total Project duration is anticipated to take up to 9 months. Construction work would occur Monday through Friday, 8:00 AM to 5:00 PM and Saturday from 9:00 AM to 4:00 PM. Construction would be prohibited between the hours of 9:00 PM and 7:30 AM on weekdays. Construction noise would be prohibited on weekends with the exception of Saturday work between 9:00 AM and 4:00 PM (Capitola Municipal Code 2019). Work that depends on the low tide cycle may be permitted outside of these hours with approval from the City and a minimum of 5 days advance request. The Wharf would be closed during construction due to the risk of construction hazards. The work would be performed during the off season (approximately September through May) to restore public access for the following busy summer season.

The proposed Project would require the use of cranes and diesel and vibratory hammers for pile driving, power chain saws, pneumatic tools, and electric power and hand tools. Work would be performed from the Wharf deck, to the maximum extent practical, with small boat assistance as needed. A barge-mounted crane may be used if selected by the construction contractor. Pile jacketing and steel pile repair may be performed from a small boat and with a diver as needed.

Staging would occur on the deck of the Wharf or on a floating barge. Construction equipment and materials would be transported via a truck on the Wharf deck or by barge. The use of a barge is not anticipated but may be preferred by the selected contractor. Construction methods for the proposed widening, repairs, and improvements are described in further detail below.

<u>Wharf Widening</u>

The widening would require the use of cranes and diesel and vibratory hammers for pile driving, power chain saws, pneumatic tools, and electric power and hand tools. The piles would be composite material

(fiberglass) installed primarily with a vibratory hammer, and, if needed, an impact hammer for the last few feet. Fiberglass piles would have High-density polyethylene (HDPE) sleeves. Work would be performed from the Wharf deck with a crane and pile driver, to the maximum extent practical, with small boat assistance as needed. A barge-mounted crane with pile driving hammer may be used if selected by the construction contractor. Pile driving activities are anticipated to last two (2) to three (3) months to complete both the Wharf Widening and Repairs described in the section below.

Repairs

Damaged piles (timber and steel) would be repaired by installing a fiberglass jacket around the pile. Fiberglass jackets would be filled with marine grade grout to fill the deteriorated section and seal off the pile from the bay water. The jacket would be sealed within the bay water and extend above high tide to allow grout placement without any grout coming into contact with the bay water. Pile jacket installation would be performed by a small boat and diver. Grout would be injected by a sealed hose pumping the grout from above or from the shore.

Piles that are missing or severely deteriorated would be restored by driving a new pile adjacent to, or in the place of the damaged pile. New piles would be fiberglass or timber. Timber piles would be ACZA treated piles with an inert polyurea coating (e.g. Thunderbolt Industries) prior to installation. Timber or fiberglass piles would be driven with an impact hammer.

Improvements

The new restrooms at the Wharf head and foot are modular and primarily fabricated offsite. They would be delivered to the site by truck and installed at the Wharf with hand tools and power tools. Public benches would also be constructed using hand tools and power tools.

The new security gate and most of the decorative gate would be constructed of metal and fabricated offsite. They would be delivered to the site by truck and installed at the Wharf with a small crane, power tools, and hand tools.

Personnel and Equipment List

Approximately 15 workers are anticipated to be onsite depending on construction stage and associated equipment use. The personnel and pieces of equipment listed below could be used at any time during the 9-month duration of the Project.

- Impact pile driver
- Vibratory pile driver/extractor
- Pneumatic tools
- Power (electric and gas) saws
- Power tools

- Hand tools
- Cranes
- Small boat
- A barge-mounted crane (if selected by the construction contractor)
- A diver (as needed)
- Floating barge for staging (use of a barge is not anticipated but may be preferred by the selected contractor)
- Trucks for transportation of construction equipment and materials

2.10 Other Permits and Approvals

This IS/MND is intended to be an informational document for the City, as Lead Agency, to review and use when approving subsequent discretionary actions for this Project. Table 1 provides a potential, but not exhaustive, list of other responsible agencies, trustee agencies, and/or entities that may rely upon this IS/MND to grant subsequent discretionary approvals and/or permits, where applicable, related to Project implementation.

Table 1: Other Permits and Approvals

Agency/Entity	Permit/Approval	Description	Timing
United States Army Corps of Engineers (USACE)	404 Letter of Permission (LOP) or Individual Permit (IP)	Work within jurisdictional waters from pile removal and pile installation.	Prior to impacts to Waters of the United States
Regional Water Quality Control Board (RWQCB)	401 Water Quality Certification; Waste Discharge Requirement	Work within jurisdictional waters from pile removal and pile installation.	Prior to impacts to Waters of the United States/State
California Department of Fish and Wildlife (CDFW)	None anticipated	No impacts to CDFW-regulated resources are anticipated.	Not applicable
California Coastal Commission (CCC)	Coastal Development Permit	Pile installation; trestle and deck widening; construction of restrooms.	Prior to construction
California State Lands Commission (CSLC)	State Lands Lease; State Lands Lease Amendment	Pile installation; trestle and deck widening; construction of restrooms.	Prior to work in State Lands

2.11 Consultation with California Native American Tribe(s)

Coordination between Moffatt & Nichol (M&N) and the City occurred in January 2020 to identify any tribes that have previously requested to be notified about City projects under AB 52. This coordination effort found that no tribes have requested notification with the City under AB 52. Because no tribes have requested notification or consultation, the City is not required to consult under AB 52.

2.12 Environmental Factors Potentially Affected

All potential environmental impacts listed below are addressed in this IS. Those that are checked below have been identified as involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages for which mitigation measures have been identified to reduce the impact to less than significant.

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

2.13 Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet (Appendix F) have been added to the Project. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" 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, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

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

Signature: _____ Date: April 6, 2020

Printed Name: Steven Jesberg Title: Public Works Director

3.0 ENVIRONMENTAL ANALYSIS

The environmental analysis provided below in Section 3.0 is patterned after the IS Checklist recommended by the CEQA Guidelines, as amended, and used by the City in its environmental review process. For the environmental review undertaken as part of this IS preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the Project's impacts and to identify mitigation.

For the evaluation of potential impacts, the questions in the IS Checklist are stated and an answer is provided according to the analysis undertaken as part of this IS. The analysis considers the short-term, long-term, direct, indirect, and cumulative impacts of the Project. However, as mentioned above, operational changes to the Wharf are not proposed and, therefore, long-term operational impacts are not anticipated. There are four possible responses to each question:

- ***No impact.*** The Project would not have any measurable environmental impact on the environment.

- ***Less than significant impact.*** The Project would have the potential to impact the environment, although this impact would be negligible, it would be below established thresholds that are considered to be significant and/or would be reduced to less than significant with the implementation of established plans, policies, procedures and/or regulations.

- ***Less than significant with mitigation.*** The Project would have the potential to generate impacts, which may be considered as a significant effect on the environment, although mitigation measures or changes to the Project's physical or operational characteristics would reduce these impacts to levels that are less than significant.

- ***Potentially significant impact.*** The Project could have impacts that may be considered significant and, therefore, additional analysis is required to identify mitigation measures that could reduce potentially significant impacts to less than significant levels.

The following is a discussion of potential Project impacts as identified in the Initial Study/Environmental Checklist. Explanations are provided for each item.

Aesthetics

Except as provided in Public Resources Code Section 21099, would the Project:

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

3.1 Aesthetics

a) Would the Project have a substantial adverse effect on a scenic vista?

Less than significant impact. There are no officially designated scenic vistas or view corridors in the City (City of Capitola 2013). Public views of the Wharf and backdrop of Monterey Bay are available from Capitola Beach and from nearby roadways including Cliff Drive, Esplanade, and Monterey Avenue. None of these views would be impacted with the Project's proposed trestle and bridge deck widening or with the proposed construction of two small restroom facilities. Construction equipment would temporarily be visible on the Wharf deck during construction; however, this potential visual impact would be short-term and minor. Therefore, potential impacts are considered less than significant, and no mitigation is required.

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

No impact. There are no officially designated scenic highways within the city limits of Capitola (City of Capitola 2013). Highway 1 is eligible to become officially designated but is located over 0.85 mile from the Project site. In addition, no damage to a scenic resource including tree removal or rock removal are proposed. No impacts would occur and no mitigation is required.

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

No impact. The proposed Project would result in very minor changes to the Wharf's existing structure with the trestle and bridge deck widening and with the construction of two small restroom facilities. These proposed changes are anticipated to be barely noticeable and have no impact on the existing visual character of the Wharf or on existing public views from the community. In addition, the proposed Project is consistent with the current zoning of the Project site, which is zoned as PF. No impact is anticipated, and no mitigation is required.

d) Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No impact. The Project proposes no new sources of substantial light or glare. No new structures are proposed with highly lit or reflective surfaces that could impact day or nighttime views. The new restroom facilities would have lighting consistent with building code standards and existing Wharf lighting. No construction nightwork is proposed that would require the use of lighting work areas. No impacts are anticipated and no mitigation is required.

Cumulative Impacts

No impact. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant aesthetic impact in consideration of the proposed Project. No impacts are anticipated, and no mitigation is required.

Avoidance, Minimization, and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources:

Capitola General Plan Update (City of Capitola 2019); General Plan Update EIR (City of Capitola 2013).

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 Dept. 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:

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

3.2 Agricultural and Forest Resources

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

No impact. The Project footprint is confined to the existing Wharf and immediately adjacent tidal lands. No upland work is proposed. According to the California Department of Conservation (CDC) Farmland Mapping and Monitoring Program's California Important Farmland Finder, adjacent land is classified as Urban Built-up Land (CDC 2019). The Project site would not be located on or encroach upon Prime

Farmland, Unique Farmland, or Farmland of Statewide Importance. No existing or planned farming operations occur here. Impacts are not anticipated and no mitigation is required.

b) Would the Project conflict with existing agriculture zoning for agricultural use, or a Williamson Act contract?

No impact. There are no Williamson Act contracts within the Project site or City's greater planning area (City of Capitola 2013). The Project site is not located on land designated or zoned for agricultural use. The zoning for the Project site is Public Facility (PF) (City of Capitola 2018); therefore, the Project would not conflict with zoning for agricultural use or a Williamson Act contract. No impacts are anticipated, and no mitigation is required.

c) Would the Project 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))?

No impact. As previously discussed, the zoning for the Project site is PF (City of Capitola 2018). The Project site is not located on or adjacent to land designated for forest land, timberland, or timberland zoned timberland production. No impacts are anticipated and no mitigation is required.

d) Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

No impact. See discussion under 3.2.c) above.

e) Would the Project 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?

No impact. As previously discussed, the Project site neither contains forest land nor forest resources. As also discussed above, no existing or planned farming operations occur in or adjacent to the Project site. Therefore, impacts are not anticipated and no mitigation is required.

Cumulative Impacts

No impact. No agricultural or forest resources are present. No potential for cumulative impacts exists.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources

Farmland Mapping and Monitoring Program (CDC 2019); Capitola General Plan Update (City of Capitola 2019); General Plan Update EIR (City of Capitola 2013); Inside Coastal Boundary Zoning Map (City of Capitola 2018).

Air Quality

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

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

3.3 Air Quality

The Project is located within the North Central Coast Air Basin (NCCAB). Air quality in the NCCAB is influenced by airflow patterns associated with inland and ocean temperatures. Warmer temperatures in inland valley areas in the Monterey Bay area can increase the ground temperature and intensify onshore airflow during the afternoon and evening. Occasionally the airflow is reversed, and weak offshore winds are created. When this occurs, the air mass can be held in place by the Pacific High-Pressure Cell, which can cause pollutants to build up for days. Northern or easterly winds can cause pollutant transport from the Central Valley or the San Francisco Bay area into the NCCAB. In the winter and early spring there is typically an absence of deep, persistent inversions and occasional storms, which typically results in improved air quality. The NCCAB is a nonattainment area under the California Ambient Air Quality Standards (CAAQS) for particulate matter of 10 microns or less in diameter (PM_{10}) and ozone. The NCCAB is in attainment of all National Ambient Air Quality Standards (NAAQS).

Health risks associated with PM_{10} include premature mortality, aggravation of respiratory and cardiovascular disease, changes in lung function and increased respiratory symptoms, changes to lung tissues and structure, and altered respiratory defense mechanisms. In 2005, the NCCAB daily PM_{10} emissions were approximately 102 tons per day. Approximately 35% of all PM_{10} emissions were from road dust, 20% from windblown dust, 15% from agricultural tilling, 17% from waste burning, 4% from construction and mobile sources, and 9% from industrial processes and other sources.

Ozone is found in two layers in the atmosphere, the troposphere and the stratosphere. The stratospheric layer protects the earth from harmful ultraviolet (UV) rays and is referred to as the "good" ozone. The "bad" ozone is a photochemical pollutant. Nitrogen oxides (NO_x) and volatile organic compounds (VOC) are considered primary compounds contributing to the formation of ozone. Health risks associated with short-term exposure to ozone include damage to the lungs, decreases in pulmonary function, and impairment of immune mechanisms. In 2008, daily VOC emissions in the NCCAB were approximately 76 tons and NO_x emission were approximately 79 tons. On-road mobile sources accounted for approximately 23% of VOC and 49% of NO_x emissions.

a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

No impact. The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. The Monterey Bay Unified Air Pollution Control District (MBUAPCD) is one of 35 air quality management districts established to protect air quality in California and is responsible for regulating stationary, indirect, and area sources of pollution within the NCCAB and for implementing the AQMP for the NCCAB. The NCCAB is a nonattainment area under the CAAQS for PM_{10} and ozone. The NCCAB is in attainment of all NAAQS. Consistency determinations with the AQMP are used by the MBUAPCD to assess a project's cumulative impact on regional air quality (i.e., ozone levels) (MBUAPCD 2008) and potential conflicts-with or obstruction-to implementation of the AQMP. The MBUAPCD adopted CEQA Air Quality Guidelines in October 1995 (revised February 2008). This IS utilizes MBUAPCD's CEQA criteria and thresholds to assess the proposed Project's potential impacts on air quality.

Construction Emissions

The Project's construction activities would produce temporary emissions of nonattainment pollutants, primarily from diesel combustion equipment during the 9 months of proposed construction. The MBUAPCD has established screening thresholds analyzing PM_{10} and ozone emissions. Based on MBUAPCD's PM_{10} thresholds, a construction site with minimal earthmoving activity would have potentially significant PM_{10} impacts when active construction covers 8.1 acres or more per day. In addition, a construction site with earthmoving activity would have potentially significant PM_{10} impacts when active construction covers 2.2 acres or more per day. Projects below these screening thresholds are assumed to be below the 82 pounds per day (lb/day) PM_{10} threshold of significance (MBUAPCD 2008). The MBUAPCD requires projects that exceed these screening thresholds to quantify their emissions and identify applicable mitigation measures to reduce emissions below the 82 lb/day. Because the proposed Project would not involve earthmoving activities and occurs within an area of less than 1 acre, the Project is not anticipated to produce PM_{10} emissions that exceed the threshold of significance.

Per the MBUAPCD's criteria for determining construction impacts for ozone, construction projects that use "typical construction equipment" are accommodated in the emission inventories of State and federally required air plans and would not have a significant impact on the attainment and maintenance

of ozone CAAQS. The Project proposes to use typical construction equipment and would, therefore, not be anticipated to result in a significant ozone emissions impact.

It should be noted that the MBUAPCD does not have construction thresholds for other criteria pollutants such as VOC, carbon monoxide (CO), NO_x, or $PM_{2.5}$. Emissions from the proposed typical construction equipment are anticipated to be minor and temporary. In addition, implementation of standard construction equipment best management practices (BMP) would further ensure that construction emissions of other criteria pollutants would not have a significant impact. The Project is not anticipated to conflict with or disrupt any MBUAPCD air quality regulations or AQMP. No impacts are anticipated and no mitigation is required.

Operational Emissions

MBUAPCD's thresholds of significance for operational impacts, specific to the NCCAB, are listed below. Accordingly, air quality impacts resulting from the implementation of the proposed Project would not be considered significant if they would result in the following:

a) emit less than 137 lb/day of VOC or NO_x;

b) directly emit less than 550 lb/day of CO or will not cause a violation of CO AAQS at existing or reasonably foreseeable receptors;

c) not significantly impact traffic levels of service or will not cause a violation of CO AAQS or contribute 550 lb/day to an existing or projected violation at existing or reasonably foreseeable receptors;

d) directly emit less than 82 lb/day of PM_{10} on-site or will not cause a violation of PM_{10} AAQS or contribute 82 lb/day to an existing or projected violation at existing or reasonably foreseeable receptors;

e) not indirectly generate PM_{10} along unpaved roads or will not cause a violation of PM_{10} AAQS or contribute 82 lb/day to an existing or projected violation at existing or reasonably foreseeable receptors; and

f) directly emit less than 150 lb/day of SO_x or will not cause a violation of sulfur dioxide (SO_2) AAQS at existing or reasonably foreseeable receptors.

The Project only proposes structural enhancements and public access improvements at the existing Wharf. No increase in facility use or operations are proposed that could lead to a direct or indirect increase in the emission of pollutants listed above. Additional vehicular travel is not anticipated, only improvements to public safety by allowing for separated pedestrian and vehicular travel. No unpaved roads or new pollutant emitting equipment are a part of the Project. The Project does not otherwise propose changes to roadway intersections or roadways that would change the level of service (LOS), increase traffic, increase delays, or decrease capacity. Therefore, no operational impacts would occur

associated with localized CO emissions. Operational impacts are not anticipated, and no mitigation is required.

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

No impact. Cumulative impacts are impacts that may not result from individually minor project contributions but may result from collectively significant multiple project contributions. The MBUAPCD has developed a policy to address the cumulative impacts of CEQA Projects. The policy holds the cumulative threshold to be the same as the project-level threshold and indicates that project impacts are cumulatively considerable if they exceed the project-specific AQMP significance thresholds. Based on the discussion provided above in Section 3.3.a), the Project would not result in a project-level exceedance of the PM_{10} or ozone screening thresholds. Therefore, the Project would not result in a cumulatively considerable impact and no mitigation is required.

c) Would the Project expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact. The General Plan EIR identifies residences, schools, playgrounds, childcare centers, athletic facilities, churches, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes as sensitive receptors. These receptors contain segments of the population most susceptible to poor air quality. The nearest sensitive receptors to the Project site by type are as follows:

- Areas zoned as single-family residences are located approximately 0.5 miles northwest of the Wharf and areas zoned as neighborhood mixed-use are approximately 30 feet east of the Wharf. Additionally, Capitola Venetian Hotel is located approximately 86 feet (0.2 miles) east of the Wharf. The closest residential receptor to the Project's main work area (as measured by distance between the receptor and location of where the new expanded deck would begin near the Wharf foot) is 80 feet.

- The nearest school is Opal Cliffs School located approximately 0.3 miles west of the Wharf.

- The nearest park to the Project is Esplanade Park approximately 0.2 miles east of the Wharf. Although not identified as a park in the General Plan, Capitola Beach is a public beach and the Wharf is used for recreational activities such as boating and fishing.

- The nearest health center is Capitola Health Center approximately 0.2 miles (1,000 feet) north of the Wharf.

The Project proposes standard equipment such as pile drivers, cranes, a small boat, barge-mounted crane, floating barge, and trucks for transporting equipment and materials. Equipment usage would require the burning of diesel fuel and would emit VOC, CO, NO_x, and PM emissions.

Impacts to sensitive receptors are typically evaluated in terms of exposure to toxic air contaminants (TACs). The California Air Resources Board (CARB) classifies diesel particulate matter (DPM) emissions as a TAC. Proposed construction activities would result in short-term emissions of DPM from the combustion of diesel fuel from construction equipment. The burning of diesel fuel can produce both $PM_{2.5}$ and PM_{10} emissions. The CARB uses PM_{10} emissions from diesel exhaust as a surrogate for DPM. According to the CARB 2017 off-road model and anticipated equipment use (Appendix C), estimated PM emissions would be 15.90 lb/day and would not exceed the 82 lb/day MBUAPCD significance threshold. This analysis is conservative as it assumes three pieces of 250 hp equipment running 10 hours per day and assumes older (40 years) higher-polluting equipment. It is more likely that newer equipment would be used, run times would be shorter, and engines would be smaller, resulting in less than 15.90 lb/day of DPM.

Other criteria pollutants such as VOC, CO, and NO_X emissions do not have construction emissions thresholds. The Project proposes to use typical construction equipment and would, therefore, not be anticipated to result in a significant ozone emissions impact.

Health effects from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 70-year lifetime exposure to TACs. The proposed Project construction period of 9 months would be much less than the 70 years used for risk determination. Also, equipment would be moved throughout the Project site during construction activities and not remain near a particular receptor over the 9-month period. Generally speaking, the work would range from 80 feet to the nearest receptor, for work near the Wharf foot, to over 500 feet to the nearest receptor, for work near the Wharf head. Once construction is complete, the Wharf would continue to operate similar to existing conditions with no expanded use. Based on the analysis above, the proposed Project would not expose sensitive receptors to substantial TAC emissions during construction or operations; potential impacts are considered less than significant, and no mitigation is required.

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

Less than significant impact. The Project does not propose land uses or facilities that have been identified as likely to be affiliated with the generation of odors (MBUAPCD 2008). The Project only proposes structural enhancements and public access improvements at the existing Wharf. There is no proposed change in land use or increase in use. The Project would not result in operational odor emissions impacts.

Project construction would temporarily generate air pollutants due to the combustion of diesel fuel during the 9-month Project. The Wharf would be closed to the public during construction, which would reduce odor exposure within the immediate vicinity of the proposed construction activities. Some individuals using adjacent areas may sense that diesel combustion emissions are objectionable, although there is no approved method of quantifying the odor impacts of these emissions to the public. Emissions associated with construction activities would be dispersed over the Project area, short-term, and transient.

Therefore, potential impacts from the proposed construction activities are anticipated to be less than significant and no mitigation is required.

Cumulative Impacts

Less than significant impact. Less than significant impacts are anticipated from the Project. The proposed Project would result in temporary emissions during construction but is not anticipated to result in significant emission increases or conflict with established plans. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant air quality impact in consideration of the proposed Project. Project impacts are anticipated to be less than significant and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources

California Environmental Quality Act Air Quality Guidelines (MBUAPCD 2008); General Plan Update EIR (City of Capitola 2013).

Biological Resources

Would the Project:

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

3.4 Biological Resources

The analysis and findings presented in this section are based on the Biological Technical Report for Capitola Wharf Resiliency and Public Access Improvement Project (Dudek 2020), Appendix B of this IS. As part of the Biological Technical Report, existing biological resource conditions within the Action Area, defined as the greatest area of potential impacts as shown on Figure 4, were initially investigated through review of pertinent scientific literature. Federal register listings, protocols, and species data provided by the United States Fish and Wildlife Service (USFWS) were reviewed in conjunction with anticipated federally listed species potentially occurring within the Action Area. The California Natural Diversity Database (CNDDB) was also reviewed for all pertinent information regarding the locations of

known occurrences of sensitive species in the vicinity of the Project. The literature review also included a query of the USFWS Information, Planning, and Conservation (IPaC) System, National Oceanic and Atmospheric Administration (NOAA) California Species List Tools, USFWS Environmental Conservation Online System, NOAA Fisheries Species of Concern, CDFW commercial landings, and the NOAA Environmental Sensitivity Index (ESI). In addition, numerous regional planning documents and biological resource reports for projects within or near to the Action Area were reviewed.

a) Would the Project 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 Wildlife or the U.S. Fish and Wildlife Service?

Less than significant with mitigation. Capitola Beach and Monterey Bay provide diverse habitat for a variety of wildlife including special status species. The marine habitats in the vicinity of the Wharf consist of various intertidal, kelp forest, and open-water habitats (Figure 4, Dudek 2020). The Monterey Bay National Marine Sanctuary (MBNMS) is home to numerous mammals, seabirds, fishes, invertebrates, and algae in a remarkably productive coastal environment. To protect marine habitats, mitigation measure **MM BIO-1** would require a qualified biologist to lead an on-site environmental training for work crews prior to the start of the proposed Project to protect the surrounding biological resources identified in this Section.

Biological resources within the Action Area (Figure 4, Dudek 2020) were investigated through review of pertinent scientific literature and databases, as further described in Appendix B. The Action Area is defined as the greatest area of potential impacts. Special status species with a high to moderate likelihood of occurring in the Action Area are summarized below. More information on these species can be found in Appendix B.

Special-status fish species: Special-status fish species with a high likelihood of occurring in the Action Area include: steelhead (*Oncorhynchus mykiss*), Coho salmon (*Oncorhynchus kisutch*), Chinook (*Oncorhynchus tshawytscha*), and green sturgeon (*Acipenser medirostris*). Potential impacts to special-status fish species from the proposed Project could occur due to noise, physical disturbance, water quality, and impacts to prey species as discussed below in detail.

Noise: Noise has the potential to directly impact fish by causing physical injury or altering behavior when noise threshold levels are exceeded (NMFS 2008). The interim injury criteria noise threshold is 206 decibels (dB) peak and 187 dB accumulated sound energy levels (SEL) above for all fish, except those less than 2 grams in body weight, for which 183 dB is the SEL threshold. The mean single strike SEL for impact installation of fiberglass piles has been recorded at 142 dB SEL at 41 meters from the source (Appendix B). Impact pile driving of timber piles could result in underwater noise levels of up to 172 dB

root mean square (RMS)[1] at 10 meters or 160 db SEL at 10 meters from the source (Caltrans 2015 as cited in Dudek 2020). Therefore, fiberglass pile installation is not anticipated to produce noise that would exceed the interim injury criteria threshold. Furthermore, the Project proposes to use vibratory installation to the extent feasible, which is anticipated to produce less noise than impact pile driving. The installation of 12- to 14-inch timber piles showed RMS ranging from 158 to 172 dB at a distance of 10 meters at one location and 140 to 158 dB RMS at a second location (Caltrans 2015b as cited in Dudek 2020). If timber piles are installed, the threshold could be exceeded within a small area no greater than 18 meters around the pile for fish less than 2 grams and 10 meters for fish greater than 2 grams; however, it is unlikely that fish would occur within this small area near the construction activities. Furthermore, a pile driving soft start required under **MM NOI-2** would allow fish to move out of the area prior to the most intensive pile driving activities. Additionally, this analysis conservatively assumes 500 blows per day (5 piles at 100 blows each); however in actuality, far less are likely.

Special-status and other fish in the same area may be exposed to temporary increased sound levels, but installation of piles would not be expected to cause physical injury or mortality to fish species. The activity associated with pile driving would likely temporarily drive fish from the immediate vicinity of the pile, reducing the likelihood of exposure to higher peak sound levels. In addition, mitigation measure **MM NOI-2**, which is described in detail under Section 3.13, would require the contractor to begin pile driving using a "soft start" that would gradually increase in impact intensity and allow fish more time to leave the immediate work area before maximum sound levels are reached. **MM NOI-2** would help to ensure noise impacts on fish would be temporary and less than significant.

Physical Disturbances: Physical disturbances during pile driving activities could occur to benthic sediments near the isolated pile installation locations. Benthic disturbances would likely cause fish to temporarily avoid the immediate construction area. Fish eggs and larval, juvenile, and adult fish would likely experience few to no effects due to construction activities. Fish eggs and larval fish are primarily found in the water column and are dispersed by water movement away from the intertidal zone during lower tides, when work on the Wharf is expected to occur. Less than significant physical disturbance impacts are anticipated.

Water Quality: Decreased water quality has the potential to impact fish. Pile driving may result in short-term temporary discharge of sediments into already turbid surface waters, which could cause a very minor increase in the water's turbidity in the immediate vicinity on a temporary basis. The Project would be required to follow BMPs and permit conditions, for compliance with the required regulatory permits, to protect water quality. Potential examples of BMPs and permit conditions include, but are not limited to

[1] RMS refers to the sound pressure level that is square root of the sum of the squares of the pressure contained within a defined period from the initial time to the final time. For marine mammals, the RMS pressure historically has been calculated over the period of the pulse that contains 90 percent of the acoustical energy (Caltrans 2015b).

the following: the contractor would develop a spill plan prior to construction, vehicle staging would occur away from tidal waters, and to the extent feasible Wharf expansion would occur at low tide to minimize contact of construction equipment with water. Compliance with all BMPs and permit conditions for potential temporary impacts to water quality would be ensured through implementation **MM HWQ-1** included in Section 3.10, ensuring potential temporary impacts to water quality would be less than significant.

Long-term water quality impacts could occur from the installation of treated wood piles. The majority of piles would be fiberglass. However, some existing treated timber piles may be replaced with ACZA treated timber piles coated in polyurea. Polyurea is a spray coating expected to minimize the possibility of copper leaching from the ACZA treated piles.

Potential long-term impacts would also be less than significant with the implementation of **MM HWQ-1** and corresponding BMPs and permit conditions. The Project would comply with all BMPs recommended by NOAA (2009) for using treated pilings (or piles) including the following:

1. Selecting wood products that have been third-party verified as containing no more than the minimum level of pesticide needed for the use;

2. Wrapping or coating the pilings to form a physical barrier between the leachable material and the aquatic environment (such as the polyurea coating proposed for the Project);

3. Timing installation to avoid times when sensitive species might be present in the project vicinity (such as avoiding April through July when juvenile salmon might be moving from estuaries to the open ocean); and

4. Employing construction practices that avoid input of sawdust or other treated wood debris into the environment.

Models by NOAA fisheries have indicated that installation of 100 or less uncoated copper-treated piles at current velocities of 10 cm/sec or more are not likely to result in problematic water column concentrations. The Project only proposes to install up to 21 ACZA treated piles. Additionally, the piles would be wrapped in polyurea.

Impacts to Prey Species: Impacts to prey species have the potential to cause indirect impacts to their predators through reduced quality or quantity of food supply. Metals leached into sediments near copper-treated wood in aquatic environments have been found to accumulate in benthic and epibenthic organisms (Weis and Weis 2004 as cited in NOAA, 2009). Fish can acquire elevated levels of copper indirectly through trophic transfer and may exhibit toxic effects if levels are high enough (Weis et al. 1998, Weis and Weis 2004, Eisler 2000 as cited in NOAA, 2009). However, effects decrease after the wood has leached a few months (Weis and Weis 2004 as cited in NOAA 2009). Weis and Weis (2004) determined that concentrations of copper in sediments near dock pilings, in moderately flushed areas, did not show accumulation of metals. The waters beneath the Wharf are highly flushed due to wave action. Therefore, indirect impacts to fish from trophic transfer are not anticipated.

Existing damaged piles provide vertical relief habitat for encrusting invertebrates that could provide food for fish species. Pile sleeving would remove invertebrates growing on the piles; however, anecdotal information from observation of other polyurea pilings suggest that they remain suitable for encrusting organisms, would be recolonized from the surrounding remaining pilings, and that no long-term effect to the Wharf biota would result from the replacements. Proposed use of fiberglass piles with HDPE sleeves would also support colonization as the surface is suitable for encrusting organisms. Indirect impacts to fish species from impacts to prey species would be temporary and less than significant.

Marine Mammals: Marine mammals protected under the Endangered Species Act (ESA) with a moderate to high likelihood of occurring in the Action Area include Southern sea otters (*Enhydra lutris nereis*). In addition to the marine mammals protected under the ESA, California sea lion (*Zalophus californianus*), harbor seals (*Phoca vitulina*), Northern elephant seals (*Mirounga angustirostris*), Northern fur seals (*Callorhinus ursinus*), harbor porpoises (*Phocoena phocoena*), common bottlenose (*Tursiops truncates*), and gray whales (*Eschrichtius robustus*) have a moderate to high potential of occurring in the Action Area and are protected under the Marine Mammal Protection Act (MMPA). Impacts to marine mammals from the proposed Project could occur due to noise and impacts to prey species, as discussed in detail below. Marine mammals would unlikely be affected by the minor localized turbidity increases and benthic sediment disturbances during pile driving.

Noise: Noise has the potential to directly impact marine mammals by causing physical injury or altering behavior when noise threshold levels are exceeded. Level A harassment is defined as "[A]ny act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild." Level B harassment is defined as"[A]ny act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including but not limited to migration, breathing, nursing, breeding, feeding or sheltering." Currently, neither NOAA Fisheries nor USFWS have specific take criteria for harassment of sea otters, a federally listed threatened species. In the absence of noise thresholds specific to sea otters, USFWS has used the Level A 180 dB RMS threshold (updated Level A 202-232 dB RMS; NMFS 2018b found in Dudek 2020) and the Level B 160 dB RMS threshold for impulse noise; and Level B 120 dB RMS for continuous noise (URS Corporation 2013 found in Dudek 2020).

Pile driving would produce the loudest in-water noise. Twelve (12)-inch diameter timber piles would be installed using impact pile driving and/or 16-inch fiberglass piles would be installed using a vibratory hammer and impact proofing if required. The Project could result in in-water noise levels exceeding the Level A in-water threshold within the immediate vicinity of the source (Dudek 2020). However, it would be extremely unlikely that marine mammals would occur within these small threshold areas. The largest threshold area is 21.9 meters for high frequency cetaceans. Due to the small Level A in-water threshold area, Level A impacts are not anticipated.

The in-water Level B threshold would exceed the behavioral threshold for up to 410 meters for the vibratory installation of fiberglass piles, 63 meters for potential timber pile impact driving, and up to 8.8 meters for proofing of fiberglass piles. Marine mammals would not be anticipated to occur within the immediate vicinity of the pile driving where noise impacts could conceivably be greatest. For this Project,

the proposed exclusion zone (pile extraction shutdown area) includes all marine waters within the Level A and Level B zones as required under **MM BIO-3**. Implementation of **MM BIO-3** would prevent all possible Level A or Level B harassment to marine mammals and ensure potential impacts are less than significant.

For in-air noise exposure of hauled-out pinnipeds, NMFS do-not-exceed disturbance criteria for Level B harassment of 90 dB re 20 µPa RMS for harbor seals and 100 dB re 20 µPa RMS for all other pinnipeds (NOAA 2011) was used to analyze potential impacts. The Level B harassment level for impact pile driving of timber piles would extend up to 11.4 meters for seals and 4.5 meters for sealions. The Level B harassment area could extend up to 30.3 meters for seals and 12.1 meters for sealions during impact proofing of fiberglass piles. Vibratory installation of fiberglass piles could result in shutdown zones of up to 7.1 meters for seals and 2.8 meters for sealions. There are no known harbor seal or sealion haulouts in the Action Area and therefore impacts to hauled out pinnipeds would not be anticipated. Furthermore, an exclusion zone would be applied to assure that impacts to pinnipeds does not occur. **MM BIO-3** would require that an exclusion/shutdown zone be established and would be defined as the distance in which underwater sound levels exceed the Level B threshold for impact or continuous noise (Figure 5, Dudek 2020). These measures would avoid exposing marine mammals to sound levels in excess of the Level A or Level B criteria. In addition, mitigation measure **MM BIO-2** would require that a wood cushion block or comparable sound dampening device be used during impact pile driving. With the proposed mitigation measures, noise impacts would be anticipated to be less than significant.

Impacts to Prey Species: Impacts to prey species have the potential to cause indirect impacts to their predators through reduced quality or quantity of food supply. Metals leached into sediments near copper-treated wood in aquatic environments have been found to accumulate in benthic and epibenthic organisms. These metals can bioaccumulate up the food chain and cause toxic effects at higher trophic levels. Weis and Weis (2004) determined that concentrations of copper in sediments near dock pilings, in moderately flushed areas, did not show accumulation of metals. The sediments below the Wharf are well flushed and, therefore, trophic transfer of metals from ACZA treated piles would be anticipated to be less than significant. Furthermore, the ACZA piles would be coated in polyurea to inhibit ACZA from leaching from the piles.

Special-Status Bird Species: Special status bird species with a moderate likelihood of occurring in the Action Area include marbled murrelet (*Brachyramphus marmoratus*) osprey (*Pandion haliaetus*) and brant (*Brant bernicla*). The osprey is ranked as a CDFW Watch List species and the ocean and lagoon habitat within the Action Area provide suitable foraging habitat for this species. Osprey are not anticipated to nest in the Action Area. The brant is a California species of special concern and the marine and estuarine habitat within and adjacent to the Action Area provide adequate wintering and foraging habitat for this species. In addition to the special status bird species that could occur in the Action Area, Monterey Bay is an important stop-over point for migratory birds and 94 species of native and non-native seabirds are known to occur regularly in Monterey Bay. Migratory birds are protected under the Migratory Bird Treaty Act (MBTA). Impacts to special-status bird species from the proposed Project could occur due to noise, water quality, and impacts to prey species, as discussed below in detail.

Noise: Noise from construction equipment and activities has the potential to disturb shorebirds, gulls, and other coastal birds that may forage or rest on beaches at or near the Wharf. This impact would not be substantially adverse and would remain less than significant because: (1) disturbance effects would be temporary and limited to the period of construction; (2) the unaffected shoreline adjacent to the repair activities site provides foraging opportunities; and (3) the foraging areas at the repair activities site would rapidly recover following the conclusion of construction. Noise from the proposed activities could disturb nesting birds. Therefore, mitigation measure **MM BIO-4** would require that for construction conducted within the nesting bird season (e.g. February 15 – September 15), a pre-construction nesting bird survey would be conducted and avoidance provisions as necessary. Implementation of **MM BIO-4** would ensure potential impacts are reduced to less than significant.

Water Quality: Decreased water quality has the potential to impact foraging birds. Pile driving may result in short-term temporary discharge of sediments into already turbid surface waters, which could cause a very minor increase in the water's turbidity in the immediate vicinity on a temporary basis (Dudek 2020). Increased turbidity could decrease foraging success in the immediate project vicinity; however, it is anticipated that there would be ample adjacent undisturbed foraging area for birds and impacts would be less than significant.

Impacts to Prey species: Impacts to prey species have the potential to cause indirect impacts to their predators through reduced quality or quantity of food supply. Metals leached into sediments near copper-treated wood in aquatic environments have been found to accumulate in benthic and epibenthic organisms. These metals can bioaccumulate up the food chain and cause toxic effects at higher trophic levels. Weis and Weis (2004) determined that concentrations of copper in sediments near dock pilings, in moderately flushed areas, did not show accumulation of metals. The sediments below the Wharf are well flushed and therefore trophic transfer of metals from ACZA treated piles would be anticipated to be less than significant. Furthermore, the ACZA piles would be coated in polyurea to inhibit ACZA from leaching from the piles.

Magnuson-Stevens Fishery Conservation and Management Act: The 1996 amendment to the Magnuson-Stevens Fishery Conservation and Management Act (MSA) created essential fish habitat (EFH) and required the identification and protection of important habitats for federally managed fisheries. The tidal aquatic habitats within the action t area are considered EFH by NOAA. Fisheries for a species assemblage that includes sharks, rockfish, roundfish, and flatfish. There are three Fishery Management Plans (FMP) that include waters in and adjacent to the Action Area: the Coastal Pelagic FMP covering 5 species, the Pacific Groundfish FMP covering 9 species, and the Pacific Coast Salmon FMP covering 3 species. Fish species under these three plans are managed under the MSA. Consultation with NOAA Fisheries under the MSA would occur during the permitting process for the proposed Project.

Impacts to EFH and MSA managed species are typically determined based on whether a project reduces quality and/or quantity of EFH, regardless of the degree to which that impact occurs. The proposed Project would temporarily modify EFH at the Wharf, as well as localized portions of Monterey Bay surrounding the Action Area, but the effects would not result in permanent habitat loss or more than short-term displacement of MSA managed species and habitat. Impacts to MSA managed species from

modification to benthic habitat, temporary water quality impacts, and noise impacts could occur, but would be anticipated to be less than significant. The Project would comply with any conservation measures required by NOAA fisheries to assure that less than significant impacts to MSA managed species occur.

With the implementation of required regulatory permit conditions and the proposed mitigation measures presented in this Section, impacts to candidate, sensitive, or special status species are anticipated to be less than significant. Additional mitigation is not required.

b) Would the Project 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 the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Less than significant impact with mitigation. The City has an environmentally sensitive habitat (ESH) ordinance, which is intended to protect riparian habitat and monarch habitat from impacts due to development. The Project would occur on the existing Wharf deck and over Monterey Bay. The Wharf extends from Capitola Beach. Neither beach dune vegetation nor riparian habitat is present in the Action Area (Dudek 2020). Because the Project occurs overwater and over a managed beach, neither of which sustain assemblages of plant species, impacts to vegetation communities and riparian habitat is not anticipated. No impacts were identified and no mitigation is required.

The Project would occur at the existing Capitola Wharf, over Monterey Bay. Monterey Bay is part of the MBNMS, which was established and designated in 1992 for the purpose of resource protection, research, education, and public use and is the largest of the 13 marine sanctuaries administered by NOAA. The MBNMS is home to numerous mammals, seabirds, fishes, invertebrates, and algae in a remarkably productive coastal environment. In November of 2008, the Office of National Marine Sanctuaries released the final Monterey Bay National Marine Sanctuary Management Plan (Management Plan). Section II of the Management Plan addresses coastal development including reducing hard armoring, minimizing impacts from desalination activities, and ensuring protection of MBNMS resources during dredging and disposal activities. The proposed Project would not interfere with the goals of the MBNMS Management Plan as is does not propose armoring, desalination, dredging, or disposal.

The California Coastal Act is designed to encourage local governments to create Local Coastal Programs (LCPs) to govern decisions that determine short-term and long-term conservation and use of coastal resources. Capitola's LCP includes policies pertaining to the protection of biological resources (City of Capitola 2013). With the minimization measures proposed in this Section (**MM BIO-1, MM BIO-2, MM BIO-3,** and **MM BIO-4**) the Project would not be anticipated to interfere with any of these policies. In addition, the City is required to prepare findings that any proposed development would meet all applicable land use policies before a permit can be issued for any development in the Coastal Zone.

Implementation of minimization measures presented in this Section (**MM BIO-1, MM BIO-2, MM BIO-3,** and **MM BIO-4**) would assure that the Project does not conflict with any local policies or

ordinances that protect biological resources. Therefore, impacts are anticipated to be less than significant and no additional mitigation is required.

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

Less than significant impact. Projects with impacts to Waters of the United States are regulated under Sections 404 and 401 of the Clean Water Act (CWA) through the USACE and the RWQCB, respectively. The Project would occur at the existing Wharf, over Monterey Bay. To determine the presence of a wetland, three indicators are required: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Jurisdictional Waters of the United States are typically determined through the observation of an Ordinary High Water Mark (OHWM), which is defined as the "line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." Waters of the United States must also be connected to adjacent watersheds. Jurisdictional Waters of the United States under the jurisdiction of the USACE and RWQCB occur in the Action Area.

Parts of the Action Area are characterized as intertidal sandy beach (wetland) and subtidal coastal wetland (Dudek 2020). The intertidal zone is located between the highest and lowest tide elevations. Within the Action Area, the intertidal is entirely sandy beach. Intertidal sandy beach communities are subject to daily tidal changes that result in highly fluctuating physical regimes in temperature, salinity, and moisture content of the sand. The intertidal can also be subject to high energy wave action. Subtidal coastal wetlands are located immediately seaward of intertidal sandy beach habitat and are constantly submerged. Subtidal coastal wetland habitat comprises the majority of the Action Area.

The coastal wetlands found in the Action Area are subject to the jurisdiction of the USACE and RWQCB under Section 404 and 401 of the Federal CWA. The Project is confined to the existing Wharf and 16 foot by 458-foot overwater expansion area. The Wharf expansion will occur over water and will be pile supported. Approximately 120, 16-inch piles are proposed as part of this expansion. Fiberglass piles would have HDPE sleeves to provide UV and battering protection New piles would be fiberglass (composite) piles and could result in approximately 150 square feet of benthic disturbance within the intertidal and subtidal areas of the Action Area. Additionally:

- Twenty-one (21), 12-inch damaged timber piles could be replaced or repaired with fiberglass sleeves. If replaced piles would be ACZA treated polyurea coated or fiberglass.

- And 12, 14-inch steel piles could be repaired by either splicing on new steel pipe to the existing piles above the bay bottom, or by placing fiberglass jackets around these piles and grouting the inside. Sleeving would add approximately 2 inches to the diameter of the pile.

It is likely that the majority of the damaged timber piles would be repaired as opposed to replaced. However, in the event that all 21 of the damaged timber piles are replaced, the Project would permanently disturb up to 18 square feet of benthic sediment from pile repairs. The Project has been designed to use the smallest diameter feasible while still assuring the structural integrity of the Wharf. Furthermore, all new piles would be fiberglass. Fiberglass piles with HDPE sleeves are anticipated to be biologically favorable to treated wood piles. If treated wood piles are replaced, they would be replaced with fiberglass or ACZA treated wood coated in polyurea. Creosote treated wood piles are not proposed. The polyurea coating would be anticipated to inhibit leaching of ACZA. Weis and Weis (2004) determined that concentrations of copper in sediments near dock pilings, in moderately flushed areas, did not show accumulation of metals. The sediments below the Wharf are well flushed and impacts would be anticipated to be less than significant.

Any benthic sediment disturbances to coastal wetlands are anticipated to be minor. Less than significant impacts to federally protected wetlands are anticipated and no mitigation is required.

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

Less than significant with mitigation. Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The Project would occur at the existing Wharf, over Monterey Bay. To the north of the Wharf the area is urbanized and consists of commercial, hotel, and residential uses. The Wharf extends from Capitola Beach, a public beach. The Wharf is pile supported and would not be anticipated to inhibit movement of aquatic species.

The greater Monterey Bay is an important stop-over point for migratory birds and 94 species of native and non-native seabirds are known to occur regularly in Monterey Bay. Along the continental shelf, the dominant species are sooty shearwaters (*Ardenna grisea*), western grebes, Pacific loon (*Gavia pacifica*), brown pelican, and western gulls. During summer to fall, species such as black-footed albatross (*Phoebastria nigripes*), ashy storm-petrel (*Oceanodroma homochroa*), and Scripps's murrelet (*Synthliboramphus scrippsi*) can be found foraging over deeper waters of Monterey Bay (URS Corporation 2013). An important habitat associated with Monterey Bay is the waterbird foraging area off the shore below Depot Hill between the jetty and the mouth of Tannery Gulch, which is frequented by numerous bird species. The shoreline between the rock groin of Capitola Beach and the mouth of Tannery Gulch is frequented by numerous shorebirds during low tide such as sanderling (*Calidris alba*), willet (*Tringa semipalmata*) and black turnstone (*Arenaria melanocephala*). Many other waterbirds, including cormorants, gulls and the delisted California Brown Pelican, commonly forage immediately offshore in the waters adjacent to the kelp beds.

Noise from construction equipment and activities has the potential to disturb shorebirds, gulls, and other coastal birds that may forage or rest on beaches at or near the Wharf. This impact would not be substantially adverse and would remain less than significant because: (1) disturbance effects would be

temporary and limited to the period of construction; (2) unaffected shoreline adjacent to the repair activities site provides foraging opportunities; and (3) the foraging areas at the repair activities site would rapidly recover following the conclusion of construction. Noise from the proposed activities could disturb nesting birds. Therefore, **MM BIO-4** would require that for construction conducted within the nesting bird season (e.g. February 15 – September 15), a pre-construction nesting bird survey will be conducted.

Project activities could also impact the movement of fish due to noise and turbidity. Noise would not be anticipated to cause physical injury of fish species but could alter their behavior and cause them to avoid the construction area. Increased turbidity in the water column could also impact fish behavior; however, mitigation measure **MM HWQ-1** discussed above would require the Project to implement BMPs and permit conditions required by the regulatory agencies in order to protect water quality. Implementation of BMPs and permit conditions would ensure potential impacts are less than significant.

Impacts to the movement of fish or wildlife are anticipated to be less than significant and no additional mitigation is required.

e) Would the Project conflict with any local policies or ordinance protecting biological resources, such as a tree preservation policy or ordinance?

Less than significant impact. The Project is located within the coastal zone, which can be considered an Environmentally Sensitive Habitat Area (ESHA) under Section 17.64.020 of the City's Zoning Code and with its applicability to the City's LCP and the requirements of the Coastal Act. Based on Project location, compliance with the City's LCP would be required. Compliance with the LCP and required regulatory permits would ensure that potential impacts to ESHA would be less than significant.

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

No impact. The City of Santa Cruz Habitat Conservation Plan (HCP) is currently being developed. The final document has not been released or adopted. The HCP is anticipated to be finalized in 2020. The Project would comply with all federal, state, and local regulations. Impacts are not anticipated and no mitigation is required.

Cumulative Impacts

Less than significant impact. Less than significant impacts are anticipated from the Project. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant impact on biological resources within the MBNMS in consideration of the proposed Project. Project impacts are anticipated to be less than significant and no additional mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

The following mitigation measures would be implemented to avoid and/or minimize potential impacts and to ensure impacts are less than significant:

MM BIO-1 A biologist shall lead on-site environmental training for work crews prior to the start of the proposed Project. Any new crew members brought onto the job prior to Project commencement must undergo the environmental training before starting work on the Project. Pre-construction training shall involve discussion on the status and sensitivity of the target species in the area and the actions to be taken to avoid or minimize impacts in the event of a target species entering the work area. This measure shall be included on the construction plans.

MM BIO-2 The contractor shall use a wood cushion block, or other comparable noise dampening device, during pile driving activities. This measure shall be included on the construction plans.

MM BIO-3 A pile installation "exclusion zone" defined as the distance where underwater and in-air sound levels exceed the Level B harassment threshold (160 dB RMS threshold for impulse noise; and 120 dB RMS for continuous noise) shall be established. The exclusion zone distance(s) shall be from the active pile driving/installation source as detailed below or an alternative distance(s) if required by the Project's regulatory permits. Exclusion zones by pile type and installation method are as follows:

Underwater exclusion zone

1. Fiberglass pile vibratory installation – 410 meters
2. Fiberglass pile impact proofing – 8.8 meters
3. Timber pile impact driving – 63 meters

In-air exclusion zone

1. Fiberglass pile vibratory installation – 7.1 meters (seals) and 2.8 meters (sealions)
2. Fiberglass pile impact proofing – 30.3 meters (seals) and 12.1 meters (sealions)
3. Timber pile impact driving – 11.4 meters (seals) and 4.5 meters (sealions)

Marine mammal monitoring of the exclusion zone shall be conducted prior to commencement of pile installation. Pile-installation activities shall not commence until marine mammals are not sighted in the exclusion zone for 15 minutes. This measure shall be included on the construction plans.

MM BIO-4 If Project construction begins outside of nesting bird season, no additional mitigation is required. If Project construction begins within the nesting bird season (e.g. February 15 – September 15), a pre-construction nesting bird survey shall be conducted. No more than one week prior to initiation of construction activities, a qualified biologist shall conduct a nesting bird survey to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the nesting bird monitoring area shown on Figure 4. If active nests are found, construction activities within 300 feet of the nests (or as determined by the qualified biologist) shall be modified, postponed or halted, until the nest is vacated, the young have fledged, and/or there is no evidence of a

second attempt at nesting. Monitoring shall not extend beyond Cliff Drive because the effects and noise environment beyond that location is dominated by roadway and train effects.

Sources

Biological Technical Report for Capitola Wharf Resiliency and Public Access Improvement Project (Dudek 2020); City of Santa Cruz and Soquel Creek Water District (URS Corporation 2013); General Plan Update EIR (City of Capitola 2013); Interim Criteria Agreement. (NMFS 2008); The Use of Treated Wood Products in Aquatic Environments: Guidelines to West Coast (NOAA 2009).

Cultural Resources

Would the Project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

3.5 Cultural Resources

a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Less than significant with mitigation. The Wharf was individually listed by the City on its 2005 Historic Structures List, and identified as individually eligible for the California Register under Criterion (1) and the National Register under Criterion (A) in an updated Department of Parks and Recreation (DPR) evaluation prepared in 2019 (Dill 2019a). The City engaged in early coordination with a licensed and registered architectural historian, Leslie Dill, to evaluate and minimize the Project's potential impacts to the Wharf and Capitola Beach Cultural Landscape District. A memorandum was prepared by Leslie Dill, dated June 6, 2019, providing initial Secretary of the Interior's review of potential materials proposed for repairs at the Capitola Wharf (Dill 2019b). The memorandum determined that additional material and design information would be needed to determine potential impacts on the character defining features identified in the DPR. On March 12, 2020 additional material and design information for the proposed Project was submitted to Leslie Dill for supplemental review. Leslie Dill then completed an updated Secretary of the Interior's Standards and Historic Integrity Review in April 2020 (Dill 2020, Appendix D), which includes the full evaluation of coordination, submittals and reviews described above. The findings and recommendations of the Secretary of the Interior's Standards and Historic Integrity Review are summarized below.

Since the Wharf's original construction in 1857 it has been rebuilt several times (Dill 2019a). The Wharf was extended in 1863, reduced in size in 1865, repaired in 1909, a clubhouse was built in 1928 which burned in 1940, widened and repaired from 1955-56, buildings were added in 1982, and various other repairs and renovations occurred in: 1924, 1936, 1965, 1981, and 1999-2000. In 1981 major maintenance was required that nearly replaced the entire structure. Although it has been rebuilt many times, the Wharf

still serves as a visual, functional, and recognizable part of Capitola Beach. The Wharf was previously listed on the Historic Structures List by the City as an individually significant structure in 2005.

Per the DPR, the character-defining features of the Wharf are as follows, based on current conditions and historic photographs:

1. Its location and orientation, including its direct connection to the end of Wharf Road;
2. Its visually abundant round wooden piles, some in a regular pattern and some irregular;
3. Its continuous-height wood-plank deck, at the height of the end of Wharf Road;
4. Its narrower entrance width and wider end (altered to this design in the 1950s); and
5. The inclusion of hoists and other technical boating and fishing equipment.

The proposed Project would have no impact on character defining features 1, 3, or 5. Impacts to character defining features 2 and 4 would be less than significant, as further discussed below.

Although altered and rebuilt multiple times after years of exposure to wave and tidal damage, the Wharf retains much of its historic integrity per the National Register's seven aspects of integrity and continues to serve as a visual, functional, and recognizable part of Capitola Beach. Because long-term weathering and storm damage have prompted repair and replacement of the Wharf's piers and decking multiple times, its materials and workmanship are not readily identifiable as historic; however, the structure continues to be built of timber and display round-wood pilings related to the structural design of the past. The Wharf has historical integrity with its location and setting at Capitola Beach and extending into Monterey Bay. It retains visual associations with the establishment of shipping in the Early American era and commercial and recreational fishing for over a century, and it conveys a feeling of its age and continued use over time. Per the California Register definition of integrity, the Wharf conveys adequate historic authenticity. It serves to preserve the relationship of the beach to the commercial shipping and fishing industries of Capitola's past.

Due to necessary maintenance and repair over the years, the Wharf structure is not identifiable as historic, but is still a prominent landmark in Capitola and contributor to Capitola Beach. The Wharf conveys adequate historic authenticity with its location and setting at Capitola Beach and extending into Monterey Bay. Because the Wharf contributes to Capitola Beach Cultural Landscape District, it is eligible for the California Register under Criterion (1) and the National Register under Criterion (A). The proposed Project would not alter the setting or location of the Wharf and is, therefore, not anticipated to interfere with its eligibility under criteria (1) or (A) of the California or National Register, respectively. No impacts are anticipated, and no mitigation is required.

The Wharf's heavily altered structure no longer has integrity with the original materials or design, and it does not have association with other significant personages that meet criteria (2) or (B) of the California or National Register, respectively. The heavily altered structure does not meet the Design/Construction criteria for design qualities or artisanship and does not meet criteria (3) or (C) for the California or National Registers, respectively. Because the Wharf's structure does not meet Criteria (2) or (3) of the

California register or (B) or (C) of the National Register, the proposed Project would not be anticipated to have a significant impact on cultural resources.

As previously mentioned, an Interior's Standards and Historic Integrity Review was completed in April 2020 (Dill 2020, Appendix D). This review concluded that the Wharf has "been repaired and altered many times with matching replacement materials. The durability of these historical materials over time in the face of the Pacific Ocean is not consistent with the value of the structure to the community, so alternative replacement materials are worth consideration." To the extent feasible, replacement materials would be similar to historical materials (Appendix A). The use of treated wood piles can cause an array of biological issues due to the leaching of chemical treatments (ACZA or creosote). Therefore, it is not favorable to install treated wood piles and in-kind replacement of creosote treated timber piles is not allowed by the regulatory agencies. Available pile types that are agency approved and have been used more recently for pile additions and replacements include HDPE (as used on the expansion of the trestle near the Wharf foot in 2002) piles and ACZA timber piles with a polyurea coating.

The Project proposes 120, new 15-inch fiberglass piles with HDPE covers to provide UV and battering protection. Additionally up to 21 existing 12-inch creosote treated wood piles would be replaced[2] with ACZA treated polyurea coated piles or fiberglass piles with HDPE sleeves. The use of fiberglass piles with HDPE covers and widening of the trestle would be anticipated to improve the resiliency of the structure and minimize future maintenance needs. Replacement piles would be similar in dimension and cross-section shape. Polyurea coated piles would be black/brown and fiberglass piles with HDPE covers would be black. The texture of ACZA treated polyurea coated piles or fiberglass piles with HDPE covers would be slightly different to that of the historic creosote treated wood piles. However both proposed pile types would likely be repopulated by barnacles similar to the historic wood piles, which would help disguise any textural differences. Additionally, the use of fiberglass piles with HDPE covers would be similar to the 2002 expansion of the Wharf foot.. The replacement materials are proposed to be similar in dimension, layout, and color of the historic pier, especially as viewed from afar. Differences would be more discernable when viewed at closer distances from underneath the Wharf standing on the beach. Based on the Interior's Standards and Historic Integrity Review, the new pile materials would result in "a loss of integrity of materials, but it is proposed to be minimized in this Project (Dill 2020)." In order to ensure potential impacts remain less than significant, mitigation measure **MM CUL-1** would require the City's Architectural & Site Review Committee to verify the Project's 100% design plans are consistent with the recommendations provided in the Interior's Standards and Historic Integrity Review prior to approval. Implementation of **MM CUL-1** would ensure potential impacts to character defining feature 2 would be minimized to less than significant.

[2] Existing damaged piles designated for "replacement" are to be protected in-place with the new pile installed next to the damaged pile; however, in some cases the contractor may need to remove the existing pile should field conditions impede installation of the new pile. The preference is to protect damaged piles in-place to reduce construction work and retain any structural support of the existing pile.

Although the Project would widen the Wharf trestle, the entrance would still remain narrower than the Wharf head. The Interior's Standards and Historic Integrity Review determined that "the added width would continue to allow a perception of light and air from underneath the structure; views would persist to the water and to the sides. The changes can be found compatible with the character of the historic wharf (Dill 2020, Appendix D)." Based on this evaluation, potential impacts to character defining feature 4 would be less than significant.

In summary, the Interior's Standards and Historic Integrity Review concluded the Project, "as currently presented, is substantially compatible with the Secretary of the Interior's Standards for the Treatment of Historic Properties. The project can be found to preserve substantially the historic integrity of the historic resource and of the identified Capitola Beach Cultural Landscape District (Dill 2020, Appendix D)." Consistent with the recommendations made in the Interior's Standards and Historic Integrity Review and to ensure the Project remains consistent with this finding as it is carried forward to the final design stage, mitigation measure **MM CUL-1** would require the City's Architectural & Site Review Committee to verify the Project's 100% design plans are consistent with the recommendations provided in the Interior's Standards and Historic Integrity Review prior to approval. Implementation of **MM CUL-1** would ensure the Project's potential impacts remain less than significant.

b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No impact. The Project only proposes structural enhancements and public access improvements at the existing Wharf. There would be no major excavation that could disturb archaeological resources. Sediment disturbance would be limited to pile sleeving and pile driving. Pile sleeving may require a diver to use a handheld shovel and dig directly around the pile to approximately 1 foot deep to allow for placement of the sleeve (to be determined by the contractor based on field conditions). Sediments located at these shallow depths are in constant flux due to the high-energy wave environment; so archaeological resources would not be anticipated to occur. In July of 2018 the City of Capitola prepared a Cultural Resources Assessment (Appendix D) for a separate project that partially included the Project footprint along the beach near the foot of the Wharf. The Cultural Resource Assessment did not identify any known or recorded cultural resources at or immediately adjacent to the proposed Project area of ground disturbance (Appendix D). Due to the nature of the Project and based on other research performed in the area, it is very unlikely that archaeological resources would be encountered. No impacts are anticipated and no mitigation is required.

c) Would the Project disturb any human remains, including those interred outside of formal cemeteries?

No impact. No human remains are known to exist at the Project site and no substantial excavations are proposed. Sediment disturbance would be limited to pile sleeving and pile driving as described above in Section 3.5.b). No impacts are anticipated; however, should human remains be discovered during ground disturbance, the Project Applicant/Developer would be required to follow all standard protocols and regulations required of any project that uncovers human remains. To comply with State Health and Safety Code Section 7050.5, if human remains are encountered, the County Coroner must be notified of the

find immediately. No further disturbance would occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. If the remains are determined to be Native American, the Coroner would notify the Native American Heritage Commission (NAHC), which would determine and notify a Most Likely Descendant (MLD). The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Cumulative Impacts

No impact. The Project is not anticipated to affect the cultural or historical integrity of the Wharf or the potential Capitola Beach Cultural Landscape District. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant cultural resource impact in consideration of the proposed Project. No cumulative impacts are anticipated and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

The following mitigation measures would be implemented to avoid and/or minimize potential impacts and to ensure impacts are less than significant:

MM CUL-1 Prior to City approval of the Project's final 100% design plans, the City's Architectural & Site Review Committee shall perform a focused review of the draft 100% design plans for consistency with the design plans reviewed and recommendations provided in the Project's April 2020 (or as amended) Secretary of the Interior's Standards and Historic Integrity Review. The City's focused review shall evaluate consistency with the following elements:

a. Compatible texture and finish of proposed exterior of the new piles and repaired piles;
b. Compatible design, scale, materials, location, etc., of the prefabricated restrooms;
c. Design, scale, materials, etc., of the altered entrance gates; and
d. Design, scale, materials, etc., of the new security gates.

Should the focused review determine the above listed elements in the draft 100% design plans are consistent with the design plans reviewed and recommendations provided in the Secretary of the Interior's Standards and Historic Integrity Review, no additional mitigation shall be required. Should an inconsistency be identified, modifications to the draft 100% design plans shall be made until the Architectural & Site Review Committee determines consistency has been met.

Sources

Capitola Wharf Department of Parks and Recreation Primary Record (Dill 2019a); Proposed Replacement Pile Material, Capitola Wharf Rehabilitation Project, Initial Secretary of the Interior's Standard Review (Dill 2019b): Proposed Rehabilitation and Repair Project, Capitola Wharf, Capitola, CA Secretary of the Interior's Standards and Historic Integrity Review (Dill 2020).

Energy

Would the Project:

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

3.6 Energy

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

Less than significant impact. The Project proposes structural enhancements and facility improvements at the existing Wharf that are necessary for improved resiliency, safety, and public access. The Project proposes lighting improvements along the Wharf and lighting in the new restrooms. The proposed lighting additions would slightly increase energy use during long-term operations, but this increase is not anticipated to be wasteful or inefficient as increased demand would be negligible and fixtures would be consistent with building code efficiency standards and requirements. Long-term Project operation is not anticipated to result in the wasteful, inefficient, or unnecessary consumption of energy resources.

Temporary increases in energy use would occur during Project construction. Project construction could occur for 9 months and would require the use of impact pile drivers, vibratory pile drivers/extractors, pneumatic tools, power tools, hand tools, cranes, a small boat, and a diver as needed. Construction equipment would require consumption of energy resources including fossil fuels and electricity. This equipment is typical of equipment used for normal maintenance and repair of the Wharf. Use of such equipment is not anticipated to be wasteful, inefficient, or unnecessary and would not result in a potentially significant environmental impact. Less than significant impacts are anticipated and no mitigation is required.

b) Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No impact. New developments in the City are encouraged to use energy-efficient design features (City of Capitola 2019) and Title 24 of the State Building Standard Code requires energy conservation and efficiency measures for any new structures, additions to existing structures, changes to footprint of structures, or changes to water and heating systems (City of Capitola 2013). On July 17, 2008 the

California Green Building Standards Code (Title 24, Part 11) was adopted. This code established planning and design standards for sustainable developments.

The Project only proposes structural enhancements and public access improvements at the existing Wharf. The Project proposes to widen the trestle by 16 feet to a total width of 36 feet, increasing the Project footprint by a total of 7,400 square feet. No habitable buildings will be constructed. The Project proposes to construct two approximately 10-by-20-foot restrooms, one of which would replace the existing restroom behind the Capitola Wharf House restaurant. The restrooms would be constructed in compliance with the mandatory provisions of Title 24 of the State Building Standard Code's efficiency standards and requirements. Any increased long-term demand for electricity or hot water would be negligible. Impacts are not anticipated and no mitigation is required.

Cumulative Impacts

Less than significant impact. The Project would result in temporary elevations in energy usage during construction and slightly elevated energy usage over the long-term due to additional lighting needs. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant environmental impact due to unnecessary or wasteful energy use or conflict with a state or local energy plan. Project impacts would be less than significant and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

Sources

Capitola General Plan Update, (City of Capitola, 2019); General Plan Update EIR (City of Capitola 2013).

Geology and Soils

Would the Project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a Known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994 or most current edition), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

3.7 Geology and Soils

a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No impact. Capitola is a seismically active area, but there are no known active faults within the City boundaries. The three faults with the most seismic influence in the City are the San Andreas Fault, Palo Colorado-San Gregorio Fault, and Zayante Fault (City of Capitola 2019). The Zayante Fault is approximately 5 miles northeast of the Wharf at its closest point, the Palo Colorado-San Gregorio Fault is approximately 14 miles southwest of the Wharf at its closest point, and the San Andreas Fault is approximately 9 miles northeast of the Wharf at its closest point (City of Capitola 2013). These three faults are considered active and have been delineated under the Alquist-Priolo Earthquake Fault Zoning Map (California Department of Conservation EQ Zapp 2019). According to the Alquist-Priolo Earthquake Fault Zoning Map, the delineated portion of the Zayante Fault is approximately 8.5 miles east of the Wharf at its closest point as opposed to 5 miles northeast as described in the 2019 update of the Capitola General Plan. The Project only proposes structural enhancements and public access improvements to the existing Wharf. The Project proposes to build a new additional restroom at the foot of the Wharf and replace and relocate the existing restroom at the head of the Wharf. The Project also proposes to expand the existing trestle of the Wharf by 16 feet. No other structures are proposed. The new restrooms would be constructed on the existing Wharf deck, one of which would replace the existing restroom at the head of the Wharf. Expansion of the Wharf would be anticipated to improve the structural integrity of the Wharf. There is no proposed increase in use of the Wharf that could pose additional risk of injury or death during an earthquake and there are no known active faults within the City boundaries. Impacts are anticipated to be less than significant and no mitigation is required.

ii) Strong seismic ground shaking?

Less than significant impact. The possibility of damage due to ground shaking is considered very low since active faults are not known to cross the site or occur within the City limits (City of Capitola 2019). The nearest known active regional fault according to the City of Capitola General Plan Update is the Zayante Fault, located approximately 5 miles northeast of the site. In addition, Wharf improvements are anticipated to improve the structural integrity of the Wharf and will be consistent with current building standards, including those related to seismic considerations. There is no proposed increase in use of the Wharf that could pose additional risk from seismic ground shaking. Potential impacts are considered less than significant and no mitigation is required.

iii) Seismic-related ground failure, including liquefaction?

Less than significant impact. Liquefaction is a ground failure hazard that typically occurs during seismic events in areas where loose sandy soils exist below shallow groundwater. The Project occurs over water

with piles driven into the ocean floor for structural stability, consistent with the existing Wharf and other typical wharf structures. The liquefaction potential in the immediate area of the proposed Project has not been defined. Adjacent soils to the northeast of the Wharf have been defined as having a very high liquefaction potential (City of Capitola 2019). Adjacent soils to the northwest of the Wharf have been defined as having a low liquefaction potential. The Project proposes to build two new restrooms and expand the existing trestle of the Wharf, but no other structures are proposed. Expansion of the Wharf would improve the structural integrity of the Wharf. There is no proposed increase in use of the Wharf that could pose additional risk of liquefaction. Potential impacts are considered less than significant, and no mitigation is required.

iv) Landslides?

No impact. The Project site is located in Monterey Bay at the existing Wharf. The Project proposes to build two new restrooms and expand the existing trestle of the Wharf to improve the Wharf's structural integrity. There are no onsite or adjacent hills. The City is generally characterized as flat (City of Capitola 2019). Given the absence of steep slopes adjacent to the Project site, landslides are unlikely; no impacts are anticipated and no mitigation is required.

b) Would the Project result in substantial soil erosion or the loss of topsoil?

No impact. The Project site and surrounding area is relatively flat with characteristics that are not indicative of erosive conditions. The Project is confined to the existing Wharf and 16-foot by 458-foot overwater expansion area. No upland work would occur that could result in the loss of topsoil or soil erosion. The Wharf expansion would occur over water and will be pile supported. Impacts are not anticipated, and no mitigation is required.

c) Would the Project 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 offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than significant impact. The Project site is on a relatively flat beach and extends over Monterey Bay. The greater Project vicinity is characterized by generally flat areas (City of Capitola 2019). There are no adjacent hillsides to the Project site. Areas immediately to the northeast of the Wharf are identified as areas of high liquefaction potential (City of Capitola 2019), but these are sufficiently far from the Project site. The Project does not propose development of new structures susceptible to substantial increased risk of liquefaction. Widening of the Wharf trestle would provide additional structural integrity. The Project does not propose activities such as excavation work that could result in unstable soils. New piles would be driven to a depth that would assure structural integrity of the Wharf. In addition, damaged and/or deteriorated piles that may not be providing optimal support would be replaced with new piles. Less than significant impacts are anticipated, and no mitigation is required.

d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks of life or property?

No impact. Expansive soils are characteristically clay soils that are prone to large volume changes (swelling and shrinking) that are directly related to changes in water content. Expansive soils can cause damage to structures that are built on them due to shrinking and swelling events. In general, the soils in Capitola consist of loam and sandy loam soils (City of Capitola 2013). These soil types are characterized as well-drained alluvial soils with low permeability and would be anticipated to have a low shrink swell potential. Therefore, impacts are not anticipated, and no mitigation is required.

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

No impact. The Project proposes to construct two new restrooms, one of which would replace the existing restroom at the head of the Wharf. Both restrooms would connect to the existing sewer system. The sewer line would be relocated from below deck to above deck to provide protection from waves. Wastewater disposal systems or septic tanks are not proposed. Impacts are not anticipated and no mitigation is required.

f) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. Paleontological resources are remains of prehistoric animals and plants that are at least 11,000 years old. The City of Capitola General Plan Update EIR, identifies the coastal zone within Capitola as having potential for containing paleontological resources (City of Capitola 2013). Most of the paleontological resources are anticipated to be found in Purisima formation along the bluffs of Capitola. The Project does not occur on a bluff and does not propose any excavation within coastal bluffs or any other areas of the Project site. The proposed Project occurs on the existing Wharf and a 16-by-458-foot expansion area over Monterey Bay. To support the expansion area, approximately 120, 16-inch piles would be driven adjacent to the existing Wharf, but there would be no excavation of sediments that could disturb paleontological resources. Impacts to paleontological resources are not anticipated and no mitigation is required.

Cumulative Impacts

Less than significant impact. Less than significant impacts are anticipated from the Project. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant geological impact in consideration of the proposed Project. No impacts are anticipated, and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources

California Department of Conservation EQ Zapp accessed on December 4, 2019 at https://maps.conservation.ca.gov/cgs/EQZApp/app/; Capitola General Plan Update, (City of Capitola, 2019); General Plan Update EIR (City of Capitola 2013).

Greenhouse Gas Emissions

Would the Project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

3.8 Greenhouse Gas Emissions

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

Less than significant impact. Construction activities would result in minor generation of greenhouse gas (GHG) emissions from the combustions of diesel fuel. GHG emissions would occur from direct sources such as the use of construction equipment, worker commute trips, and haul truck trips. The MBUAPCD has not adopted its own GHG emission significance thresholds. Therefore, Bay Area Air Quality Management District (BAAQMD) GHG thresholds were used to analyze the significance of Project related GHG emissions. GHG emission rates were calculated using the CARB 2017 off-road model and anticipated equipment use (Appendix C). Anticipated Project GHG emissions are presented in Table 2.

Table 2: **Annual GHG Emissions**

Source Category	CO2 (mty)	CH4 (mty)	N2O (mty)	CO2e (mty)
Construction				
Project related emissions	287	0	0	287
BAAQMD significance threshold				None
Operation				
Operational Emissions[1]	0	0	0	0
BAAQMD stationary source significance threshold				10,000
Total GHG Emissions[2]	287	0	0	287
Significant?				No

[1] No increase in use or construction of structures that could measurably increase GHG emissions compared to existing baseline conditions. Therefore, operational emissions are not anticipated.
[2] Total annual GHG emissions are the sum of 9-month construction emissions.
Source: 2017 CARB off-road model

Table 2 shows that Project construction would result in an incremental increase in GHG emissions of 287 metric tons per year (mty), over 9 months of construction within one year. The MBUAPCD or BAAQMD does not state a significance threshold for construction related GHG emissions; however, the

construction related GHG emissions described above are anticipated to be minor and less than significant compared to BAAQMD's threshold. No mitigation is required. The analysis is conservative as it assumes three pieces of 250 hp equipment running 10 hours per day and assumes older (40 years) higher-polluting equipment. It is more likely that newer equipment would be used, run times would be shorter, and engines would be smaller, resulting in less than 287 mty of emissions.

Significant operational GHG emissions are not anticipated as the Wharf would continue to operate the same as existing conditions once construction is complete. There is no substantial increase in use or change in land use proposed. The Project only proposes structural enhancements and public access improvements at the existing Wharf. The Project proposes the construction of two restrooms, one of which would replace the existing restroom at the head of the Wharf. The restrooms would require a nominal amount of electricity for night use, but associated emissions would be negligible. No other structures are proposed that could result in operational GHG emissions. Operational GHG emission are anticipated to be negligible and impacts are not anticipated.

b) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No impact. The Governor's Executive Order S-3-05 (EO S-3-05) established GHG emission reduction targets for the state as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. In response to this Executive Order, California adopted Assembly Bill 32 (AB 32), which codified EO S-3-05 goals as statewide targets and instructed CARB to adopt regulations that reduce emissions from significant sources of GHGs and establish a mandatory GHG reporting and verification program. In 2008 CARB developed the AB 32 Scoping Plan, which laid out a suite of measures to reduce GHG emissions to 1990 levels by 2020. In 2014 CARB developed the 1st Update to the AB 32 Scoping Plan, which highlighted California's progress toward meeting the near-term 2020 GHG emission reduction goals, highlighted the latest climate change science and provided direction on how to achieve long-term emission reduction goals described in EO S-3-05.

In 2015, the Governor issued Executive Order B-30-15 (EO B-30-15) establishing a mid-term GHG reduction target for California of 40 percent below 1990 levels by 2030. In response to this Executive Order, California adopted Senate Bill (SB) 32, which codified EO B-30-15 goals as a statewide target and instructed CARB to adopt regulations to meet the target. The CARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

AB 32 and SB 32 codified state targets and directed State regulatory agencies to develop rules and regulations to meet the targets; AB 32 and SB 32 do not stipulate project-specific requirements. Specific requirements are codified in rules and regulations developed by regulatory agencies such as CARB and MBUAPCD, and local City actions such as the City of Capitola draft Climate Action Plan (CAP). The CAP 2035 GHG reduction target is to reduce GHG emissions by 42.9 percent below Capitola's 2010 baseline GHG emissions. To meet these goals the CAP identifies six overall sectors/measures in which reduction methods will be focused:

1.) Vehicle Miles Traveled (VMT) and transportation
2.) Residential and non-residential energy
3.) Water and wastewater
4.) Solid waste
5.) Parks, open space, and agriculture
6.) Action and implementation

AB 32 Scoping Plan and Scoping Plan Update strategies include, but are not limited to the renewables portfolio standard, the low carbon fuel standard, mobiles source measures (vehicle efficiency measures, zero vehicle emission technologies), solar roof programs, carbon sequestration systems, etc. CARB and MBUAPCD develop regulations based on these strategies, which are enforced at the state level on utility providers and automobile manufacturers.

As described above, minor GHG emissions would be generated during Project construction and Project operations would continue similar to existing conditions post-construction. Construction of the proposed Project would comply with CARB and BAAQMD requirements. The proposed Project would comply with existing regulations and would, by law, comply with future regulatory requirements. The proposed Project would, therefore, not preclude the State's implementation of the AB 32 Scoping Plan or Plan Update. In addition, the proposed Project would not conflict with the City of Capitola CAP. The Project would comply with all applicable GHG emission reduction measures proposed in the CAP such as recycling at least 50 percent of non-hazardous construction debris and sourcing construction materials locally when feasible. The Project would not conflict with any plans, policies, or regulations adopted to reduce GHG emissions. No impacts are anticipated and no mitigation is required.

Cumulative Impacts

Less than significant impact. Less than significant impacts are anticipated from the Project. The Project would generate negligible GHG emissions during construction but would not result in significant GHG emissions or conflict with existing plans, policies, or regulations. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant GHG emission impact in consideration of the proposed Project. Less than significant impacts are anticipated and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

Sources

City of Capitola Climate Action Plan (City of Capitola, 2015); California Environmental Quality Act Air Quality Guidelines (Monterey Bay Unified Air Pollution Control District 2008).

Hazards and Hazardous Materials

Would the Project:

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

3.9 Hazards and Hazardous Materials

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

Less than significant impact. The Project does not propose the routine transport of hazardous materials. Old damaged creosote treated piles will be removed from the marine environment and disposed of at an appropriate upland facility as part of this Project. No new creosote treated piles will be introduced into the environment. All new and replacement piles will be composite (fiberglass) piles or ACZA treated and polyurea coated or composite (fiberglass) piles. New or replacement piles will not be creosote treated.

ACZA contains copper oxide, zinc oxide, and arsenic pentoxide. It is used to prevent wood decay and is generally preferred over creosote. Because ACZA can be toxic to the environment, the City proposes to coat all treated piles in polyurea. Polyurea is designed to fully encapsulate treated timber products by creating a mechanical monolithic bond to the treated timber pile. Polyurea is applied at the treating facility and allowed to completely integrate into the woods surface. Studies have verified that polyurea successfully inhibits the leaching of ACZA components from timber piles (Konkler and Morrell 2016).

The Project proposed no change to existing functions or operations of the Wharf. Deterioration and/or damage of piles installed as part of this Project may require pile replacement in the future. In the case that pile replacement is required, composite piles or otherwise non-toxic piles will be used as approved by the agencies (USACE, California Coastal Commission, and RWQCB). Replacement piles will not be creosote treated. Impacts from the transport, use, or disposal of hazardous wastes are anticipated to be less than significant and no mitigation is required.

b) Would the Project 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?

No impacts. The Project proposes structural enhancements and public access improvements to an existing Wharf. The Project occurs at a public beach and over Monterey Bay. Little potential exists for encountering hazardous materials or hazardous waste within the Project site.

The Project would result in temporary transport, use and disposal of hazardous materials and debris generated during Project construction such as creosote piles, petroleum-based fuels, lubricants, and other similar materials. The potential risk associated with accidental discharge during use and storage of equipment-related hazardous materials would be low since the handling of such materials would be addressed through the implementation of regulatory permit BMPs and requirements. In addition, all transport, handling, use, and disposal of substances such as petroleum products, paints, and solvents related to the operation and maintenance of the Project would comply with all Federal, State, and local laws regulating management and use of hazardous materials. With the implementation of BMPs and standard regulations, potential impacts would be less than significant and no mitigation is required.

A review of the State Water Resources Control Board's Leaking Underground Storage Tank (LUST) GeoTracker database and Department of Toxic Substances Control (DTSC) EnviroStor noted the following sites within a half mile of the Project:

- The two nearest LUST cleanup sites are approximately 0.35 miles north of the Wharf (SWRCB 2019). One site was a former Capitola pumping station and one was the Capitola Mall Brown Bulb Ranch. The potential media of concern is soil at both sites. The potential contaminant of concern is diesel at both sites. Clean ups have been marked as 'completed, case closed' for both sites as of 1988.

- The nearest active cleanup site is approximately 2.3 miles northwest of the Wharf. The potential media of concern at this site is groundwater and soil. The potential containment of concern is gasoline.

- According to the EnviroStor database the nearest DTSC cleanup site is approximately 0.3 miles west of the Wharf at Opal Cliffs School. The potential media of concern is soil. Potential contaminates of concern include lead and organochlorine pesticides. The cleanup status is marked as 'No further action as of 6/4/2009.'

- The nearest cleanup program site is Noble Gulch Storm Drain, approximately 0.4 miles northeast of the Wharf. The potential media of concern is soil and surface water. The potential contaminants of concern include Dichlorodiphenyltrichloroethane (DDT), diesel, insecticides, pesticides, fumigants, herbicides, waste oil, motor, hydraulic, and lubricating. The status of this site is 'open assessment & interim remedial action as of 8/28/2008.'

- There are no military cleanup sites in the City.

- The nearest EnviroStor database listed site is Opal Cliffs School cleanup site approximately 0.3 west of the Wharf (EPA 2019). This site has a status of 'no further action'.

- The nearest active site is the Homeless Garden Project, approximately 1.6 miles west of the Wharf.

None of the identified sites above are located within or adjacent to the Project site. The proposed Project would be confined to the existing wharf and small adjacent 16 by 458-foot expansion area. The Project does not propose activities that have the potential to disturb contaminants at sites identified on the GeoTracker or EnviroStor database. No impacts are anticipated, and no mitigation is required.

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

No impact. The nearest school, Opal Cliffs School, is located approximately 0.3 miles west of the Wharf and does not occur within a quarter mile of the proposed Project. The Project proposes to remove creosote treated piles from the marine environment and dispose of them at an appropriate upland facility. No new creosote treated piles would be introduced into the environment. No impacts are anticipated and no mitigation is required.

d) Would the Project 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?

No impact. A review of the Department of Toxic Substances Control's Hazardous Waste and Substances List (Cortese List) indicated that the Project site is not located on any identified hazardous material sites

(DTSC 2019). There are no sites identified on the Cortese List within the City. A review of the State Water Resources Control Board's LUST GeoTracker indicated that the nearest active cleanup program site is 0.4 miles northeast of the site. Review of the Environmental Protection Agency (EPA) EnviroStor database indicated that the nearest listed hazardous material site is approximately 1.6 miles west of the Wharf (SWRCB 2019; EPA 2019). No impacts are anticipated and no mitigation is required.

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

No impact. There are no airports or private airstrips within the City boundaries (City of Capitola 2013). The closest airstrip to the Project site is the Monterey Bay Academy airstrip, approximately 6.5 miles southeast of the Wharf. The nearest airport is the Watsonville Municipal Airport, approximately 8 miles southeast of the Wharf. The Project does not include any elements that would create safety hazards associated with airports or air travel. Excessive noise at the Wharf due to air traffic is not anticipated given the distance to the nearest airstrip and airport. No impacts are anticipated and no mitigation is required.

f) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No impact. The Project would neither physically interfere with nor impair implementation of any existing emergency response plan or emergency evacuation plan. The Project only proposes structural enhancements and public access improvements at the existing Wharf. Access to the Wharf would be temporarily impacted during construction, but the Project would not block roads that could provide emergency response or evacuation. All major highways would remain fully accessible. No impacts are anticipated and no mitigation is required.

g) Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

No Impact. The proposed Project would occur at the existing Wharf which extends from Capitola Beach to Monterey Bay. The Project would not occur in a high fire risk area according to the City of Capitola General Plan Update EIR (City of Capitola 2013). The Project does not propose activities that could exacerbate wildfire risks. The Project only proposes structural enhancements and public access improvements at the existing Wharf. The Project would not change current topography or wind patterns. No impacts are anticipated and no mitigation is required.

Cumulative Impacts

Less than significant impact. Less than significant impacts are anticipated from the Project. Deteriorated and/or damaged piles installed as part of this Project may require pile replacement in the future. Any pile replacements in the future would be permitted and approved by the agencies. All piles would be disposed

of at an appropriate upland facility and are not anticipated to pose a significant hazard. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant hazards and hazardous materials impact in consideration of the proposed Project. No impacts are anticipated, and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources

Effects of Coatings on Migration of metal Components from ACZA Treated Marine Piling (Konkler and Morrell 2016); EnviroStor database (EPA 2019); GeoTracker database (SWRCB 2019); Capitola General Plan Update, (City of Capitola 2019); General Plan Update EIR (City of Capitola 2013); Department of Toxic Substances Control Cortese List (DTSC, accessed at https://dtsc.ca.gov/dtscs-cortese-list/ on December 4, 2019).

Hydrology and Water Quality

Would the Project:

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

3.10 Hydrology and Water Quality

a) Would the project violate or conflict with any adopted water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less than significant with mitigation. The Project proposes structural enhancements and public access improvement at the existing Wharf. The trestle would be widened by 16 feet and would result in 7,400 square feet of additional ACZA timber decking. The City of Capitola General Plan Update identified urban runoff as a major factor contributing to water quality in Capitola (City of Capitola 2019). As stormwater flows over impervious surfaces pollutants on those impervious surfaces can be carried directly

to water bodies. There is no proposed increase in use of the Wharf that could substantially increase the quantity of pollutants on the Wharf deck. The expansion of the trestle would not require the removal of any vegetated buffer that could provide biofiltration of stormwater.

The ACZA decking is above water and would not come in contact with the marine waters. There is the potential for ACZA to leach from the wood during rain events. As part of this Project, certification from the RWQCB would be required and the Project would comply with all permit conditions to assure that the Project does not substantially degrade surface or groundwater quality. For example, ACZA decking is typically sealed with a non-toxic penetrating coating (e.g. Arci-soy), which may be a condition of the RWQCB's water quality certification if deemed necessary. Implementation of permit conditions required by the regulatory agencies would ensure potential impacts to water quality are less than significant. Although compliance with expected permits would ensure potential impacts are less than significant, mitigation measure **MM HWQ-1** has been included to document the need for obtaining and complying with such permits.

The Project proposes to install 120, 16-inch composite (fiberglass) piles with HDPE sleeves and would repair or replace approximately 21, 12-inch damaged creosote piles. Replacement piles would be ACZA treated, polyurea coated timber piles or composite piles. Polyurea is designed to fully encapsulate treated timber products by creating a mechanical monolithic bond to the treated timber pile. Polyurea is applied at the treating facility and allowed to completely integrate into the woods surface. Studies have verified that polyurea successfully inhibits the leaching of ACZA components from timber piles (Konkler and Morrell 2016). Use of regulatory agency-approved materials as a condition of required permits would ensure potential impacts to water quality are less than significant.

In-water activities such as pile driving would create temporary localized elevations in turbidity. Pile driving is proposed in a high energy wave environment where baseline turbidity levels are often high. Therefore, Project-related elevations in turbidity above baseline conditions are anticipated to be minimal and less than significant.

Capitola Beach waters are periodically declared unsafe for body contact. Closures are typically due to bacterial contamination. Bacterial contamination is attributed to high numbers of roosting birds, leaky sewer lines, manholes, and urban runoff. The Project proposes to construct two new restrooms, one of which would replace the existing restroom at the head of the Wharf. There is no proposed increase in use that would be anticipated to impact water quality. The existing sewer line would be relocated to above deck to provide protection from waves and prevent storm related damage and leaks. The sewer line would connect to the existing sewer system and be maintained and checked regularly for leaks same as under existing conditions. No impacts are anticipated, and no additional mitigation is required.

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

No impact. The Project proposes structural enhancements and public access improvements at the existing Wharf. The Project occurs over water and would not be anticipated to interfere with groundwater recharge. The Project does not propose pumping or extraction of groundwater. The Project would not deplete groundwater supplies and would not interfere with groundwater recharge by building additional wells. Therefore, impacts are not anticipated and no mitigation is required.

c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) result in substantial erosion or siltation on- or off-site;

No impact. The Project would not alter the course of a stream or river. The Project proposes to widen the existing trestle of the Wharf by 16 feet. This would result in approximately 7,400 square feet of additional impervious surface at the site; however, no areas are located downstream and gaps between boards of the Wharf decking would allow for rainwater to drain through to the bay below, same as existing conditions with the current Wharf structure. Because this impervious surface occurs overwater, no erosion or siltation would occur. No impacts are anticipated, and no mitigation is required.

ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

No impact. The Project site extends over Monterey Bay; therefore, there are no areas downstream of the Project that could be exposed to flooding from surface runoff. As discussed above, gaps between boards of the proposed expanded Wharf decking would allow for rainwater to drain through to the bay below, same as existing conditions with the current Wharf structure. The construction of the widened trestle would not require the removal of any vegetated areas that could provide flooding buffers on or off-site areas. The Project does not propose any fill or structures that could reduce flood-carrying capacity. No impacts would occur, and no mitigation is required.

iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

Less than significant with mitigation. The existing Wharf and proposed Wharf improvements would not be tied to an existing or planned stormwater drainage system, as the Project is located over water and does not require a stormwater drainage system for runoff management. In addition, there is no proposed increase in Wharf use that could substantially increase the quantity of pollutants on the Wharf deck.

The ACZA decking is above water and would not come in contact with the marine waters. There is the potential for ACZA to leach from the wood during rain events. As part of this Project, certification from the Regional Water Quality Control Board (RWQCB) would be required and the Project would comply with all permit conditions to assure that the Project does not substantially degrade surface or groundwater quality. For example, ACZA decking is typically sealed with a non-toxic penetrating coating (e.g. Arci-soy), which may be a condition of the RWQCB's water quality certification if deemed necessary. Implementation of permit conditions required by the regulatory agencies would ensure potential impacts to water quality are less than significant. Although compliance with expected permits would ensure potential impacts are less than significant, mitigation measure **MM HWQ-1** has been included to document the need for obtaining and complying with such permits.

All discharges from the Project would comply with the applicable provisions of CWA section 301 Effluent Limitations, 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards), and with other applicable requirements of State law. The Project would meet or exceed State stormwater requirements and incorporate any applicable BMPs from Capitola's National Pollutant Discharge Elimination System (NPDES) Permit and Stormwater Management Plan. Impacts are anticipated to be less than significant and no additional mitigation is required.

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

Less than significant impact. The Project is located within the 100-year flood plain (FEMA 2016) and on the coastline. The Project only proposes structural enhancements and public access improvements to the existing facility, which will not increase the 100-year flood level in the Project area. The trestle widening would increase the Wharf structure's resiliency against potential exposure to inundation from tsunami and storm events. In addition, the Project would relocate the utility lines, including sewer, to above the Wharf deck to decrease the chance of wave damage to the utilities systems. Potential impacts are anticipated to be less than significant and no mitigation is required.

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

No impact. The existing drainage pattern of the site would be maintained, and the Project would be required to comply with all agency permits, including permits under the jurisdiction of the RWQCB. The Project occurs overwater and would not interfere with groundwater replenishment. The Project does not propose an increase in use that could contribute to an increase in urban runoff pollution. No impacts are anticipated, and no mitigation is required.

Cumulative Impacts

Less than significant impact. Less than significant impacts are anticipated from the Project. Potential water quality impacts would be avoided through compliance with regulatory permits and through the implementation of BMPs. No other projects have been identified associated with the Wharf or

surrounding area that could cumulatively contribute to a significant hydrology or water quality impact in consideration of the proposed Project. No cumulative impacts are anticipated, and no additional mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

The following mitigation measure would be implemented to avoid and/or minimize potential impacts and to ensure impacts are less than significant:

MM HWQ-1 The City shall obtain all necessary permits from applicable agencies with jurisdiction over the Project. The contractor will implement and document compliance with permit conditions and BMP practices required by the permits per agency requirements and for City records. Proof of implementation may include but is not limited to the use of before-and-after photo documentation, copies of receipts and/or construction management logs.

Sources

Federal Emergency Management Agency (FEMA) Flood Map Service Center (FEMA 2016, accessed at https://msc.fema.gov/portal/home ; Capitola General Plan Update, (City of Capitola 2019).

3.11 Land Use and Planning

Land Use and Planning

Would the Project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

a) Would the Project physically divide an established community?

No impact. The Project site is located at the existing Wharf over Monterey Bay. The Project does not propose the construction of new structures that could divide a community. The Project only proposes structural enhancement of the existing Wharf including widening the trestle by 16 feet and public access improvements along the Wharf. The Project is anticipated to benefit the community by improving public access along the Wharf. The Project would not divide the established community. Impacts are not anticipated, and mitigation is not required.

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

No impact. The Project site land use is designated as Parks and Open Space (City of Capitola 2019). The Project does not propose any changes to land use. The Project proposes structural enhancements and public access improvements that are anticipated to improve the current use of the Wharf. The Project would assure access to the facility is maintained for all populations. The burdens and benefits of the proposed Project would be equally shared. Upland disposal of any deteriorated and/or damaged piles or other construction debris would be disposed of at an appropriate authorized facility. No impacts are anticipated, and no mitigation is required.

Cumulative Impacts

No impact. No impacts are anticipated from the Project. The Project does not propose any changes to the existing land use of the Project site. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant land use and planning impact in consideration of the proposed Project. No impacts are anticipated, and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No impacts were identified, and no mitigation measures are required.

Sources

Capitola General Plan Update, (City of Capitola 2019).

3.12 Mineral Resources

Mineral Resources				
Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) Would the Project 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?

No impact. According to the City of Capitola General Plan Update, there are no mineral resource zones within the Project footprint or within the City sphere of influence (City of Capitola 2019). The nearest identified mine is Aptos Placer mine approximately 2.2 miles northwest of the Wharf (USGS 2019). The United States Geological Survey (USGS) Minerals Resource Data System did not identify any critical or major mineral deposits in the Project footprint or in the City. The nearest mineral deposit is iron, titanium and metal at the Aptos Placer mine approximately 2.2 miles northwest of the Wharf. Given the nature of this Project, neither impacts to mineral resources nor the loss of availability of mineral resources are anticipated. No impacts are anticipated, and no mitigation is required

b) Would the Project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No impact. As discussed above, there are no mineral resource zones within the Project footprint or the City sphere of influence. Therefore, the Project is not anticipated to result in the loss of availability of a locally-important mineral resource recovery site. No impacts are anticipated and no mitigation is required.

Cumulative Impacts

No impact. No impacts are anticipated from the Project. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant mineral impact in consideration of the proposed Project. No impacts are anticipated, and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No impacts were identified, and no mitigation measures are required.

Sources

Mineral Resources Data System (USGS, accessed on January 2020 at https://mrdata.usgs.gov/mrds/); General Plan Update EIR (City of Capitola 2013).

Noise

Would the Project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☒	☐	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?	☐	☐	☐	☒

3.13 Noise

a) Would the Project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than significant with mitigation. The Capitola City General Plan Update in its Chapter 6, Safety and Noise Element, acknowledges the potential negative effects of noise on humans (City of Capitola 2019). The primary noise source in Capitola is automobile noise. The City's General Plan establishes land use compatibility criteria in terms of the Community Noise Equivalent Level (CNEL) for various types of development/uses, including residential uses. Sensitive land uses such as residential areas, hospitals, libraries, schools, parks, and retirement homes generally have more stringent noise requirements compared to less sensitive uses such as commercial and industrial zones. The City's noise and land use compatibility guidelines shown in Table 3, are typically applicable to long-term, operational effects of developments within the City, not temporary construction noise.

Table 3: City of Capitola Noise and Land Use Compatibility Standards (Ambient Exterior Noise Exposure)

Land Use	Normally acceptable	Normally unacceptable
Residential- Low Density	<60 dBA	70-75 dBA
Multiple-Family Residential	<65 dBA	70-75 dBA
Transient Lodging	<65 dBA	70-80 dBA
Public Facilities (Schools, Libraries, Churches, Hospitals, Nursing Homes)	<70 dBA	70-80 dBA
Playgrounds, Neighborhood Parks	< 70 dBA	68-75 dBA
Office Buildings, Business Commercial and Professional	< 70 dBA	75-85 dBA
Industrial, manufacturing utilities, agriculture	< 70 dBA	75-85 dBA
Source: City of Capitola 2019 General Plan Update		

Section 9.12.010 of the City of Capitola Municipal Code states that loud, boisterous, irritating, penetrating or unusual noise shall be prohibited between the hours of 10:00 pm and 8:00 am on any day (City of Capitola 2019). Construction is prohibited on weekends with the exception of Saturdays between 9:00 am and 4:00 pm or emergency work approved by the building official. The Project would comply with the City's permitted construction work hours.

Construction noise associated with the Project would be temporary and last approximately 9 months; however, most noise generated would primarily be associated with vibratory pile installation and impact pile driving proofing, which would take place over approximately 26 working days. An estimated 120 new piles and 8 replacement piles would be installed for the trestle expansion and repair work at about 5 piles per day, requiring approximately 15 minutes of vibration per pile. Therefore, the Project would generate about 1 hour and 15 minutes of vibratory pile driving noise per day during each of the 26 working days, spread over the course of the working day. Additional impact pile driving used for proofing each pile at the end of install would be conducted as needed and last approximately 20 minutes total per day.

Areas zoned as single-family residential are located approximately 0.5 miles northwest of the Wharf and areas zoned as neighborhood mixed-use are approximately 30 feet east of the Wharf. The nearest school is 0.3 miles east of the Wharf. Additionally, the closest unit in the Capitola Venetian Hotel is located immediately adjacent on the eastern side of the Wharf approximately 88 feet from the proposed pile driving. Outdoor activity area of the closest residential receptor (4940 Cliff Drive) to the Project's main work area (as measured by distance between the receptor and location of where the new expanded deck would begin near the Wharf foot) is 80 feet. At its farthest locations, Project construction work would be in excess of 500 feet from these sensitive receptors.

The nearest sensitive receptor is residential, located approximately 80 feet away to the closest proposed pile installation location near the Wharf Foot. A typical vibratory pile driver would generate a maximum noise level of approximately 95 dBA at a distance of 50 feet from the equipment (FTA 2018). A typical impact pile driver used for proofing would generate a maximum noise level of approximately 101 dBA at a distance of 50 feet from the equipment (FTA 2018). Generally, in-air sound levels for a point source

decreases by 6 dBA for each doubling of distance (FHWA 2017). Based on the locations of the nearest noise-sensitive receivers, vibratory pile driving and impact pile driving maximum noise levels would be between 75 dBA to 91 dBA and 81 dBA to 97 dBA, respectively, at exterior locations of these receivers. The noise calculations are included in Appendix E.

Within interior spaces of the nearest residential land uses, additional noise attenuation would be provided by the building shell. Noise reduction afforded by structures with open windows is typically about 17 dBA, and about 25 dBA with closed windows (NCHRP 1971). This means that vibratory pile driving would generate maximum noise levels in the range of 57 dBA to 73 dBA within buildings with open windows and 49 dBA to 65 dBA inside homes with closed windows. Impact pile driving would generate maximum noise levels in the range of 63 dBA to 79 dBA within buildings with open windows and 55 dBA to 71 dBA inside homes with closed windows.

Table 4 describes typical A-weighted noise levels for common indoor and outdoor noise source activities.

Table 4: Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing
dBA = A-weighted decibels; mph = miles per hour		
Source: California Department of Transportation, *Technical Noise Supplement*, September 2013.		

When compared with the noise levels in Table 4, it is apparent that Project construction noise levels during pile installation would be clearly audible to occupants of the nearest buildings to the Wharf.

Based on the analysis above, potential construction-related impacts would be transient and temporary (i.e. approximately 1 hour and 35 minutes of non-contiguous noise per day over approximately 26 working days). Although work would be performed within the City's permitted municipal code construction hour requirements, temporary elevated noise levels would still be a potential source of annoyance to the nearest receivers during the workday, provided the occupants are at home during typical working hours. Therefore, mitigation measures **MM NOI-1** and **MM NOI-2** have been included to implement a pile driving notification plan and pile driving soft start measure to keep nearby receivers informed of the pile installation schedule and to reduce potential for startle noise. These measures in combination with measure **MM BIO-2** (use of a sound dampening cushion for pile driving) described in the Biological Resources Section 3.4 would ensure potential for residential annoyance is minimized over the duration of Project construction and reduced to less than significant.

Once the Project is complete, the Wharf would continue to operate the same as under existing conditions. There is no proposed expansion of use. Therefore, there would be no long-term noise impacts associated with the Project and no mitigation is required.

b) Would the Project result in generation of excessive ground-borne vibration or ground-borne noise levels?

Less than significant with mitigation. Construction of the Project is expected to generate temporary ground-borne vibration in the immediate vicinity of certain construction activities. Ground vibration can cause human annoyance and potential building damage (City of Capitola 2013). Typical construction equipment with the potential to create ground borne vibration includes pile drivers, large bulldozers, loaded trucks, jackhammers, and small bulldozers. Of these pieces of equipment, only vibratory and impact pile drivers are proposed for construction of the Project.

Vibratory motion is commonly described by quantifying the peak particle velocity (PPV) of the vibrated ground in terms of inches per second (in/sec). California Department of Transportation (Caltrans) has developed guidelines for assessing potential for damage to buildings and annoyance to people from vibration caused by construction sources (Caltrans 2013). Table 5 shows the threshold criteria for potential damage to various types of buildings, and Table 6 lists the various levels of perceptibility in people caused by vibration events.

Use of impact and vibratory pile drivers during construction of the proposed Project would result in generation of intermittent ground-borne vibration events at the buildings located closest to construction activities. As described above in Section 3.13 (a), vibratory pile installation would occur approximately 1 hour and 15 minutes per day, over the course of the day, for approximately 26 working days. The closest pile to existing buildings in the Project area is expected to be placed near the Wharf Foot, where the Wharf widening would begin. The nearest sensitive land uses to this location include residential buildings at distances approximately 90 to 100 feet from the pile location. A review of dates of construction of these buildings shows that the nearest building west of the Wharf (located at 4940 Cliff Drive) was built in 2006 and is therefore a relatively new residential building. The nearest structure east of the Wharf is

an apartment building located at 1500 Wharf Road, which was built in 1930, and is therefore an older residential building. These buildings would be subject to different thresholds for assessment of potential damage to the buildings due to ground-borne vibration. Ground-borne vibration levels from impact and vibratory (during start-up and shut-down) pile drivers with a reference energy of 36,000 ft-lb is 0.65 in/sec at 25 feet from the source (Caltrans 2013).

Primary factors affecting the level of attenuation of vibration in the ground include the type and intensity of vibration at the source and the type of soil through which vibratory force propagates. The soil type in the Project area is sandy beach. Assuming the use of a pile driver similar to the reference pile driver, the ground-borne vibration level at the nearest residential building east of the Project site, located at 4940 Cliff Drive, would be a PPV of 0.093 in/sec. This is well below the 0.5 in/sec threshold of potential damage for this building. The building located at 1500 Wharf Road is located approximately 90 feet from the nearest pile location. At this distance, the calculated PPV is 0.108 in/sec, which is also below the 0.3 in/sec threshold of damage for older residential buildings. At farther pile locations along the Wharf, construction vibration levels would be lower than the above levels. Therefore, construction of the Project is not expected to result in any damage to buildings in closest proximity to the Project.

Table 5: Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.		

Table 6: Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.		

In terms of perceptibility to the people living near the Project site, the estimated vibration levels at the nearest residences could potentially reach the "strongly perceptible" threshold of 0.1 in/sec for a frequent intermittent source (see Table 5). Therefore, nearby receivers could temporarily experience vibration levels that may be a source of annoyance during construction of the nearest piles, provided occupants are home during typical working hours. Therefore, proper timely notices of scheduled pile installation activities to local residents would be important in managing expectations and mitigating annoyance effects. Once vibratory installation reaches an approximate distance of 185 feet or more from the receiver, vibration levels would stay below the 0.04 in/sec "distinctly perceptible" threshold. Therefore, approximately 11 working days of the estimated 26 working days required for pile installation may result in approximately 1 hour and 15 minutes of intermittent "distinctly perceptible" to "strongly perceptible" levels of vibration at the nearest receivers. The vibration calculations are included in Appendix E.

Ground-borne noise levels from pile driving activities would be minimal and imperceptible as compared to airborne noise from pile installation activities. Therefore, this type of noise would be less than significant.

Based on the above discussion, mitigation measures **MM NOI-1** and **MM NOI-2** are required of the Project to keep nearby residents informed of pile installation activities, minimize the chance for startle effect and minimize the potential for human annoyance. Implementation of **MM NOI-1** and **MM NOI-2** would ensure temporary construction impacts are less than significant. No long-term operational impacts would occur as the Project proposes no change in existing operations of the Wharf.

c) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?

No impact. The Project site is not located within an airport land use plan. The closest airstrip to the Project site is the Monterey Bay Academy airstrip approximately 6.5 miles southeast of the Wharf (City of Capitola 2019). The nearest airport is the Watsonville Municipal Airport approximately 8 miles southeast of the Wharf. The Project would not expose people residing or working in the area to excessive

noise levels associated with airports or airstrips. The Project does not include the construction of residential uses that could expose people to excessive noise levels. Given the distance to the nearest public airport and airstrip, no impacts are anticipated and no mitigation is required.

Cumulative Impacts

Less than significant impact. Less than significant noise impacts are anticipated from the Project. The Project would abide by the permitted construction hours mentioned above. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant noise impact in consideration of the proposed Project. Therefore, potential cumulative impacts are anticipated to be less than significant.

Avoidance, Minimization and/or Mitigation Measures

The following mitigation measures are required:

MM NOI-1 Pile Driving Notification Plan – The City shall implement a pile driving notification plan as described herein to keep residents informed of the Project's pile driving schedule. Prior to pile driving activities and within 2 weeks after award and execution of the construction contract, the Contractor shall provide the City with a pile driving schedule that identifies: (1) start date of pile driving, (2) anticipated weekly work zones by estimated date shown on an aerial map (or plan sheet overview), (3) estimated pile driving completion date, and (4) website address for accessing the pile driving schedule on-line. The Contractor shall be required to post and maintain the schedule onsite near the Wharf Foot. The Contractor shall update the schedule at least every two weeks and provide the schedule to the City by the following day for posting on the City's website.

MM NOI-2 Pile Driving Soft Start – Pile-driving shall commence with a soft start procedure (ramping up) in order to reduce the potential for startle and annoyance of nearby receptors. This shall be noted on the Project's construction plans.

Sources

General Plan Update (City of Capitola 2019); General Plan Update EIR (City of Capitola 2013). Capitola Municipal Code (City of Capitola 2019b); Highway Noise: A Design Guide for Highway Engineers (National Cooperative Highway Research Program (NCHRP) Report 117 1971); Highway Traffic Noise Analysis and Abatement Policy and Guidance (FHWA 2017). Transit Noise and Vibration Impact Assessment Manual (FTA 2018). Transportation and Construction Vibration Guidance Manual (Caltrans 2013). Technical Noise Supplement (Caltrans 2013).

Population and Housing

Would the Project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial upland population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.14 Population and Housing

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

No impact. The Project is only anticipated to improve the current use of the Wharf and is not anticipated to increase use of the Wharf. The Project does not propose the construction of new housing or commercial businesses that would directly induce population growth in the area. The Project would not extend roadways or other infrastructure into new areas that could lead to indirect growth. No impacts are anticipated and no mitigation is required.

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

No impact. There are no housing units located on the Wharf. The Project would not displace housing. The Project does not propose the removal of housing. The Project would not displace people. No impact would occur and no mitigation is required.

Cumulative Impacts

No impact. None of the proposed activities would impact housing stock or encourage growth. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant population and housing impact in consideration of the proposed Project. No impacts are anticipated, and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No impacts were identified, and no mitigation measures are required.

Sources

The findings in the section are based on the nature of proposed Project activities.

Public Services

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

3.15 Public Services

a) Would the Project 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

No Impact. The City is serviced by the Central Fire Protection District of Santa Cruz (City of Capitola 2019). The fire station is located at 405 Capitola Avenue approximately 0.18 miles northeast of the Wharf. The fire station has a response goal time of eight minutes. The station would be adequate for servicing the Project site, similar to existing conditions, without the need for alterations to existing facilities or construction of new facilities.

Proposed activities would not result in lane closures that could impact firefighter response time. The proposed Project is located on the existing Wharf and would not create a new public safety or fire hazard. The Project is not anticipated to induce population growth that would create additional demand for public services or facilities. The Project only proposes structural enhancements and public improvements at the existing Wharf and is not anticipated to increase use of the Wharf. The Project would not result in

the need for new or physically altered government facilities and would not affect response times or performance objectives. Impacts are not anticipated, and no mitigation is required.

ii) Police protection

No impact. The Capitola Police Department would provide service to the Project site in the event of a service call. The nearest station is located at 422 Capitola Avenue, approximately 0.24 miles northeast of the Wharf (City of Capitola 2013). As previously discussed, the Project would not induce population growth that could lead to any incremental or cumulative increase in demand for service, impact public facilities, or impact emergency response times. The proposed Project would not impact police response times or performance objectives. No impacts are anticipated and no mitigation is required.

iii) Schools

No impact. The nearest schools to the Project site are Opal Cliffs School at 4510 Jade Street and New Brighton Middle School at 250 Washburn Ave. Opal Cliffs School is approximately 0.3 northwest of the Wharf and New Brighton Middle School is approximately 0.58 miles northeast of the Wharf. The Project proposes structural enhancements and public access improvements at the existing Wharf. The Project does not include residential uses that would increase the use of existing school facilities identified above or require the construction of new school facilities. No impacts are anticipated and no mitigation is required.

iv) Parks

No impact. Capitola has seven public parks (City of Capitola 2019). The closest park to the Project is Esplanade Park approximately 0.2 miles east of the Wharf. This park offers oceanfront seating and a grassy field. The Project does not propose changes to existing parks. Construction related impacts to adjacent parks are not anticipated given the distance to the nearest park. The Project also does not include residential uses that would indirectly increase the use of existing park facilities or increase the demand for construction of new park facilities. The Project proposes to provide structural enhancements and public access improvements at the existing Wharf located at Capitola Beach, a public beach. The Capitola General Plan does not identify Capitola Beach as a park. No impacts are anticipated and no mitigation is required.

v) Other public facilities

Less than significant impact. The City has approximately 20 acres of beach, including Capitola Beach. The Project is located at Capitola Wharf, a public Wharf that extends from Capitola Beach over Monterey Bay. The public beach may be temporarily impacted by construction activities such as elevated noise. Portions of the beach may need to be closed off to the public during construction for safety, but access to Capitola Beach would never be fully restricted. Access to the Wharf would also be impacted temporarily during construction. Project construction could require Wharf closure from September to May. Construction would occur during the off season when use of the Wharf is low and impacts to public

use would be anticipated to be minimal. Public use of the Wharf is anticipated to improve after construction of the proposed Project due to fewer Wharf shutdowns, a separate pedestrian walkway, lightening improvements, and additional seating. Potential temporary impacts from the proposed construction would be less than significant and would result in long-term benefits to public services. No mitigation is required.

Cumulative Impacts

Less than significant impact. Less than significant impacts are anticipated from the Project. Use of the Wharf and Capitola Beach may be temporarily impacted by the proposed construction. Use of Capitola Beach would never be fully restricted. The Wharf may be closed for nine months during the off season. Potential temporary impacts from the proposed construction would be less than significant and no mitigation is required. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant public services impact in consideration of the proposed Project. Potential temporary impacts from the proposed construction would be less than significant and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources

General Plan Update (City of Capitola 2019); General Plan Update EIR (City of Capitola 2013).

Recreation

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

3.16 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?

No impact. The Project only proposes structural enhancements and public access improvements at the existing Wharf. The Project is not anticipated to increase use of the Wharf, but instead would improve current uses. The Project proposes no increase in residential development that would increase the demand for parks or other recreational facilities. The Project is also not expected to cause a significant increase in employment, only temporary construction related jobs. The Project does not propose the construction of new stores or commercial buildings. Therefore, no direct or indirect increase in demand or use of existing parks or recreational facilities would result from Project implementation. Impacts are not anticipated and no mitigation is required.

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

Less than significant impact. Capitola Beach is used for recreational activities such as fishing, beach sports, and swimming. The Wharf is used for recreational activities and contains a bait shop, boat rentals, boat launch, restaurant, restroom facilities on the backside of the restaurant, and fish cleaning stations. The proposed Project would assure the safe and continued use of the Wharf while providing additional public improvements. The Project proposes to widen the trestle of the Wharf to improve the structural integrity of the Wharf and to provide a separate lane for pedestrian travel. There is no proposed expansion in use. The Project only proposes to improve current uses of the Wharf. Widening of the trestle would result in 7,400 sf of additional overwater coverage. The Project would remove damaged deteriorated creosote treated wood piles and replace piles with fiberglass composite piles or ACZA treated polyurea coated wood piles. Wood piles would be ACZA treated and polyurea coated. No new creosote treated wood piles would be introduced into the marine environment. No impacts to the physical environmental are anticipated other than those analyzed and disclosed in this IS/MND. Less than significant impacts are anticipated and no additional mitigation is required.

Cumulative Impacts

Less than significant impact. As discussed above, the Project would ensure the safe and continued use of the Wharf and provide additional public access improvements. Environmental effects from the proposed Project are anticipated to be less than significant. Temporary construction related impacts are anticipated to be less than significant. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant recreation impact in consideration of the proposed Project. No additional mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

Sources

Based on the nature of proposed Project activities.

Transportation

Would the Project:

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

3.17 Transportation

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

Less than significant impact. Capitola is serviced by Santa Cruz Metropolitan Transit. The Project is not located on any identified routes (City of Capitola 2019). The nearest route is approximately 0.05 miles north of the Wharf foot. Capitola adopted the Bicycle Transportation Plan in 2011. This plan sets goals and objectives to increase safety and convenience for bicyclers. The Project is not located on any bike paths. The nearest bike path is approximately 0.05 miles north of the Wharf foot. The City of Capitola General Plan Update recognizes the importance of pedestrian access. There are many areas in Capitola that have been identified as not having adequate sidewalks. Policy MO-9.2 of the General Plan Update is to maintain and improve pedestrian pathways in Capitola, particularly pathways that provide pedestrians access to natural areas and scenic vistas. The Wharf trestle currently supports both vehicular traffic and pedestrian traffic with no separation between the two. The Project proposes to widen the Wharf trestle, which would provide a separate pedestrian walking path. This is anticipated to improve public safety and access to the Wharf over the long-term.

During construction the Wharf would be temporarily closed to vehicular, bicycle and pedestrian traffic to maintain public safety. The Wharf would be closed during the off season from September to May to minimize impacts to the public, but this would not impact the circulation system. Adjacent roads and access to Capitola Beach would not be restricted. Closure of the Wharf would be temporary and would not impact access to the beach or adjacent roadways. The Project would not conflict with any circulation

plans, ordinances, or policies and would be anticipated to help meet the goal of Policy MO-9.2. Less than significant impacts were identified and no mitigation is required.

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

No impact. The Project would not result in a change in automobile use or VMT because it is not related to roadway transportation or land-use changes. The Project only proposes structural enhancements and public access improvements at the existing Wharf. There is no proposed change in use. No impacts are anticipated and no mitigation is required.

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

No impact. The Project does not propose geometric design features such as sharp curves of dangerous intersections. The expanded section of the trestle is rectangular. The new restrooms are modular and would be mostly constructed offsite. There is no proposed change in Wharf use. Impacts are not anticipated from the proposed Project and no mitigation is required.

d) Would the Project result in inadequate emergency access?

No impact. Access to the Wharf would be temporarily impacted during construction, but the Project would not block roads that could provide emergency response. All major highways would remain fully accessible. The Wharf would be closed to the public from September to May to assure public safety during construction. Access on and off the Wharf would be restricted to Project personnel only. Proper safety precautions would be taken to assure Project personnel safety. The Project proposes to widen the trestle by 16 feet which would be anticipated to improve access along the Wharf over the long-term. No impacts are anticipated and no mitigation is required.

Cumulative Impacts

No impact. No impacts are anticipated from the proposed Project. During construction, access to the Wharf would be temporarily restricted but this would not impact the circulation system. Access to roads that provide emergency response would not be blocked. The Project would be anticipated to improve public access to the Wharf in the long-term. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant transportation impact in consideration of the proposed Project.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources

General Plan Update (City of Capitola 2019); General Plan Update EIR (City of Capitola 2013).

Tribal Cultural Resources

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

3.18 Tribal Cultural Resources

Coordination between M&N and the City occurred in January 2020 to identify any tribes that have previously requested to be notified about City projects under AB 52. This coordination effort found that no tribes have requested notification with the City under AB 52. Because no tribes have requested notification or consultation, the City is not required to consult under AB 52.

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

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

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

Less than significant impact. Per the City General Plan EIR, Capitola is built on the location of an Indian village that existed for more than 1,000 years. Native inhabitants, known as the Soquel Indians, were removed to the Mission Santa Cruz when it was established in 1791. Nearly all traces of the Soquel "rancheria" and its culture vanished. Archaeological resources are defined as the material remains of any area's pre-historic (aboriginal/Native American) or historic (European and Euro-American) human activity. Archaeological resources are known to occur within the City's Plan Area.

As discussed above in Section 3.5.b), the Project only proposes structural enhancements and public access improvements at the existing Wharf. There would be no major excavation that could disturb archaeological resources, including potential buried tribal cultural resources. Sediment disturbance would be limited to pile sleeving and pile driving. Pile sleeving may require a diver to use a handheld shovel and dig directly around the pile to approximately 1 ft deep to allow for placement of the sleeve. Sediments here are in constant flux due to the high-energy wave environment so tribal resources would not be anticipated to occur. Due to the nature of the Project, it is unlikely that tribal cultural resources would be encountered. No impacts are anticipated and no mitigation is required.

Cumulative Impacts

No impact. No other projects have been identified in the area that would contribute to a cumulatively significant impact.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources

Capitola Wharf Department of Parks and Recreation Primary Record (Dill 2019a).

Utilities and Service Systems

Would the Project:

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

3.19 Utilities and Service Systems

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

Less than significant impact. The Project proposes to construct two new restrooms, one of which would replace the existing restroom at the head of the Wharf. A new additional restroom would be constructed at the foot of the Wharf. The new restrooms would require water, electric power, natural gas for heating water, and wastewater treatment. The new restrooms are not anticipated to substantially increase the demand on water, natural gas, or wastewater treatment as there would be at most a de minimis increase in use. There also would be minor increases in electricity usage from keeping the new additional restroom lit. The Project would not require the relocation, or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities. The Project proposes the relocation of utility lines from below deck to above deck to protect the utility lines from waves, but does not require the relocation, or construction of new or expanded water, wastewater

treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities. Less than significant impacts would occur and no mitigation is required.

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

No impact. There is no proposed substantial increase in use and additional water supply would not be required for the Project. No impact would occur and no mitigation is required.

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

No impact. Please refer to the discussion under Section 3.9(a). There is no proposed increase in demand. No impacts are anticipated and no mitigation is required.

d) Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than significant impact. Policy OSC-11.1 of the City of Capitola set the goal of increasing community diversion of solid wastes by 60 percent by 2020. Policy OSC-11.3 requires mandatory recycling of building demolition materials. Policy OSC-11.4 encourages building designs that minimize waste and consumption in construction projects. The Project proposes to remove creosote treated deteriorated damaged piles from the marine environment. Piles would be disposed of at an upland permitted disposal site. Reuse is not recommended due to the toxicity of creosote. Construction debris suitable for reuse would be recycled in accordance with City requirements.

According to the City of Capitola General Plan Update, all solid wastes collected in Capitola are transferred to the Monterey Peninsula Class III Landfill. As of 2019 this Land fill had a life capacity of 100 years and a waste capacity of approximately 40 million tons (City of Capitola 2019). No new businesses or residences are proposed that are typically associated with more substantial amounts of construction and operational waste streams. The Project has been designed to minimize waste and consumption. The Project's contribution to solid waste is considered less than significant and no mitigation is required.

e) Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less than significant impact. Policy OSC-11.1 of the City of Capitola set the goal of increasing community diversion of solid wastes by 60 percent by 2020. Policy OSC-11.3 requires mandatory recycling of building demolition materials. The Project proposes to remove creosote treated deteriorated damaged piles from the marine environment. Piles would be disposed of at an upland permitted disposal site. Reuse is not recommended due to the toxicity of creosote. Other construction debris would be

recycled per applicable regulations, such as the City's Construction Waste Management Plan requirements. All construction debris disposal would comply with required federal, state, and local management regulations. Impacts are anticipated to be less than significant and no mitigation is required.

Cumulative Impacts

Less than significant impact. Less than significant impacts are anticipated from the proposed Project. The proposed Project would result in solid wastes and some additional utility usage. The Project would not be anticipated to exceed the capacity of current utility and/or solid waste facilities. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant utility and service system impact in consideration of the proposed Project. Therefore, potential cumulative impacts are anticipated to be less than significant.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources

General Plan Update (City of Capitola 2019); General Plan Update EIR (City of Capitola 2013).

Wildfire

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

3.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

No impact. There are no wildland fire hazard areas in Capitola (City of Capitola 2019). Certain areas of Capitola with substantial amounts of vegetation are susceptible to wildfires but the Project is not located in such an area. The Project is located at the existing Capitola Wharf, which extends from Capitola Beach out and over Monterey Bay. The nearest high fire hazard area is 1.25 miles east of the Wharf (Capitola 2013). No impacts are anticipated, and no mitigation is required.

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

No impact. The Project does not occur in a high fire hazard area. The nearest high fire risk zone occurs approximately 1.25 miles east of the Wharf. The Project proposes only structural enhancements and public access improvements at the existing Wharf. The Project would not temporarily or permanently block roads that could provide emergency response or evacuation from wildfires or other emergency. All major highways would remain open. No impacts are anticipated, and no mitigation is required.

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

No Impact. The Project does not propose the addition of habitable buildings or structures or activities that could exacerbate wildfire risks. The Project only proposes structural enhancements and public access improvements at the existing Wharf and would not otherwise change topography or wind patterns. No impacts are anticipated, and no mitigation is required.

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

No impact. The Project does not occur in a high fire hazard area. The Project only proposes structural enhancements and public access improvements at the existing Wharf. The Project does not propose or require the installation or maintenance of fuel breaks, emergency water sources, or power lines. The trestle would be expanded to allow for separate pedestrian travel. There would be minor trestle expansion for vehicles traveling on the Wharf, including re-decking. There would also be minor utility upgrades such as relocating the utilities to above deck. No impacts are anticipated, and no mitigation is required.

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

No impact. The Project does not occur in a high fire hazard area. The Project does not propose changes to topography such as slope or drainage changes. The Project only proposes structural enhancements and public access improvements at the existing Wharf. No habitable buildings or structures are proposed or located within the Project footprint. No impacts are anticipated and no mitigation is required.

Cumulative Impacts

No impact. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant wildfire impact in consideration of the proposed Project. Due to the nature of dredging operations and absence of high fire risk areas in the Project Vicinity, no Project impacts or cumulative Project impacts would occur, and no mitigation is required.

Avoidance, Minimization and/or Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

Sources

General Plan Update (City of Capitola 2019); General Plan Update EIR (City of Capitola 2013).

Mandatory Findings of Significance

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

3.21 Mandatory Findings of Significance

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

Less than significant with mitigation. As discussed in Section 3.4, the Project Action Area provides habitat for a variety of wildlife including special status species. **MM BIO-1** would require environmental training of work crews prior to the start of the proposed Project. This would be anticipated to help protect the identified biological resources in the area. In addition, mitigation measures are proposed to protect special status species from potential noise impacts. **MM BIO-2** would require the use of a wood cushion block or other comparable noise dampening device to reduce noise levels and **MM BIO-3** would require the implementation of an exclusion/shutdown zone defined as the distance in which underwater noise would attenuate to the Level B threshold for marine mammals. To protect special status birds **MM BIO- 4** would require pre-construction nesting bird surveys and 300-foot buffers around all active nests. Avoidance and minimization measures **MM BIO-1** through **MM BIO-4** would be anticipated to assure that impacts to habitats and sensitive wildlife species do not occur.

The Project would also protect water quality through the implementation of water quality BMPs required under mitigation measure **MM HWQ-1.** As described above in Section 3.10, implementation of **MM HWQ-1** would ensure potential impacts to water quality would be less than significant.

Finally, as discussed in Section 3.5, potential impacts to historical resources (i.e. the Wharf and Capitola Beach Cultural Landscape District) would be less than significant with implementation of mitigation measure **MM CUL-1**, which would require the City's Architectural & Site Review Committee to verify the Project's 100% design plans are consistent with the recommendations provided in the Interior's Standards and Historic Integrity Review prior to approval. . The Wharf has been repaired, rebuilt, and changed several times throughout its history. The proposed Project is not anticipated to substantially change the character of the Wharf. To the extent feasible, the proposed Project has been designed to utilize similar materials and construction methods as those historically used at the Wharf. The Project would ensure the structural integrity of the Wharf's service life and reduce potential for damage of existing elements and closures. Therefore, the Project is not anticipated to eliminate part of California's history or prehistory and potential impacts would remain less than significant with implementation of **MM CUL-1**.

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

Less than significant impact. The Project would not result in potentially significant Project-level or cumulative impacts. No other projects have been identified associated with the Wharf or surrounding area that could cumulatively contribute to a significant cumulative impact in consideration of the proposed Project. No significant cumulative impacts have been identified and no mitigation is required.

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

Less than significant with mitigation. Previous sections of this IS/MND reviewed the Project's potential temporary impacts related to air quality and noise among other environmental issue areas. As discussed, the Project would result in less than significant environmental impacts for air quality and would not require mitigation measures. Mitigation measures **MM NOI-1** and **MM NOI-2** would require implementation of a pile driving notification plan and use of pile driving "slow-start" in order to keep nearby residents informed of the construction schedule and to reduce the potential for startle and annoyance of nearby receptors. Implementation of these measures would ensure potential impacts are less than significant.

4.0 LIST OF PREPARERS

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Michael Henry, Biological Technical Report Lead

4.5 Archives and Architecture LLC

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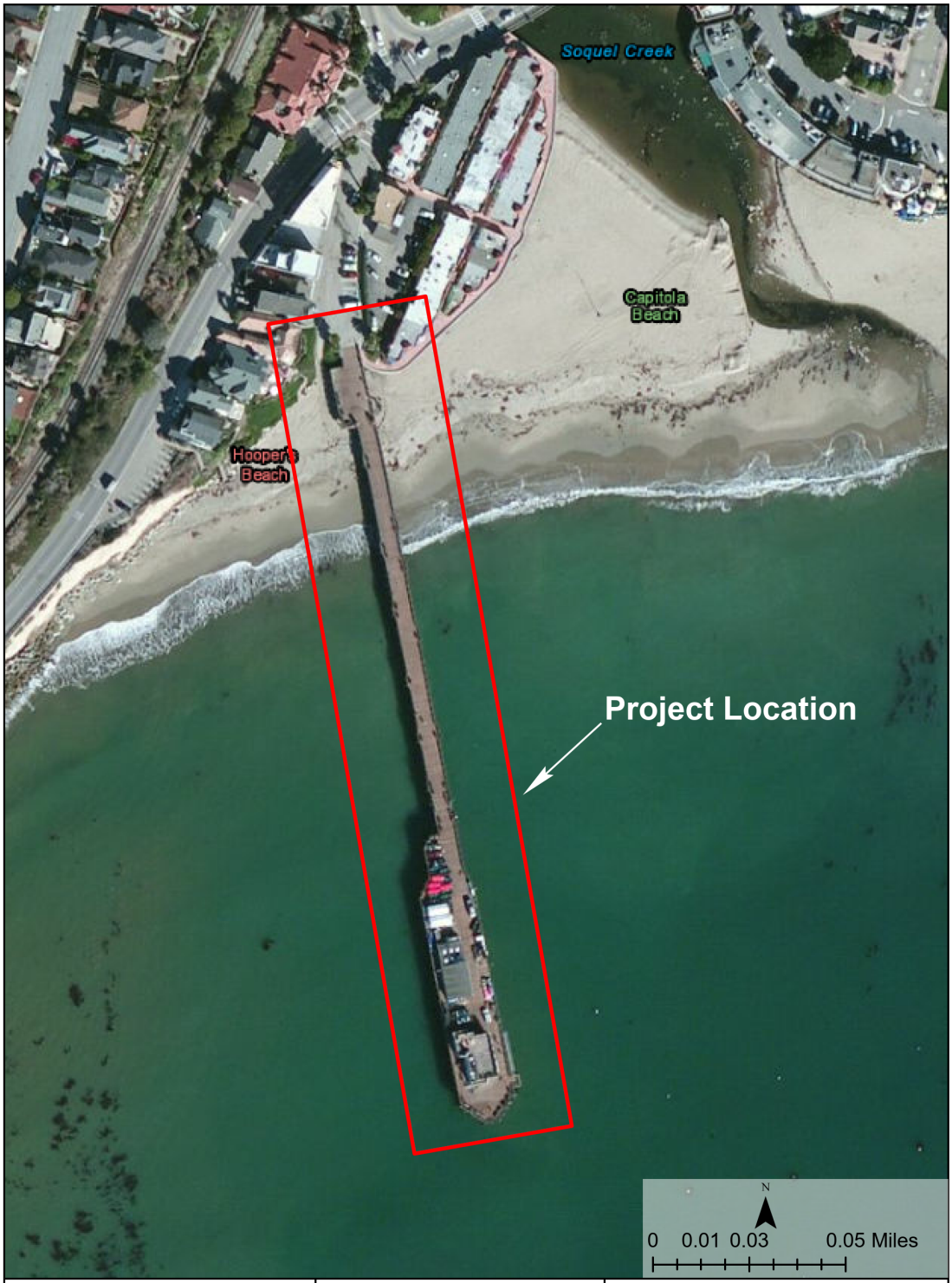
6.0 FIGURES

Figure 1: Regional and Vicinity Map



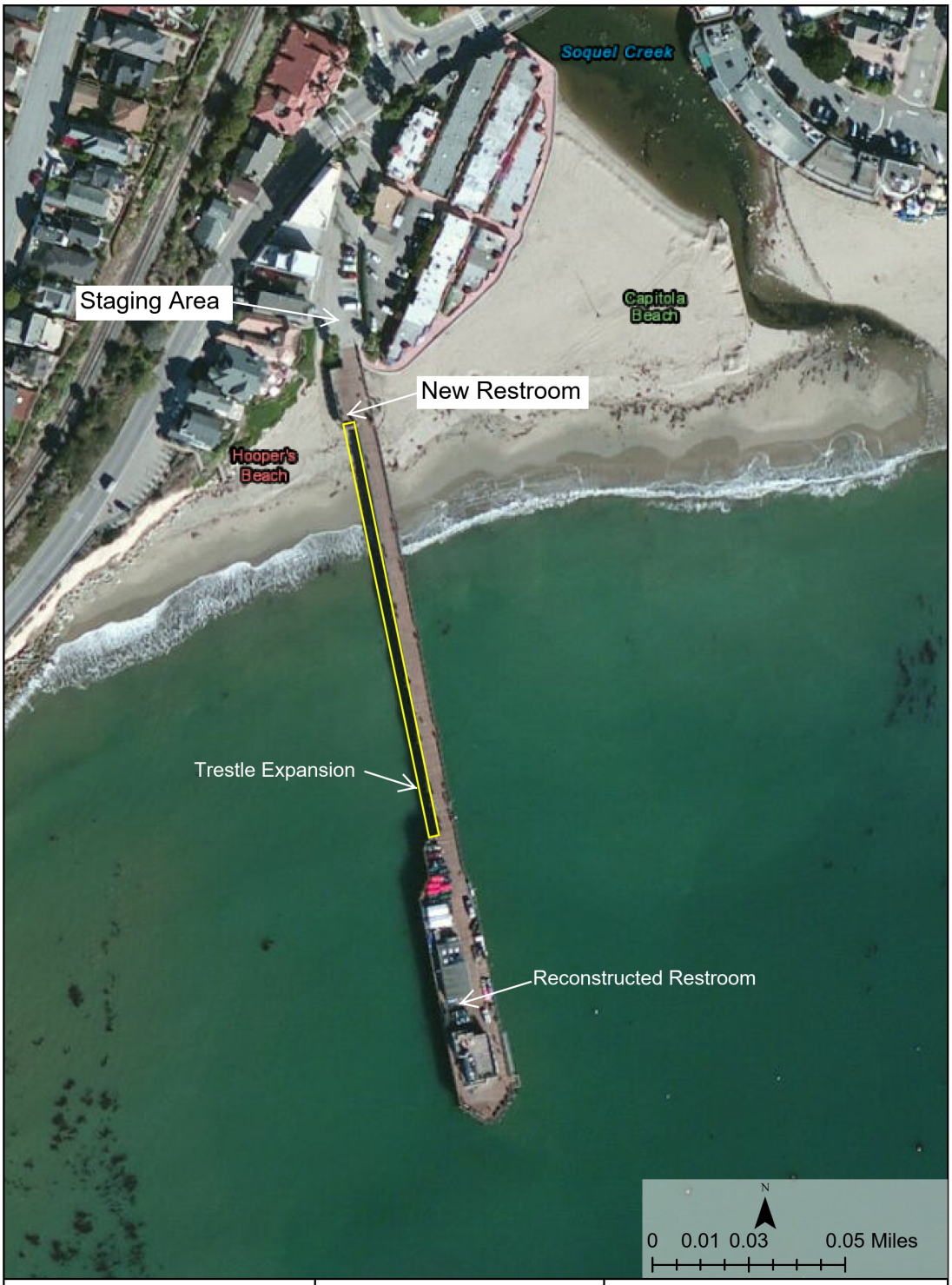
APPLICANT: City of Capitola Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics moffatt & nichol	LOCATION ADDRESS: 1400 Wharf Rd, Capitola, CA 95010 Township: 11S Range: 1E	PROPOSED PROJECT: Capitola Wharf Resiliency and Public Access Improvement Project Figure 1. Regional and Vicinity Map

Figure 2: Project Location Map



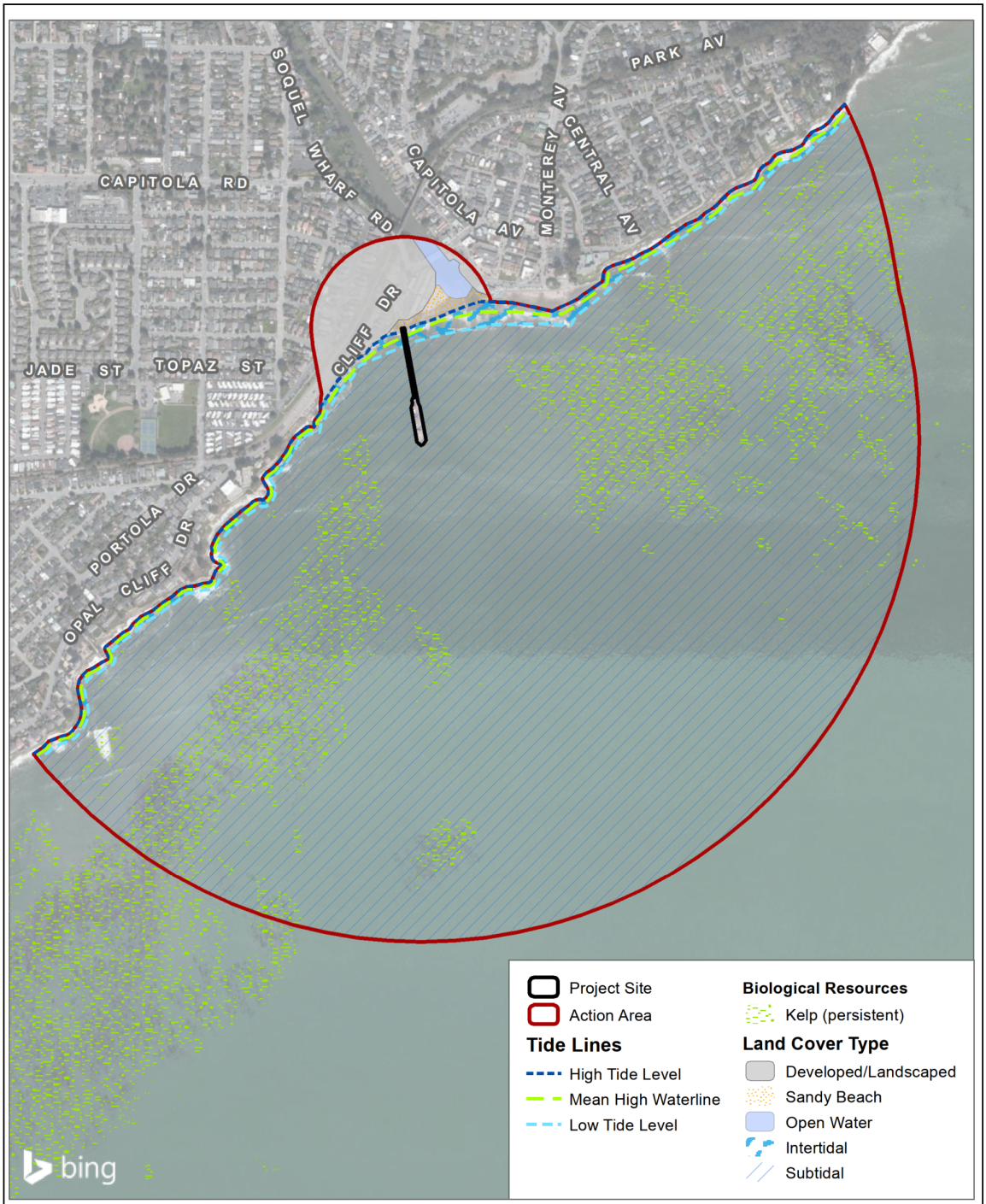
APPLICANT: City of Capitola Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics moffatt & nichol	LOCATION ADDRESS: 1400 Wharf Rd, Capitola, CA 95010 Township: 11S Range: 1E	PROPOSED PROJECT: Capitola Wharf Resiliency and Public Access Improvement Project Figure 2. Project Location

Figure 3: Project Boundaries



APPLICANT: City of Capitola Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics moffatt & nichol	LOCATION ADDRESS: 1400 Wharf Rd, Capitola, CA 95010 Township: 11S Range: 1E	PROPOSED PROJECT: Capitola Wharf Resiliency and Public Access Improvement Project Figure 3. Project Boundaries

Figure 4: Action Area



APPLICANT: City of Capitola

Source: Biological Technical Report (Dudek 2020)

moffatt & nichol

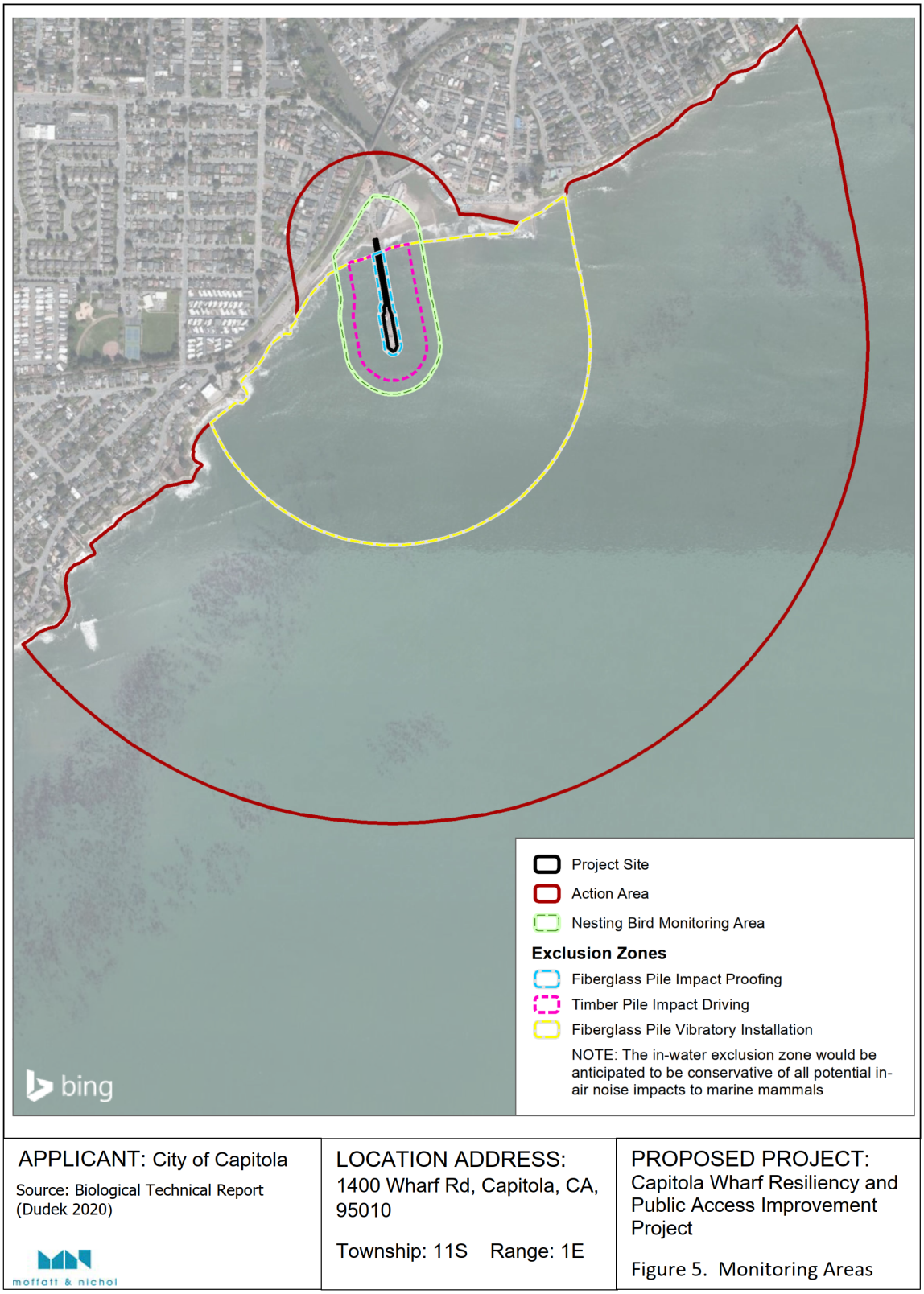
LOCATION ADDRESS:
1400 Wharf Rd, Capitola, CA, 95010

Township: 11S Range: 1E

PROPOSED PROJECT:
Capitola Wharf Resiliency and Public Access Improvement Project

Figure 4. Action Area Map

Figure 5: Monitoring Areas



APPLICANT: City of Capitola Source: Biological Technical Report (Dudek 2020) moffatt & nichol	LOCATION ADDRESS: 1400 Wharf Rd, Capitola, CA, 95010 Township: 11S Range: 1E	PROPOSED PROJECT: Capitola Wharf Resiliency and Public Access Improvement Project Figure 5. Monitoring Areas

7.0 APPENDICES

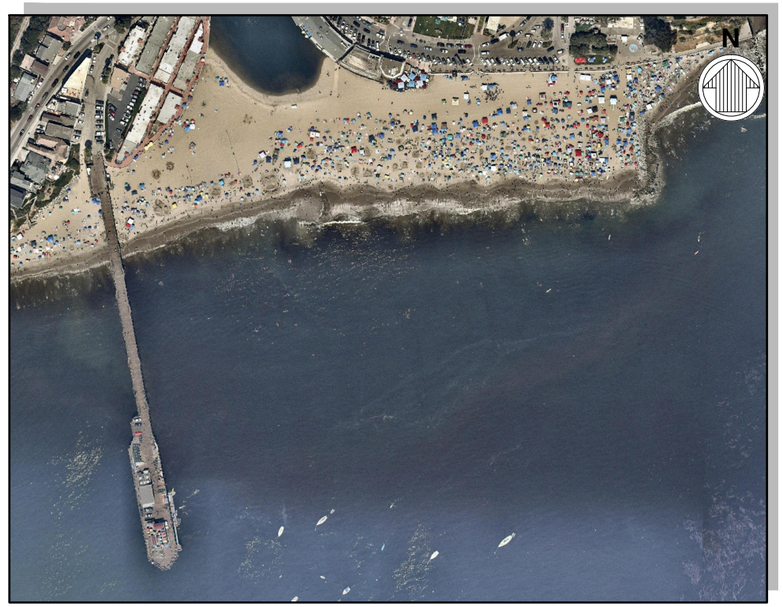
CAPITOLA WHARF

RESILIENCY AND PUBLIC ACCESS IMPROVEMENT



VICINITY MAP
SCALE: NTS

INDEX OF DRAWINGS	
SHEET NO	SHEET TITLE
G-001	TITLE SHEET
C-100	OVERALL WHARF PLAN
C-101	EXISTING WHARF
C-102	WIDENING WHARF PLAN AND SECTION
C-103	WHARF PILE REPAIRS
C-104	WHARF RESTROOMS
C-121	TYPICAL DETAILS



LOCATION PLAN
SCALE: NTS

TIDAL DATUM (MONTEREY GAUGE)

MEAN HIGHER HIGH WATER (MHHW)	+5.33ft
MEAN SEA LEVEL (MSL)	+2.83ft
MEAN LOWER LOWER WATER (MLLW)	0ft
NORTH AMERICAN VERTICLE DATUM (NAVD) 88	−0.13ft

LEGEND

EXISTING FEATURE

PROJECT FEATURE

ABBREVIATIONS

APPROX	APPROXIMATE
(E)	EXISTING
UON	UNLESS OTHERWISE NOTED

PERMIT SET - PROJECT DESCRIPTION
MARCH 20, 2020

CITY OF CAPITOLA INCORPORATED 1949

Mark	Description	Date	Appr.
-	-	-	-

CAPITOLA WHARF
RESILIENCY AND PUBLIC ACCESS IMPROVEMENT

TITLE SHEET

Designed by: BP
Dwn by: AC
Ckd by:
Reviewed by:
Submitted by: SUBMITTER'S NAME MOFFATT & NICHOL
Date: 03/13/2020
M&N Project No.: 9154-01
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)
Rev: -

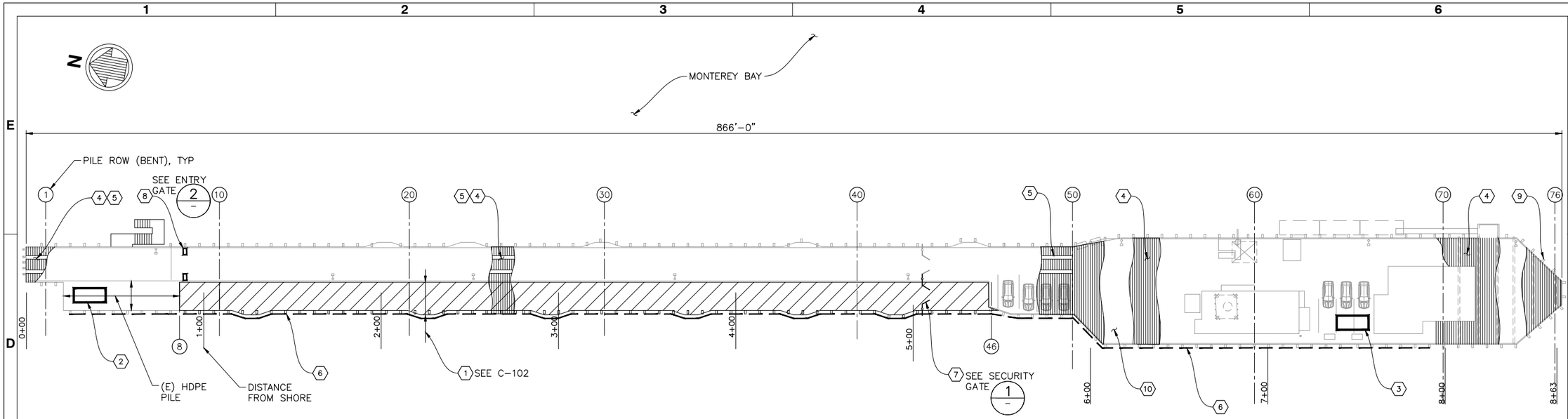
2185 N. CALIFORNIA BLVD.
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moffatt & nichol

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Sheet Reference No.
G-001
INDEX: 1 OF 7

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



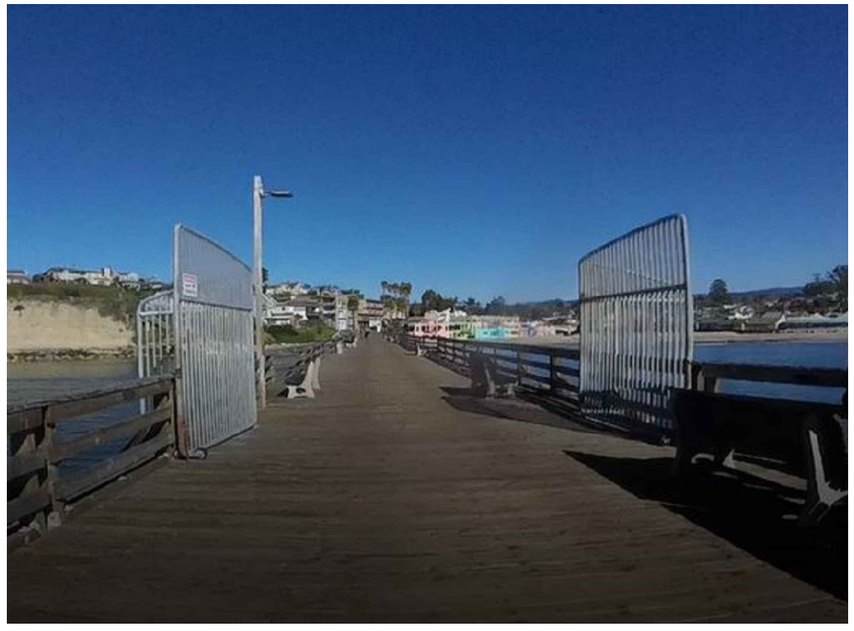
WHARF PLAN
SCALE: 1" = 30'

LEGEND:

- WIDEN WHARF
- REPLACE DECKING

KEY NOTES:

1. WIDEN EXISTING WHARF TRESTLE, SEE DWG C-121 FOR CONNECTION DETAILS
2. CONSTRUCT RESTROOM BUILDING AT FOOT OF WHARF.
3. CONSTRUCT RESTROOM BUILDING NEAR RESTAURANT BLDG.-SEE C-104.
4. REPLACE DECKING ALONG ENTIRE WHARF OUTSIDE OF BLDG. FOOT PRINTS.
5. INSTALL VEHICLE RUNNERS ON TOP OF DECKING FROM BENT 1 TO 50.
6. RELOCATE EXISTING UTILITIES TO TOP OF OUTRIGGER DECK ON WEST SIDE.
7. CONSTRUCT SECURITY GATE TO MATCH (E), SEE PHOTO 1.
8. MODIFY ENTRY GATE TO MATCH STYLE OF (E), SEE PHOTO 2. FINAL DESIGN SHALL BE APPROVED BY CITY PLANNING COMMISSION.
9. REPAIR STEEL PILES AT SOUTH END WHARF. SEE C103.
10. REPLACE/REPAIR DAMAGED TIMBER PILES, SEE C103.



1 SECURITY GATE
SCALE: NTS



2 ENTRY GATE
SCALE: NTS

NOTES:

1. THIS DRAWING IS INTENDED TO SHOW THE MAJOR COMPONENTS OF THE PROJECT. SEE FOLLOWING DRAWINGS FOR DETAILS AN ADDITIONAL INFORMATION.
2. MATERIALS
   - PILES, WIDENING: FIBERGLASS WITH HDPE COVER.
   - PILES, REPAIR: (SEE DRAWING C103.
   - STRUCTUAL MEMBERS (DECKING, STRINGERS, CAPS): REPLACE WITH KIND WITH DOUGLAS FIR
   - LUMBER, NO.1 ACZA TREATED.
   - CONNECTIONS: GALVANIZED STEEL (A36).

30' 0' 30' 60'
SCALE: 1"=30'

CITY OF CAPITOLA
INCORPORATED 1949

Mark	Description	Date	Appr.

CAPITOLA WHARF RESILIENCY AND PUBLIC ACCESS IMPROVEMENT

OVERALL WHARF PLAN

Designed by: BP
Drawn by: PH
Last by:
Reviewed by:
Submitted by: SUBMITTER'S NAME MOFFATT & NICHOL
Date: 03/13/2020
03-05-2020
Rev. -
M&N Project No.: 9154-01
Drawing date:
Drawing Scale:
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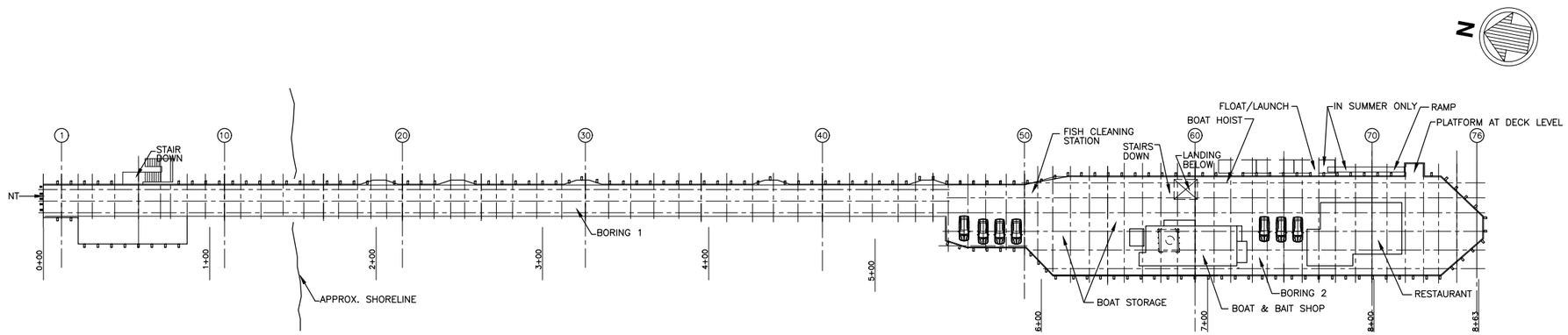
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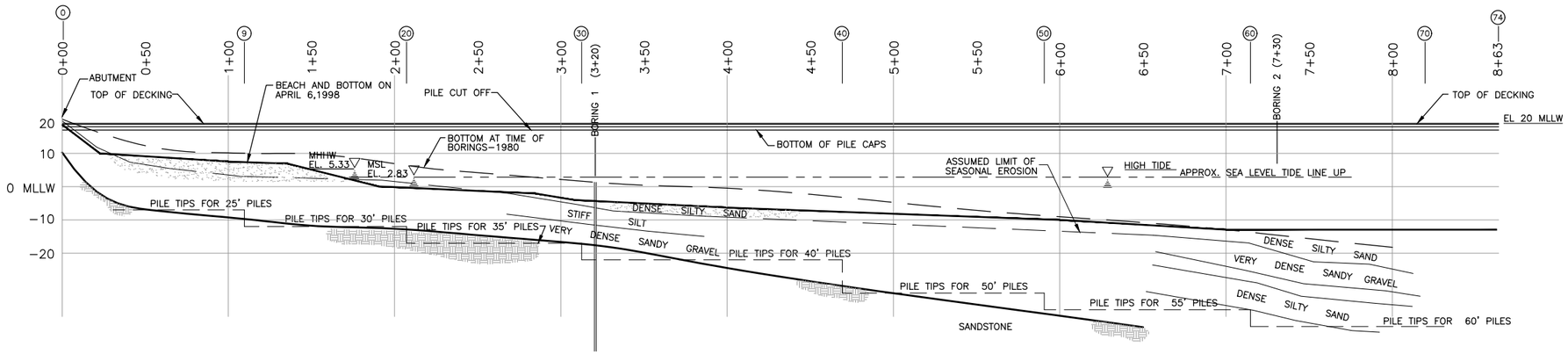
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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



WHARF PLAN
SCALE: 1" = 40'



WHARF PROFILE
SCALE 1" = 40' (HORIZ)
1" = 20' (VERT)

NOTES:

1. SOIL PROFILE IS BASED UPON DRAWING 80-37 BY H.V. ANDERSON DATED MARCH 13, 1981 AND HARDING LAWSON ASSOC. (HLA) SOILS INVESTIGATION DATED MAY 8, 1980.
2. BORINGS (2) WERE DONE BY HLA ON MARCH 5, 1980.
3. GRID LINES ARE BASED UPON DRAWINGS OF H.V. ANDERSON (NOTE 1). NOT ALL GRID PILE BENTS REMAIN, WHILE OTHERS HAVE BEEN ADDED. THEREFORE GRID NUMBERS ARE NOT ALWAYS SEQUENTIAL.
4. THE ELEVATION OF THE WHARF DECK VARIES ALONG ITS LENGTH FROM A HIGH POINT AT THE ABUTMENT AS SHOWN BELOW. THE +20.0 FT MLLW ELEVATION SHOWN IS APPROXIMATE.

BENT	DISTANCE BELOW ABUTMENT (APPROX.)
0 (ABUTMENT)	0
40	2.5'
60	2.0'
74	1.8'

ABBREVIATIONS:

MHHW – MEAN HIGHER HIGH WATER
MTL – MEAN TIDE LEVEL
(E) – EXISTING
SIM – SIMILAR
TYP – TYPICAL
CONC – CONCRETE
APPROX – APPROXIMATE

40' 0'–0" 40' 80'
SCALE: 1"=40'

20' 0' 20' 40'
SCALE: 1"=20'

CITY OF CAPITOLA INCORPORATED 1949

Mark	Description	Date	Appr.

CAPITOLA WHARF RESILIENCY AND PUBLIC ACCESS IMPROVEMENT

EXISTING WHARF

Designed by: BP	Dwn by: AC	Ckd by:	Reviewed by:
Date: 03/13/2020	M&N Project No.: 9154-01	Drawing code:	Rev. -
Submitted by: SUBMITTERS NAME MOFFATT & NICHOL	Drawing Scale: Plot scale: 1:1 (D SHEET)		

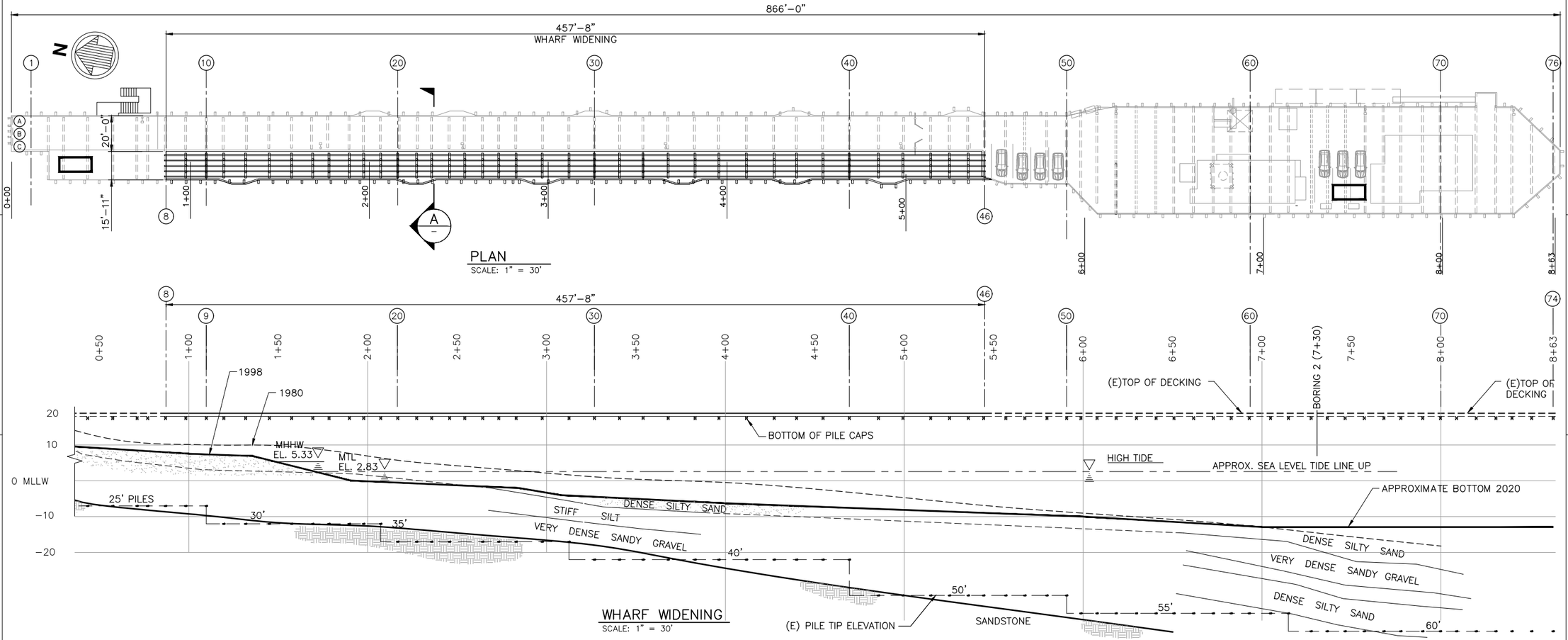
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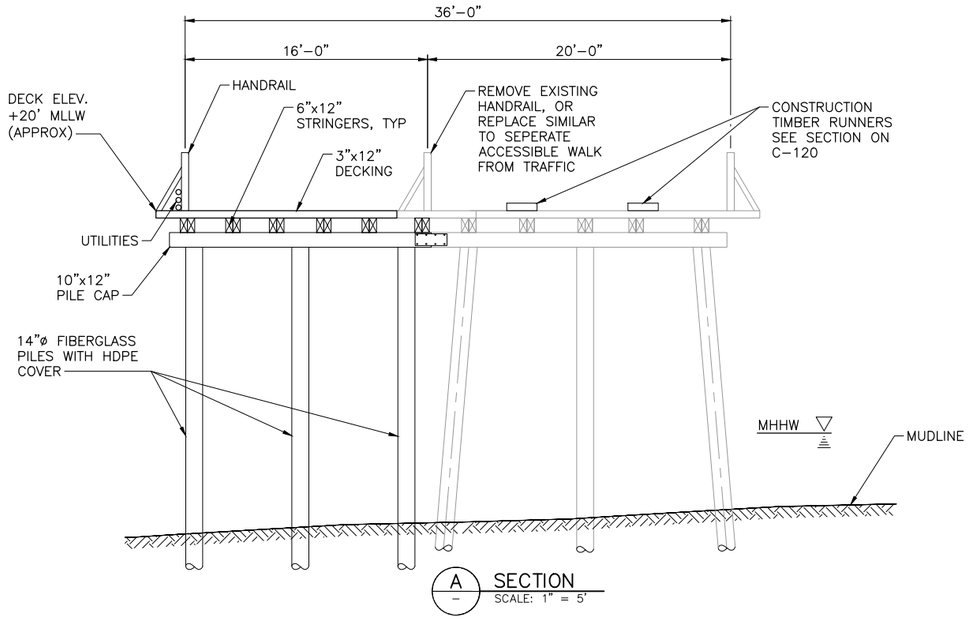
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STATE OF CALIFORNIA
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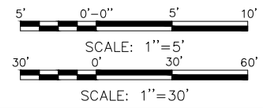
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CITY OF CAPITOLA
INCORPORATED 1949

Mark	Description	Date	Appr

CAPITOLA WHARF RESILIENCY AND PUBLIC ACCESS IMPROVEMENT

WIDENING WHARF PLAN AND SECTION

Date: 03/13/2020
03–05–2020
Rev. -
M&N Project No.: 9154-01
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Chd by:
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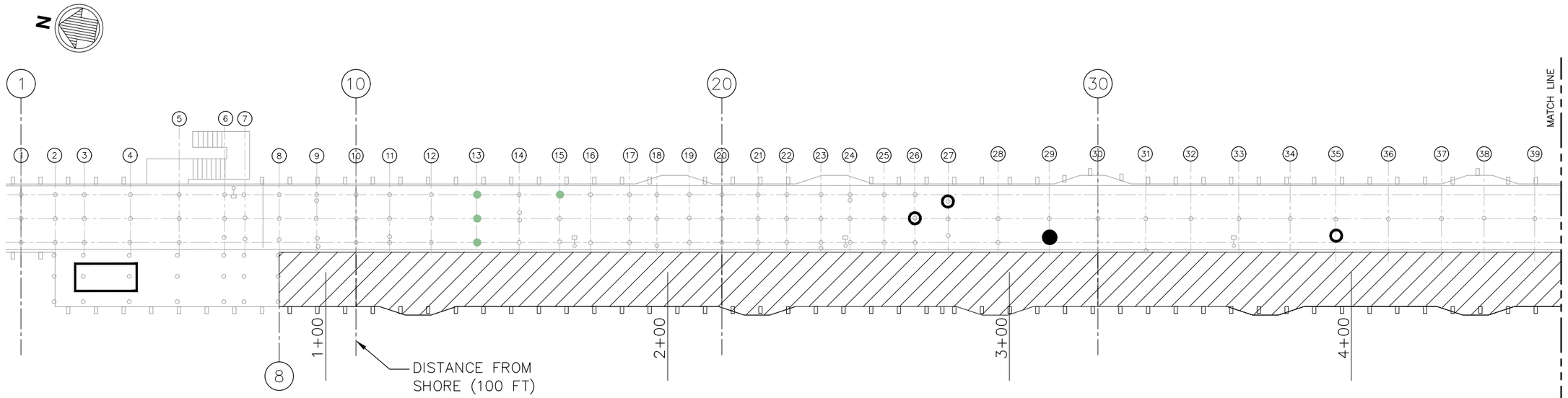
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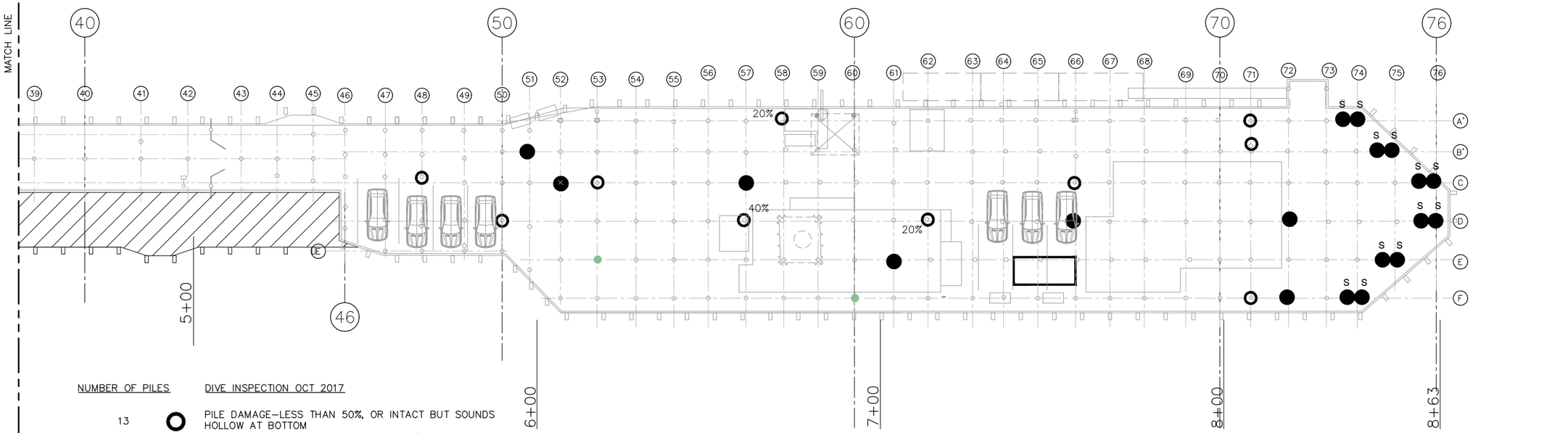
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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NUMBER OF PILES — DIVE INSPECTION OCT 2017

13	○	PILE DAMAGE–LESS THAN 50%, OR INTACT BUT SOUNDS HOLLOW AT BOTTOM REPAIR WITH FIBERGLASS JACKET (SIMPSON FX–70 OR EQUAL) AND GROUTED INTERIOR.
8	●	PILE DAMAGE–50% OR MORE REPLACE PILE WITH FIBERGLASS PILE OR POLYUREA COATED, TREATED TIMBER PILE.
TOTAL = 10/31	S●	STEEL PILE RUSTED OUT ABOVE WATER REPAIR WITH FIBERGLASS WRAP (QUAKE–WRAP SYSTEM OR EQUAL).
304	○	UNDAMAGED PILE (E) PILES ARE TREATED TIMBER (CREOSOTE OR ACZA) WITH 12–15 INCH BUTT DIAMETER, EXCEPT BENT 2–8 THAT ARE STEEL WITH HDPE.
335		TOTAL PILES ON WHARF.

LEGEND:

WIDEN WHARF

PLAN
SCALE: 1" = 16'

16' 0' 16' 32'
SCALE: 1"=16'

CITY OF CAPITOLA
INCORPORATED 1949

Mark	Description	Date	Appr.

CAPITOLA WHARF RESILIENCY AND PUBLIC ACCESS IMPROVEMENT

WHARF PILE REPAIRS

2185 N. CALIFORNIA BLVD.
SUITE 500
WALNUT CREEK, CA 94596
moffatt & nichol

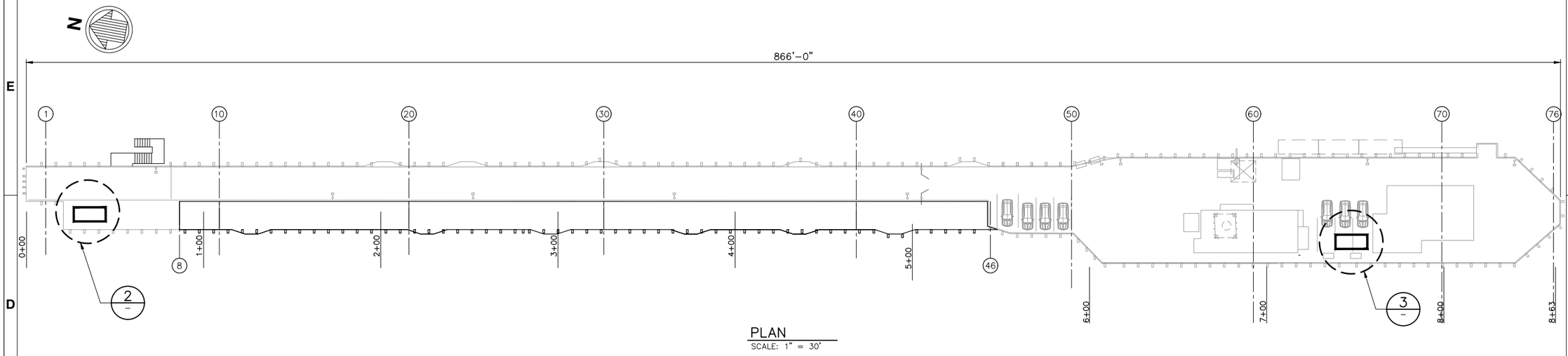
Designed by: BP
Drawn by: PH
Cad by:
Reviewed by:
Submitted by: SUBMITTER'S NAME MOFFATT & NICHOL
Date: 03/13/2020
03–05–2020
Rev: -
M&N Project No.: 9154-01
Drawing code:
Drawing Scale
Plot scale: 1:1 (D SHEET)

REGISTERED PROFESSIONAL ENGINEER
BRADFORD A. PORTER
No. 042795
Exp. 3-31-20
CIVIL
STATE OF CALIFORNIA
SEAL

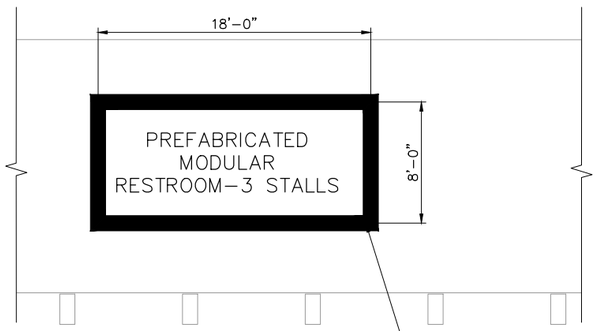
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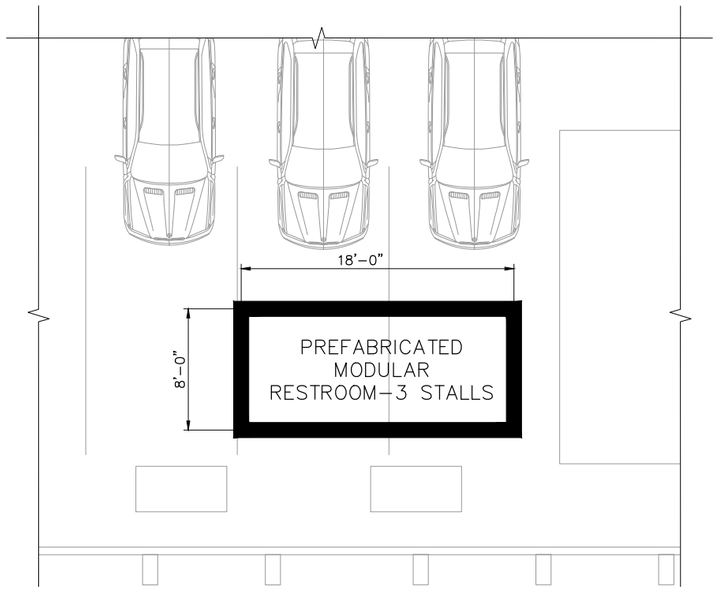
DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



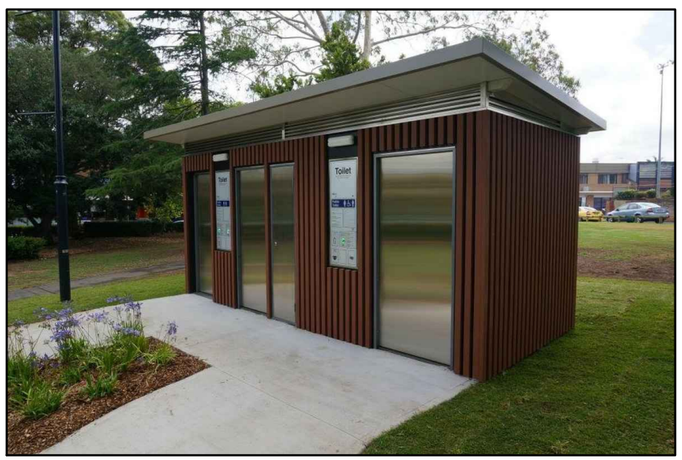
PLAN
SCALE: 1" = 30'



2 DETAIL
SCALE: 1" = 5'



3 DETAIL
SCALE: 1" = 5'



4 PREFABRICATED MODULAR RESTROOM–3 STALLS
SCALE: NTS

NOTES:

1. THE RESTROOM SHALL BE CONSTRUCTED TO PROVIDE SUBSTANTIALLY THE APPEARANCE AND FINISH AS THAT SHOWN––EXCELOO, JUPITER MODEL
2. WOODEN EXTERIOR BATTENS
3. STAINLESS STEEL METALS
4. MODULAR CONSTRUCTION OFFSITE DELIVERED READY TO CONNECT

5' 0'–0" 5' 10'
SCALE: 1"=5'

30' 0' 30' 60'
SCALE: 1"=30'

CITY OF CAPITOLA
INCORPORATED 1949

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CAPITOLA WHARF RESILIENCY AND PUBLIC ACCESS IMPROVEMENT

WHARF RESTROOMS

Date: 03/13/2020
03–05–2020
Rev: -

Designed by: BP
Drn by: PH
Ckd by:
Reviewed by:

M&M Project No.: 9154-01

Drawing code:

Drawing Scale:
Plot scale: 1:1 (D SHEET)

Submitted by:
SUBMITTER'S NAME
MOFFATT & NICHOL

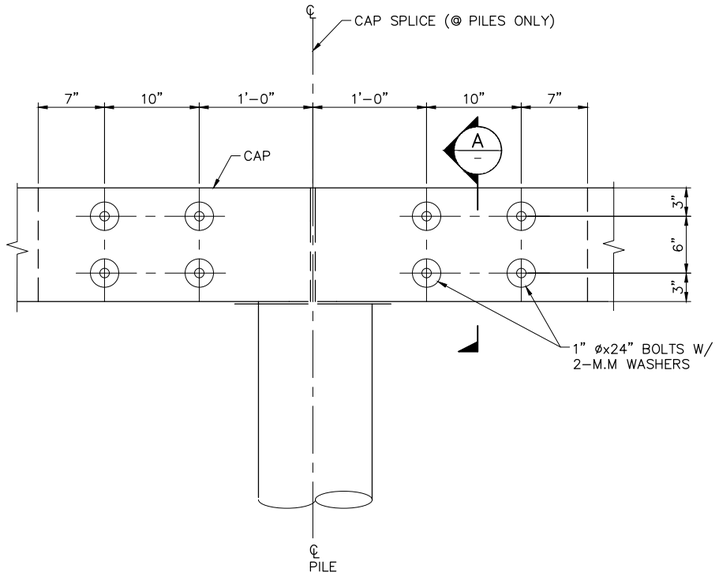
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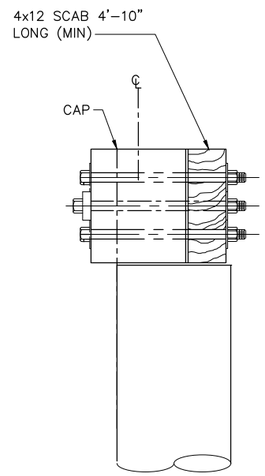
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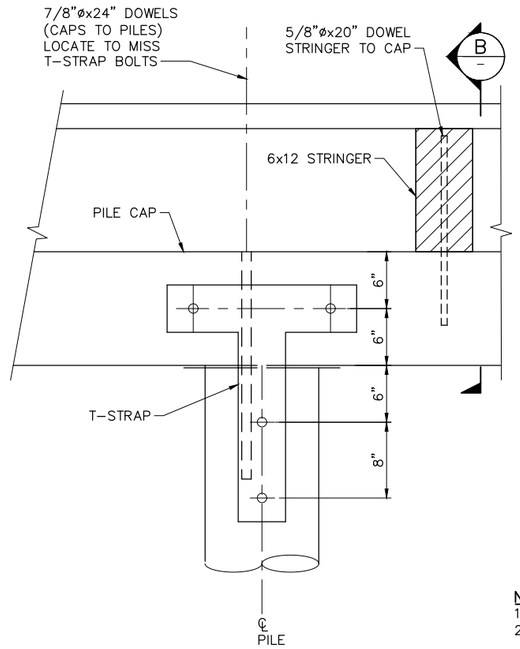
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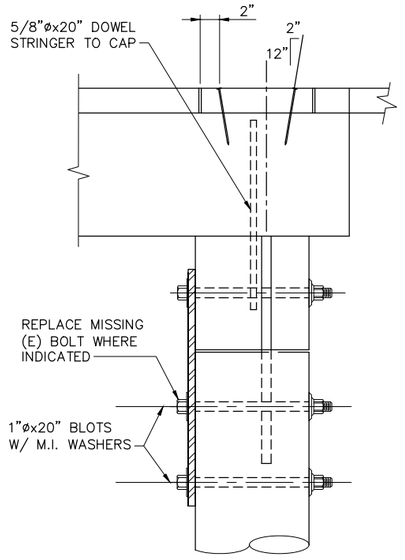
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SCALE: 1 1/2" = 1'–0"



A — SECTION
SCALE: 1 1/2" = 1'–0"

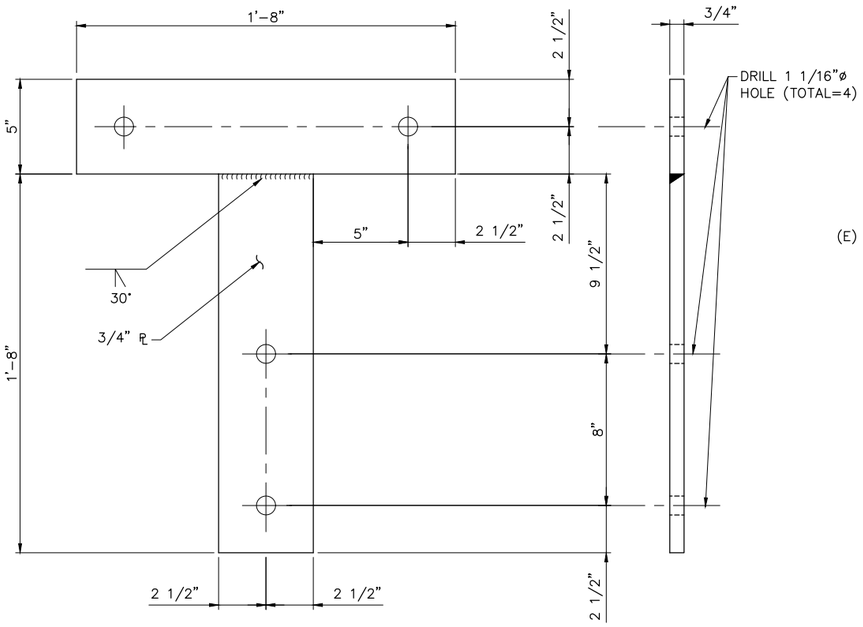


3 — TYPICAL STRUCTURAL FRAMING DETAIL
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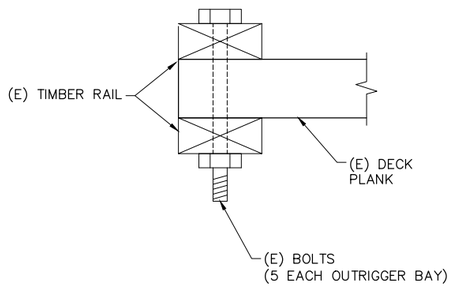


B — SECTION
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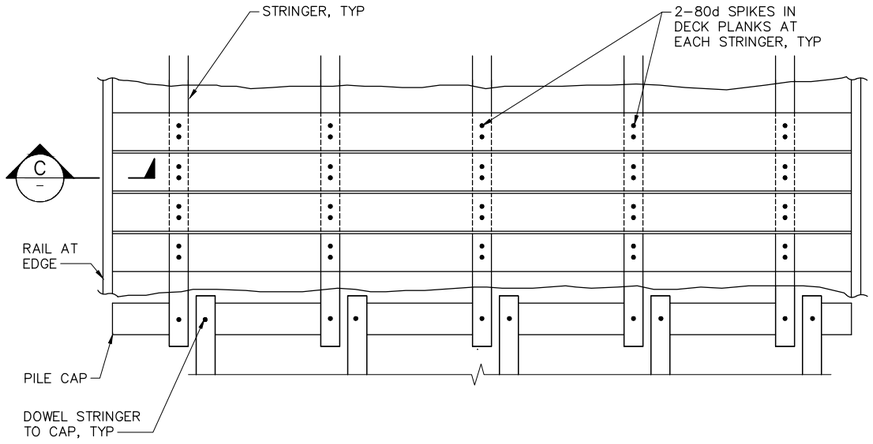
NOTES:
1. ALL NAILS AND HARDWARE TO BE HOT DIPPED GALVANIZED.
2. CONNECTION TO PILE MAY BE INSTALLED WITH "T" STRAP OR DOWEL.



5 — TYPICAL T–STRAP DEDAIL
SCALE: 3" = 1'–0"



C — SECTION
SCALE: 1 1/2" = 1'–0"



7 — TYPICAL DECK PLAN DETAIL
SCALE: 1/2" = 1'–0"

6" 0'–0" 3" 6"
SCALE: 3"=1'–0"

1'–0" 0'–0" 6" 1'–0"
SCALE: 1 1/2"=1'–0"

2'–0" 0'–0" 2'–0" 4'–0"
SCALE: 1/2"=1'–0"

CITY OF CAPITOLA
INCORPORATED 1949

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CAPITOLA WHARF RESILIENCY AND PUBLIC ACCESS IMPROVEMENT

TYPICAL DETAILS

Designed by: BP
Drawn by: AC
Checked by:
Reviewed by:
Submitted by: SUBMITTER'S NAME MOFFATT & NICHOL
Date: 03/13/2020
Rev. -
M&N Project No.: 9154-01
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Biological Technical Report for the Capitola Wharf Resiliency and Public Access Improvement Project Capitola, California

Prepared for:

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Acronyms and Abbreviations

Acronym/Abbreviation	Meaning
USACE or Corps	U.S. Army Corps of Engineers
bay	Monterey Bay
Beach	Capitola Beach
BMPs	Best Management Practices
BTR	Biological Technical Report
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
cfs	cubic feet per second
CESA	California Endangered Species Act
City	City of Capitola
CNDDB	California Natural Diversity Database
dB	Decibels
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
ESU	Evolutionarily Significant Unit
FESA	Federal Endangered Species Act
FMP	Fishery Management Plan
HAB	Harmful algal blooms
HAPC	Habitat Areas of Particular Concern
HDPE	High density polyethylene
HTL	High Tide Line
MBNMS	Monterey Bay National Marine Sanctuary
MHHW	Mean High Water
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MMPA	Marine Mammal Protection Act
MHWL	Mean High Water Line
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
PAH	Polynuclear aromatic hydrocarbons
ppt	parts per thousand
RWQCB	Regional Water Quality Control Board
SEL	Sound Energy Level
SWPPP	Stormwater Pollution Prevention Plan
USFWS	United States Fish and Wildlife Service
UV	Ultraviolet

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1 Introduction

The proposed Capitola Wharf Resiliency and Public Access Improvement Project (Project) is located at the Capitola Wharf (Wharf) in the City of Capitola (City), Santa Cruz County, California (Figure 1). The proposed Project would enhance Wharf resiliency as well as improve public safety by expanding a section of the Wharf's narrow existing trestle system and completing necessary repairs. The proposed Project would also provide improved public access with an expanded bridge deck that reduces pedestrian and vehicular conflicts and by constructing two new restroom facilities for beach and Wharf users.

This Biological Technical Report (BTR) for the proposed Project describes the Project and documents the existing biological resources at the action area, including special-status species and potential Essential Fish Habitat (EFH). This BTR also evaluates potential impacts to these biological resources due to proposed Project construction. This BTR is intended to support formal consultation with the United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NOAA Fisheries), California Department of Fish and Wildlife (CDFW), and other interested agencies.

1.1 Project Location

The proposed Project is located in the City of Capitola (City), Santa Cruz County, California, on Capitola Wharf at Capitola Beach (Figure 1). The Wharf extends from Capitola Beach into Monterey Bay and supports one lane of both combined vehicular and foot traffic. The Wharf is primarily used for recreational activities, and also hosts a restaurant and a boat shop. The Wharf extends approximately 866 feet long from the shore where it connects to the paved portion of Wharf Road, and can be divided into two sections: the trestle and Wharf head. The Wharf trestle is approximately 543 feet long, and is approximately 20 feet wide for the majority of the trestle, with an approximately 36-foot wide segment that extends for 85 feet at the connection to paved Wharf Road. The trestle extends out from shore to the wider Wharf head, which is approximately 323 feet long and 60 feet wide. The restaurant, boat rentals, boat launch, summer dock, and restroom facilities are located on the Wharf head.

The piles are 12 – 14-inch diameter creosote-treated timbers aligned in rows ("bents") perpendicular to the Wharf centerline at 12 foot nominal spacing. There are typically three piles per bent along the trestle, and six piles at the Wharf head. The Wharf head also includes twelve 14-inch diameter steel piles at the face. These steel piles were installed to increase the stiffness of the Wharf end to resist wave forces and resulting deflection. The piles support timber cap (10-inch x 12-inch) beams (pile caps) that span across the bent. The caps support stringers (6-inch x 12-inch) that in turn supports the Wharf decking (3-inch x 12-inch planks).

The approximate midpoint of site coordinates where construction would occur are 36 degrees 58 minutes 13.42 seconds N latitude and 121 degrees 57 minutes 12.63 seconds W longitude.

1.2 Project Background

The elevation of the Wharf's deck structure, 20 feet (ft) Mean Lower Low Water (MLLW), is below the crest elevation of attacking waves that are experienced during large storm events. The Wharf also experiences damage to the supporting foundation piles in winter storms when floating logs batter the piles. Depending on the severity of the storm, the resulting damage can require Wharf closure. For example, In January 2020 two pilings supporting the small boat crane were broken by strong waves and the Wharf was temporarily closed to public access. The section

of the pier containing the narrow trestle with only three supporting piles per row is the most susceptible to damage that has historically required Wharf closure. Wharf closures have happened up to two times a year and negatively impact the community through loss of business and restriction of over water access along the Wharf.

In addition to its susceptibility to damage, the narrow segment of the Wharf creates pedestrian and vehicle conflicts for pier users and vehicles traveling between the Wharf base and Wharf head.

Finally, Capitola Beach and the Wharf also currently lack adequate restroom facilities to serve beach-goers and Wharf-users. The only existing restrooms serving these populations is the bathroom at the back of the restaurant, and a seasonal portable restroom at the beach end of the Wharf.

1.3 Project Description and Purpose

The proposed Project would increase Wharf resiliency and improve public safety by expanding a section of the Wharf's existing narrow trestle system and by completing necessary repairs to piles, pile caps, and decking. The Project would also provide improved public access with an expanded bridge deck that reduces pedestrian and vehicular conflicts and by constructing two new restroom facilities for beach and Wharf users.

Wharf expansion would add resiliency to the most vulnerable portion of the Wharf that has sustained the most critical damage in the past. Expansion would include a new fiberglass pile and timber structure expansion area. The expansion area would widen the trestle by 16 feet to approximately 36, extending for approximately 458 feet of the Wharf. This would widen the trestle to match the first 85-foot long portion of the trestle at the foot of the Wharf. Up to 120, 15-inch fiberglass piles would be added as part of the expansion. High density polyethylene covers may be added around the fiberglass piles for ultraviolet (UV) and battering protection. The timber decking expansion area would be constructed with timber treated with ammoniacal copper zinc arsenate (ACZA), which protects the timber against attack by fungus, termites, and marine boring species. The expansion would result in an increase in Wharf area of approximately 7,400 square feet (sf). Presently, the Wharf comprises approximately 30,900 sf. As part of the expansion, two separate travel areas would be created, one for pedestrians and one for vehicles. This is anticipated to improve public access and safety.

As part of the Project, existing deteriorated Wharf elements would be repaired and/or replaced as needed. Maintenance and repairs would include:

- Approximately 21, 12-inch damaged creosote-treated piles would be repaired or replaced with 12-inch ACZA treated, polyuria-coated timber piles or fiberglass piles;
- The twelve steel piles at the Wharf head would be repaired by either splicing on new steel pipe to the existing piles above the bay bottom, or by placing fiberglass jackets around these piles and grouting the inside;
- The exposed existing ACZA-treated timber decking –approximately 26,500 sf – would be replaced and 4,500 sf of ACZA-treated timber decking would be placed on top of the decking to serve as vehicle runners;
- Up to 260 linear feet of pile caps and 680 linear feet of stringers would be replaced;
- The hoist landing area would be repaired by replacing damaged timber members and metal connection hardware in kind; and
- Wharf utilities (water, sewer and electric) would be relocated above deck.

The Project also proposes public use and access improvements including:

- A new security gate and modification of the decorative Wharf gate;
- Pedestrian improvements such as improved lighting and increased number and size of benches;
- The bathroom at the head of the Wharf would be replaced, and a new bathroom at the foot of the Wharf will be constructed.

Once Project construction is complete, the Wharf would continue to operate similar to existing conditions. No change in use or intensity of use is proposed or anticipated.

1.4 Construction Methods

Wharf widening, repairs and improvements would be completed concurrently for up to nine months. Construction work would occur Monday-Friday, 7:30 AM to 5 PM and Saturday from 9 AM- 4 PM. Construction would be prohibited between the hours of 9PM and 7:30AM on weekdays, and on weekends any time other than between 9AM and 4PM on Saturday (Capitola Municipal Code 2019). Work that depends on the low tide cycle may be permitted outside of these hours with approval from the City and a minimum of 5 days advance request for such. The Wharf would be closed to public access during construction due to the risk of construction hazards. The work would be performed during the off season (Sep- May) to restore public access by the following busy summer season.

The proposed Project would require the use of cranes, diesel impact pile driver, and vibratory hammer for pile driving, power chain saw, pneumatic tools, electric power and hand tools. Work would be performed from the Wharf deck to the maximum extent practical with small boat assistance as needed. A barge-mounted crane may be used if selected by the construction contractor. In-water repairs would be performed from a small boat and a diver as needed.

Staging would occur on the deck of the Wharf or on a floating barge. Construction equipment and materials would be transported via truck on the Wharf deck or by barge. The use of a barge is not anticipated but may be preferred by the selected contractor. Construction methods for the proposed widening, repairs and improvements are outlined below.

Wharf Widening

The widening would require the use of cranes, diesel impact pile driver, and vibratory hammer for pile driving, power chain saw, pneumatic tools, and electric power and hand tools. The piles would be fiberglass and installed primarily with a vibratory hammer; an impact hammer would be used only if needed for the last few feet of penetration. Work would be performed from the Wharf deck with a crane and pile driver, to the maximum extent practical with small boat assistance as needed. A barge-mounted crane with pile driving hammer may be used if selected by the construction contractor.

Repairs

Damaged piles will be repaired by installing a fiberglass jacket around the pile. Fiberglass jackets would be filled with marine-grade grout to fill the deteriorated section and seal off the pile from the bay water. The jacket would extend above high tide to allow grout placement without any grout coming into contact with the bay water. Pile jacket installation would be performed by a small boat and diver. Grout would be injected by a sealed hose pumping the grout from above or from the shore.

Piles that are missing or severely deteriorated would be restored by driving a new pile adjacent to, or in the place of the damaged pile. New piles would be fiberglass or ACZA-treated timber piles with an inert polyurea coating (Thunderbolt Industries). Timber piles would be driven with an impact hammer.

Improvements

The new restrooms at the Wharf head and foot would be modular and primarily fabricated offsite. They would be delivered to the site by truck and installed at the Wharf with hand tools and power tools. Public benches would also be constructed using hand tools and power tools.

The new security gate and most of the decorative gate would be constructed of metal and fabricated offsite. They would be delivered to the site by truck and installed at the Wharf with a small crane, power and hand tools.

Equipment List

The following pieces of equipment are anticipated for the proposed Project and could be used at any time during the nine-month duration of the project.

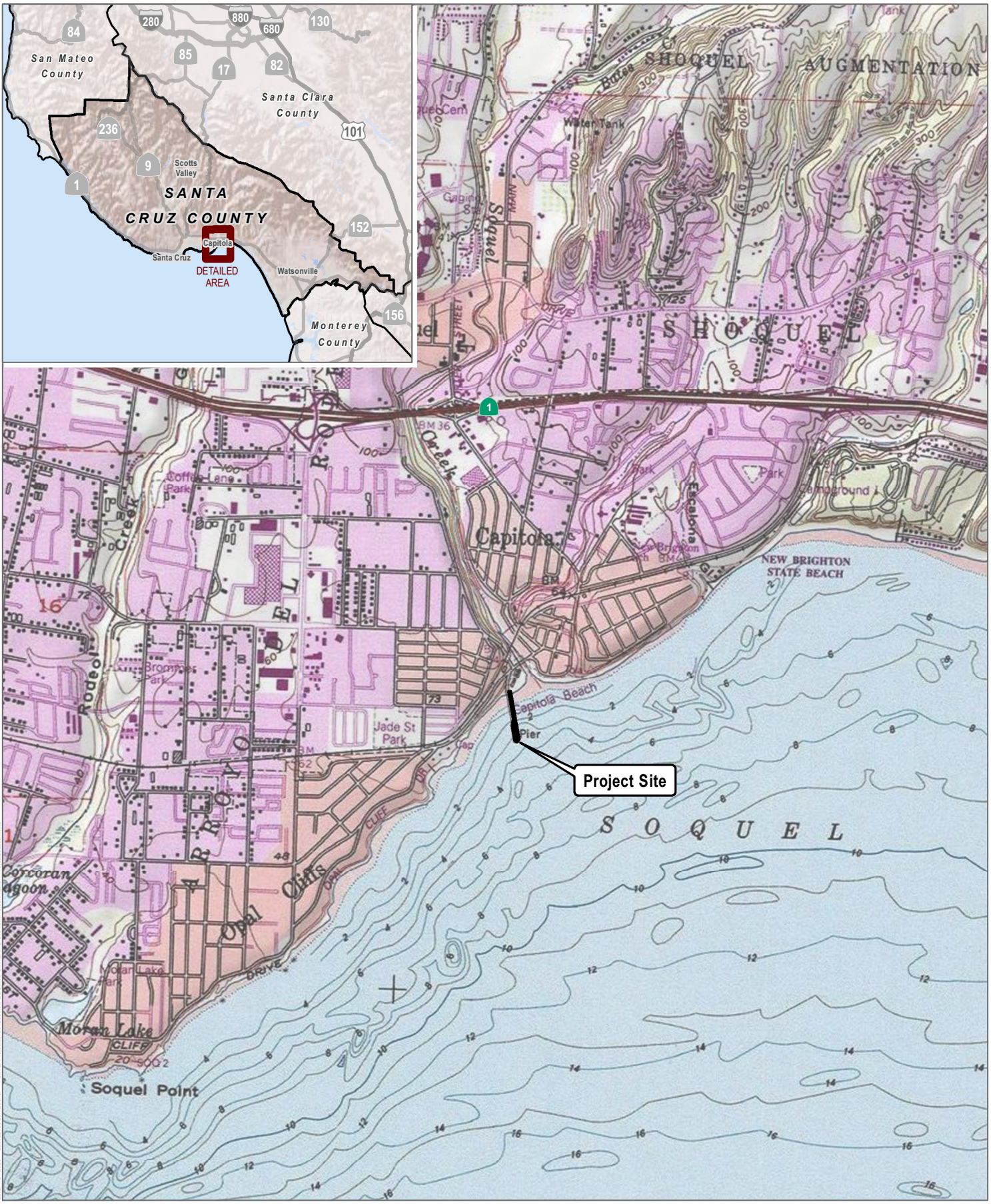
- Impact pile driver
- Vibratory pile driver/extractor
- Pneumatic tools
- Power (electric and gas) saw
- Hand tools
- Cranes
- Small boat
- A barge mounted crane may be used if selected by the construction contractor
- Dive equipment as needed.
- Potential use of a floating barge for staging (use of a barge is not anticipated but may be preferred by the selected contractor)
- Trucks for transportation of construction equipment and materials

1.5 Description of Action Area

This BTR describes existing biological resources and potential for effects within an action area that comprises the Capitola Wharf plus a 1,000 m (3,280 ft) buffer area in the marine environment, with a 601.7-foot buffer area onshore (Figure 2). The marine action area accounts for vibratory pile driving, which has a larger radius of potential effect than does impact pile driving. Washington (WSDOT) and California (Caltrans) Departments of Transportation have compiled waterborne acoustic monitoring data for various pile driving projects, which provide support for this action area buffer zone (ICF Jones & Stokes and Illingworth and Rodkin 2009, updated in 2012). The in-water buffer distance was calculated as the distance at which project noise would dissipate to the ambient noise level. The analysis assumed that the best analog for ambient in-water noise would be the Monterey Bay nearshore measurement provided in Table 4-3, of the Caltrans technical guidance: 113dB (Caltrans 2015a). Due to the uncertainty in noise dissipation beyond 1,000 m, Caltrans guidance recommends using a 1,000 m buffer when calculated noise dissipation distances exceed that value. Both impact-driven timber piles and vibratory driven

fiberglass piles give results that exceed 1,000 m; therefore, we use the Caltrans manual recommendations to limit the action area to 1,000 m (Caltrans 2015a). The onshore in-air action area buffer was calculated using an outdoor ambient sound level of comparative streets in Santa Cruz measured at 67 dBA Ldn1 (Goldberg 2007)). An input noise level from a vibratory pile driver (101 dBA Lmax at 50 feet) was used in the equation from 7.1.4.2 in the WSDOT Biological Assessment Prep Manual (WSDOT 2019). As stated in Section 1.4, work will occur predominantly from the Wharf itself, but a barge may also be required for certain construction activities. Representative photos of Capitola Wharf and pile framing configuration are included in Figure 3.

[1] Federal Transit Administration's (FTA) estimation of day-night sound level (Ldn) mid-day



SOURCE: Source: USGS 7.5 MINUTE SERIES, SOQUEL QUADRANGLE

DUDEK

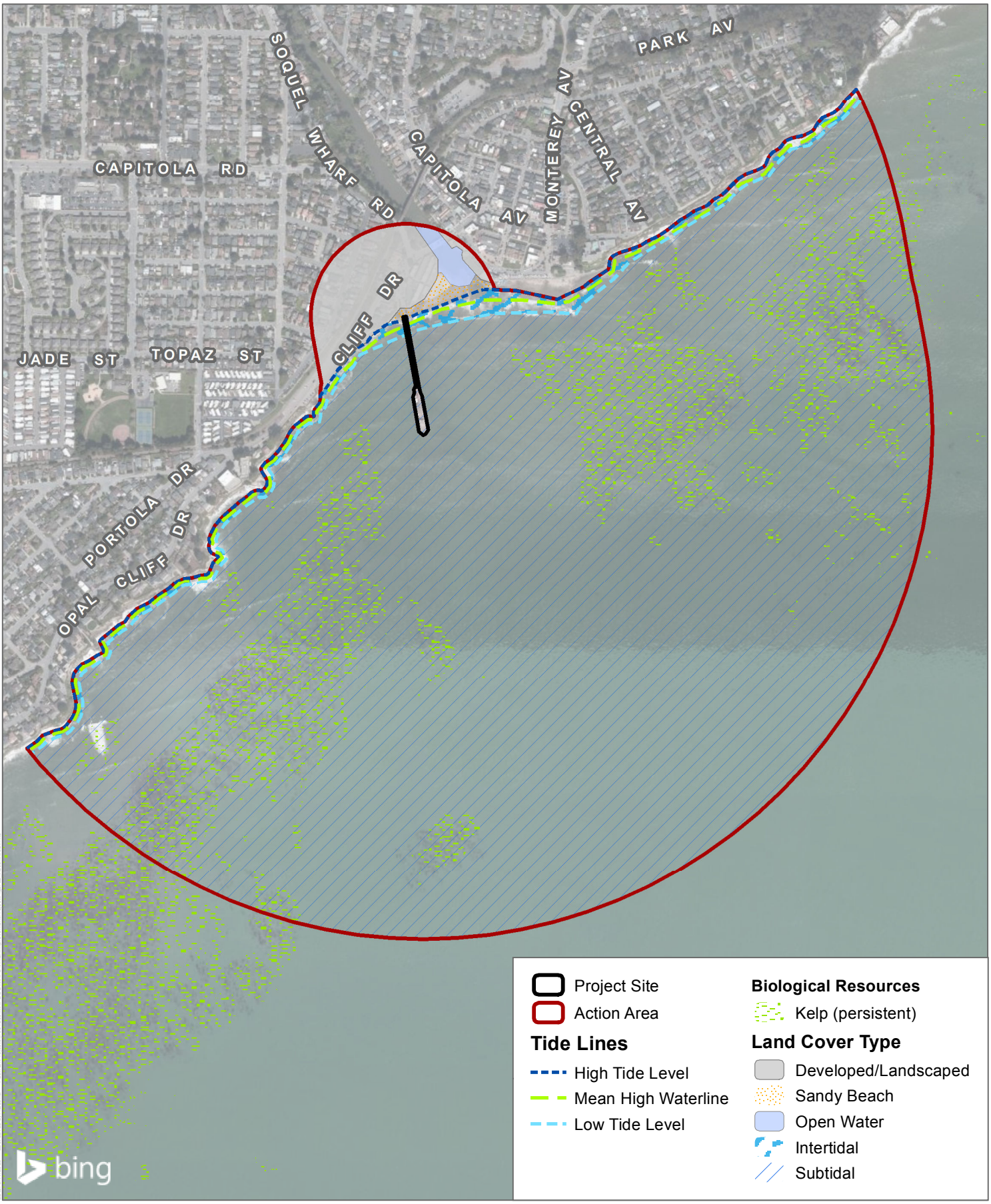
0 1,000 2,000 Feet

FIGURE 1

Project Location

Biological Technical Report for Capitola Wharf Resiliency and Public Access Improvement

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SOURCE: Source: Bing Maps, NOAA, CDFW Marine Region

DUDEK

0 200 400 Feet

FIGURE 2

Action Area

Biological Technical Report for Capitola Wharf Resiliency and Public Access Improvement

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Photo 1. View of Capitola Wharf Looking East.



Photo 2. Typical Wharf Structural Framing.

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2 Methodology

This BTR evaluates potential impacts and disturbance associated with the proposed construction activities on biological resources within the action area, including shorebirds and coastal birds, fish, fish habitat, sea turtles, marine mammals, and other marine resources within the action area. The location, duration, timing, and intensity of construction activity effects were considered when determining the significance of effects on biological resources. In addition, existing disturbance levels in the action area were considered.

2.1 Literature Review

Existing biological resource conditions within and adjacent to the action area were initially investigated through review of pertinent scientific literature. Federal register listings, protocols, and species data provided by the United States Fish and Wildlife Service (USFWS) were reviewed in conjunction with anticipated federally listed species potentially occurring within the action area. The California Natural Diversity Database (CNDDB) was also reviewed for all pertinent information regarding the locations of known occurrences of sensitive species in the action area. The literature review also included a query of the USFWS Information, Planning, and Conservation (IPaC) System, National Oceanic and Atmospheric Administration (NOAA) California Species List Tools, USFWS Environmental Conservation Online System, NOAA Fisheries Species of Concern, CDFW commercial landings, and the NOAA Environmental Sensitivity Index (ESI). In addition, numerous regional planning documents and biological resource reports for projects within or near to the action area were reviewed and include:

- Monterey Bay National Marine Sanctuary, Sanctuary Integrated Monitoring Network (SIMoN 2020).
- Recovery Plan for the Evolutionarily Significant Unit of Central California Coast Coho Salmon. National Marine Fisheries Service, Santa Rosa, California. September, 2012.
- Recovery Plan for the Tidewater Goby (*Eucyclogobius newberryi)*. Pacific Region USFWS, Portland, Oregon. December, 2005.
- U.S. Fish and Wildlife Service. 2003. Final Revised Recovery Plan for the Southern Sea Otter (*Enhydra lutris nereis*). Portland, Oregon. xi + 165 pp.
- 5-Year Review: Summary & Evaluation of Central California Coast Steelhead. National Marine Fisheries Service, West Coast Region. April, 2016.
- National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1998. Recovery Plan for U.S. Pacific Populations of the Green Turtle (*Chelonia mydas*). National Marine Fisheries Service, Silver Spring, MD.
- California Department of Fish and Wildlife. 2012. Recovery Strategy for the California Coho Salmon Progress Report. 2004-2012. Prepared for the California Fish and Game Commission by the California Department of Fish and Wildlife.
- 2004 Soquel Creek Lagoon Management and Enhancement Program – Update. Prepared for City of Capitola California. Prepared by D. W. Alley & Associates. Project #192-01. June, 2004.
- Soquel Lagoon Monitoring Report 2017. Prepared for City of Capitola California. Prepared by D. W. Alley & Associates. Project #106-24. February 2018.

Combined, the sources reviewed provided an excellent baseline from which to inventory the biological resources occurring or potentially occurring in the action area.

3 Regulatory Context

3.1 Federal Regulations

Federal Endangered Species Act (FESA). The federal Endangered Species Act (FESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, is administered by the USFWS and the National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries). This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. The FESA defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."

FESA prohibits federal agencies from authorizing, permitting or funding any action that would result in biological jeopardy to or take of a species listed as threatened or endangered. NOAA Fisheries jurisdiction under the FESA is limited to the protection of marine mammals and anadromous fish; all other species are within USFWS jurisdiction. Under the provisions of Section 9(a)(1)(B) of the FESA (16 U.S.C. 1531 et seq.), it is unlawful to "take" any listed species. Take is defined as, "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Exemptions to the prohibitions against take may be obtained through coordination with the USFWS through interagency consultation for projects with federal involvement (i.e., funded, authorized, or carried out by a Federal agency) pursuant to Section 7 of the FESA or through the issuance of an incidental take permit under Section 10(a)(1)(B) of the FESA if the applicant submits a habitat conservation plan (HCP) that meets statutory requirements including components to minimize and mitigate impacts associated with the take. In a case where a property owner seeks permission from a federal agency for an action that could affect a federally listed plant or wildlife species, the property owner and agency are required to consult with USFWS. Take prohibitions in Section 9 of the ESA (16 U.S.C. 1531 et seq.) do not expressly encompass all plants.

Federal Regulation of Wetlands and Waters of the U.S. The U.S. Army Corps of Engineers (USACE) has regulatory authority for activities within wetlands under the Clean Water Act (CWA, 1977, as amended), which serves as the primary federal law protecting the quality of the nation's surface waters. Section 404 of the CWA establishes a program to regulate discharge of dredged or fill material into "waters of the United States," which is administered by the USACE. The term "waters" includes wetlands and non-wetland bodies of water that meet specific criteria as defined in the Code of Federal Regulations. In general, a permit must be obtained under Section 404 of the CWA before fill can be placed in wetlands or other waters of the U.S. The type of permit depends on the amount of acreage and the purpose of the proposed fill, subject to discretion of the USACE. Under Section 404, general permits may be issued on a nationwide, regional, or state basis for particular types of activities that will have only minimal adverse impacts. Individual permits are required for projects with potentially significant impacts.

Under Section 401 of the CWA, the California Regional Water Quality Control Boards (RWQCB) have regulatory authority over actions in waters of the U.S. through issuance of water quality certifications, which are issued in combination with permits issued by the USACE under Section 404 of the CWA. A 401 Certification is required from the RWQCB whenever improvements are made within Jurisdictional Waters of the U.S.

Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act [MSA]). The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. Sections 1801–1884) of 1976, as amended in 1996

and reauthorized in 2007, is intended to protect fisheries resources and fishing activities within 200 miles of shore. The amended law, also known as the Sustainable Fisheries Act (Public Law 104-297), requires all federal agencies to consult with the Secretary of Commerce on proposed projects authorized, funded, or undertaken by that agency that may adversely affect EFH. The main purpose of the EFH provisions is to avoid loss of fisheries due to disturbance and degradation of the fisheries habitat. Monterey Bay is designated as EFH by the Pacific Fisheries Management Council to protect and enhance habitat for coastal marine fish, and macroinvertebrate species that support commercial fisheries. EFH is regulated under the Magnuson-Stevens Fishery Conservation Management Act, protecting waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (Magnuson-Stevens Act, 16 U.S.C. 1801 et seq.), which also includes eelgrass (*Zostera marina*) beds. Substrates that are considered include sediment, hard bottom, structures underlying waters, and associated biological communities.

Marine Mammal Protection Act. The Marine Mammal Protection Act of 1972 (MMPA), as amended, establishes a federal responsibility for the protection and conservation of marine mammal species by prohibiting the "take" of any marine mammal. The MMPA defines "take" as the act of hunting, killing, capture, and/or harassment of any marine mammal, or the attempt at such. The MMPA also imposes a moratorium on the import, export, or sale of any marine mammals, parts, or products within the U.S. The USFWS and NOAA Fisheries are jointly responsible for implementation of the MMPA; USFWS is responsible for the protection of sea otters, and NOAA Fisheries is responsible for protecting pinnipeds (seals and sea lions) and cetaceans (whales and dolphins).

Under Section 101(a)(5)(D) of the MMPA, an incidental harassment authorization may be issued for activities other than commercial fishing that may impact small numbers of marine mammals. An incidental harassment authorization covers activities that extend for periods of not more than 1 year, and that will have a negligible impact on the impacted species. Amendments to the MMPA in 1994 statutorily defined two levels of harassment. Level A harassment is defined as any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal in the wild. Level B harassment is defined as harassment having potential to disturb marine mammals by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) was originally passed in 1918 as four bilateral treaties, or conventions, for the protection of a shared migratory bird resource (16 U.S.C. 703–712). The primary motivation for the international negotiations was to stop the "indiscriminate slaughter" of migratory birds by market hunters and others. Each of the treaties protects selected species of birds and provides for closed and open seasons for hunting game birds. The MBTA protects over 800 species of birds, which are listed in the Code of Federal Regulations (50 CFR 10.13). The MBTA prohibits the "take" of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, take is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so. Two species of eagles that are native to the United States, the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*), were granted additional protection within the United States under the Bald and Golden Eagle Protection Act (BGEPA; 16 U.S.C. 668–668d) to prevent the species from becoming extinct.

Monterey Bay National Marine Sanctuary. Monterey Bay is part of the Monterey Bay National Marine Sanctuary (MBNMS), which was established and designated in 1992 for the purpose of resource protection, research, education and public use. The MBNMS is the largest of thirteen marine sanctuaries administered by the United States Department of Commerce National Oceanic and Atmospheric Administration (NOAA) and it extends from Marin County to Cambria, encompassing nearly 300 miles of shoreline and 5,322 square miles of ocean, extending an average distance of twenty-five miles from shore. At its deepest point the MBNMS reaches down 10,663 feet

(more than two miles) (National Marine Sanctuary Program, 2008). The action area is entirely within the Monterey Bay National Marine Sanctuary.

3.2 California Regulations

California Endangered Species Act (CESA). The California Endangered Species Act (CESA) (California Fish and Game Code, Section 2050 et seq.) prohibits the taking of species listed as threatened or endangered under the act, or candidates for listing, except as authorized by California law. Section 2081 of CESA states that take of an endangered, threatened, or candidate species may be authorized by the CDFW if the impacts of the take are incidental to an otherwise lawful activity, are "minimized and fully mitigated," and do not "jeopardize the continued existence of [the] species." Any mitigation measures imposed under CESA must be measures "roughly proportional in extent to the impact of the authorized taking on the species." The only fish species listed under CESA that was evaluated to have moderate or high potential to occur in the action area is Coho salmon (*Oncorhynchus kisutch*) – Central California coast ESU (Endangered).

California Coastal Act. In 1972, voters concerned about coastal development, including impacts to public access and coastal resources, passed the California Coastal Zone Conservative Initiative ("Proposition 20"), in turn creating the California Coastal Commission (CCC). This initiative declared the California coastal zone as a distinct and valuable natural resource belonging to all people and existing as a delicately balanced ecosystem, requiring conservation and protection of remaining natural and scenic resource for the coastal zone. As a result, it was determined that, to promote public safety, health, and welfare, and to protect public and private property, wildlife, marine fisheries, other ocean resources, and the natural environment, it was necessary to preserve the ecological balance of the coastal zone and prevent its further deterioration and destruction. The initiative also determined that it is the policy of the state to preserve, protect, and where possible restore the resources of the coastal zone for the enjoyment of the current and succeeding generations. In 1976, the California State Legislature enacted the California Coastal Act, which is the primary law governing the decisions of the CCC. The California Coastal Act of 1976 guides new development in an effort to improve public access to coastal areas. The Coastal Zone encompasses 1.5 million acres of land, stretching from 3 miles at sea to an inland boundary that varies from several blocks in urban areas to as many as 5 mile in less developed areas. The Coastal Zone extends into federal waters under the Federal Coastal Zone Management Act, covering approximately 1,100 miles of California coastline from Oregon to Mexico, including 287 miles of shoreline surrounding nine offshore islands.

The California Coastal Act is designed to encourage local governments to create Local Coastal Programs (LCPs) to govern decisions that determine short-term and long-term conservation and use of coastal resources. LCPs are required to be consistent with the policies of the California Coastal Act in protecting public access and coastal resources within the Coastal Zone. Until the CCC certifies an LCP, the CCC makes the final decisions on all development within a jurisdiction (city or county) within the Coastal Zone. Upon certification of an LCP for a jurisdiction, decisions are handled locally, but can be appealed to the CCC. The city of Capitola adopted a LCP in 1981, which has been revised in 2001 and 2005 (City of Capitola 1981).

ESHA. Environmentally sensitive habitat areas (ESHA) are afforded protection under the California Coastal Act in the coastal zone. Section 30107.5 of the Coastal Act defines an "Environmentally sensitive area" as: Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. The City of Capitola has an environmentally sensitive habitat (ESH) ordinance, which is intended to protect riparian habitat and monarch habitat from impacts due to development.

California Department of Fish and Wildlife. The potential take of state listed Threatened, Endangered or Rare plant and animal species is regulated by the CDFW and includes Species of Special Concern, Fully Protected Species and Other State Code Provisions. The "Species of Special Concern" list includes species whose breeding populations in California may face extirpation (CDFW 2019a). Although these species have no legal status under the CESA, the CDFW recommends considering these species during analysis of proposed Project impacts to protect declining populations, and to avoid the need to list them as threatened or endangered in the future. These species may "be considered rare or endangered [under CEQA] if the species can be shown to meet the criteria."

Additionally, the California Fish and Game Code (CFGC) contains lists of vertebrate species designated as "Fully Protected" (California Fish & Game Code 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]. According to Sections 3511 and 4700 of the CFGC, which regulate birds and mammals, respectively, a "Fully Protected" species may not be taken or possessed without a permit from the Fish and Game Commission. Incidental take is not authorized under CFGC Section 2081 for species designated as Fully Protected, except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Pursuant to Section 3503.5 of the CFGC, it is unlawful to take, possess, or destroy any birds of prey; or to take, possess, or destroy any nest or eggs of such birds. Active nests of all other birds (except introduced species such as rock pigeons, Eurasian collared-doves, house sparrows, and European starlings) are similarly protected under CFGC Sections 3503 and 3513. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. This statute does not provide for the issuance of an incidental take permit.

3.3 Existing Permits and Biological Opinions Related to the Action

There are no existing permits or Biological Opinions (BO) for the Action Area; however, a Biological Opinion was issued for the management of the Soquel Lagoon Berm, just downcoast from the Action Area.

Biological Opinion/Incidental Take Statement (2013-9534) for Steelhead and Coho Salmon. Issued by NOAA Fisheries by letter dated May 3, 2013. Work authorized included annual placement of a sand berm and associated seasonal dewatering of the lower-most 700 feet of Soquel Creek, capture and relocation of any fish species away from the construction area each construction day, use of a flume to redirect stream flows, removal of kelp and seagrass from the lagoon and flume, backfilling residual channel along the seawall east of the berm, grading for a temporary outlet channel parallel to the flume, and regrading of the sand berm in the fall to facilitate natural breaching in the winter. The Biological Opinion also describes maintenance of the flume including filling of voids compacting of sand adjacent to the flume, washing of sand from the flume, and evaluation of structural integrity. The BO describes lagoon management including periodically manipulating the flume inlet to accelerate the transition of the lagoon from brackish to freshwater, provide outmigration passage conditions for smolts and adult steelhead, and prevent flooding in the City. The area of direct impact analyzed in the BO includes approximately 1,000 linear feet along the beach, moving from the northern portion of the beach down south to the breakwater. Indirect effects were analyzed in the upper lagoon area where water would impound earlier than under natural conditions.

Biological Opinion for Soquel Lagoon Berm Management Project, Santa Cruz, California (8-8-13-F-17). Issued by USFWS by letter dated May 2, 2013. This BO provides incidental take coverage for the federally endangered tidewater goby. Activities covered under this BO are the same as those described above for the NOAA Fisheries BO.

4 Environmental Setting and Existing Conditions

4.1 General Environmental Setting

The Capitola Wharf is located in the central part of Santa Cruz County, on the central California coast between the cities of Santa Cruz and Watsonville. The Wharf is just west of the mouth of Soquel Creek which empties into the MBNMS after flowing nearly 30 miles from its headwaters at the crest of the Santa Cruz Mountains at the Santa Clara County border.

Jurisdictional wetlands and other waters of the U.S./State are present within the action area, including the tidal wetlands and the aquatic habitats that surround the Wharf. EFH is also present within the action area.

Land cover types are quantified in Table 1 and shown on Figure 2.

Table 1. Land Cover Types in the Action Area

Land Cover Type	Total Cover (acres)
Sandy Beach	1.4
Intertidal Sandy Beach	11.6
Subtidal Coastal Wetland	427.6
Developed/Landscaped	12.0
Total	**452.6**

Sandy Beach (Upland). Sandy beach habitat includes any unvegetated coastal area comprised exclusively of sand. Upland sandy beach area represents the minority of the action area, comprising approximately 1.4 acres.

Intertidal Sandy Beach (Wetland). The intertidal zone is located between the highest and lowest tide elevations, comprising approximately 11.6 acres of the action area. Intertidal zones along the central California coast include rocky shores, sandy beaches, coastal marshes, and tidal flats located within estuaries and lagoons. Within the action area, the intertidal is entirely sandy beach. Intertidal sandy beach communities are subject to daily tidal changes that result in highly fluctuating physical regimes in temperature, salinity, and moisture content of the sand. The intertidal can also be subject to high energy wave action.

Subtidal Coastal Wetland. Subtidal coastal wetlands are located immediately seaward of intertidal sandy beach habitat and are constantly submerged (Duxbury and Duxbury 1991). Subtidal areas, as well as the intertidal and splash zone areas, occupy the benthic photic zone because sufficient light is present in these zones to support both floating single celled plants as well as benthic plants. Subtidal coastal wetland habitat comprises approximately 427.6 acres, the majority of the action area.

Developed/Landscaped. Developed and landscaped areas within the action area include roads, buildings, and ornamental landscaping. These areas provide little or no habitat value. The developed/landscaped land cover comprises approximately 12 acres within the action area.

4.2 Critical Habitat

The USFWS and NOAA Fisheries are required under Section 4 of the FESA to designate critical habitat for federally listed species. Within the action area, critical habitat has been designated for the following federally listed species (Appendix A, B):

- Leatherback sea turtle (*Dermochelys coriacea*) (Federally endangered)
- Green sturgeon (*Acipenser medirostris*) southern Distinct Population Segment (DPS) (Federally threatened)

Designated critical habitat for the Central California Coast DPS of steelhead is located approximately 0.10 miles northeast of the action area in Soquel Creek. Designated critical habitat for tidewater goby is also located approximately 1.8 miles southwest in Corcoran Lagoon and approximately 2.6 miles east in Aptos Creek.

4.3 Essential Fish Habitat

The MSA defines EFH as "those areas and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity."

Waters in Monterey Bay, including nearby Soquel Creek, are considered EFH for a variety of fish species covered under the Pacific Groundfish Fishery Management Plan, Coastal Pelagics FMP and Pacific Salmon FMP.

4.4 Monterey Bay National Marine Sanctuary

Monterey Bay is part of the MBNMS, which was established and designated in 1992 for the purpose of resource protection, research, education and public use and is the largest of the thirteen marine sanctuaries administered by NOAA. MBNMS updated its 2009 Condition Report, which provides an assessment of ecosystem health, status and trends within four representative areas of the sanctuary for: estuarine (Elkhorn Slough), nearshore (<30 meters in depth), offshore (>30 meters) and the Davidson Seamount (70 miles offshore, southwest of Monterey) (2015). Overall, the nearshore biogenic habitat (which extends from the shoreline boundary out to approximately 30 meters depth), including kelp, algae, and invertebrates are abundant and stable. There has been no introduction of new invasive species; key species are stable or slightly increasing; and water quality risks to human health decreased due to improved sewer infrastructure and non-point source controls. However, the 2015 Condition Report downgraded the eutrophic conditions of sanctuary waters to "fair" due to the increasing nutrient enrichment and proliferation of harmful algal blooms (HABs). Concerns in the nearshore environment include ambient toxicity due to pesticides and pharmaceuticals; sea star declines; and effects of the following activities: sand mining, coastal armoring, inputs of contaminants, and marine debris. In the offshore environment the main concerns are impacts that have been detected due to the Oxygen Minimum Zone caused by acidification, warming and shoaling; pollutants, marine debris, and toxins from HABs found in some key species; impacts to sensitive species from human-caused noise and vessel traffic; long-term impacts of warmer water conditions; and trawling impacts on the benthic habitat (National Marine Sanctuary Program, 2015).

Bottom substrates in the action area are predominantly soft, sandy sediments. Species diversity in the intertidal zone is generally low because organisms are subject to daily tidal fluctuations causing varying wet and dry conditions and fluctuations in temperature and salinity (URS Corporation, May 2013). Common species include polychaete worms (e.g., *Apoprionospio* sp., *Mediomastus* sp.), anemones, and oligochaete and nematode worms

(Ibid.). Kelp forests of Monterey Bay are composed of the giant kelp (*Macrocystis pyrifera*), bullwhip kelp (*Nereocystis luetkeana*), and other red and brown algae (Ibid.). Farther offshore, soft-bottom subtidal areas are characterized by benthic (bottom dwelling) organisms typical of the open-coast soft-bottomed community off much of the California coast (Ibid.).

The open water, or pelagic zone, encompasses the entire water column extending from the surface nearly to the bottom substrate. Many species are associated with open-water habitats over both rocky and sandy substrates, including plankton, invertebrates, and fish. Plankton are generally microscopic plants and animals, free-floating in the open water, and represent the lower levels of the food chain and are important to many marine species, including benthic organisms, fish, and mammals. A variety of pelagic marine invertebrates occur within the MBNMS action area, including squid (*Loligo opalescens*), jellyfish, and shrimp. Fish commonly found in open water in the nearshore areas of MBNMS include anchovies (*Engraulis mordax*) and sardines (*Sardinops sagax*) (URS Corporation, May 2013).

5 Biological Resources

5.1 General Plant and Wildlife Species

Capitola Beach and Monterey Bay provide diverse habitat for a variety of wildlife including special status species. The MBNMS is home to numerous mammals, seabirds, fishes, invertebrates, and algae in a remarkably productive coastal environment. Its natural resources include the nation's largest contiguous kelp forests, one of North America's largest underwater canyons and the closest-to-shore, deep ocean environment off the continental United States. It is home to some of the most diverse and productive marine ecosystems in the world, including a vast diversity of marine life, with 33 species of marine mammals, 94 species of seabirds, 345 species of fish, four species of sea turtles, 31 phyla of invertebrates, and more than 450 species of marine algae. During early spring to late summer, upwelling causes nutrient-rich water to rise to the surface. These nutrients in turn are consumed by planktonic organisms which support the entire food chain, giving rise to the incredible diversity in Monterey Bay (SIMoN 2020). The marine habitats in the action area of the Capitola Wharf consist of various intertidal, and open-water habitats.

5.1.1 Vegetation

Vegetation communities are assemblages of plant species defined by species composition and relative abundance, which occur together in the same area. Beach dune vegetation is not present in the action area, as the beach is consistently managed from year to year, and used frequently by residents and tourists throughout the summer. Because the action area encompasses open water and managed beach, neither of which sustain assemblages of plant species, no vegetation communities are expected to be impacted by the Project activities.

5.1.2 Invertebrates

Various invertebrate animals live in the sand and in wracks of decaying sea weed and other detritus and include crustaceans, isopods, and mole crabs (Oakden and Nybakken 1977), as well as other common species such as anemones, and oligochaete and nematode worms (URS Corporation, May 2013). Polychaete worms (e.g., *Apoprionospio* sp., *Mediomastus* sp.), and bivalves (i.e. clams, mussels, and scallops) are also regularly present, though typically in low abundances.

5.1.3 Fish

A variety of fish, including multiple species of surfperch, flatfish, rays, and sharks, inhabit or utilize the surf zone. The intertidal zone within and adjacent to the action area is characterized by sandy beach. Four special status species have potential to occur within the action area, including steelhead Central California Coast DPS (federally listed as Threatened), green sturgeon southern DPS (federally listed as Threatened), Chinook Salmon (four ESUs), and Central California Coast Coho salmon (federally listed as Endangered), all of which are detailed in Section 5.2.

5.1.4 Reptiles

Several species of sea turtles have ranges that include the Monterey Bay, these are leatherback, green, olive ridley and loggerhead sea turtles. The leatherback sea turtle (*Dermochelys coriacea*) is a federally-listed endangered species. The leatherback is the largest turtle in the world and they are the only species of sea turtle that lack scales and a hard shell. Leatherbacks are highly migratory, some swimming over 10,000 miles a year between nesting in tropical latitudes and foraging grounds along the Pacific Coast of North America (NOAA Fisheries 2018a). The loggerhead sea turtle (*Caretta caretta*) is a federally-listed endangered species. The North Pacific Ocean DPS occurs in tropical to temperate waters in the Pacific Ocean. Loggerhead sea turtles migrate from nesting grounds in Japan and Australia to feeding grounds located along the west coast from central to North America. The closest known loggerhead nesting beaches in the North Pacific Ocean are located in Japan (NOAA Fisheries and USFWS 2007). The green sea turtle (*Chelonia mydas*) is a federally-listed threatened species. The Eastern Pacific DPS ranges from Baja California to southern Alaska. This species forages in the open ocean when migrating as well as shallow waters of lagoons, bays, estuaries, mangroves, eelgrass, and seaweed beds. They are herbivorous and feed primarily on seagrasses and algae. It is a regular visitor in the waters off the southwest coast of the United States. Residents occur in the San Gabriel River, Long Beach. The closest known nesting occurrences are in Mexico (NOAA Fisheries and USFWS 1998b). The olive ridley sea turtle (*Lepidochelys olivacea*) is a federally-listed threatened species. Olive ridley sea turtles occur worldwide in tropical and warm temperate ocean waters. In the eastern Pacific, this species distribution ranges from Southern California to Northern Chile. Olive ridley sea turtles are mostly pelagic but will also inhabit coastal areas. As a highly migratory species, they are encountered in U.S. waters as they travel between nesting and foraging habitats (NOAA Fisheries 2018b).

5.1.5 Coastal and Migratory Birds

The greater Monterey Bay is an important stop-over point for migratory birds and 94 species of native and non-native seabirds are known to occur regularly in Monterey Bay. Along the continental shelf, the dominant species are sooty shearwaters (*Ardenna grisea*), western grebes, Pacific loon (*Gavia pacifica*), brown pelican, and western gulls. During summer to fall, species such as black-footed albatross *(Phoebastria nigripes*), ashy storm-petrel (*Oceanodroma homochroa*), and Scripps's murrelet (*Synthliboramphus scrippsi*) can be found foraging over deeper waters of Monterey Bay (URS Corporation May 2013). An important habitat associated with Monterey Bay is the waterbird foraging area off the shore below Depot Hill between the jetty and the mouth of Tannery Gulch which is frequented by numerous bird species. The shoreline between the rock groin of Capitola Beach and the mouth of Tannery Gulch is frequented by numerous shorebirds during low tide such as sanderling (*Calidris alba*), willet (*Tringa semipalmata*), and black turnstone (*Arenaria melanocephala*). Many other waterbirds, including cormorants, gulls and the delisted California Brown Pelican, commonly forage immediately offshore in the waters adjacent to the kelp beds.

5.1.6 Marine Mammals

Marine mammals, including California sea lions and Pacific harbor seals haul out on isolated beaches and sand spits throughout Monterey Bay. The southern sea otter (*Enhydra lutris nereis*), also known as the California sea otter, predominantly inhabits nearshore environments and have been observed near the action area, and potentially within the action area. Southern sea otters forage for crustaceans and bivalves in the surf zone during high tide. Pacific harbor seals (*Phoca vitulina richardii*) and California sea lions (*Zalophus californianis*) are also routinely observed outside the action area in the surf zone, although usually as single individuals. No haul outs for either species are known to occur within the action area, and they are not documented as hauling out on the Wharf structure.

Several additional marine mammal species are known to occur within or have the potential to occur in Monterey Bay, and include the Steller sea lion (*Eumetopius jubatus*), northern fur seal (*Callorhinus ursinus*), northern elephant seal (*Mirounga angustirostris*), gray whale (*Eschrichtius robustus*), blue whale (*Balaentoptera musculus musculus*), humpback whale (*Megaptera noveangliae*), killer whale (*Orcinus orca*), harbor porpoise (*Phocoena phocoena*), and common bottlenose dolphin (*Tursiops truncatus*) (SIMoN 2018). The northern fur seal migrates in offshore waters but is rarely seen in nearshore areas.

A CDFW study found only five species of marine mammals in nearshore (<1 km [0.6 mile]) waters of Monterey Bay, which would include part of the action area. These were, in order of abundance: California sea lion, harbor porpoise, sea otter, harbor seal, and bottlenose dolphin; gray whales also were observed (Henkel and Harvey 2008). Seasonal abundance of harbor porpoise in the nearshore waters was greatest during winter, pinnipeds were most abundant during autumn, and sea otters were most abundant during spring and autumn (SIMoN 2018).

5.2 Special-Status Species

Biological resources within and adjacent to the action area were investigated through review of pertinent scientific literature and databases. Evaluation of species records and occurrences in the U.S. Geologic Survey (USGS) Soquel quadrangle that encompasses the action area and included surrounding six quadrangles, including Felton, Laurel, Loma Prieta, Santa Cruz, Watsonville West, and Moss Landing to determine target species (CDFW 2019b; USFWS 2020). In addition, Dudek's knowledge of biological resources and regional distribution of each species, as well as the unique habitat characteristics of the action area was evaluated to determine the potential for various special-status species to occur. A full list of special status species with potential to occur within the action area is presented in Table 2. All species determined to have a high or moderate potential to occur within the action area are discussed further below.

Table 2. Special-Status Marine Species Observed or Potentially Occurring in the Action Area

Scientific Name	Common Name	Status Federal/ State	Primary Habitat Associations	Potential to Occur
Marine Mammals				
Arctocephalus townsendii	Guadalupe fur seal	FT/None	Rocky coasts and associated caves. Ranges from Point Reyes National Seashore, California to Puerto Guerrero near the Mexico/Guatemala border. Commonly found from the Channel islands, California to Cedros Island, Baja California, Mexico	Low: Foraging habitat is present in the action area. The nearest observation was at Fort Ord in Monterey Bay, 24 miles from the Wharf.
Balaenoptera borealis	Sei whale	FE/None	Pacific Ocean pelagic marine waters	Low: Foraging and migration habitat is present in the action area; however, this species rarely travels as near to shore as the action area. Has been observed in the offshore submarine canyon.

Table 2. Special-Status Marine Species Observed or Potentially Occurring in the Action Area

Scientific Name	Common Name	Status Federal/ State	Primary Habitat Associations	Potential to Occur
Balaenoptera musculus	Blue whale	FE/None	Pacific Ocean pelagic marine waters	Low: Foraging and migration habitat is present in the action area; however, this species rarely travels as near to shore as the action area. Hotspot is located along the edge of Soquel Canyon.
Balaenoptera physalus	Fin whale	FE/None	Pacific Ocean pelagic marine waters	Low: Foraging and migration habitat is present in the action area; however, this species rarely travels as near to shore as the action area. Has been observed in the offshore submarine canyon.
Enhydra lutris nereis	Southern sea otter	FT/None	Pacific Ocean nearshore marine waters	High: Known to occur in the action area. Usually observed less than 1 km (0.6 mile) from shore.
Eubalaena glacialis	North Pacific right whale	FE/None	Pacific Ocean pelagic marine waters	Low: Foraging and migration habitat is present in the action area; however the last sighting since 1996 was in La Jolla >400 miles from the Wharf and this species rarely travels as near to shore as the action area.
Megaptera novaeangliae	Humpback whale	FE/None	Pacific Ocean pelagic marine waters	Low: Potential foraging and migration habitat is present in the action area when conditions allow for prey switching to fish in nearshore areas; however, this species has not been documented within the action area. Has been observed within the Bay, particularly near the edge of Soquel Canyon.
Orcinus orca Southern resident DPS	Killer Whale	FE/None	Pacific Ocean pelagic marine waters	Low: Foraging and migration habitat is present in the action area. However, this species rarely travels as near to shore and is usually sighted in offshore waters close to the submarine canyon, which is more than 8 miles from the action area.
Physeter macrocephalus	Sperm whale	FE/None	Pacific Ocean pelagic marine waters	Low: Foraging and migration habitat is present in the action area vicinity. Generally 18 miles from shore; has been sighted closer to shore due to proximity of submarine canyon.

Table 2. Special-Status Marine Species Observed or Potentially Occurring in the Action Area

Scientific Name	Common Name	Status Federal/ State	Primary Habitat Associations	Potential to Occur
Fish				
Acipenser medirostris	Green Sturgeon	FT/SSC	This population spawns in the Sacramento River system. After leaving natal waters, juveniles and adults inhabit estuaries and nearshore marine waters.	High: Adults may migrate and/or forage in the action area. There is year-round presence of adults/subadults in nearshore waters of Monterey Bay.
Oncorhynchus kisutch	Central California Coast Coho Salmon	FE/SE	Between Punta Gordo and San Lorenzo River.	Moderate: Adults and juveniles may migrate and/or forage in the action area; but are more likely to be present further offshore.
Oncorhynchus mykiss	Central Coastal California steelhead DPS	FT/None	River basins from Russian River to Aptos Creek.	High: Adults and juveniles may migrate and/or forage in the action area, and are known to migrate/forage within Soquel Creek.
	Central Valley steelhead DPS	FT/None	Includes all naturally spawned anadromous *O. mykiss* (steelhead) populations below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries, as well as Fish Hatchery and Feather River Hatchery steelhead habitat.	Moderate: Adults may migrate and/or forage in action area; but are more likely to be present further offshore. Individuals from this DPS originate from the Sacramento River and its tributaries.
	South-Central California Coast steelhead DPS	FT/SSC	Includes all naturally spawned anadromous *O. mykiss* (steelhead) populations below natural and manmade impassable barriers in streams from the Pajaro River to, but not including the Santa Maria River.	Moderate: Adults and juveniles may migrate and/or forage in action area. Soquel Creek is in close proximity to the Wharf.
Oncorhynchus tshawytscha	Central Valley spring-run Chinook salmon ESU	FT/ST	Includes all naturally spawned populations of spring-run Chinook salmon in the Sacramento River and its tributaries in California, including the Feather River, as well as the Feather River Hatchery spring-run program.	Moderate: Adults may migrate and/or forage in action area; but are more likely to be present further offshore. Individuals from this ESU originate from the Sacramento River and its tributaries.
	California Coastal	FT/None	Includes all naturally spawned populations of Chinook salmon from rivers and streams south	Moderate: Adults may migrate and/or forage in action area; but are more likely to be present

Table 2. Special-Status Marine Species Observed or Potentially Occurring in the Action Area

Scientific Name	Common Name	Status Federal/ State	Primary Habitat Associations	Potential to Occur
	Chinook salmon ESU		of the Klamath River to the Russian River, California, as well as artificial propagation programs.	further offshore. Individuals from this ESU originate from the Klamath River to the Russian River in northern California.
Eucycloglobius newberryi	Tidewater Goby	FE/SE	This goby inhabits lagoons formed by streams running into the sea. The lagoons are blocked from the Pacific Ocean by sandbars, admitting salt water only during particular seasons, and so their water is brackish and cool. The tidewater goby prefers salinities of less than 10 parts per thousand (ppt) (less than a third of the salinity found in the ocean) and freshwater conditions for nesting and is thus more often found in the upper parts of estuaries, near their inflow and throughout freshwater converted lagoons.	Low: Adults may forage in the lagoon habitat of nearby Soquel Creek lagoon, but are highly unlikely to occur in the action area. Tidewater gobies may enter marine environments only when flushed out of lagoons, estuaries, and river mouths by normal breaching of the sandbars following storm events (USFWS 2005).
Spirinchus thaleichthys	Longfin smelt	FC/ST	Aquatic, estuary	Low: This species is typically found in open waters of estuaries which is not present within the action area, but have been found in marine environments, and was observed in Moss Landing Harbor in 1993 (CDFW 2019b).
Thaleichthys pacificus	Eulachon	FT/None	Found in Klamath River, Mad River, and Redwood Creek and in small numbers in Smith River and Humboldt Bay tributaries	Low: This species was observed directly adjacent to the action area at the mouth of Soquel Creek around 1911 (CDFW 2019b), but has not been recorded in the vicinity since.
Invertebrates				
Coelus globosus	Globose dune beetle	None/None	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico	None: Suitable sand dune habitat not present within the action area.
Haliotis cracherodii	Black abalone	FE/None	Rocky, low intertidal zone up to 6 meters deep.	Low: Suitable habitat not present within the action area.
Haliotis sorenseni	White abalone	FE/None	Open low- or high-relief rock or bolder areas interspersed with sand channels.	None: Action area is outside of geographical range.

Table 2. Special-Status Marine Species Observed or Potentially Occurring in the Action Area

Scientific Name	Common Name	Status Federal/ State	Primary Habitat Associations	Potential to Occur
Tryonia imitator	Mimic tryonia (=California brackish water snail)	None/ None	Inhabits coastal lagoons, estuaries, and saltmarshes, from Sonoma County south to San Diego County	Low: No suitable habitat is present within the action area, but suitable habitat is present in the nearby Soquel Creek lagoon.
Reptiles				
Caretta	Loggerhead sea turtle	FT/None	Open Ocean	Low: May migrate and/or forage near action area. Monterey Bay is part of this species known distribution.
Chelonia mydas	Green sea turtle	FE/None	Open Ocean	Low: May migrate and/or forage near action area. Has been observed at the commercial Wharf in Monterey.
Dermochelys coriacea	Leatherback sea turtle	FE/None	Open Ocean	Low: May migrate and/or forage near action area. Appears annually in Monterey Bay, has been observed in central and northern areas in the bay.
Lepidochelys olivacea	Olive ridley sea turtle	FE/None	Open Ocean	Low: May migrate and/or forage near action area. Monterey Bay is part of their known distribution; has been observed at Pacific Grove.
Birds				
Accipiter cooperii	Cooper's hawk	None/WL	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Not expected to occur. No suitable habitat present in action area.
Agelaius tricolor (nesting colony)	Tricolored blackbird	BCC/PSE , SSC	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	Not expected to occur. No suitable habitat present in action area.
Aquila chrysaetos (nesting & wintering)	Golden eagle	BCC/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Not expected to occur. No suitable habitat present in action area.
Ardea herodias	Great blue heron (nesting colony)	None/SA	Nests in large trees or snags; forages in wetlands, water bodies, watercourses, and opportunistically in uplands,	Low: No suitable foraging habitat within the action area. Not expected to nest.

Table 2. Special-Status Marine Species Observed or Potentially Occurring in the Action Area

Scientific Name	Common Name	Status Federal/ State	Primary Habitat Associations	Potential to Occur
			including pasture and croplands.	
Asio flammeus (nesting)	Short-eared owl	None/SSC	Grassland, prairies, dunes, meadows, irrigated lands, and saline and freshwater emergent wetlands	Low: No known occurrences within the Soquel Creek watershed; closest known occurrence is over 15 miles from the action area (CDFW 2019b).
Athene cunicularia (burrow sites & some wintering sites)	Burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to occur. No suitable habitat present.
Brachyramphus marmoratus	Marbled murrelet (nesting)	FE/SE	Nests high in trees in redwood and douglas-fir forests and feeds in breeding season in near-shore waters.	Moderate: May forage within the action area. . Not expected to nest.
Branta bernicla	Brant (wintering and staging)	None/SSC	Shallow estuaries and nearby marine waters.	Moderate: May forage within the action area. Not expected to winter or stage.
Charadrius alexandrinus nivosus	Western snowy plover (nesting)	FT, BCC/SSC	On coasts, nests on sandy marine and estuarine shores; in the interior nests on sandy, barren, or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds.	Low: Not expected to nest due to high human usage of suitable nesting areas on site.
Coturnicops noveboracensis	Yellow rail	BCC/SSC	Nesting requires wet marsh/sedge meadows or coastal marshes with wet soil and shallow, standing water	Low: Not known to occur near the action area since 1905 (CDFW 2019b). Not expected to nest; no nesting habitat present on site.
Cypseloides niger	Black swift (nesting)	BCC/SSC	Nests in moist crevices or caves on sea cliffs or near waterfalls in deep canyons; forages over many habitats.	Low: May forage in the action area. Not expected to nest.
Elanus leucurus (nesting)	White-tailed kite	None/FP	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Low: May forage in the action area. Not expected to nest.
Falco peregrinus anatum (nesting)	American peregrine falcon	FDL, BCC/SDL, FP	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	Low: May forage in the action area. Not expected to nest.
Hydroprogne caspia	Caspian tern	BCC/None	Undisturbed islands, levees, and shores for nesting, a	Not expected to nest or forage within the action area.

Table 2. Special-Status Marine Species Observed or Potentially Occurring in the Action Area

Scientific Name	Common Name	Status Federal/ State	Primary Habitat Associations	Potential to Occur
	(nesting colony)		variety of aquatic and nearshore marine habitats for feeding.	
Larus californicus	California gull (nesting colony)	None/WL	Islands in alkali or freshwater lakes and salt ponds for nesting; marine and aquatic habitats, landfills, fields, pastures for foraging. Common year-round, but does not breed in the region.	Low: May forage in the action area. Not expected to nest.
Laterallus jamaicensis coturniculus	California black rail	BCC/ST, FP	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	Low: No suitable habitat present in the action area, but minimal suitable habitat is present in the vicinity and if present could forage in the action area.
Nycticorax	Black-crowned night-heron (nesting colony)	None/SSC	Marshes, ponds, reservoirs, estuaries; nests in dense-foliaged trees and dense fresh or brackish emergent wetlands.	Low: May forage in the action area. Not expected to nest.
Pandion haliaetus	Osprey (nesting)	None/WL	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast.	Moderate: May forage within the action area, as this species is widely observed along the coast. Not expected to nest.
Pelecanus occidentalis californicus	California brown pelican (nesting colonies and communal roosts)	None/FP	In California, nests on dry, rocky offshore islands. Forages in coastal marine environments and roosts in near-shore waters and on inaccessible rocks, as well as sandy beaches, wharfs, and jetties.	Low: Likely to forage offshore near action area. Not expected to nest or to roost communally
Phalacrocorax auritus	Double-crested cormorant (nesting colony)	None/WL	Lakes, rivers, reservoirs, estuaries, ocean; nests in tall trees, rock ledges on cliffs, rugged slopes.	Low: No known occurrences near the action area (CDFW 2019b). Not expected to nest.
Rallus obsoletus	Ridgway's rail	FE/SE, FP	Coastal salt or brackish marshes	Low: No suitable habitat present in the action area, but minimal suitable habitat is present in the vicinity and if present could forage in the action area.
Riparia riparia	Bank swallow (nesting)	None/ST	Nests in lowland country with soft banks or bluffs; open country and water during migration.	Low: Minimal suitable habitat present. Not expected to nest.

Table 2. Special-Status Marine Species Observed or Potentially Occurring in the Action Area

Scientific Name	Common Name	Status Federal/ State	Primary Habitat Associations	Potential to Occur
Sternula antillarum browni	California least tern	FE/SE, FP	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats.	Low: May forage in the action area. Not expected to nest.
Thalasseus elegans	Elegant tern (nesting colony)	None/WL	Coastal waters, estuaries, large bays and harbors, mudflats. Also occurs in nearshore waters, such as during dispersal from breeding colonies. No nesting habitat occurs in the vicinity.	Low: May forage in the action area. Not expected to nest.

Status Key:
Federal: BCC = USFWS bird of conservation concern
FE = federal endangered
FT = federal threatened
State: SSC = California species of special concern
FP = fully protected
SE = California endangered
ST = state threatened
WL = watch list (Shuford and Gardali 2008)

Federally listed species with high potential to occur in the action area include green sturgeon (*Acipenser medirostris*, Threatened), steelhead trout Central Coastal California DPS (*Oncorhynchus mykiss*, Threatened), and southern sea otter (*Enhydra lutris nereis*, Threatened). Federally listed species with moderate potential to occur in the action area include coho salmon Central California coast ESU (*Oncorhynchus kisutch*, Endangered), chinook salmon Central Valley spring-run ESU (*Oncorhynchus tshawytscha,* Threatened), chinook salmon California Coastal ESU (*Oncorhynchus tshawytscha,* Threatened), and marbled murrelet (*Brachyramphus marmoratus,* Endangered [nesting]).

There is designated critical habitat for leatherback sea turtle (*Dermochelys coriacea*, Endangered) and green sturgeon (*Acipenser medirostris*) southern DPS (Federally threatened) within the action area. These critical habitat areas are not specific to the project area; for example, the entirety of Monterey Bay out to 110 fathoms depth is designated critical habitat for green sturgeon.

5.2.1 Steelhead (Central California Coast Distinct Population Segment)

Steelhead (*Oncorhynchus mykiss*), the anadromous form of rainbow trout, has been divided by NOAA Fisheries into distinct population segments (DPSs) along the Pacific coast based upon genetic similarities and watershed boundaries. The Central Coastal California steelhead DPS, a federally listed threatened species, occurs in river basins from the Russian River to Aptos Creek (Moyle 2002). Although variation occurs in coastal California, steelhead usually live in freshwater for one to two years in central California, then spend an additional one to three years in the ocean before returning to their natal stream to spawn. Recently emerged, small steelhead fry rear in quiet stream edgewater habitat and gradually move into portions of pools and riffles as they grow larger. Central coast steelhead juveniles commonly rear at summer water temperatures of 16-21 degrees C. They can survive in water up to 27 degrees C with saturated dissolved oxygen conditions and a plentiful food supply. Adult Central Coastal California steelhead typically migrate from the ocean to freshwater between December and April, peaking

in January and February (depending on stormflow patterns), and juveniles migrate as smolts to the ocean primarily from February through May but as late as June, with peak emigration occurring in April and May.

Steelhead are present in the nearby Soquel Creek Lagoon and watershed according to annual stream surveys (D.W. Alley & Associates 2004; D.W. Alley & Associates 2012; D.W. Alley & Associates 2015). Each summer a sand berm is constructed at the mouth of the creek to create and manage a lagoon within the City of Capitola. The lagoon provides good habitat for juvenile steelhead and has been estimated to support as many as 7,000 large juvenile steelhead during a summer in 2008, though more recent counts estimate population size of 237 in 2016 and 259 in 2017) (D.W. Alley & Associates 2015, 2018). When natural connectivity is re-established in the fall between the lagoon and Pacific Ocean, is it presumed that steelhead could be migrating and/or foraging in the action area.

5.2.2 Central California Coast Coho Salmon Evolutionary Significant Unit (ESU)

Central California Coast Coho salmon are listed as endangered under the ESA (70 FR 37160) and the CESA. The Soquel Creek Watershed has historically supported Coho salmon (*Oncorhynchus kisutch*), although Coho are believed extirpated since 1992 (Santa Cruz County Resource Conservation District 2003). The Central California Coast Coho Salmon is a federally-listed endangered species that occurs from Punta Gorda in Northern California, south to, and including, the San Lorenzo River and Soquel Creek that flows into Monterey Bay.

Coho salmon in California generally exhibit a relatively simple three year life cycle. Adult salmon typically begin the immigration from the ocean to their natal streams after heavy late-fall or early winter rains breach the sand berm at the mouths of coastal streams (Sandercock 1991, as referenced in NOAA Fisheries 2013). Immigration continues into March, generally peaking in December and January, with spawning occurring shortly after arrival at the spawning ground (Shapovalov and Taft 1954, as referenced in NOAA Fisheries 2013). Along the Central Coast, Coho salmon typically spend one growing season in freshwater (smolting after their first year) and two growing seasons in the ocean before returning to their natal streams to spawn. Coho salmon smolts migrate to the ocean from March through June, peaking in April and May. Juvenile coho salmon prefer well shaded pools at least l meter deep with dense overhead cover; abundant submerged cover composed of undercut banks, logs, roots, and other woody debris; and preferred water temperatures of 12-15 degrees C (McMahon 1983), but not exceeding 22-24 degrees C (NOAA Fisheries 2013) for an extended time period.

Coho salmon historically have occurred in the nearby Soquel Creek. There is record of a confirmed capture of an adult Coho salmon in 1992 in Soquel Creek (D.W. Alley & Associates 2004). Additionally, juvenile Coho salmon were detected at one sampling site by D.W. Alley & Associates in Soquel Creek during the fall of 2008 (D.W. Alley & Associates 2009; NOAA Fisheries 2013), and in response to this detection and other factors their range was extended to include Soquel Creek in 2012 (76 FR 2011). Juvenile Coho salmon were again detected in Soquel Creek at two sampling sites in fall 2015 (D.W. Alley & Associates 2016). Evidence of Coho salmon in the nearby Soquel Creek indicate that it is likely this species is migrating through or foraging within the action area.

5.2.3 Chinook Salmon

Chinook salmon historically ranged from the Ventura River in California to Point Hope, Alaska, on the eastern edge of the Pacific and in the western portion of the Pacific Ocean from Japan to Russia. Four Chinook salmon ESUs have potential to migrate through and forage in Monterey Bay: California Coastal (federally listed threatened species), Sacramento River Winter-Run (state and federally-listed endangered species), Central Valley Spring-Run (state and

federally-listed threatened species), and Central Valley Fall/Late Fall-Run (state and federal Species of Special Concern). Chinook salmon have a relatively complex life history that includes spawning and juvenile rearing in rivers followed by migrating to saltwater to feed, grow, and mature before returning to freshwater to spawn. They are vulnerable to many stressors and threats including blocked access to spawning grounds and habitat degradation caused by dams and culverts.

5.2.4 Green Sturgeon

Green Sturgeon (*Acipenser medirostris*). Green sturgeon southern DPS is a federally-listed threatened species. Telemetry data and genetic analyses suggest that Southern DPS green sturgeon generally occur from Graves Harbor, Alaska to Monterey Bay, California (NMFS 2015). Green sturgeon are anadromous fish that spend most of their lives in saltwater, and return to spawn in freshwater. As adults, green sturgeon migrate seasonally along the West Coast. Subadult and adult North American green sturgeon spend most of their life in the coastal marine environment. They are a long-lived, slow-growing fish. They are vulnerable to many stressors and threats including blocked access to spawning grounds and habitat degradation caused by dams and culverts (NMFS 2015). Tagging data indicate that green sturgeon typically occupy depths of 20-70 m while in marine habitats and make rapid vertical ascents while in marine environments, often at night. The entire Monterey Bay up to a depth of 110 feet was designated as critical habitat for green sturgeon by NOAA Fisheries in 2009. The action area is located within designated critical habitat for this species. Green sturgeon may pass through the area during migration to spawn in the Sacramento, Feather and Yuba Rivers, and when they return to the ocean.

5.2.5 Southern Sea Otter

The southern sea otters (*Enhydra lutris nereis*) is a federally-listed threatened species and also is protected by the MMPA. USFWS is responsible for the protection of sea otters. Approximately 16,000 to 18,000 sea otters were formerly distributed along the California coastline. After extensive harvesting in the 18th and 19th centuries, less than 100 sea otters remained off the isolated coastline of Big Sur, California. Approximately 2,865 individuals now exist in the southern sea otter range, and they have expanded their range north of Santa Cruz to about Half Moon Bay. In Monterey Bay, the highest densities of sea otters have been recorded in the southern part of the bay, near Pacific Grove (Tinker et al. 2013). Due to their consumption of large quantities of marine invertebrates, sea otters tend to be in nearshore areas, which could make them susceptible to disturbance with nearshore construction projects (Tinker et al. 2013). There are kelp forests, a known habitat for this species, as mapped by CDFW (2011). As a coastal species, sea otters are also particularly sensitive to pollution, toxins, and land derived pathogens (Tinker et al. 2013).

5.2.6 Marbled Murrelet

The marbled murrelet (*Brachyramphus marmoratus*) are live along the Pacific Coast from central California to Alaska and nest in old growth forests. Santa Cruz County is at the southern extent of their range. They are federally and state-listed as endangered during the nesting season. The breeding range of the marbled murrelet in the Santa Cruz Mountains encompasses 181,000 acres, and is found in the northwest quarter of the mountain range from Santa Cruz north to San Francisco and inland as far as the summit ridge (Halbert and Singer 2017). At-sea bird counts are currently the best available measure of population size, with the current estimate of population size likely within the range of 400–600 birds (ibid). There is no nesting habitat for the species within the action area, though nesting marbled murrelets could forage within the action area during nesting season.

5.2.7 Osprey

The osprey (*Pandion haliaetus*) is ranked as a CDFW Watch List species and generally occurs around ocean shores, bays, freshwater lakes, and streams. This species builds large nests within 15 miles of good foraging habitat (CDFW 2019b). The ocean and lagoon habitat within and adjacent to the action area provide suitable foraging habitat for this species, although it is not expected to nest within the action area.

5.2.8 Brant

The brant (*Brant bernicla*) is a California species of special concern which typically requires shallow, protected marine waters with intertidal eelgrass beds which makes up the majority of their diet. Brant often feed close to mudflats, sandbars, or spits used as gritting sites (CDFW 2019b). The marine and estuarine habitat within and adjacent to the action area provide adequate wintering and foraging habitat for this species.

5.3 Species Protected Under the Marine Mammal Protection Act

In addition to the special-status marine mammal species identified in the preceding section, other species are protected under the MMPA. Species that are not listed under the FESA or CESA but are protected under the MMPA that occur or have a high potential to occur in the action area include Pacific harbor seals (*Phoca vitulina richardii)*, California sea lions (*Zalophus californianus*), harbor porpoises (*Phocoena phocoena*), common bottlenose dolphins (*Tursiops truncatus*), and gray whales (*Eschrichtius robustus*). Northern elephant seals (*Mirounga angustirostris*) and Northern fur seal (*Callorhinus ursinus*) have a moderate potential to occur in the vicinity of the action area.

5.3.1 Pacific Harbor Seal

The Pacific harbor seal (*Phoca vitulina richardii)* is protected under the MMPA and has a high potential to occur in the action area. Harbor seals are nonmigratory, and can be found along shorelines and in estuaries throughout North America. Pacific harbor seals use Monterey Bay year-round, where they engage in limited seasonal movements associated with hauling out, foraging, and breeding activities. Harbor seals forage in shallow, intertidal waters on a variety of fish, crustaceans, and a few cephalopods (e.g., octopus). They also consume benthic organisms and schooling fishes. Harbor seals haul out in groups ranging in size from a few individuals to several hundred. Habitats used as haul-out sites include tidal rocks, bayflats, sandbars, and sandy beaches. They are generally unable to haul out on elevated structures such as the Wharf supports, and are not documented to do so. The numbers of harbor seals occupying the action area are likely to be highest during late summer, fall and winter, outside of breeding (March ☐May) and molting (June ☐July) seasons. Individuals that are not sexually reproductive may remain near the Wharf later into the spring, until molting season. In an unpublished study of harbor seal prey base, harbor seals using the San Lorenzo River were found to use the river as their haul-out exclusively, foraging in the ocean and returning during the night when disturbances were at a minimum (Weise, M. personal communication, 2009 as cited in Caltrans 2015b). Nearby known haulouts for the eastern Pacific harbor seal include Pleasure Point in Live Oak; the Cement Boat at Seacliff State Beach in Aptos; Table Rock, off Wilder State Park; as well as numerous other sites along the north coast from Wilder State Park to Año Nuevo State Park (NOAA Fisheries 2015).

5.3.2 California Sea Lion

The California sea lion (*Zalophus californianus*) is protected under the MMPA and has a high potential to occur in the action area. California sea lions breed in Southern California and along the Channel Islands. On occasion, sea lions will pup on Año Nuevo Island in San Mateo County to the north. After the breeding season in Southern California, males migrate north up the Pacific coast and into Monterey Bay. The largest populations of sea lions are on Año Nuevo. Sea lions can be observed resting on offshore rocks throughout MBNMS. Some sea lions become accustomed to human environments and haul out on docks and piers, but this does not appear to be the case at Capitola Wharf.

5.2.3 Northern Elephant Seal

Northern elephant seals (*Mirounga angustirostris*) are protected under the MMPA and have a moderate potential to occur within the action area. During winter months, northern elephant seals travel through the MBNMS on their way to and from breeding areas. Most elephant seals breed on the Channel Islands, while some travel as far south as Baja California. During the breeding season, elephant seals congregate at Año Nuevo and Piedras Blancas. Año Nuevo Island, the closest colony to the action area, supports a large elephant seal breeding colony, which researchers at UC Santa Cruz have monitored and studied since its inception in 1968. Elephant seals began pupping and breeding on the mainland at Año Nuevo, and since then, several other mainland colonies have developed. At Año Nuevo, every year up to 10,000 elephant seals return to breed, give birth, and molt their skin amongst the dunes and beaches. Piedras Blancas has the largest mainland colony of northern elephant seals, with more than 14,000 individuals during the peak season (January to March).

5.2.4 Northern Fur Seal

Northern fur seals (*Callorhinus ursinus*) are protected under the MMPA and have a moderate potential to occur within the action area. In spring, northern fur seals migrate through the MBNMS to breeding areas in southern California and Baja California, including the Channel Islands National Marine Sanctuary. In August and September, they take advantage of late summer productivity along the central coast to travel to northern feeding areas. The northern fur seal migrates in offshore waters and is rarely seen near land (generally found tens or hundreds of kilometers from shore). However, in 2005, many individuals were within 10 to 20 kilometers of the central California coast during July 2005. It is possible that their prey was less available in offshore waters, leading them to move closer to shore in search of food. Similar patterns have been observed in the past for some whale species, which were found to concentrate in Monterey Bay when offshore productivity was low, such as during the 1997-1998 El Niño event (MBNMS 2006).

5.3.5 Harbor Porpoise

The harbor porpoise (*Phocoena phocoena*) is protected under the MMPA and has a high potential to occur in the action area. In the Pacific, harbor porpoise are found in coastal and inland waters from Point Conception, California to Alaska and across to Kamchatka and Japan. Harbor porpoise appear to have more restricted movements along the western coast of the continental U.S. than along the eastern coast, and are not migratory on the west coast (NOAA 2001). These small porpoises (5-6 feet) usually travel in small groups close to shore, but are cryptic and tend to stay away from boats. Harbor porpoise occur in greater densities in nearshore waters of northern Monterey Bay which may be because abundance of northern anchovy, an important prey of harbor porpoise, was significantly

greater north of the Pajaro River than to the south (Henkel and Harvey, 2008). Their foraging success is enhanced in turbid water where they can easily locate prey but their prey cannot see them.

5.2.6 Common Bottlenose Dolphin

The common bottlenose dolphin (*Tursiops truncatus*) is protected under the MMPA and has a high potential to occur in the action area. With a submarine canyon and its location within a major upwelling zone, Monterey Bay is an extremely rich and productive area, which provides food for thousands of dolphins. Of the six dolphin species that occur in Monterey Bay either year-round or seasonally, bottlenose dolphins are the only species that inhabits the shallow waters, usually just outside the surf line. They were first noticed in Monterey Bay during the 1982-1983 El Niño, and some of the dolphins were known individuals that had previously lived in warmer southern California waters. They are currently year-round residents (200-300 in population, with some moving in and out of the area) that travel in small groups (fewer than 15) and are often observed from shore throughout the inner bay (Monterey Bay National Marine Sanctuary, 2005). Monterey Bay is an important area for dolphins. Their frequent occurrence and high abundance suggests that this rich region provides a predictable and abundant food source throughout the year.

5.2.7 Gray Whale

Gray whales (*Eschrichtius robustus*) are protected by the MMPA and have a high potential to occur in the action area. Gray whales migrate between summer feeding grounds in the Bering and Chukchi seas, between Alaska and Russia, and winter calving areas in Baja California, Mexico. Gray whales move through Monterey Bay while migrating from southern winter calving areas to northern summer feeding grounds. They migrate north from mid-February through May, usually within three miles of shore. Most adult and juvenile whales pass Monterey on their way to Alaska by mid-April. Females heading north with their new calves pass Monterey in April and May. The population migrates south in the fall. During the southern migration, the whales tend to stay much farther offshore than during the northern migration, when they are regularly observed from West Cliff Drive. They are benthic feeders that swim along the bottom on their sides while scooping up sediment containing benthic invertebrates—primarily amphipods. The sediment and benthic amphipods are filtered through their baleen plates (URS Corporation, May 2013).

5.4 Managed Species

The tidal aquatic habitats within and adjacent to the action area are considered EFH by NOAA Fisheries for a species assemblage that includes sharks, rockfish, roundfish and flatfish. NOAA Fisheries consults with federal action agencies under the MSA in a process similar and often parallel to the Section 7 FESA consultation. Because the Project would occur within designated EFH, consultation with NOAA Fisheries under the MSA may be necessary and would be initiated by the USACE during the permitting process for the proposed Project.

Fisheries management plans (FMPs) are extensive documents that are regularly updated. The goals of FMPs include the development and sustainability of an efficient and profitable fishery, optimal yield, adequate forage for dependent species, and long-term monitoring. The action area overlaps portions of three FMPs: the Coastal Pelagic FMP covering 5 species, the Pacific Groundfish FMP covering 9 species, and the Pacific Coast Salmon FMP covering 3 species. Other species that occur in the region and are included in each of the applicable FMP for the action area include longfin smelt (*Spirinchus thaleichthys*), a CESA threatened species and FESA species, and eulachon (*Thaleichthys pacificus*) a FESA threatened species (NOAA 2018b). The species covered by each FMP are detailed in the Table 3 below.

The Project is located within an area designated as EFH in the *Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish* (PFMC 2019). This FMP manages 85 species over a large and ecologically diverse area extending from the Pacific Coast border with Mexico to the Pacific Coast border between Washington and Canada (PFMC 2019). Because the EFH determination from this FMP addresses such a large number of species, it covers areas out to 3,500 meters (11,483 feet) in depth, shoreline areas up to the Mean Higher High Water line, and areas up coastal rivers where ocean-derived salinity is at least 0.5 parts per thousand during average annual low flows.

The FMP also identifies Habitat Areas of Particular Concern (HAPCs), considered high-priority areas for conservation, management, or research because they are rare, sensitive, stressed by development, or important to ecosystem function. The HAPC designation does not necessarily mean additional protections or restrictions are afforded an area, but they help to prioritize and focus conservation efforts. Current HAPC types in the FMP are estuaries, canopy kelp, seagrass, rocky reefs, and "areas of interest" (a variety of submarine features, such as banks, seamounts, and canyons). The action area includes the HAPC canopy kelp (Figure 2), primarily to the east of the Wharf.

The Project is also located within an area that is designated as EFH in the Pacific Coast Salmon Management Plan.

Table 3. Fish Species Managed under the Magnuson-Stevens Act in or Near the Action Area

Fisheries Management Plan	Species, Common	Species, Scientific	Life Stage
Coastal Pelagic	Northern anchovy	*Engraulis mordax*	J,A
	Pacific sardine	*Sardinops sagax*	J,A
	Jack mackerel	*Trachurus symmetricus*	J,A
	Pacific mackerel	*Scomber japonicus*	J,A
	Pacific herring	*Clupea pallasi*	J,A
Pacific Coast Groundfish	English sole	*Parophrys vetulus*	J,A
	Sand sole	*Psettichthys melanostictus*	J,A
	Curlfin sole	*Pleuronichthys decurrens*	J,A
	Rock sole	*Pleuronectes bilineatus*	J,A
	Butter sole	*Pleuronectes isolepsis*	J,A
	Pacific sanddab	*Citharichthys sordidus*	J,A
	Starry flounder	*Platichthys stellatus*	J,A
	Diamond turbot	*Hypsopsetta guttulata*	J,A
	Leopard shark	*Triakis semifasciata*	J,A
Pacific Coast Salmon	Steelhead, central DPS	*Oncorhynchus mykiss*	J,A
	Steelhead, south-central DPS	*Oncorhynchus mykiss*	J,A
	Coho salmon	*Oncorhynchus kisutch*	J,A
Common to All FMPs	longfin smelt	*Spirinchus thaleichthys*	J,A
	eulachon	*Thaleichthys pacificus*	J,A

Source: PFMC 2018, 2019.
Notes: A = Adult; J = Juvenile; L = Larvae

5.4.1 Coastal Pelagics FMP

EFHs for Coastal Pelagics are defined as all marine and estuarine waters from the shoreline of the coasts of California, Oregon, and Washington offshore to the limits of the Exclusive Economic Zone and above the thermocline. As of 2018, the Coastal Pelagic FMP covered four fish species (northern anchovy [*Engraulis mordax*], jack mackerel [*Trachurus*

symmetricus], Pacific mackerel [*Scomber japonicus*], and Pacific sardine [*Sardinops sagax caerulea*]) (PFMC 2018). Pacific herring (*Clupea pallasii pallasii*) and jacksmelt (*Atherinopsis californiensis*) are also included in the Coastal Pelagic FMP as Ecosystem Component Species.

Northern anchovy is the only managed species under the Coastal Pelagic FMP that may be present in the action area. The northern anchovy historically ranged from the Queen Charlotte Islands, British Columbia, in Canada, south to Cabo San Lucas, Baja California, Mexico. Larvae and juveniles are often abundant in nearshore areas and estuaries with adults being more oceanic; however, adults may also be found in shallow nearshore areas and estuaries (Emmett et al. 1991). Anchovy are non-migratory but do make extensive inshore–offshore and along-shore movements.

5.4.2 Pacific Groundfish FMP

The Pacific Groundfish FMP for all Fishery Management Unit species is identified as all waters and substrate with depths that are less than or equal to 3,500 meters to the mean higher high water level (MHHW), or the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5ppt during the period of average annual low flow. There are 89 fish species included in the Pacific Groundfish FMP. EFH for Pacific groundfish include all waters off California and in embayment's between Mean Higher High Water and depths to 11,483 feet (Appendix C).

The most abundant Pacific groundfish group present in the nearshore areas of Capitola Beach and the Soquel Creek Lagoon was the flatfish. In the flatfish group, English sole (*Parophrys vetulus*), starry flounder (*Platichthys stellatus*), and sand sole (*Psettichthys melanostictus*) have been observed. The only other groundfish observed and/or caught was Pacific staghorn sculpin (*Leptocottus armatus*), the threespine stickleback (*Gasterosteus aculeatus*), and prickly sculpin (*Cottus asper*) (D.W. Alley & Associates 2004).

5.4.3 Pacific Coast Salmon Management Plan

The Pacific Coast Salmon FMP covers the coastwide aggregate of natural and hatchery salmon species that is contacted by salmon fisheries in the exclusive economic zone off the coasts of Washington, Oregon, and California (Appendix D).

Important managed, protected, or special-status Coastal Pelagic zone species that occur in the action area, either seasonally or year-round, include steelhead (central California coast DPS and south-central California coast DPS) and Coho salmon. Central California coast distinct population segment (DPS) steelhead trout are listed under FESA as threatened and as a species of special concern under CESA. Coho salmon (ESU) are currently protected under both the FESA and CESA as endangered. South-central California coast DPS steelhead are listed under FESA threatened, referring to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River, which is outside of the action area.

6 Potential Project Impacts

This section analyzes potential impacts to coastal and marine biological resources, including special-status species, from implementation of the proposed Project. Impact analysis is focused on potential temporary impacts to the action area: primarily water quality issues related to pile installation and removal, and noise or vibration impacts from the installation of piles into marine waters.

6.1 Impacts to Water Quality

Water quality impacts from the proposed Project could result from activities occurring in or immediately adjacent to the intertidal and beach areas, which include accessing the Wharf repair and widening areas, staging of equipment on the Wharf and potentially on a barge, dust and debris associated with the repair activities, and placement of new and repair piles.

In-water work by pile driving can suspend sediments in the water column, which can lower dissolved oxygen, increase salinity, increase concentrations of suspended solids, and possibly release chemicals present in the debris particulates into the water column as the tide encroaches into the area of construction. The concentration of suspended sediments would vary on the timing of the repair activities in association with the tide, the quality of the work performed, the maintenance of the Best Management Practices (BMPs) and the care of the operator. In all cases, increased turbidity levels would be relatively short-lived and generally confined to within a few hundred yards of the repair activity. Further, in-water work would occur within intertidal and shallow subtidal areas, which regularly experience turbidity from wave action on the sandy shoreline. Therefore, increases above baseline turbidity levels would be less than in a low wave energy environment.

Oils and similar substances from construction equipment can contain a wide variety of polycyclic aromatic hydrocarbons (PAHs), and metals. Project construction equipment is not anticipated to enter the water. Spill containment and remediation material would be nearby, and vehicles would not be fueled or otherwise serviced adjacent to the bay. Due to these measures, accidental spills would be minimized and toxic chemical contamination of the action area would be minimized.

Pile coatings have the potential to cause impacts to marine species from potential leaching of contaminants from timber piles into the marine environment. While the new piles supporting the expansion area would be fiberglass and would not have coatings, replacements for damaged Wharf piles would be fiberglass, or ACZA-treated timbercoated with a polyurea compound.

ACZA is a wood preservative derived from metal compounds and arsenic that preserve the wood from decay from fungi, wood attacking insects, including termites, and marine borers through their toxic properties. These metal-arsenate chemicals are toxic and can produce adverse impacts when used where they can be leached from pilings into the aquatic environment (California Coastal Commission 2012). Overwater uses of treated wood products can also contribute contaminants into the aquatic environment; overwater copper-treated products are expected to leach most of their contamination during the first year as a result of rainfall (Ibid.). The primary concern is potential effects of copper concentrations on Pacific salmonids, many of which are managed under the FESA and EFH provisions of the Magnuson-Stevens Fishery Conservation and Management Act (NOAA 2009).

Generally, concern regarding use of treated wood piles (either creosote or copper-treated) arises in estuarine and lake environments where current velocities are low and local concentrations surrounding the pilings can become elevated (NOAA 2009). In the Pacific subtidal and intertidal zones, relatively high current velocities ensure quick and constant mixing. Available information also indicates that acute copper toxicity (i.e. mortality) typically decreases with increasing salinity (Eisler 2000, Stratus 2006a as cited in NOAA 2009).

To eliminate risk of chemicals affecting water quality and to provide protection, methods to provide an inert barrier between the chemical treated timber and the water have been developed over the past 30-50 years, including pile wrapping, pile coating, and use of fiberglass shells. Pile coatings are a polyurea spray applied in a controlled factory. They adhere to the pile timber and can be applied in various thickness build ups. These are a more recent development in the past 10-15 years. Earlier formulations (cured brown in color) were subject to tearing and loss of adhesion to the timber. However, recent formulations (cured black in color) developed in the past 5-8 years have improved adhesion. The coating provides containment of chemical treatment of the wood piles and provides a barrier to organisms.

Although the polyurea spray coating is expected to minimize the possibility of copper leaching from the ACZA treated piles, the polyurea coating could be physically damaged or degrade and expose the underlying ACZA coating. However, even uncoated exposed copper-treated pilings leach relatively quickly, reaching low exposure levels in a matter of days to several weeks, depending mainly on formulation. For in-water uses, the highest leaching occurs in the first few days. Therefore, if the polyurea coating is damaged and exposes the ACZA coating, copper levels would be diluted quickly away from the piling, the elevated levels would drop substantially over a few days, and potentially sensitive salmonids, if present, would avoid any locations that happen to have elevated copper. However, routine inspection and monitoring for damaged or deteriorated piles would allow for replacement.

Metals leached into sediments near copper-treated wood in aquatic environments have been found to accumulate in benthic and epibenthic organisms (Weis and Weis 2004 as cited in NOAA, 2009). Other animals can acquire elevated levels of copper indirectly through trophic transfer, and may exhibit toxic effects at the cellular level (DNA damage), tissue level (pathology), organism level (reduced growth, altered behavior and mortality) and community level (reduced abundance, reduced species richness, and reduced diversity) (Weis et al. 1998, Weis and Weis 2004, Eisler 2000 as cited in NOAA, 2009). However, effects decrease after the wood has leached for a few months (Weis and Weis 2004 as cited in NOAA, 2009). Weis and Weis (2004) determined that concentrations of copper in sediments near dock pilings, in moderately flushed areas, did not show accumulation of metals. The waters beneath the Wharf are highly flushed due to wave action.

Best Management Practices (BMPs) are recommended by NOAA (2009) as a way to reduce risk to FESA-listed species and EFH from treated pilings, and would be followed during implementation of the proposed maintenance activities. These BMPs include 1) selecting wood products that have been third-party verified as containing no more than the minimum level of pesticide needed for the use; 2) wrapping or coating the pilings to form a physical barrier between the leachable material and the aquatic environment (such as the polyurea coating proposed for the project); 3) timing installation to avoid times when sensitive species might be present in the action area (such as avoiding April through July when juvenile salmon might be moving from estuaries to the open ocean); and 4) employing construction practices that avoid input of sawdust or other treated wood debris into the environment.

Models used by NOAA Fisheries indicate that installation of 100 or less uncoated copper-treated piles at current velocities of 10 cm/sec or more, are not likely to result in problematic water column concentrations, and thus, 100 uncoated copper-treated pilings has been used as the threshold recommended to trigger a site-specific risk assessment (NOAA, 2009). However, with pile coating, such as that proposed for replacement piles at the Wharf,

potential leaching into the marine environmental would be avoided. Specifically, timber piles treated with a polyurea compound that is designed to encapsulate treated timber products will prevent toxins from leaching into the environment, and this coating system has been used for encapsulating ACZA-treated piles. This type of protection is now in wide usage on treated timbers and has been approved by regulatory agencies throughout California. Some locations include Stearns Wharf in Santa Barbara, Coast Guard Wharf in Alameda and Trinidad Pier in Humboldt County. Provided that coating remains intact, copper leaching from the ACZA piles would not be expected to occur. The NOAA Fisheries models also assume that all pilings would be installed in one event; whereas implementation of the replacement piles as part of routine maintenance would include several smaller installations. This would further reduce any acute effects of new pilings. Therefore, placement of pilings would result in less than significant impact to special-status aquatic species.

6.2 Physical Disturbance of Marine Organisms

Under the Project, most of the piles would be placed in sandy bottom areas where no existing piles are located. During installation, benthic sediments would be temporarily disturbed in the immediate area of pile installation; installation is estimated to take approximately 15-30 minutes per pile. This may result in temporary discharge of sediments into already turbid surface waters, which could cause a very minor increase in the water's turbidity in the action area on a temporary basis. Disturbance of benthic habitat would likely cause both listed and non-listed species of fish, foraging seabirds, and marine mammals to avoid the immediate construction area and areas of increased turbidity during pile installation. Any sediment in the water column would not be expected to be substantial given the temporary nature of the construction disturbance and that sediments are predominantly sandy; sand particles tend to settle quickly and do not generate large or long-lasting sediment plumes (URS Corporation, May 2013). Because marine organisms would be expected to avoid the immediate construction area due to temporarily increased turbidity limited to the immediate construction zone, pile installation would not have a substantial adverse effect on special-status species that occur or have the potential to occur in the project area. Such activities also would not result in a substantial reduction in the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate such a population.

Existing damaged piles provide vertical relief habitat for encrusting invertebrates, including barnacles, mussels, anemones, sponges, and others. Replacement of the damaged pilings would remove these mature invertebrate communities and could affect the other species that depend on them such as mobile invertebrates (e.g., crabs) and fish. The coated piles that would be used as replacements may have reduced suitability as habitat for encrusting invertebrates. However, no studies were located that specifically examined "fouling" of coated piles by invertebrates. Anecdotal information from observation of other polyurea pilings suggest that they remain suitable for encrusting organisms, would be recolonized from the surrounding remaining pilings, and that no long-term effect to the Wharf biota would result from the replacements.

PAHs and metals that leak or leach from construction equipment can result in adverse impacts to salmonids. PAHs can alter salmonid egg hatching rates and reduce egg survival as well as harm the benthic organisms that are a salmonid food source (Eisler 2000). Some of the effects that metals can have on salmonids are: immobilization and impaired locomotion, reduced growth, reduced reproduction, genetic damage, tumors and lesions, developmental abnormalities, behavior changes (avoidance), and impairment of olfactory and brain functions (Eisler 2000). However, as discussed above for water quality, accidental spills would be minimal, and in many cases cleanup would be possible before the contaminants enter the water. Fine sediments generated from the construction activities might be transported to Monterey Bay during rising tides, resulting in a localized increase in turbidity which could cause short-term impacts to marine resources. Depending on wave heights and tidal flushing,

the material could stay suspended in the water column, reducing submarine light intensity, primary productivity, and subsurface visibility for sight-foraging fishes and seabirds. However, the intertidal and subtidal zones are frequently subject to these transient changes in turbidity and no long-term effect would result.

Fish eggs and larval, juvenile, and adult fish would likely experience few to no effects due to construction activities. Fish eggs and larval fish are primarily found in the water column and are dispersed by water movement away from the intertidal zone during lower tides when work on the Wharf is expected to occur, so fish eggs and larval fish are not expected to be impacted by the construction. Juvenile and adult fishes have the ability to move to avoid disturbances during construction activities.

Marine mammals would likely be disturbed by the construction activity, and most would move quickly away from the area of disturbance without experiencing much effect. Disturbance, including noise disturbance, could affect federally-listed sea otters (threatened); and other species (pinnipeds) protected under the MMPA such as California sea lions and Pacific harbor seals. Due to the work being in the water, especially for pile installation, noise disturbance may affect cetaceans that are commonly found close to shore such as bottlenose dolphins and harbor porpoises. Noise impacts from the Project, as described below, are not expected to approach thresholds for marine mammals.

Neither NOAA Fisheries nor USFWS have specific take criteria for harassment of sea otters. Importantly, any habitat, including kelp forests, would not be affected. This Project is not expected to impact sea otters especially since no distinct home ranges have been identified near Soquel Creek (Tinker et al. 2013), resources are plentiful in Monterey Bay, no habitat would be directly impacted by construction, and mitigation measures would be in place for construction equipment BMPs.

6.3 Terrestrial Noise Impacts

Operational noise from construction equipment and activities has the potential to disturb shorebirds, gulls, and other coastal birds that may forage or rest on beaches at or near the Wharf. This impact would not be substantially adverse and would remain less than significant because (1) disturbance effects would be temporary and limited to the period of construction; (2) the proximity of unaffected shoreline adjacent to the repair activities site that provides foraging opportunities; and, the (3) the foraging areas at the repair activities site would rapidly recover following the conclusion of construction.

6.4 Marine Noise Impacts

Underwater sound levels resulting from pile installation could indirectly harm fish and marine mammals, including special status and protected species, if any are present at the time of construction and pile installation. Species that could be affected are: federally-listed sea otters (threatened); other species protected under the MMPA (California sea lions, Pacific harbor seals, common bottlenose dolphin, harbor porpoise, and whale species that may occasionally be in the action area); and special status fish species if present in the area (Coho salmon, Chinook salmon, steelhead and green sturgeon).

Installation of piles can result in indirect harm, disturbance or injury and/or harassment to marine mammals or fish, including special status species, which may be in the action area during pile installation, depending on the size and type of piles used and method of installation. The federal Endangered Species Act defines “harm” to include actions that would kill or injure fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, and sheltering. “Harass” is defined as any act that creates the

likelihood of injury to a species to such an extent as to significantly disrupt normal behavior patterns such as feeding, breeding, or sheltering.

Current criteria for fish were established in 2008 by the Fisheries Hydroacoustic Working Group (FHWG), whose members include the National Marine Fisheries Service's Southwest and Northwest Divisions, California, Washington, and Oregon Departments of Transportation, the California Department of Fish and Wildlife, and the U.S. Federal Highway Administration. Although these criteria are not formal regulatory standards, they are generally accepted as viable criteria for underwater noise effects on fish. The agreed upon criteria identify sound pressure levels of 206 decibels (db) peak and 187 db accumulated sound energy levels (SEL) above for all fish, except those less than 2 grams in body weight, for which 183 dB were determined to be potentially detrimental to fish (National Oceanic and Atmospheric Administration, June 2008, Caltrans, November 2015b). No threatened or endangered fish of less than 2 grams body weight were determined to be present in the project area in past surveys of the area, but larvae of fish species managed under the Magnuson-Stevens Act may be present (URS Corporation, May 2013), and thus, the 183 dB SEL threshold was used for this analysis. Behavioral effects are not covered under these criteria, but could occur at these levels or lower. Behavioral effects may include fleeing and the temporary cessation of feeding or spawning behaviors (Ibid.).

The Marine Mammal Protection Act (MMPA), adopted in 1972, makes it unlawful to take or import any marine mammal and/or their products. Under this federal law, an incidental harassment permit may be issued for activities other than commercial fishing that may impact small numbers of marine mammals. An incidental harassment permit covers activities that extend for periods of not more than one year, and that will have a negligible impact on the impacted species. Levels of harassment for marine mammals are defined in the MMPA as:

- Level A harassment is defined as "[A]ny act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild."
- Level B harassment is defined as"[A]ny act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including but not limited to migration, breathing, nursing, breeding, feeding or sheltering."

Any activities that may result in harassment of marine mammals under these guidelines would require an Incidental Take Authorization for fish and/or Incidental Harassment Authorization for marine mammals from NOAA Fisheries. NOAA is developing comprehensive guidance on sound characteristics likely to cause injury and behavioral disruption in the context of the Marine MMPA, federal Endangered Species Act (FESA) and other statutes. Until formal guidance is available, NOAA Fisheries uses conservative thresholds of received sound pressure levels from broad band sounds that may cause behavioral disturbance and injury. These conservative thresholds are applied in MMPA permits and FESA Section 7 consultations for marine mammals to evaluate the potential for sound effects. The criterion levels specified below are specific to the levels of harassment permitted under the MMPA (National Oceanic and Atmospheric Administration website). The NOAA Fisheries criteria distinguishes between impulse sound, such as that from impact pile driving, and continuous sound, such as that from vibratory pile driving.

The Level A (injury) and Level B (disturbance) threshold levels used by NOAA Fisheries are summarized in Table 4 for cetaceans (whales, dolphins, and porpoises) and pinnipeds (seals and sea lions). NOAA is developing comprehensive guidance on sound characteristics likely to cause injury and behavioral disruption in the context of the Marine Mammal Protection Act (MMPA), Endangered Species Act (FESA) and other statutes. Until formal guidance is available, NOAA Fisheries uses conservative thresholds of received sound pressure levels from broadband sounds that may cause behavioral disturbance and injury, and the criterion levels specified in Table 4 are specific to the levels of harassment permitted under the MMPA (NMFS 2018b).

Table 4. NOAA Fisheries Acoustic Thresholds

Criterion	Criterion Definition	Threshold
In-Water (Excluding Tactical Sonar and Explosives)		
Level A	Low-Frequency Cetaceans, Impulsive Noise	PK: 219 dB SEL_{cum}: 183 dB
	Low-Frequency Cetaceans, Non-Impulsive Noise	SEL_{cum}: 199 dB
	Mid-Frequency Cetaceans, Impulsive Noise	PK: 230 dB SEL_{cum}: 185 dB
	Mid-Frequency Cetaceans, Non-Impulsive Noise	SEL_{cum}: 198 dB
	High-Frequency Cetaceans, Impulsive Noise	PK: 202 dB SEL_{cum}: 155 dB
	High-Frequency Cetaceans, Non-Impulsive Noise	SEL_{cum}: 173 dB
	Phocid Pinnipeds, Impulsive Noise	PK: 218 dB SEL_{cum}: 185 dB
	Phocid Pinnipeds, Non-Impulsive Noise	SEL_{cum}: 201 dB
	Otaarid Pinnipeds, Impulsive Noise	PK: 232 dB SEL_{cum}: 203 dB
	Otaarid Pinnipeds, Non-Impulsive Noise	SEL_{cum}: 219 dB
Level B	Behavioral disruption for impulsive noise (e.g. impact pile driving)	160 dB $_{rms}$[2]
Level B	Behavioral disruption for non-pulse noise (e.g. vibratory pile driving, drilling)	120 dB $_{rms}$
In-Air		
Level A	PTS (injury) conservatively based on TTS	None established
Level B	Behavioral disruption for harbor seals	90 dB $_{rms}$
Level B	Behavioral disruption for non-harbor seal pinnipeds	100 dB $_{rms}$

SOURCE: NOAA Fisheries 2018

Currently, neither NOAA Fisheries nor USFWS have specific take criteria for harassment of sea otters, a federally listed threatened species. In the absence of noise thresholds specific to sea otters, USFWS has used the Level A 180 dB RMS threshold (updated Level A 202-232 dB RMS; NMFS 2018b) and the Level B 160 dB RMS threshold for impulse noise; and Level B 120 dB RMS for continuous noise (URS Corporation, June 2013).

Different types and diameters of piles produce different underwater sound levels when they are driven. Monitoring of installation of 12- to 14-inch timber piles showed RMS ranging from 158 to 172 dB at a distance of 10 meters at one location and 140-158 dB RMS at a second location (Caltrans 2015b). Both locations used impact pile drivers. One site was also monitored with use of a vibratory pile driver, and RMS levels ranged from approximately 127 to 142 db at a distance of about 25 feet (Ibid.). There is little data available on installation of fiberglass piles, and none specifically for vibratory installation of fiberglass piles; however, data was collected for impact pile driving of 16-inch piles at a wharf in Port Canaveral in Florida (Iafrate et al 2016). Their results included measurement of sound exposure levels (SEL) within the interior of the wharf with mean single-strike SEL ranging from 120 to 139 dB, and mean single-strike SEL in open water outside the wharf ranging from 120 dB at 371 meters to 142 dB at 41 meters.

[2] RMS refers to the sound pressure level that is square root of the sum of the squares of the pressure contained within a defined period from the initial time to the final time. For marine mammals, the RMS pressure historically has been calculated over the period of the pulse that contains 90 percent of the acoustical energy (Caltrans, 2015b).

Based on data from the above studies, the installation by vibratory hammer of up to 120, 15-inch fiberglass piles, and installation of 21 12-inch ACZA-treated, polyurea coated timber piles/fiberglass piles by impact hammer would not be expected to exceed Level A thresholds (202-232 dB RMS) that would cause injury to marine mammals (NMFS 2018b). However, marine mammals could be exposed to sound levels exceeding the Level B harassment guidelines (120 dB RMS) in areas near the vibratory pile-driving activities due to underwater and airborne noise. Applicable criteria for marine mammals regarding airborne noise for Level B (disturbance) threshold is 90 dB RMS for harbor seals and 100 dB RMS for all other pinnipeds (e.g., sea lions) (NMFS 2018b). Pile driving may result in airborne noise levels that exceed NOAA Fisheries thresholds for Level B harassment. Sea lions or sea otters that range near the pile driving activities may be exposed to airborne noise levels exceeding 100 dB in). This could result in behavioral disturbance to marine mammals that may be present in the action area. However, sea lions do not appear to haul out on the Capitola Wharf, and the soft-start procedures proposed for the project would prompt marine mammals to move out of the zone of harassment if the noise levels proved bothersome.

Pile driving would be expected to result in noise levels below 183 dB SEL that has been determined to be potentially detrimental for fish species based on monitored sound levels in the Caltrans Guidelines (2015a). Special-status and other fish in the same area may be exposed to temporary increased sound levels, but installation of piles would not be expected to cause physical injury or mortality to fish species. The activity associated with pile driving would likely drive fish from the action area, reducing the likelihood of exposure to higher peak sound levels.

6.5 Impacts to Designated Critical Habitat

Designated critical habitat for leatherback sea turtles and green sturgeon occurs within the action area. Given the type of activities, limited footprint, temporal nature of work proposed, along with implementation of the BMPs and other conservation measures outlined in Section 7, the potential effects of the proposed Project are considered insignificant and are not expected to result in any changes to existing habitat values or result in adverse impacts to suitable habitat for either species. Therefore, the proposed Project actions would not have substantial adverse effects on designated critical habitat for leatherback sea turtles or green sturgeon.

6.6 Impacts to Essential Fish Habitat and MSA-managed Species

Impacts to EFH are typically determined based on whether a project reduces quality and/or quantity of EFH, regardless of the degree to which that impact occurs. Based on the Magnuson-Stevens Act, adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species, and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH.

The proposed Project would temporarily modify EFH at the Wharf, as well as localized portions of Monterey Bay surrounding the action area, but the effects would not result in permanent habitat loss or more than short-term displacement of MSA-managed species and habitat. No direct impacts are expected to occur to MSA-managed species. Potential localized adverse effects to EFH from Project activities include: 1) modifications to benthic habitat and substrate through construction activities; 2) temporary effects to water quality; and 3) noise impacts:

- Turbidity and Water Quality. Less than significant impacts to water column EFH and soft-bottom benthic habitat at the nearshore and offshore construction area are anticipated and would constitute temporary adverse impacts (e.g., temporary turbidity plume due to disturbance to soft bottom habitat from construction).
- Disturbance of Benthic Species and Foraging Habitat. During the installation of 120 15-inch fiberglass piles, as well as replacement of up to 21 damaged existing piles, temporary disturbance to invertebrate species and juvenile pelagic and/or ground fish foraging habitat in the immediate area of impact would occur. Disturbed benthic habitat areas are likely to be quickly recolonized by benthic species and in-benthic invertebrates due to the relative minor benthic disturbance footprint (Thrush and Dayton 2002).
- Noise Impacts: Underwater sound levels resulting from pile installation could indirectly harm fish and marine mammals, including special status and protected species, if any are present at the time of construction and pile installation.
- The most significant impact is underwater noise from pile driving using vibratory hammers or impact hammers and therefore, the project would result in a potentially significant impact. Vibratory methods are typically preferred as they reduce impacts to fish listed under the ESA. The implementation of the proposed avoidance, minimization, and conservation measures would significantly reduce the duration and footprint of disturbance and relative impact to EFH. Therefore, the Proposed Action would not have substantial adverse effects on EFH or species managed under the Pacific Groundfish FMP, Coastal Pelagic Species FMP, or Pacific Salmon FMP.

7 Best Management Practices and other Conservation Measures

The BMPs and other conservation measures presented in this section are recommended as "built-in" measures to avoid or minimize potential environmental effects to biological resources, with a focus on ESA-listed and MSA-managed species. The proposed measures reduce Project impacts to ESA-listed species and/or MSA-managed species from water quality, noise, and other construction-related disturbance.

7.1 General Conservation Measures

1. If Project construction begins outside of nesting bird season, no additional mitigation is required. If Project construction begins within the nesting bird season (e.g. February 15 – September 15), a pre-construction nesting bird survey shall be conducted. No more than one week prior to initiation of construction activities, a qualified biologist shall conduct a nesting bird survey to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the nesting bird monitoring area shown on Figure 4. If active nests are found, construction activities within 300 feet of the nests (or as determined by the qualified biologist) shall be modified, postponed or halted, until the nest is vacated, the young have fledged, and/or there is no evidence of a second attempt at nesting. Monitoring shall not extend beyond Cliff Drive because the effects and noise environment beyond that location is dominated by roadway and train effects.
2. To the extent feasible, Wharf expansion work will be conducted at low tides when the work area is exposed, minimizing the contact of construction equipment with water.
3. A qualified biologist will lead an on-site environmental training for work crews prior to the start of the proposed Project to protect surrounding biological resources. Any new crew members brought onto the job prior to Project commencement must undergo the environmental training before starting work on the Project. Pre-construction training will involve discussion on the status and sensitivity of the target species in the area and the actions to be taken to avoid or minimize impacts in the event of a target species entering the work area.

7.2 Construction BMP Measures

1. The contractor implementing the proposed Project will exercise every reasonable precaution and BMPs to protect marine biological resources from construction by-products and pollutants, such as construction debris, chemicals, fuel, hydraulic fluid, fresh cement, saw-dust, or other deleterious materials.
2. A spill plan and appropriate spill control and clean-up materials (e.g., oil absorbent pads) shall be retained on site in case a fuel spill occurs. All construction vehicles and equipment shall be inspected before they are moved to the Project site, and shall not be moved to the site if leaking fluids that could result in spills of toxic materials. All construction vehicles and equipment used on site shall be well maintained and checked daily for fuel, oil, and hydraulic fluid leaks or other problems that could result in spills of toxic materials.
3. Vehicle staging, cleaning, maintenance, refueling, and fuel storage shall take place in a vehicle staging area. The fueling area will be double lined. Daily monitoring will occur to ensure there are no leaks. Oil absorbing

pads, drip pans, or similar devices will be placed beneath the equipment when staged overnight to catch any leakage.

4. Once Wharf expansion activities are complete, all temporary construction-related equipment and material will be removed from the site.

7.3 Noise Mitigation Measures

Implementation of the following measures will reduce the impact of potential Level A and Level B marine mammal harassment to a less-than-significant level.

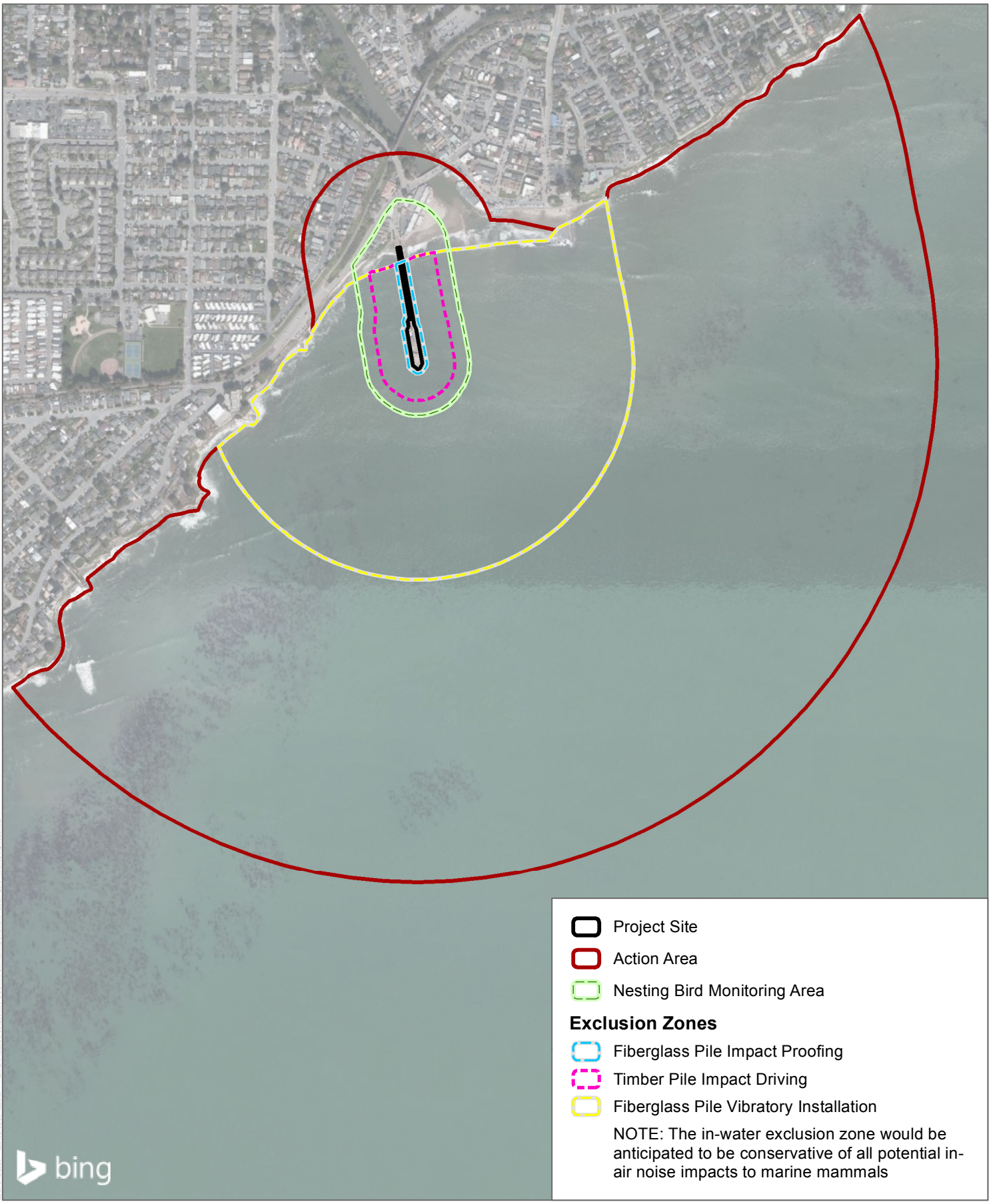
The project applicant will prepare and implement a marine mammal monitoring plan including measures to avoid exposure of marine mammals to high sound levels that could result in Level B harassment that may include, but are not limited to, the following:

1. Pre-construction training for construction crews prior to in-water construction regarding the status and sensitivity of the target species in the area and the actions to be taken to avoid or minimize impacts in the event of a target species entering the in-water work area.
2. Establishment of an underwater "exclusion zone"—defined as the distance where underwater noise levels would exceed 120 dBrms for continuos noise or 160 dBrms for impact noise. The exclusion zone distance(s) shall be from the active pile driving/installation source as detailed below or an alternative distance(s) if required by the Project's regulatory permits. Exclusion zones by pile type and installation method are as follows:
    a. Underwater exclusion zone
        i. Fiberglass pile vibratory installation – 410 meters
        ii. Fiberglass pile impact proofing – 8.8 meters
        iii. Timber pile impact driving – 63 meters
    b. In-air exclusion zone
        i. Fiberglass pile vibratory installation – 7.1 meters (seals) and 2.8 meters (sealions)
        ii. Fiberglass pile impact proofing – 30.3 meters (seals) and 12.1 meters (sealions)
        iii. Timber pile impact driving – 11.4 meters (seals) and 4.5 meters (sealions)

Marine mammal monitoring of the exclusion zone shall be conducted prior to commencement of pile installation. Pile installation activities shall not commence until marine mammals are not sighted in the exclusion zone for 15 minutes. This measure shall be included on the construction plans.This will be refined in consultation with NOAA Fisheries.

3. Marine mammal monitoring of the exclusion zone will be conducted prior to commencement of pile driving.
4. Pile-driving activities will not commence until marine mammals are not sighted in the exclusion zone for 15 minutes. This will avoid exposing marine mammals to sound levels in excess of the Level A and Level B criteria.
5. Pile-driving will commence with a soft start procedure (ramping up) in order to alert nearby wildlife, allowing them to move out of the area prior to construction activities.
6. Use of a wood cushion block or other sound-reducing method if impact pile driving is to be employed. The use of wood cushion blocks during construction would result in a substantial reduction in underwater noise.

7. Prohibit disturbance or noise to encourage the movement of the target species from the work area. The City will contact USFWS and NOAA Fisheries to determine the best approach for exclusion of the target species from the in-water work area.
8. Any necessary biological monitoring reporting will be submitted to the agencies as required in the permit.



SOURCE: Source: Bing Maps, NOAA, CDFW Marine Region

DUDEK

0 200 400 Feet

FIGURE 4

Monitoring Areas

Biological Technical Report for Capitola Wharf Resiliency and Public Access Improvement

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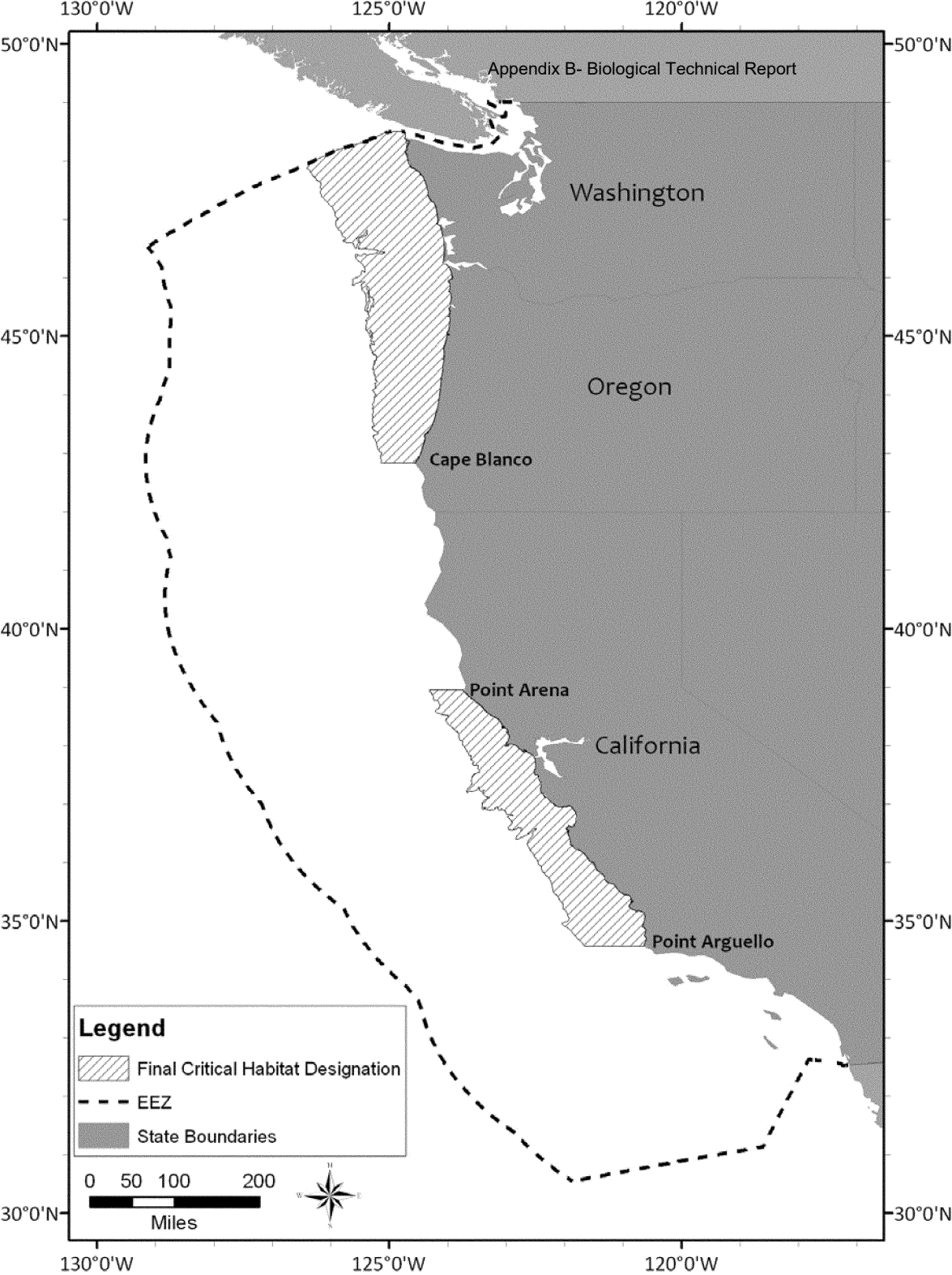
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APPENDIX A

Critical Habitat for Leatherback Sea Turtle


130°0'W
125°0'W
120°0'W
50°0'N
45°0'N
40°0'N
35°0'N
30°0'N
Washington
Oregon
Cape Blanco
Point Arena
California
Point Arguello
Legend
Final Critical Habitat Designation
EEZ
State Boundaries
0 50 100 200
Miles

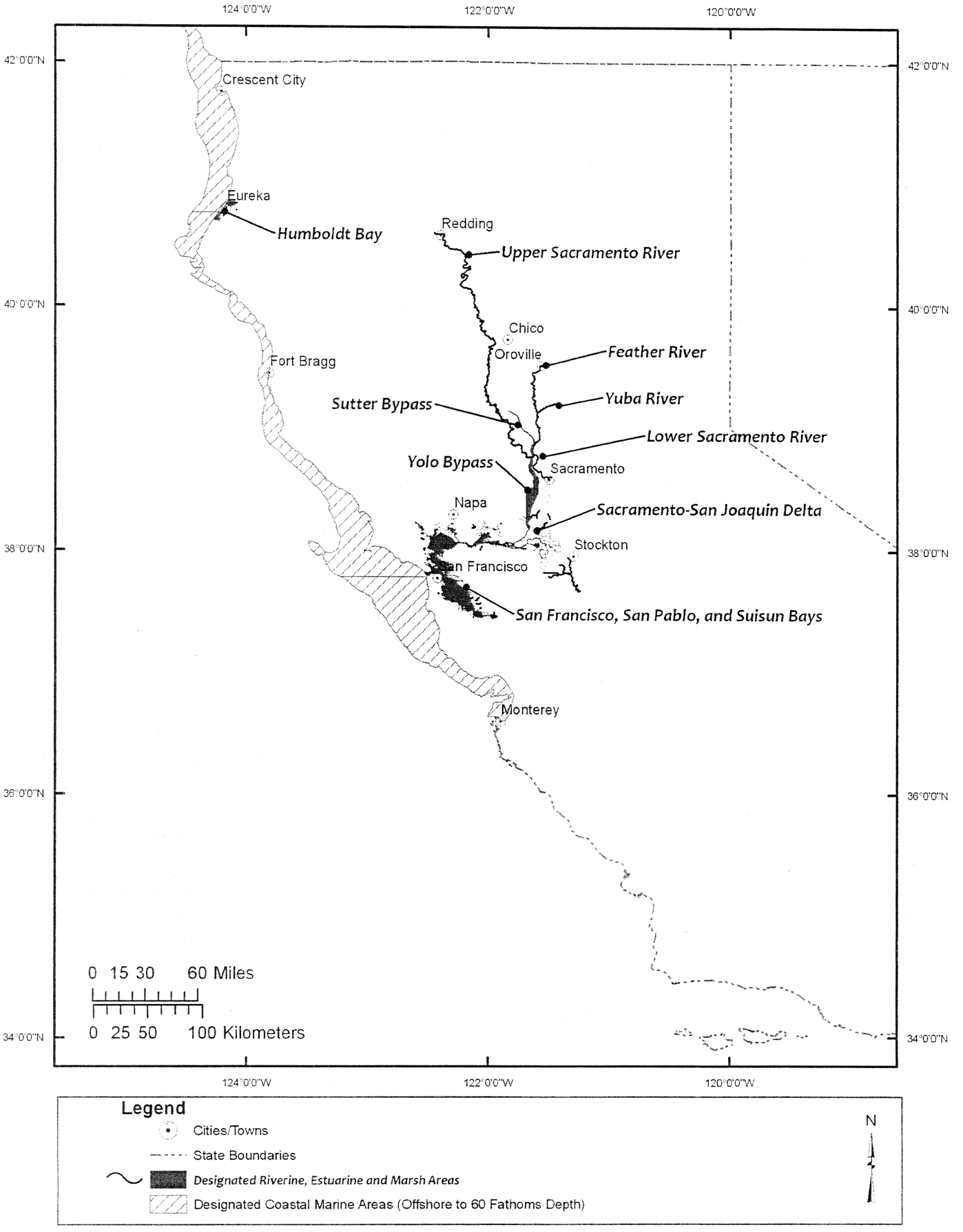
APPENDIX B

Critical Habitat for Green Sturgeon

Final Critical Habitat for the Southern DPS of Green Sturgeon

California

Appendix B- Biological Technical Report



APPENDIX C

Essential Fish Habitat for Pacific Coast Groundfish

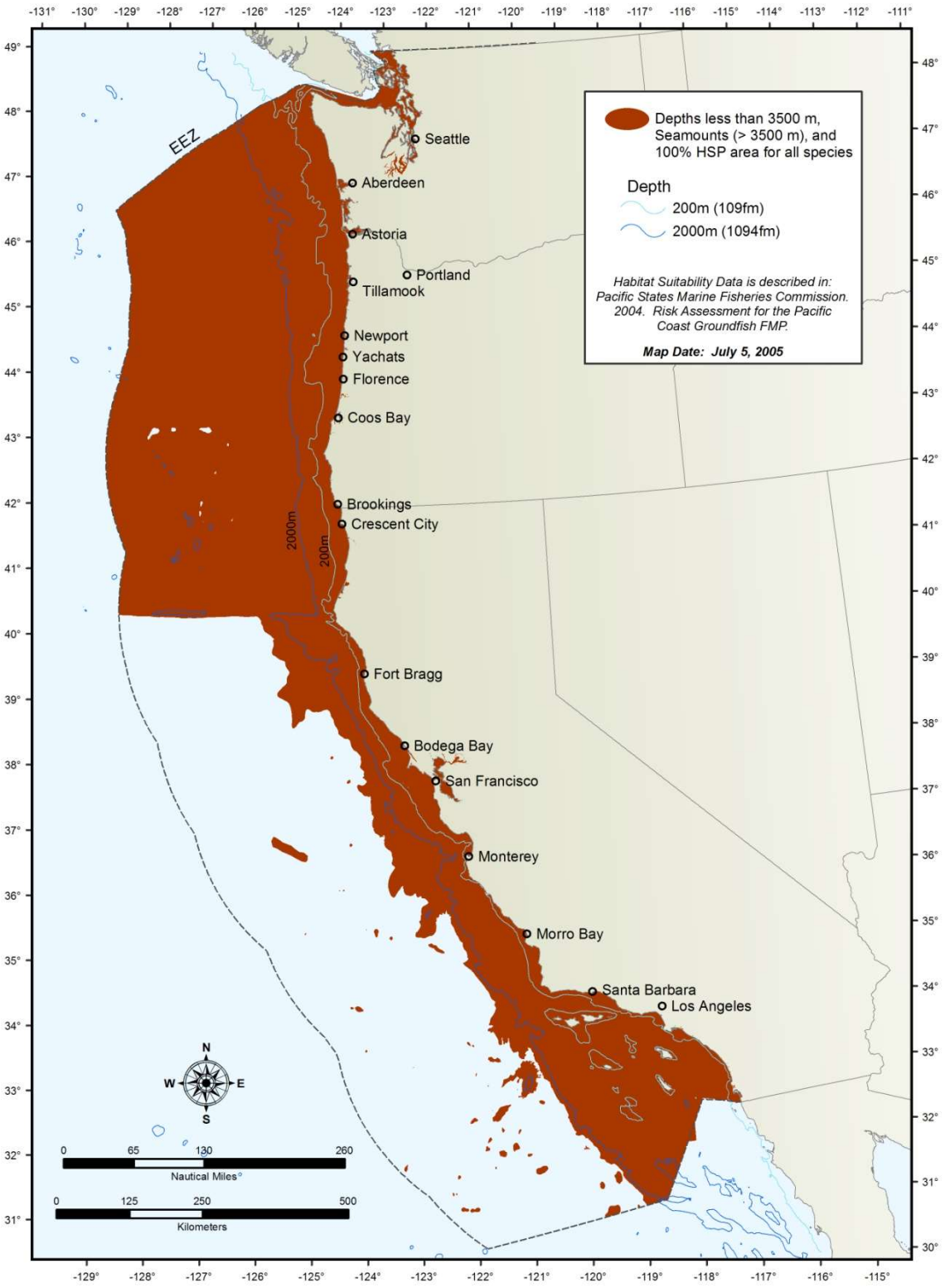


Figure 7-1. Groundfish EFH.

APPENDIX D

Essential Fish Habitat for Pacific Coast Salmon



Figure 1. Overall geographic extent of EFH for Chinook salmon, coho salmon, and Puget Sound pink salmon



Figure 5. Coho salmon EFH in California. EFH designations are based on the USGS 4th field hydrologic units.

Input	Input Engine Here
Horsepower (hp)	200
Model year Calendar year	1980 2020
Activity (annual hours)	2160.00
Accumulated hours on equipment (estimate using annual-hours*age if you only know the age of the equipment)	86,400
Load factor (check the lookup table)	0.42

Intermediate steps

HPbin	300
NOx_EF0	11.00
NOx_DR	2.5E-04
NOx_FCF	0.930
PM_EF0	0.55
PM_DR	4.0E-05
PM_FCF	0.71
THC_EF0	0.94
THC_DR	4.4E-05
THC_FCF	0.90
NOx_EF (g/hp-hr)	30.64
PM_EF (g/hp-hr)	2.84
THC_EF (g/hp-hr)	4.23
CO2_EF (kg/gallon-diesel)*	10.21
BSFC (lb/hp-hr)	0.367
Unit conversion (lb/gallon)	7.109

*Reference: www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf

Results	
Fuel Used (gallon)	9367
NOx Emissions (kg)	5559.2
PM Emissions (kg)	516.1
THC Emissions (kg)	767.2
CO2 Emissions (kg)	95636.2
NOx Emission Factor (including deterioration and fuel correction factor): gram/bhp-hr	30.64
PM Emission Factor (including deterioration and fuel correction factor): gram/bhp-hr	2.84
THC Emission Factor (including deterioration and fuel correction factor): gram/ bhp-hr	4.23

NOx Emissions (lb)	12255.95
PM Emissions (lb)	1137.72
THC Emissions (lb)	1691.45
CO2 Emissions (lb)	210841.54
Main Engine (hrs/day)	10
Number of days to complete	216.00
NOx Emissions (lb/day)	56.74
PM Emissions (lb/day)	5.27
THC Emissions (lb/day)	7.83
CO2 Emissions (lb/day)	976.12
NOx Emissions (mty/y)	5.56
PM Emissions (mty/y)	0.52
THC Emissions (mty/y)	0.77
CO2 Emissions (mty/y)	95.64

Loac Factor Lookup Table

Equipment Category	Equipment Type	Details	Load Factor
Agriculture equipment	Agricultural tractors		0.48
	Combine harvesters		0.44
	Forage & silage harvesters		0.44
	Cotton pickers		0.44
	Nut harvester		0.44
	Other harvesters		0.44
	Balers (self propelled)		0.50
	Bale wagons (self propelled)		0.50
	Swathers/windrowers/hay conditioners		0.48
	Hay Squeeze/Stack retriever		0.42
	Sprayers/Spray rigs		0.42
	Construction equipment		0.40
	Other non-mobile		0.48
	Forklifts		0.40
	Atvs		0.40
	Others		0.40
Portable equipment	All portable equipment		0.31
Cargo Handling Equipment	Construction equipment		0.55
	Container handling equipment		0.59
	Forklift		0.30
	Other general industrial equipment		0.51
	Rtg crane		0.20
	Yard tractor		0.39
Transport Refrigeration Units (TRU)	TRU on trailers	25 HP and over, MY2012 and Older	0.46
	TRU on trailers	25 HP and over, MY2013 and Newer	0.38
	TRU on trailers	23 HP and Over, below 25 HP, All years	0.46
	TRU on trucks	Below 23 HP, All Model years	0.56
	TRU on railcars	25 HP and over, MY2012 and Older	0.33
	TRU on railcars	25 HP and over, MY2013 and Newer	0.27
	TRU on railcars	Below 25 HP, All Model years	0.33
	TRU with generators	25 HP and over, MY2012 and Older	0.46
	TRU with generators	25 HP and Over, MY2013 and Newer	0.38
	TRU with generators	23 HP and Over, below 25 HP, All Model Years	0.46
Ground Support Equipment	Passenger Stand		0.40
	A/C Tug Narrow Body		0.54
	A/C Tug Wide Body		0.54
	Baggage Tug		0.37
	Belt Loader		0.34
	Bobtail		0.37
	Cargo Loader		0.34
	Cargo Tractor		0.36
	Forklift (GSE)		0.20
	Lift (GSE)		0.34
	Other GSE		0.34
Construction and Industrial Equipment	Cranes		0.29
	Crawler Tractors		0.43
	Excavators		0.38
	Graders		0.41
	Off-Highway Tractors		0.44
	Off-Highway Trucks		0.38
	Other Construction Equipment		0.42
	Pavers		0.42
	Paving Equipment		0.36
	Rollers		0.38
	Rough Terrain Forklifts		0.40
	Rubber Tired Dozers		0.40
	Rubber Tired Loaders		0.36
	Scrapers		0.48
	Skid Steer Loaders		0.37
	Surfacing Equipment		0.30
	Tractors/Loaders/Backhoes		0.37
	Trenchers		0.50
	Aerial Lifts		0.31
	Forklifts		0.20
	Other General Industrial Equipment		0.34
	Other Material Handling Equipment		0.40
	Sweepers/Scrubbers		0.46
Oil and Drill Rigs	Drill Rig (Mobile)		0.50
	Workover Rig (Mobile)		0.50
	Bore/Drill Rigs		0.50



ARCHIVES & ARCHITECTURE

REPORT

DATE: March 31, 2020; Revised April 3, 2020

TO: Kailash Mozumder
Public Works Project Manager
City of Capitola
420 Capitola Avenue
Capitola, CA 95010
(via email)

RE: Proposed Rehabilitation and Repair Project, Capitola Wharf, Capitola, CA
Secretary of the Interior's Standards and Historic Integrity Review

FROM: Leslie A.G. Dill, Historic Architect

INTRODUCTION

This report represents a review of a proposed rehabilitation project for the *Capitola Wharf Resiliency and Public Access Improvement Project*. The project will repair and alter the Capitola Wharf, a historic resource. The review was undertaken to analyze potential impacts on the historic resource itself and as a contributor to the identified cultural landscape district embodied by the Capitola Beach. The review utilizes the *Secretary of the Interior's Standards for Historic Properties – Rehabilitation Standards* (Standards). The project was also reviewed for the potential impact of the project on historic integrity of the historic resource and the cultural landscape district. We understand that one of the intents of this project is to be compatible with the Standards as a way of mitigating the project to a less than significant impact under the California Environmental Quality Act (CEQA).

Executive Summary

With the recommended review of four components of the design by the City of Capitola in the future, prior to construction, the *Capitola Wharf Resiliency and Public Access Improvement Project*, as currently presented, can be found substantially compatible with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The project, as conditioned for future review, would not substantially impact the historic integrity of the individually listed historic resource Capitola Wharf nor of the identified Capitola Beach Cultural Landscape District.

The four components that are recommended for future design review are as follows:

- Finish and texture of piles at the new addition/trestle widening
- Design and materials of the new prefabricated restroom facilities
- Design of altered decorative entrance gates
- Design of replacement security gates

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Methodology

For this report, Leslie Dill of Archives & Architecture LLC referred to the 2004 Draft *Historic Context Statement for the City of Capitola* by Carolyn Swift and to the 2005 *City of Capitola Historic Structures List*. She also referred to the recently updated Capitola Wharf and Capitola Beach evaluations by Archives & Architecture LLC. These reports were prepared in advance of this project review. These evaluations include an updated documentation and evaluation of Capitola Wharf, dated March 4, 2019 and revised April 10, 2019, as well as the associated Capitola Beach Cultural Landscape District Record forms, dated March 1, 2019 and revised April 10, 2019. These evaluations are presented on California Department of Parks & Recreation 523 (DPR523) Forms.

Schematic design sketches for future alterations had been provided for comment November 2018. Possible materials options were initially presented by the City and its engineering consultants, Moffatt & Nichol, in photographs and online links in June of 2019. Ms. Dill reviewed the plan sketches and documentation as forwarded, read online sources about the rehabilitation of other historic structures, and referred to *Preservation Brief 16: The Use of Substitute Materials on Historic Building Exteriors.*[1] The alternative materials were reviewed as presented; no field research was undertaken to view these alternative materials in person. A memorandum was prepared by Leslie Dill, dated June 6, 2019, providing initial review of the design information. Character-defining features were explained, and recommendations were outlined. In addition to this written report, a series of telephone meetings were conducted where the materials alternatives were presented to Leslie Dill for her greater understanding and where additional clarifications in the drawing set were requested by Ms. Dill. The wharf was damaged by surf action early in 2020, accelerating the need for repairs and improvements, in advance of the implementation of a larger alteration plan per the 2018 sketches.

The plans reviewed consist of seven sheets (G-001 and C-100 through C-104 and C-121), dated "saved" March 18, 2020. They were accompanied by a narrative report titled "Capitola Wharf Existing Pilings and Proposed Piling Options," dated March 12, 2020. The nine-page report includes information on potential piling materials for repairs and replacement and includes photographs of similar projects using the alternative materials. The submittal set was prepared by Moffatt & Nichol of Walnut Creek, California.

Research of Similar Projects

Historically used wood piles coated in creosote are not currently presented as an option because of the adverse environmental impact of the coating. This material is a significant character-defining feature of the wharf and other marine structures of the past. The material provides a familiar wood appearance that weathers over time in a known way; it provides a tactile surface where it is accessible to passers-by; it provides a scent of creosote that is identifiable to those who have interacted with it in the past; it even creaks and creates a known sonic tone when waves wash over it or when it is touched. The review of alternative replacement materials prompted by environmental concerns represents a loss of historic integrity of material that must be recognized. None of the alternative materials provides a fully compatible result. The substitute materials will be compatible in size, form, and approximate color only. Alternative textures are not fully identified in the application. All options allow the growth of barnacles.

Online research was conducted with the goal of finding examples of project reviews for similar historic rehabilitation projects—the replacement of wood-pile marine structures with alternative materials. Within the constraints of this process and its timeline, the research did not yield results

[1] https://www.nps.gov/tps/how-to-preserve/briefs/16-substitute-materials.htm

that provided a review format or documentation of the use of replacement materials for this precise sort of marine project in a historic setting.

Information was sent that includes examples of use of this replacement material at two prominent local sites listed on the National Register of Historic Places: Alcatraz and Fort Mason. A brochure also indicates that the material was used at the Statue of Liberty; however, although at a visually prominent location, it is not clear from the presentation if this use was at a historically contributing element of that site. The two local examples present very compelling evidence that other projects at historically significant structures have utilized fiberglass resin composite material in their marine repair projects. One thing observed in these photographs—and noted in online literature—is that the replacement material is not being used to replace all the wooden structural piles, but, rather, they are being used as fender pilings while the wood piles remain intact within the inner structure of the piers.

The literature shows the replacement material being a similar size and installation with regard to traditional wood piles. The piling brochure provided in 2018 included many photographs that show the replacement piles in use. In a few of the photographs, the piles could be seen to be shiny and exhibiting a very "plastic" appearance. In phone meetings with the engineering team and City of Capitola staff, it was presented that none of the alternative coatings were known to have a textured finish, but it was believed that the finish could be matte, and all options would have a somewhat smooth appearance. The color options page (Page 20) from a technical brochure, Creative Pultrusions (CP) Product Brochure "Superpile® Fiberglass Reinforced Polymer (FRP) Pipe Piles," states that a polyurethane coating could have a "textured architectural appearance." A textured appearance is preferable to smooth, as the texturing would provide a more compatible visual appearance with the historic material. That page is attached to this report. It is recommended in this report that textures and finishes be presented during future review of the project by the City of Capitola, with alternatives presented as available.

Per the Tech Brief 16, "Growing evidence indicates that with proper planning, careful specifications and supervision, substitute materials can be used successfully in the process of restoring the visual appearance of historic resources." Fiberglass reinforced replacement building elements are regularly used in locations that are visible at a distance, such as cornices, trim, etc. The Tech Brief concludes: "Substitute materials must meet three basic criteria before being considered: they must be compatible with the historic materials in appearance; their physical properties must be similar to those of the historic materials, or be installed in a manner that tolerates differences; and they must meet certain basic performance expectations over an extended period of time."

The construction capabilities of the alternative materials are not the purview of this review; however, it is important to reiterate that wooden piles are not being considered. Of the alternatives, the HDPE piles cannot be pile driven, so are not a preferred alternative for engineering reasons. The Timber/poly design with spray coating also has issues with regard to wear and environmental issues. The composite piles are highly preferred for engineering and environmental reasons.

Disclaimers

This report addresses the project plans and materials in terms of historically compatible design of the exterior of the historic structure and its setting. The consultant has not undertaken and will not undertake an evaluation or report on the structural conditions or other related safety hazards that might or might not exist at the site and building, and the consultant will not review the proposed project for structural soundness or other safety concerns. The consultant has not undertaken analysis of the site to evaluate the potential for subsurface resources.

Qualifications

Leslie A. G. Dill, Partner of Archives & Architecture LLC, has a Master of Architecture with a certificate in Historic Preservation from the University of Virginia. She is licensed in California as an architect. Ms. Dill is listed with the California Office of Historic Preservation as meeting the requirements to perform identification, evaluation, registration, and treatment activities within the professions of Historic Architect and Architectural Historian in compliance with state and federal environmental laws. The state utilizes the criteria of the National Park Service as outlined in 36 CFR Part 61.



Detail of an Engraving of Camp Capitola, illustrating Capitola Wharf in 1879.
From Capitola Wharf DPR523. April 10, 2019.

RESOURCE AND PROJECT

Status of the Resource

Capitola Wharf was evaluated in a 2019 DPR523 form as follows:

> *Capitola Beach has been identified as a potential historic resource, eligible for the California Register under Criterion (1) and the National Register under Criterion (A), as it is associated with and represents events that have made a significant contribution to the broad patterns of local and regional history. The beach and its contributing structures embody a cultural landscape, a combination resource of natural and human-designed elements. Capitola Beach represents the history of commerce and recreation in the community of Capitola and to the tourists who visit, and the Wharf, at over 160 years old, can be considered a contributor to the historic narrative by illustrating the significant human intervention that is a theme in the history of Capitola Beach. The Wharf represents the different phases of the Capitola Beach history, including being used for shipping in the mid-1800s, being used for commercial fishing from the 1870s until the 1920s, and being used for sport fishing and recreation from the 1920s until the present. As a historic built structure that helps physically and visually maintain a cultural landscape, the Capitola Wharf is a contributing element of the beach and its significance over time…*

In 1986, with limited documentation, the Capitola Wharf was listed as a significant local resource by the City of Capitola; that listing would establish it as a historic resource under the California Environmental Quality Act. Per the integrity analysis on the previous page, although heavily physically altered since its listing, the Wharf continues to maintain associations with its historical narrative and visually embodies its historical significance. Capitola Wharf is a prominent landmark in the City of Capitola, and it can be considered eligible for the California Register under Criterion (1) and the National Register under Criterion (A).

Character of the Capitola Wharf

The March 2019 description of Capitola Wharf from the DPR523 included a list of character-defining features as follows:

- Its location and orientation, including its direct connection to the end of Wharf Road
- Its visually abundant round wooden piles, some in a regular pattern and some irregular
- Its continuous-height wood-plank deck, at the height of the end of Wharf Road
- Its narrower entrance width and wider end (altered to this design in the 1950s)
- The inclusion of hoists and other technical boating and fishing equipment

The character-defining features of the Capitola Wharf include both visual appearance from afar and the experience at the beach level, directly underneath the wharf structure.

This review keeps in mind that the structure has been repaired and altered multiple times over the years using predominantly in-kind materials and conventional structural systems. The historic integrity of the structure was described as follows:

Although altered and rebuilt multiple times after years of exposure to wave and tidal damage, the Capitola Wharf retains much of its historic integrity per the National Register's seven aspects of integrity and continues to serve as a visual, functional, and recognizable part of Capitola Beach. Because long-term weathering and storm damage have prompted repair and replacement of the Wharf's piers and decking multiple times, its materials and workmanship are not readily identifiable as historic; however, the structure continues to be built of timber and display round-wood pilings related to the structural design of the past. Capitola Wharf has historical integrity with its location and setting at Capitola Beach and extending into Monterey Bay. It retains visual associations with the establishment of shipping in the Early American era and commercial and recreational fishing for over a century, and it conveys a feeling of its age and continued use over time. Per the California Register definition of integrity, the Capitola Wharf conveys adequate historic authenticity. It serves to preserve the relationship of the beach to the commercial shipping and fishing industries of Capitola's past.

Capitola Wharf is identified, also, as a contributing structure to the identified Capitola Beach Cultural Landscape District. The introductory paragraph of the Significance section of the District Record DPR523 forms for Capitola Beach Cultural Landscape District describes the larger setting of the wharf in Capitola's past:

Capitola Beach is a human-altered and maintained natural place significant to the historical development of the City of Capitola. As highlighted in the City of

> *Capitola Historic Context Statement by Carolyn Swift (Context Statement), Capitola Beach has been a focal point of historic commerce and recreation in the City of Capitola and region for well over one hundred seventy years. The narrative of Capitola Beach is a blend of natural beauty—the sand, the bluffs, the bay, the river—and human enterprise—shipping, fishing, tourism, and entertainment. The story of Capitola is the story of forming and reforming the beach and lagoon seasonally, as well as planning for, and recovering from, storms and tides, as well as from nearby engineering projects.*

The beach's significance to the City and region is presented as follows:

> *Although the city boundaries also include late-twentieth-century shopping centers and residential areas outside the village, Capitola Beach is the primary scenic, cultural, and tourist focus of the City of Capitola since the 1860s. The history of the city centers around the cove and its use for commerce and recreation. Commerce has included uses for shipping and transit, but over time has included holiday resort accommodations—including camps, cabins, and hotels, recreational and entertainment enterprises—including bowling, movie houses, nightclubs, water sports and boating, fishing, and retail and restaurant buildings. All these businesses have relied on and been enriched by the sandy cove at the mouth of the Soquel River. Capitola Beach is significant for its role in the development of the city, and it is embodied in the physical boundaries and engineering structures that have enhanced and altered its natural beauty for human use. Capitola Beach is eligible for the National Register of Historic Places under Criterion (A) and for the California Register of Historical Resources under Criterion (1), for its representation of local and regional patterns of history.*

Summary of Proposed Project Scope

The scope of work is outlined in the Key Notes on Sheet C-100, as follows (presented herein by whether the work item is a new addition or a repair):

New additions or alterations to existing features:

- Widen Existing wharf Trestle
- Construct [prefabricated] restroom building at foot of wharf.
- Construct [prefabricated] restroom building near restaurant building.
- Install vehicle runners on top of decking from Bent 1 to Bent 50.
- Construct security gate to match (E).
- Modify entry gate to match style of (E).
- Relocate existing utilities to top of outrigger deck on west side.

Proposed repairs or replacements of existing features:

- Replace decking along entire wharf outside of building footprints.
- Repair steel piles at south end of wharf.
- Replace/Repair damaged timber piles.

SECRETARY OF THE INTERIOR'S STANDARDS REVIEW

The *Secretary of the Interior's Standards for the Treatment of Historic Properties - Rehabilitation Standards* (Standards), originally published in 1977 and revised in 1990, include ten standards that present a recommended approach to repair, while preserving those portions or features that convey a resource's historical, cultural, or architectural values. Accordingly, Standards states that, "Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values." Following is a summary of the review with a list of the Standards and associated analysis for this project:

1. **"A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships."**

   Analysis: There is no effective change of use proposed for this public property. Although there is a proposed intensification of use by providing additional restroom facilities and widening the access, these alterations have required only moderate changes to the "distinctive materials, features, spaces, and spatial relationships." The use is consistent with its historic use as a contributing structure to Capitola Beach, as well.

2. **"The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided."**

   Analysis: The character-defining features of the Capitola Wharf are included in both its visual appearance from afar and the experience at the beach level, directly underneath the wharf structure.

   Much of the primary historic character, massing, and spatial relationships of the resource are proposed for preservation in this project: Its location, orientation, use, and inclusion of hoists and other technical equipment will be unchanged. The continuous-height wood-plank deck will be replaced in-kind. Although proposed for widening, the wharf will continue to have a narrower entrance width and wider terminus. Its visually abundant round wooden piles will be preserved, and new piles will be added; no pile locations are proposed for permanent removal. (See also Standard 5)

   In this project, the beach-level experience will be altered by the widening of the access, shading and covering more sand area. This change in size, increasing the width by 16 feet (an addition of 80% to the current width), seems in proportion to the height of the visible piles above average sand level and in keeping to the openness of the structural system overhead. The added width would continue to allow a perception of light and air from underneath the structure; views would persist to the water and to the sides. The changes can be found compatible with the character of the historic wharf. (See Standard 9 for the review of introduction of an alternate material for the new piles.)

3. **"Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other historic properties, will not be undertaken."**

   Analysis: All new elements have adequate differentiation and would not create a false sense of historical development. The proposed use of new structural materials differentiates the new area of the wharf from the existing area (See also Standard 9). The restrooms are

proposed to be modern in design and materials, so would not be mistaken for historic elements.

4. **"Changes to a property that have acquired historic significance in their own right will be retained and preserved."**

   Analysis: No changes to the structure have yet been identified as having acquired historic significance in their own right. All elements are reviewed in this report as a single composition.

5. **"Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved."**

   Analysis: The identified distinctive materials, features, and finishes that identify the structure are shown as substantially preserved on the proposed drawings. In this proposed project, the existing wood piles are preserved. Only a very small number of piles, under the wider terminus area, are proposed for replacement or for repair with new materials (See Standard 6). The wood deck is proposed for replacement in kind (See also Standard 6). There are no other distinctive character-defining materials or artisanship proposed for alteration in this project. (See also Standard 2)

6. **"Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence."**

   Analysis: The scope of repair and replacement of existing features includes the replacement of the decking, the repair of the steel piles, and the repair and replacement of damaged timber piles.

   The structural and decking components are identified as Douglas fir, to match "in kind." This repair is compatible with this Standard.

   The replacement and repair materials for the existing damaged and worn piles within the existing wharf area will not match in materials. The replacement materials are proposed to be similar in dimension, layout, and color of the historic pier, especially as viewed from afar, preserving the design and color of the wharf structure. The replacement piles are primarily nearer the wharf terminus, not accessible by pedestrians using the beach, but need to be found visually compatible. It is recommended that the finish of the material be reviewed as a part of the City of Capitola permitting process and that the finish and texture be presented for review, with alternative colors, finishes, and textures presented for review as available.

   Note: The steel piles are not identified as character-defining features; the repair of these elements with new materials can be considered compatible with the materials and dimensions of these existing piles, as the materials are considered compatible with the overall design of the adjacent character-defining materials.

7. **"Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used."**

   Analysis: No chemical or physical treatments (such as epoxy consolidation or painting) are shown as proposed in this project, and none are expected.

8. **"Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken."**

   Analysis: Archeological resources are not evaluated in this report.

9. **"New additions, exterior alterations or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment."**

   Analysis: The proposed project includes a widening of the trestle/accessway, the installation of two new restroom facilities, the alteration of the security gates and entrance gates, and the installation of wood vehicle runners on top of the decking.

   The wharf footprint has changed many times through its history. Its length and width have both been altered, as has the decking and access (rail, car, foot). The general configuration of a narrow "trestle" portion that leads to a wider/larger deeper-water access area has been established as a character-defining feature. The addition of width to the current footprint will include a mix of traditional and new materials. The decking and upper structure will be wood, and the support piles are proposed to be a composite fiberglass reinforced with a plastic exterior sleeve. This mix of materials provides a clear understanding of the location of the addition adjacent to the twentieth-century wood structure. Differentiated by its base supports, it is otherwise proposed to be compatible in size, height, scale, proportion, and materials. (See also Standard 2)

   It is understood that the prefabricated restroom facilities illustrated in the drawing set may not be the final model bid or provided in the construction phase of work. The current design is compatible with this Standard, as it is compatible for its use of repetitive slats of vertical wood siding and for its compact, utilitarian massing. The design is differentiated by its contemporary flat roof and exposed stainless-steel components. It is recommended that the design of the prefabricated restroom units be reviewed by the City of Capitola for compatibility with the Standards as a part of the future development of the bidding and acquisition phases of work, prior to City of Capitola permits and prior to installation.

   The current project drawings do not include detailed design plans elevations, detailing, or materials for the new or altered security gates. It is understood that this design will be developed in the future. It is recommended that the design be reviewed by the City of Capitola for compatibility with the Standards in materials, scale, size, connection, etc., when the design is available, and prior to City permitting,

   The current project drawings do not include detailed design plans or elevations for the altered entrance gates. It is understood that this design will be developed in the future. It is recommended that the design of the entrance gates be reviewed by the City of Capitola for compatibility with the Standards in materials, scale, size, connection, etc., when the design has been fully developed, prior to City permitting,

   The addition of new wood vehicle runners is in keeping with the history of changing use of the Capitola Wharf. The materials and scale are compatible with the character of the historic resource. They are differentiated by their perpendicular installation and use.

   Note: The relocation of the utilities has been presented within the drawing set as notes only. It is assumed, for the purposes of this review, that this alteration will affect only non-character-defining features and will not, for example, include new large structures such as utility boxes or shed-sized buildings.

10. "New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired."

Analysis: The proposed design would preserve the essential form and integrity of the historic property. The significant character-defining features of the Capitola Wharf would remain substantially unimpaired in this project.

INTEGRITY ANALYSIS

Historic integrity analysis is a component of the design review process. Integrity analysis is tied into the criteria for National Register and California Register eligibility. A project that might impact the integrity of a historic resource could impact the significance of that resource. According to the California Office of Historic Preservation Technical Assistance Series #6:

> *Integrity is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Historical resources eligible for listing in the California Register must meet one of the criteria of significance described above and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Historical resources that have been rehabilitated or restored may be evaluated for listing. Integrity is evaluated with regard to the retention of* ***location, design, setting, materials, workmanship, feeling, and association*** *[Emphasis added]. It must also be judged with reference to the particular criteria under which a resource is proposed for eligibility. Alterations over time to a resource or historic changes in its use may themselves have historical, cultural, or architectural significance.*

The following analysis is intended to address how the proposed repair, rehabilitation and addition project might potentially preserve or impact the historic integrity of the contributing subject property and the surrounding cultural landscape district. The analysis utilizes the seven aspects of historic integrity indicated by the National Register and State of California's definition of authenticity of a resource.

Location: The location of the contributing historic resource is proposed to remain as-is. The historic integrity of location of the Capitola Wharf as an individual historic resource and a contributor to a historic cultural landscape would be fully preserved within this proposed project.

Setting: There is no clearly identifiable immediate setting of the wharf (e.g., there is no associated landscaping or related structures directly adjacent to the wharf, and there are no constraining elements that provide a setting of scale or dimension other than the connection of the wharf to the end of Wharf Road. There is no proposed alteration of the connection of the wharf to the road. The setting of the wharf itself would be preserved.

The integrity of the historic "setting" is also related to the project's potential impact on the character or quality of the identified Capitola Beach Cultural Resource District and the other Capitola Beach contributors, as well as the visual impacts of the structure on the setting of other nearby historic resources. The expansion of the wharf's width represents a slight impact on the setting of the beach by covered more sand area; however, this is a minor alteration with little discernable impact on the perception of the size or quality of the beach with regard to its historic integrity of setting. The height, length, plan, materials, and other qualities are substantially

preserved; therefore, the integrity of the Capitola Beach Cultural Landscape District setting, and the setting of adjacent resources, is not substantially impacted.

Design: The project would preserve much of the historic design integrity of the Capitola Wharf. The proposed design would preserve the visual appearance of the long deck, the multiple round support piles, and the cluster of buildings and equipment at the foot and the terminus of the pier. Although widening the accessway, this area would remain narrower than the ending area, a character-defining feature of the wharf design. The design as a contributing element of the cultural landscape would be preserved. The long deck and abundant piles would be visible from throughout the larger cultural landscape and city.

Materials: Because of the age and nature of the resource and its harsh environment, no existing materials are identified as original to the nineteenth or early twentieth centuries; however, it is understood that they represent the slow evolution of similar replacement materials used over the history of the resource. The decking and above-water features are proposed to match the existing materials. The replacement and repair of some piles that support the existing wharf area will also consist of new materials. The project shows the introduction of entirely new materials to support the new addition along the accessway portion of the wharf. These are differentiated per the Standards, but reasonably compatible in size, form, and connection, although not yet known to be compatible in texture or finish. There will be a loss of integrity of materials, but it is proposed to be minimized in this project.

Workmanship: The historic integrity of workmanship has already been lost. The proposed project does not impact this aspect of integrity.

Feeling: After the proposed alterations and addition, the historic resource would continue to convey a feeling of a historic utilitarian marine structure of long-time use.

Association: Per the Capitola Wharf evaluation, "Capitola Beach represents the history of commerce and recreation in the community of Capitola and to the tourists who visit, and the wharf, at over 160 years old, can be considered a contributor to the historic narrative by illustrating the significant human intervention that is a theme in the history of Capitola Beach. The wharf represents the different phases of the Capitola Beach history, including being used for shipping in the mid-1800s, being used for commercial fishing from the 1870s until the 1920s, and being used for sport fishing and recreation from the 1920s until the present." These significant associations of the resource would be preserved and continued with this new project.

Integrity Analysis Summary: Substantial integrity of location, setting, design and feeling would remain. The integrity of materials has changed over the years, but the preservation or in-kind replacement of the decking, upper structural elements, and the continued use of the vast majority of the existing wood piles can be considered consistent with the original wooden resource. The introduction of new materials is proposed in a way compatible with the historic significance, without significant impact on the historic integrity. The integrity of workmanship has already been lost. The integrity of association would be maintained. The authenticity of the property would be preserved with this *Capitola Wharf Resiliency and Public Access Improvement Project.*

RECOMMENDATIONS AND CONCLUSION

Recommendations

Because of the public bidding process, some elements of the proposed project were not able to be presented with full specifications, drawings, or notations that address potential historic compatibility and potential impacts. These elements of the design are separate and distinct, and their design is recommended for future review as a part of the City of Capitola project approval

process. It was suggested that these elements be conditioned for approval, based on additional design review by the City, including public hearings, prior to issuance of the building permit. The detailing and materials of these specific elements should be reviewed for compatibility with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

It is recommended, therefore, that the following elements be conditioned for approval, based on future City of Capitola design review and approval:

- Compatible texture and finish of proposed exterior of the new piles and repaired piles
- Compatible design, scale, materials, location, etc., of the prefabricated restrooms
- Design, scale, materials, etc., of the altered entrance gates: scale, materials, etc.
- Design, scale, materials, etc., of the new security gates

Conclusion

With the recommended future review of four components of the design, the *Capitola Wharf Resiliency and Public Access Improvement Project*, as currently presented, is substantially compatible with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The project can be found to preserve substantially the historic integrity of the historic resource and of the identified Capitola Beach Cultural Landscape District.

As conditioned for approval, the proposed project can be found to be mitigated to a less-than-significant impact on the historic resource and its surrounding identified cultural landscape per the California Environmental Quality Act.

ATTACHMENT

Creative Pultrusions (CP) Product Brochure "Superpile® Fiberglass Reinforced Polymer (FRP) Pipe Piles," Page 20.

COLOR OPTIONS



The standard color of the FRP pile is black. Custom colors are available upon request. CPI recommends that a UV protection layer be incorporated onto the pile surface if the pile is exposed to UV light and the application is architectural or cosmetic.

The UV protection is available in the form of a paint or polyurethane coating or in the form of a high density polyethylene sleeve.

Polyurethane coatings have an advantage as they provide UV and abrasion protection while exhibiting a textured architectural appearance. Polyurethane and paint coatings are offered in various colors. Consult the factory and talk to a representative to determine the best UV protection option for your installation.

BEARING AND DOCK PILES

SUPERPILE® is used extensively for bearing pile applications. The SUPERPILE® can be utilized hollow or concrete filled depending on the strength and stiffness requirements for your application.

Engineers and owners are discovering the benefits of using FRP piles in the splash zone. This exercise will significantly increase the service life of your structure.

As an example, after Hurricane Sandy, the Federal Highway Administration (FHWA) replaced the visitor and service docks on Liberty Island, NY with new docks made of FRP and wood. The FHWA engineers specified polymer piles to be used for the bearing piles in order to increase the service life of the structure. The piles were driven to refusal and filled with concrete. The dock structure was erected and the wood plank decking attached.



Visitor Center Reopens



Liberty Island Installation Site



FRP Bearing Piles

Another example of engineers and owners taking advantage of FRP materials involves the construction of an all composite fire boat dock in Jacksonville, Florida. The dock was designed for a category three hurricane direct hit, as the structure is critical for the fire department rescue team.

SUPERPILE® supports the boat lift. The substructure is made of FRP pultruded channels and beams that support the pultruded grating walkway that extends from the firehouse to the boat lifts.



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August 22, 2018

U.S. Army Corps of Engineers (USACE)
San Francisco District – Regulatory Division
1455 Market Street, 16th Floor
San Francisco, California 94103-1398

Attn: Greg Brown

Subject: Cultural Resources Memorandum for the Proposed Capitola Beach Flume and Jetty Rehabilitation Project, Located in Capitola, California

Dear Mr. Brown:

The City of Capitola and their engineering and environmental sub-consultants, Moffatt & Nichol and Dudek, have reviewed the likelihood of the proposed Capitola Beach Flume and Jetty Rehabilitation Project (proposed project) affecting any cultural resources in the project area. The review has revealed no known or recorded cultural resources at or immediately adjacent to the flume, jetty, or proposed project area. Furthermore, there would be no changes in land use, public access, or permanent traffic patterns associated with project. The location and configuration of the flume and jetty would not change. The National Register of Historic Places database was examined and the closest known resource was identified to be over 400 feet away and would not be disturbed by construction of the proposed project (Figure 1).

Additionally, the USACE coordinated with the City of Capitola for the 2017 Soquel Creek Lagoon Management and Enhancement Plan. This coordination resulted in a determination that no cultural resources would be affected by that project. Given the overlapping footprint of the proposed project to the Soquel Creek Lagoon Management and Enhancement Plan, implementation of the proposed project is similarly not anticipated to result in impacts to cultural resources.

In July 2018, the City of Capitola prepared a Cultural Resources Assessment for a separate project located approximately 0.35 miles from the proposed project site (106 Sacramento Avenue, Capitola, CA). As part of that Cultural Resources Assessment, a records search of the California Historical Resources Information System (CHRIS) was conducted for a study area overlapping the proposed project footprint. The search did not identify any known or recorded cultural resources at or immediately adjacent to the proposed project area.

Based on these reviews, we believe that implementation of the proposed project would not impact any cultural resources. If you have any additional questions, please feel free to contact our permit coordinating lead, Anna Johnson, at 925-944-5411 or ajohnson@moffattnichol.com. Thank you for your review of this information.

Sincerely,

Steve Jesberg
Public Works Director

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cc: Kailash Mozumder, City of Capitola
Anna Johnson, Moffatt & Nichol
Brad Porter, Moffatt & Nichol
Dave Wickens, Dudek
Christine Fukasawa, Dudek
Stephanie Strelow, Dudek

Attachment: Figure 1, Cultural Resources from the National Register of Historic Places in the Vicinity of the Proposed Project Footprint

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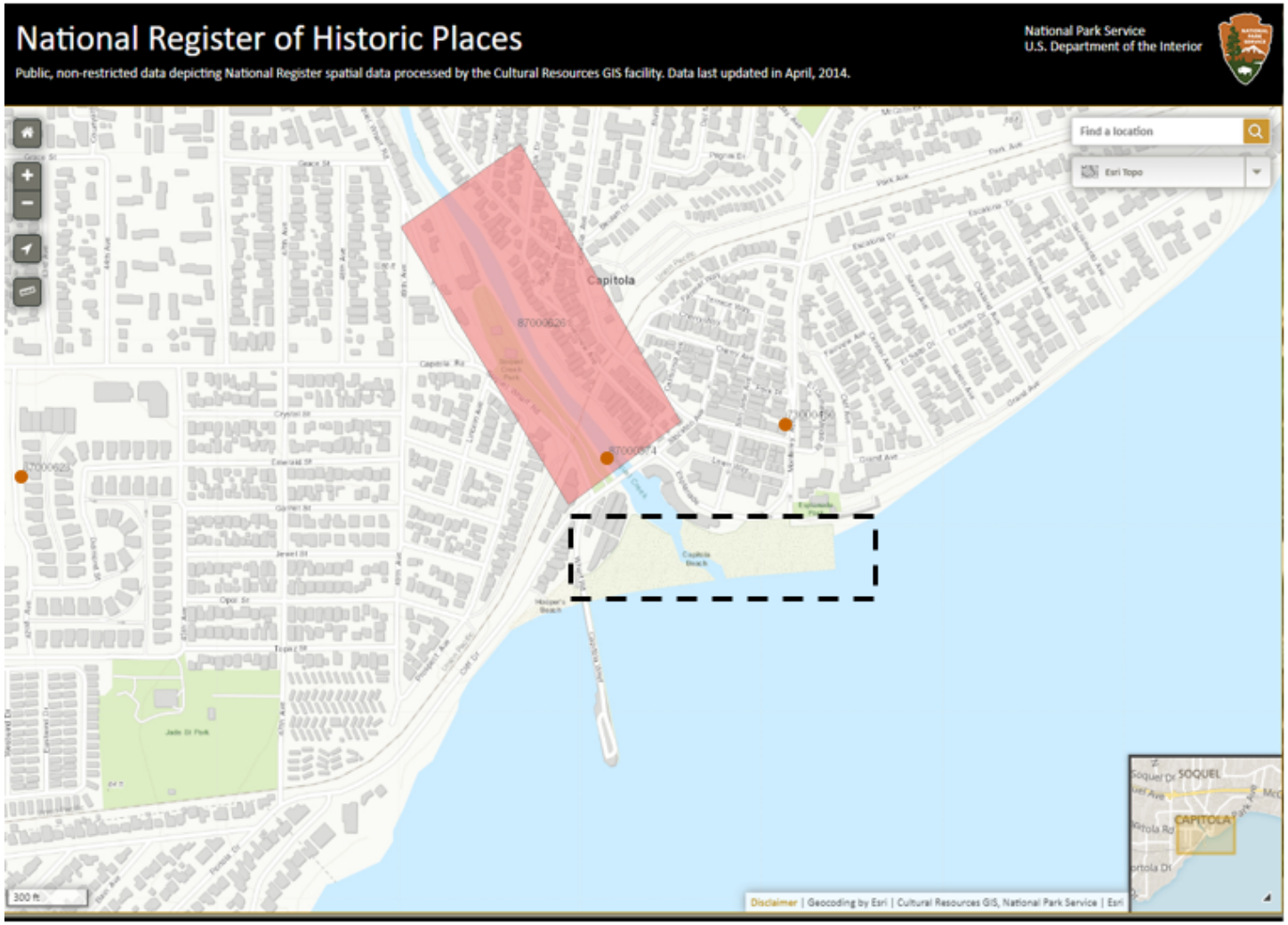


Figure 1: Cultural Resources from the National Register of Historic Places in the Vicinity of the Proposed Project Footprint

Capitola Wharf Resiliency and Public Access Improvement Project

Pile Driving Noise Levels

Impact Pile Driver

Reference Source Distance	Reference Noise Level
50	101
Receiver location @:	
4940 Cliff Drive - Backyard	80
4940 Cliff Drive - Building Setback	100
4940 Cliff Drive - Distance to Farthest Piles	525
1500 Wharf Road - Building Setback	90
1500 Wharf Road - Distance to Farthest Piles	530

Distance Attenuation	Resultant Noise Level	Indoor Noise with windows	
		open	closed
		17	25
-4.1	97		
-6.0	95	78	70
-20.4	81	64	56
-5.1	96	79	71
-20.5	80	63	55

Vibratory Pile Driver

Reference Source Distance	Reference Noise Level
50	95
Receiver location @:	
4940 Cliff Drive - Backyard	80
4940 Cliff Drive - Building Setback	100
4940 Cliff Drive - Distance to Farthest Piles	525
1500 Wharf Road - Building Setback	90
1500 Wharf Road - Distance to Farthest Piles	530

Distance Attenuation	Resultant Noise Level	Indoor Noise with windows	
		open	closed
		17	25
-4.1	91		
-6.0	89	72	64
-20.4	75	58	50
-5.1	90	73	65
-20.5	74	57	49

Capitola Wharf Resiliency and Public Access Improvement Project

Vibratory Pile Driver Vibration

$PPV_{Vibratory\ Pile\ Driver} = PPV_{Ref} (25/D)^n$ (in/sec)

PPV_{Ref}	0.65	in/sec
n	1.4	(for sandy beach)

Noise-Sensitive Location	Distance from Pile Driver (ft)	Resultant Vibration Level (in/sec)
4940 Cliff Drive - Building Setback	100	0.093
1500 Wharf Road - Building Setback	90	0.108
Distance needed to be less than "distinctly perceptible"	185	0.039

Capitola Wharf Resiliency and Public Access Improvement Project

MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Introduction

This document is the Mitigation Monitoring and Reporting Program (MMRP) for the Capitola Wharf Resiliency and Public Access Improvement Project (Project). This MMRP has been prepared pursuant to Section 21081.6 of the California Public Resources Code, which requires public agencies to "adopt a reporting and monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." A MMRP is required for the proposed Project because the Initial Study/Mitigated Negative Declaration (IS/MND) has identified mitigation measures to reduce potential impacts to less than significant.

Mitigation Monitoring and Reporting Program

As the lead agency, the City of Capitola will be responsible for monitoring compliance with all mitigation measures. Different departments within the City are responsible for aspects of the Project. It is expected that one or more departments will coordinate efforts to ensure compliance. The MMRP is presented in tabular form on the following pages. The components of the MMRP are described briefly below:

- **Mitigation Measure:** The mitigation measure(s) are taken from the IS/MND, in the same order that they appear in the IS/MND.
- **Method of Verification:** Identifies the potential method(s) that will be used to confirm that each mitigation measure has been implemented.
- **Timing of Verification:** Identifies at which stage of the Project the mitigation must be completed.
- **Monitoring Responsibility:** Identifies the City as responsible for mitigation monitoring and other parties potentially needed to facilitate implementation.
- **Verification (Date and Initials):** Provides a contact who reviewed the mitigation measure and the date the measure was determined complete.

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Mitigation Monitoring and Reporting Program (MMRP)				
Mitigation/Avoidance Measure	**Method(s) of Verification**	**Timing of Verification**	**Monitoring Responsibility**	**Verification (Date/Initials)**
Biological Resources				
BIO-1 A biologist shall lead on-site environmental training for work crews prior to the start of the proposed Project. Any new crew members brought onto the job prior to Project commencement must undergo the environmental training before starting work on the Project. Pre-construction training shall involve discussion on the status and sensitivity of the target species in the area and the actions to be taken to avoid or minimize impacts in the event of a target species entering the work area. This measure shall be included on the construction plans.	Biologist compliance documentation (e.g. record date and time of training)	Prior to starting work	City/ City Biologist/ City Contractor	
BIO-2 The contractor shall use a wood cushion block, or other comparable noise dampening device, during pile driving activities. This measure shall be included on the construction plans.	Contractor agreement and work logs	Prior to and during work	City/City Contractor	
BIO-3 A pile installation "exclusion zone" defined as the distance where underwater and in-air sound levels exceed the Level B harassment threshold (160 dB RMS threshold for impulse noise; and 120 dB RMS for continuous noise) shall be established. The exclusion zone distance(s) shall be from the active pile driving/installation source as detailed below or an alternative distance(s) if required by the Project's regulatory permits. Exclusion zones by pile type and installation method are as follows: Underwater exclusion zone 1. Fiberglass pile vibratory installation – 410 meters 2. Fiberglass pile impact proofing – 8.8 meters 3. Timber pile impact driving – 63 meters In-air exclusion zone 1. Fiberglass pile vibratory installation – 7.1 meters (seals) and 2.8 meters (sealions) 2. Fiberglass pile impact proofing – 30.3 meters (seals) and 12.1 meters (sealions) 3. Timber pile impact driving – 11.4 meters (seals) and 4.5 meters (sealions) Marine mammal monitoring of the exclusion zone shall be conducted prior to commencement of pile installation. Pile-installation activities shall not commence until marine mammals are not sighted in the exclusion zone for 15 minutes. This measure shall be included on the construction plans.	Biologist compliance documentation and/or Contractor work logs	During pile driving and pile vibratory installation	City/ City Biologist/ City Contractor (Biologist-trained designated construction monitor)	
BIO-4 If Project construction begins outside of nesting bird season, no additional mitigation is required. If Project construction begins within the nesting bird season (e.g. February 15 – September 15), a pre-construction nesting bird survey shall be conducted. No	Biologist compliance documentation	No more than one week prior to work, if	City/ City Biologist	

Mitigation Monitoring and Reporting Program (MMRP)				
Mitigation/Avoidance Measure	**Method(s) of Verification**	**Timing of Verification**	**Monitoring Responsibility**	**Verification (Date/Initials)**
more than one week prior to initiation of construction activities, a qualified biologist shall conduct a nesting bird survey to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the nesting bird monitoring area. If active nests are found, construction activities within 300 feet of the nests (or as determined by the qualified biologist) shall be modified, postponed or halted, until the nest is vacated, the young have fledged, and/or there is no evidence of a second attempt at nesting. Monitoring shall not extend beyond Cliff Drive because the effects and noise environment beyond that location is dominated by roadway and train effects.		construction is scheduled to begin during the nesting season (February 15-September 15)		
Cultural Resources				
CUL-1 Prior to City approval of the Project's final 100% design plans, the City's Architectural & Site Review Committee shall perform a focused review of the draft 100% design plans for consistency with the design plans reviewed and recommendations provided in the Project's April 2020 (or as amended) *Secretary of the Interior's Standards and Historic Integrity Review*. The City's focused review shall evaluate consistency with the following elements: a. Compatible texture and finish of proposed exterior of the new piles and repaired piles; b. Compatible design, scale, materials, location, etc., of the prefabricated restrooms; c. Design, scale, materials, etc., of the altered entrance gates; and d. Design, scale, materials, etc., of the new security gates. Should the focused review determine the above listed elements in the draft 100% design plans are consistent with the design plans reviewed and recommendations provided in the *Secretary of the Interior's Standards and Historic Integrity Review*, no additional mitigation shall be required. Should an inconsistency be identified, modifications to the draft 100% design plans shall be made until the Architectural & Site Review Committee determines consistency has been met.	Architectural & Site Review Committee review documentation	Prior to City approval of 100% design plans	City/ Architectural & Site Review Committee	
Hydrology and Water Quality				
HWQ-1 The City shall obtain all necessary permits from applicable agencies with jurisdiction over the Project. The contractor will implement and document compliance with permit conditions and BMP practices required by the permits per agency requirements and for City records. Proof of implementation may include but is not limited to the use of before-and-after photo documentation, copies of receipts and/or construction management logs.	e.g. before and after photos; receipts and/or Contractor work logs	Prior to and during work	City/ City Contractor	
Noise				

Mitigation Monitoring and Reporting Program (MMRP)				
Mitigation/Avoidance Measure	**Method(s) of Verification**	**Timing of Verification**	**Monitoring Responsibility**	**Verification (Date/Initials)**
NOI-1 Pile Driving Notification Plan – The City shall implement a pile driving notification plan as described herein to keep residents informed of the Project's pile driving schedule. Prior to pile driving activities and within 2 weeks after award and execution of the construction contract, the Contractor shall provide the City with a pile driving schedule that identifies: (1) start date of pile driving, (2) anticipated weekly work zones by estimated date shown on an aerial map (or plan sheet overview), (3) estimated pile driving completion date, and (4) website address for accessing the pile driving schedule on-line. The Contractor shall be required to post and maintain the schedule onsite near the Wharf Foot. The Contractor shall update the schedule at least every two weeks and provide the schedule to the City by the following day for posting on the City's website.	Pile driving schedule posted near the Wharf foot and on the City's website	Prior to pile driving and within 2 weeks after award and execution of the construction contract	City/ City Contractor	
NOI-2 Pile Driving Soft Start – Pile-driving shall commence with a soft start procedure (ramping up) in order to reduce the potential for startle and annoyance of nearby receptors. This shall be noted on the Project's construction plans.	Contractor agreement and contractor work logs	Prior to and during pile driving	City/ City Contractor	