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Staff: Alexandra McCoy - SC
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Hearing Date: 11/6/2020

STAFF REPORT CDP APPLICATION

Application Number: 3-20-0127
Applicant: City of Monterey
Project Location: Monterey Harbor just offshore the City of Monterey
Project Description: Ten-year structural maintenance program for the City of Monterey's two municipal wharves (Wharf 1 and Wharf 2) to address long-term maintenance needs for the City-operated portions of the wharves' structural elements, including the wharves' piles and concrete pedestals, wharf sub-structures, wharf decks, and various platforms, docks, and fender and guide pile systems. Maintenance activities are proposed to occur on three-year cycles, involving generally one year of inspection, one year to develop repair and maintenance plans, and one year of implementation (i.e., construction).
Staff Recommendation: Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

The City of Monterey's owns and operates two municipal wharves at Monterey Harbor, Wharf 1 (also referred to as Old Fisherman's Wharf) and Wharf 2 (also referred to as te Commercial Wharf). The wharves accommodate a number of coastal-related and coastal-dependent activities, including commercial fishing and recreational boating. The City proposes a ten-year Structural Maintenance Program (Program) for the structural components of both wharves to facilitate their safe and reliable continued and future use, including for commercial and recreational fishing and boating uses. The Program would encompass the portions of the wharves' structural elements that are the City's

responsibility to repair and maintain¹ and is intended to restore the original capacity of such elements that have degraded, including the wharves' piles and concrete pedestals, sub-structures, and decks. The Program would also allow for repair and maintenance of the wharves' structural elements that extend out horizontally and/or vertically from the wharves, such as various platforms, docks, and fender systems, including their associated fender and guide piles. All Program activities are designed to maintain existing wharf configurations (i.e., not to change or expand these dimensions) using similar materials as to what currently exists.

Coastal Act issues raised by the proposed project include: (1) the potential for injury or disturbance to marine mammals or sensitive species during piling replacement activities; (2) the potential for adverse impacts to coastal water quality due to accidental discharges or releases of construction materials; and (3) the potential for new fill of coastal waters due to the installation of pier piles. To address these issues, the Applicant has proposed to implement a variety of mitigation measures in accordance with staff guidance, including: (1) the implementation of a "soft start" or ramp-up technique to allow fish and mammals to vacate the area before full pile driving activities commence; (2) the use of sound dampening devices to reduce the energy transmitted from the impact hammer into timber piles; (3) completion of a Hydroacoustic Testing Plan; (4) pre-construction biological surveys; (5) limiting the type and degree of timber preservative to ammoniacal copper zinc arsenate (ACZA) for replacement decking and/or timber pilings; and (6) implementing best management practices (BMPs) to prevent spills or storm water contamination (such as daily maintenance of equipment to prevent leaks of petroleum products, adequate separation of construction materials from the water, and good construction "housekeeping"). Further, to minimize the damaging effects of sound to marine mammals and fish during pile driving activities, the Applicant proposes exclusion zones for marine mammals and sea turtles during pile driving activities, and also proposes the presence of a qualified biologist to act as a marine mammal observer who would have the authority to halt work if any cetacean, sea turtle, or sea otter entered the exclusion zone or if pinnipeds showed evidence of distress.

Staff's recommendation incorporates the City's coastal resource protection measures, and also makes certain adjustments to address potential concerns (e.g., limiting the permit to a five-year term, limiting construction activities to outside of the summer season and during daylight hours, pre-construction biological surveys, nesting bird surveys and buffers, hydroacoustic testing to establish the limits of exclusion zones, etc.). As proposed and conditioned, staff believes that the project is consistent with the Coastal Act regarding marine and biological resources, commercial and recreational fishing and boating, and public recreational access. Therefore, staff recommends approval as conditioned. The motion and resolution to effectuate this recommendation are found on **page 4** below.

¹ The City has a number of tenants on the wharves who lease wharf space for their businesses. Per the lease agreements, the tenants are responsible for maintenance and repair of the wharf structures that are located below their lease sites.

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- Exhibit 1 – Regional Vicinity Map
- Exhibit 2 – Wharf 1 Aerial Image and Structural Repair Locations
- Exhibit 3 – Wharf 2 Aerial Image and Structural Repair Locations
- Exhibit 4 – Proposed Mitigation Measures and BMPs
- Exhibit 5 – Potential Hydraulic Jetting Locations and Eelgrass Beds
- Exhibit 6 – Proposed Construction Staging Areas

1. MOTION AND RESOLUTION

Staff recommends that the Commission, after public hearing, **approve** a coastal development permit for the proposed development. To implement this recommendation, staff recommends a **YES** vote on the following motion. Passage of this motion will result in approval of the CDP as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Motion: *I move that the Commission **approve** Coastal Development Permit Number 3-20-0127 pursuant to the staff recommendation, and I recommend a **yes** vote.*

Resolution to Approve CDP: *The Commission hereby approves Coastal Development Permit Number 3-20-0127 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.*

2. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

- 1. Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
- 2. Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
- 3. Interpretation.** Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
- 4. Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
- 5. Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions.

3. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **CDP Duration.** This CDP shall be valid for five years from the date of Commission approval (i.e., until November 6, 2025). Construction work on the wharves shall only take place between the day after Labor Day and the Friday prior to the Memorial Day weekend.
2. **Hydroacoustic Testing Plan.** PRIOR TO ISSUANCE OF THIS CDP, the Permittee shall prepare a Hydroacoustic Testing Plan (HTP) for review and approval by the Executive Director. The HTP shall include the following elements:
 - a. To prevent adverse impacts to marine mammals and fish from elevated levels of underwater sound associated with installation of timber piles using an impact hammer, the HTP shall outline an underwater hydroacoustic testing program to be implemented during the installation of an initial subset of timber piles on both wharves in order to establish the limits of the exclusion zone.
 - b. The exclusion zone shall be defined by the distance between the work site and the locations at which the maximum recorded peak sound pressure level (SPL) or cumulative sound exposure level (SEL) falls below the temporary threshold shift (TTS) and permanent threshold shift (PTS) levels for marine mammals and fish. The maximum SPL or SEL thresholds utilized to determine the exclusion zone shall be based on the best available science on TTS and PTS levels for special status fish species and NOAA's most up-to-date Marine Mammal Acoustic Technical Guidance.
 - c. The HTP shall fully describe the testing program, the monitoring equipment, the number of proposed hydroacoustic testing sessions, the hydrophone locations along both wharves and in the ocean waters off of the wharves, the distance of hydrophones from the active pile driving site, and the rationale for how the program will capture a representative amount of readings that address changes in bathymetry and substrate (e.g., rocky versus sandy) in the waters surrounding both wharves. In addition, the HTP shall identify protocols for communicating hydroacoustic testing results, including any changes in the boundaries of the exclusion zone, to the approved marine mammal observer (see **Special Condition 4**).
 - d. Underwater hydroacoustic testing devices (capable of recording both SPL and SEL at the frequencies corresponding with the hearing capabilities of special status fish species and marine mammals anticipated to be present in the project area) shall be placed at an array of increasing distances from the site of active pile driving to fully monitor the project area and allow for multiple readings of the SPL and SEL levels associated with temporary and permanent threshold shifts (TTS and PTS).
 - e. A 100-meter exclusion zone shall be implemented for cetaceans, sea turtles, and

sea otters during hydroacoustic testing in accordance with **Special Condition 4(e)**. Sea lions and harbor seals are subject to the requirements of **Special Condition 4(c)**.

- f. If during hydroacoustic testing the SPL or SEL threshold is exceeded beyond the 100-meter exclusion zone used during HTP implementation and/or if the marine mammal monitor (see **Special Condition 4(b)**) observes dead or injured fish in the vicinity of active pile driving operations, the exclusion zone shall be expanded or the Permittee shall implement additional feasible power reduction and/or sound dampening measures to ensure that SPL and SEL thresholds are not exceeded beyond the 100-meter exclusion zone.
- g. If hydroacoustic testing results indicate that the size of the exclusion zone should be adjusted to be greater or lesser than 100 meters, the Permittee shall immediately implement the modified exclusion zone and shall notify the Executive Director of the change. Notification shall include a summary of hydroacoustic testing results that provide a justification for the modified exclusion zone.

Minor adjustments to the above HTP requirements may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources. All requirements above and all requirements of the approved HTP shall be enforceable components of this CDP. The Permittee shall undertake development in conformance with this condition and the approved HTP, unless the Commission amends this CDP, or the Executive Director provides a written determination that no amendment is legally required for any proposed minor deviations.

- 3. **Hydroacoustic Testing Report.** No more than 30 days after the completion of the required initial hydroacoustic testing activities, the Permittee shall submit a final hydroacoustic testing report to the Executive Director for review and approval. The final report shall compare results of hydroacoustic testing during the installation of timber piles on both Wharf 1 and Wharf 2. The final report shall include a description of all pile driving activities, a description of the hydroacoustic testing equipment and protocols that were used during the pile driving activities, the results of the hydroacoustic testing, a determination of the necessary marine mammal exclusion zones to be implemented during future pile driving activities at each wharf, and a description of any observable fish and marine mammal behavior that took place during hydroacoustic testing activities.
- 4. **Marine Wildlife Protection Plan.** PRIOR TO ISSUANCE OF THIS CDP, the Permittee shall prepare a Marine Wildlife Protection Plan (MWPP) for review and approval by the Executive Director. The MWPP shall incorporate the following parameters to be implemented during all timber pile driving activities that are done using an impact hammer:
 - a. An initial ramp-up period or “soft start” procedure at the commencement of

impact hammer pile-driving activities, or after a break in impact hammer driving of 30 minutes or more, shall be implemented to avoid potential impacts to marine mammals that may be present, but undetected, in the exclusion zone (see also subsection (e) below). The "soft start" shall consist of an initial set of three strikes made by the impact hammer at 40 percent energy, followed by a one-minute waiting period, then two subsequent three-strike sets, before initiating continuous driving. A soft start will only be implemented if no sea otters, cetaceans, or sea turtles are present within the 100-meter exclusion zone (described in subsection (e) below). In addition, the pile driver shall employ sound dampening techniques and/or devices (such as wooden blocks, pile cushions, and/or caps) during all impact hammer pile driving activities.

- b. One qualified marine mammal observer (MMO), or more if required to effectively observe the entire exclusion zone, shall be present to conduct observations during all pile driving activities. Each MMO shall be a qualified wildlife biologist with experience observing marine mammals and differentiating normal behavior from signs of injury or distress. MMO duties shall be dedicated to observing marine wildlife only, and the MMO shall not be assigned other pile driving-related duties. The MMO shall have the appropriate safety and monitoring equipment (e.g., binoculars) adequate to conduct monitoring activities and shall be located at an effective vantage point in order to observe the entire exclusion zone without obstruction.
- c. Pinnipeds (i.e., seals and sea lions) shall have a discretionary exclusion zone of 50 meters. The effects of pile driving noise on pinnipeds located within 50 meters of pile driving activities shall be monitored by the MMO using the following criteria:
 1. The first piles to be driven will be located as far as possible from known pinniped haul-out locations in the vicinity of either wharf's substructure so that the reaction of the pinnipeds to pile driving activities can be evaluated. The MMO shall monitor pinniped reactions during the initial pile driving strikes and then report these observations and related information to the Executive Director in the required Hydroacoustic Testing Report (see **Special Condition 3**).
 2. If the normal commotion of preparing the work site for the day's pile driving does not cause the resident pinnipeds to disperse away from the wharf, the MMO will record this in the required logs (see subsection (d) below) and take photos of any lingering pinnipeds on the wharf's substructure.
 3. If pinnipeds remain within the vicinity of either wharf after the initial ramp-up period described in subsection (a) above, regular pile driving activities may proceed as long as the pinnipeds do not exhibit any observable signs of injury or distress.
 4. If one or more pinnipeds appear injured or distressed, the MMO shall direct

pile driving activities to cease until the animal leaves the monitoring zone or is determined by the MMO to no longer be at risk.

- d. The MMO shall maintain a daily log of observed marine animals' (i.e., marine mammals and sea turtles) behavior that shall be of sufficient detail to determine whether the project causes observable effects to marine animals. A copy of the MMO's logs shall be submitted to the Executive Director within a week of completion of any pile driving event. At a minimum, the daily log observations shall include:
 1. The date and time that monitored pile driving activity begins and ends.
 2. Pile driving activities (e.g., Wharf 1 or Wharf 2, the number of timber piles being driven and their location on the wharf, the type of hammer being used, etc.) occurring during each observation period.
 3. Weather parameters (e.g., wind speed and direction, percent sky cover, visibility, precipitation, etc.).
 4. Ocean conditions (e.g., water level fluctuation, tide, etc.).
 5. A map showing species, numbers, location, and, if possible, sex and age class of all observed marine animals.
 6. A description of any observable marine animal behavior patterns, including those in response to piling driving activities, including their location and distance relative to the work site, direction of travel, and if possible, the correlation of behavior to SPLs.
 7. A description of implementation of any required mitigation measures (e.g., shutdown or delay of piling driving activities, etc.)
 8. Other human activities in the area.
- e. During hydroacoustic testing in accordance with the HTP (**Special Condition 2**), the MMO shall establish a 100-meter exclusion zone for cetaceans, sea turtles, and sea otters from the work site. If the MMO observes any cetaceans, sea turtles, or sea otters within this exclusion zone (see subsection (c) above for pinnipeds), the MMO shall notify City staff and/or the pile driving contractor staff as appropriate and require an immediate shut down of pile driving activities. Such activities may restart once the cetaceans/sea turtles/sea otters are observed to leave the 100-meter exclusion zone or are not observed within the 100-meter exclusion zone for at least 30 minutes.
- f. Once hydroacoustic testing is complete, for all subsequent days of pile driving, the outer edge of the exclusion zone for cetaceans, sea turtles, and sea otters shall be determined by the results of the Hydroacoustic Testing Plan (**Special Condition 2**).

- g. If the exclusion zone is not entirely visible (e.g., due to darkness, fog, etc.), pile driving shall not commence or continue to proceed (if it is underway) until visual conditions have improved and the entire exclusion zone is visible to the MMO.
- h. A report summarizing the results of monitoring activities shall be submitted to the Executive Director following implementation of any repair construction cycle during the five-year term of this CDP. The report shall include marine mammal observations (see subsection (d) above), descriptions of any project delays or cessation of operations due to the presence in the project area of marine mammal species subject to protection, and an evaluation of monitoring protocol effectiveness.
- i. To protect spawning grunion, the MWPP shall include a provision that prohibits piling replacement/repairs at the base of Wharf 2 during the month of May.

The requirements of the approved MWPP are to be implemented during all pile driving activities at the municipal wharves, including during hydroacoustic testing activities authorized pursuant to **Special Condition 2**. Minor adjustments to the above MWPP requirements may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources. All requirements above and all requirements of the approved MWPP shall be enforceable components of this CDP. The Permittee shall undertake development in conformance with this condition and the approved MWPP, unless the Commission amends this CDP, or the Executive Director provides a written determination that no amendment is legally required for any proposed minor deviations.

5. Pre-Construction Biological Surveys. Prior to any hydraulic jetting, pile repair, or pile replacement activities, the Permittee shall conduct pre-construction biological surveys, as described below, and shall submit the results of such surveys to the Executive Director for review and approval, as follows:

- a. **Eelgrass.** A pre-construction eelgrass survey for the areas under both wharves and within a 10-meter buffer area along each wharf during the period of active eelgrass growth (i.e., April through October). The pre-construction survey shall be completed no more than 60 days prior to the beginning of construction and shall be valid until the next period of active eelgrass growth. The eelgrass survey and mapping shall be prepared in full compliance with the California Eelgrass Mitigation Policy (CEMP), and in consultation with the National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW). Divers or side-scan sonar shall be used to complete the survey. If side-scan sonar methods will be used, evidence of a permit issued by the California State Lands Commission (CSLC) for such activities shall be provided to the Executive Director prior to the commencement of survey work. The Permittee shall submit the pre-construction eelgrass survey for review and approval by the Executive Director within five business days of completion of each eelgrass survey and, in any event, no later than 15 business days prior to commencement of any piling

replacement activities. If the eelgrass survey identifies any eelgrass within the project area that may potentially be impacted by the proposed project activities, such activities will be avoided. If avoidance is not possible, the Permittee shall complete and submit a post-construction eelgrass survey for the review and approval of the Executive Director within 30 days after completion of the survey. If any eelgrass has been adversely impacted, the Permittee shall replace the impacted eelgrass at an appropriate location in the vicinity of the wharves at a minimum ratio of 1.2:1 (mitigation:impact) ratio, or at another location approved by the Executive Director, in accordance with the CEMP. Eelgrass mitigation shall be completed in consultation with the CDFW and NMFS.

b. Black Abalone. A pre-construction black abalone survey of all pilings or floating docks proposed for removal/repair, the concrete breakwater located along the eastern edge of Wharf 2, as well as rocky (or otherwise hardscaped) areas and intertidal areas within 10 meters of the pilings or floating docks proposed for removal or repair. The survey shall be completed in spring within 30 days prior to construction activities. The survey shall be completed by a NMFS-qualified biologist visually on foot for intertidal areas located above the mean lower low water (MLLW) datum and by a diver for intertidal areas located below MLLW and for pilings proposed for repair or removal. The survey results, including a map showing the locations of all black abalone identified during the survey and their maximum shell length to the nearest millimeter, shall be submitted to the Executive Director for review and approval no more than 15 days prior to commencement of pile driving or hydraulic jetting activities. If any pre-construction black abalone survey indicates the presence of black abalone on in-water pilings or floating docks proposed to be repaired or replaced, the survey report shall include a Mitigation Plan that identifies specific methods to remove and relocate black abalone to a suitable area.

6. Hydraulic Jetting. Prior to a repair cycle that includes hydraulic jetting, the Permittee will prepare a map of the proposed jetting locations. Such map shall be compared with the locations of any eelgrass and/or black abalone found in the pre-construction surveys (**Special Condition 5**) to map the locations of any observed sensitive species in and around the areas of proposed jetting. If proposed jetting activities are found to be within 50 meters of any eelgrass bed perimeter or black abalone individual, the Permittee shall utilize silt curtains during implementation of hydraulic jetting activities.

7. Nesting Bird Surveys. Nesting birds and their nests shall be protected during construction by use of the following measures:

a. For any construction work that would occur during the avian breeding season (i.e., February 15 to September 1), pre-construction surveys will be completed by a qualified wildlife biologist with experience in observing reproductive and nesting behavior to identify displays of nesting behavior and/or active nests (i.e., as occupied by eggs or nestlings) along the wharves, including surfaces above both

wharves' decks (e.g., rooftops for gulls) and below both wharves' decks (e.g., substructures viewed from the water). The following shall apply:

1. Surveys will commence no more than 30 days prior to the initiation of construction and may occur weekly thereafter over the project season, with the last survey occurring no more than 72 hours prior to the start of construction in a given area.
 2. Surveys may be focused on those areas for planned maintenance and repair activities rather than necessarily covering the entire wharf structures and may be sequenced as needed to address specific work areas and schedules over the course of the nesting season.
 3. Surveys shall be performed extending 300 feet from the project work area to locate any active non-raptor nests and within 500 feet to locate any active raptor (bird of prey) nests, including areas atop wharf buildings and under wharf sub-structures.
 4. If it is determined that construction may affect active nests, the qualified biologist shall establish a no-disturbance buffer around the nests and all project work shall halt within the buffer until a qualified biologist determines the nest is no longer in use. These buffer distances are 300 feet for non-raptors and 500 feet for raptors, unless evidence is provided to the Executive Director to conclusively show that a different distance is appropriate.
 5. Maps identifying the location of any active nests detected shall be provided, showing the date of survey and nest stage (e.g., eggs, nestlings, etc.) and all buffers, to inform repair plans for maintenance and repair activities.
 6. The Permittee shall submit all nesting bird surveys to the Executive Director within 7 days of completion a nesting bird survey.
- b. Except for minor maintenance and repair efforts limited to the use of hand tools and light power tools (e.g., hand drills but not jack-hammers or power saws), the specified buffers above will be applied to each active nest during the nesting season and until the biologist determines the nest has fully fledged.
1. When only minor maintenance and repair work will be conducted along the topside of the wharves, a buffer of no less than 50 feet will be applied to active nests located above the wharves' decks in consultation with the qualified biologist.
 2. When only minor maintenance and repair work will be conducted along the underside or substructure of the wharves, a buffer of no less than 50 feet will be applied to active nests located below the wharves' decks in consultation with the qualified biologist. In addition, blinds will be placed between the active nests and the work area to avoid visually disturbing nesting seabirds. The placement of the blinds will be overseen by the biologist and that

individual will observe nest sites and parent behavior over the course of activities, or until he/she is satisfied that the nesting birds will not be significantly disturbed by the work in that area.

3. Any birds that begin nesting within an active construction area or buffers amid construction activities may be assumed to be habituated to construction-related noise and disturbance levels. No prescribed buffers are required to be established around active nests in these cases; however, further encroachment should be avoided, the nests should continue to be monitored by the qualified biologist and if the nesting birds begin to show distress associated with construction activities, the prescribed no-disturbance buffers shall be reestablished.
- c. If under any circumstances either construction staff or the biologist observe signs of distress (e.g., parents flush from the nest and do not readily return as activities continue, anxious warning calls, etc.), work shall be stopped immediately, and the biologist shall consult with the Executive Director to determine necessary modifications to activities. Activities will resume only after the biologist is satisfied that the modifications are sufficient to avoid continued disturbance to the nests.
- d. Annual monitoring reports shall be provided to the Executive Director within 90 days of construction completion and shall include: the maps from each nest survey conducted that year; a brief narrative describing the survey methods and observations of the species' tolerances to noise, vibration, and visual disturbance cues; and a record of maintenance and repair activities carried out during the nesting season, including their location relative to active nests. If any incidents have resulted in a need for further consultation with the project biologist and/or the Executive Director, these will also be discussed.

Minor adjustments to the above nesting bird survey requirements may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources. All requirements above shall be enforceable components of this CDP. The Permittee shall undertake development in conformance with this condition, unless the Commission amends this CDP, or the Executive Director provides a written determination that no amendment is legally required for any proposed minor deviations.

8. **Daylight Work Only.** All work shall take place during daylight hours (i.e., from one hour before sunrise to one hour after sunset). Nighttime work and lighting of the exterior work area are prohibited.
9. **Revised List of Mitigation Measures and BMPs.** PRIOR TO ISSUANCE OF THIS CDP, the Permittee shall submit, for Executive Director review and approval, a revised version of the "Compiled List of Mitigation Measures and BMPs" (**Exhibit 4**), modified as necessary to incorporate the requirements of **Special Conditions 2, 3,**

4, 5, 6, 7, and 8. The Permittee shall undertake development in conformance with the approved revised “Compiled List Of Mitigation Measures and BMPs”.

10. Army Corps of Engineers (ACOE) Approval. PRIOR TO ISSUANCE OF THIS CDP, the Permittee shall submit a valid ACOE permit authorizing the proposed Structural Maintenance Program. The Permittee shall inform the Executive Director of any changes to the project required by the ACOE permit. Any such changes shall not be incorporated into the project until the Permittee obtains a Commission amendment to this CDP, unless the Executive Director determines that no amendment is legally required.

11. Annual Work Plan Reports. The Permittee shall submit, for review and written approval by the Executive Director, an Annual Work Plan that includes project plans and lists of all anticipated activities for the upcoming repair cycle within 90 days prior to commencement of construction activities. The Permittee shall also submit, for Executive Director review and approval, a Post-Activity report within 90 days of construction completion that compares the anticipated activities with those completed during the repair cycle. The Post-Activity report shall include a description of any issues encountered in terms of ensuring compliance with that year’s Annual Work Plan.

12. Minor Modifications. Additional development beyond the repair and maintenance activities specified in this approval shall be submitted for a determination of coastal development permit requirements (i.e., a separate coastal development permit, amendment to this permit, or waiver). Minor adjustments to the terms and conditions of this CDP may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; (2) do not adversely impact coastal resources; and (3) do not legally require a permit amendment.

4. FINDINGS AND DECLARATIONS

A. Project Location, Background, and Description

1. Project Location

The City of Monterey is located at the southern end of the Monterey Bay in Monterey County (see **Exhibit 1** for regional location map). The site of the proposed development is the City’s two existing and actively-used municipal wharf structures, the downcoast Wharf 1 (also known as Old Fisherman’s Wharf) and the upcoast Wharf 2 (also known as the Commercial Wharf), which both extend north from the shoreline out into the tidal waters of Monterey Bay Harbor. The wharves and Monterey Harbor are located adjacent to, but are not within, the Monterey Bay National Marine Sanctuary, which is the largest marine sanctuary in the United States.

2. Project Background

From the earliest days of California recorded history, Monterey Harbor has been a pivotal port of call and a welcome refuge for mariners. Monterey Harbor services

commercial fishing, diving, whale watching, and sailing charter vessels, as well as vessels with recreational fishing and sailing interests. The harbor is also a key entry point to Monterey Bay for the research/scientific and marine educational community (e.g., Monterey Bay National Marine Sanctuary, Monterey Bay Aquarium, etc.) as well as the U.S. Coast Guard. In its current configuration, major components include the Coast Guard Breakwater, tourist-oriented Old Fisherman's Wharf 1, commercial fishing-oriented Wharf 2, launch ramps, and mooring and berthing facilities, including existing space for approximately 450 vessels within the Monterey Marina. Wharf 1 was constructed in the mid-1800's and was originally used for unloading freight and eventually for the transportation of sardines in the early to mid-1900's. The City of Monterey assumed ownership of Wharf 1 in 1913. Today, Wharf 1 is primarily a tourist destination that provides dining, shopping, special events, whale watching tours, bay cruises, glass bottom boat tours, fishing and sailing tours. Wharf 1 is comprised of a main boardwalk that provides access to numerous concession buildings, as well as finger piers and docking and mooring structures (as seen in **Exhibit 2**). Wharf 2 was originally constructed in 1926 to service the commercial fishing industry. Today, Wharf 2 continues to support the commercial fishing industry, but also provides public access, public parking, a few restaurants, and a yacht club (as seen in **Exhibit 3**). A concrete sheet pile breakwater, which is present along the eastern edge of Wharf 2, partially supports the roadway and a parking area atop the wharf's deck.

Both wharves are owned by the City of Monterey. The buildings on top of the wharves have a mix of ownership, with a few being owned by the City, but most being owned by non-City entities (i.e., tenants). All tenants have lease agreements with the City to occupy the specified premises and buildings on the wharves. In many cases, the lease agreements specify that tenants have both legal rights and responsibilities for the maintenance of the wharf structures located below their concessions. See **Exhibits 2 and 3** for the building ownership on the wharves. Both municipal wharves have degraded due to age, abrasion, and marine borer attack, and are in need of recurring repair and maintenance. In addition, high levels of public and commercial use of these wharves demand that these facilities be repaired and maintained in order to accommodate the high numbers of recreational boaters, commercial fisherman, and tourists that use the wharves' facilities. The City's previous wharf repair and maintenance permit (CDP 3-02-047) expired in 2007. Since that time, the City has applied for CDPs for repair and maintenance activities on a project-by-project basis. This project-specific approach resulted in added delays and costs for the City. Therefore, the City is seeking to increase regulatory predictability and decrease the cost and time required to undertake environmental review and obtain project-specific regulatory permits by obtaining a longer-term repair and maintenance CDP for the wharves. In order to facilitate continued and future uses of the wharf structures, this application is for a CDP to authorize repair and maintenance of all structural components of the wharves that are not occupied by a building (i.e., where there are no tenants) or are occupied by a building owned by the City of Monterey (as shown in **Exhibits 2 and 3**). Portions of the wharves that may require repair and maintenance but are occupied by tenant-owned or tenant-leased buildings are *not* covered by this CDP.

Such tenants would need to apply separately to the Commission for any necessary repairs and maintenance to wharf structures that are located below their tenancy.²

3. Project Description

The City proposes a ten-year Municipal Wharves 1 and 2 Structural Maintenance Program (Program) to cover repair and maintenance to facilitate safe and reliable continued and future uses of the wharves. The Program would encompass the portions of the wharves' structural elements that are the City's responsibility to repair and maintain and is intended to restore the original capacity of such elements that have degraded, including the wharves' piles and concrete pedestals, sub-structures, and decks. The Program would also allow for repair and maintenance of the wharves' structural elements that extend out horizontally and/or vertically from the wharves, such as various platforms, docks, and fender systems, including their associated fender and guide piles. All Program activities are designed to maintain existing wharf configurations (i.e., not to change or expand these dimensions) using similar materials as to what currently exists.

Structural elements fall into two broad classifications based on the structural component proposed for repair (i.e., foundations or framing):

- Foundation components include wharf piles and concrete pedestals, including associated fender and/or guide piles. Foundation components are typically piles composed of concrete, timber, or steel. In a few locations on Wharf 1, piles are supported by concrete piers that bear on the seafloor. Fender and/or guide pile systems are also considered foundation components. A fender system includes components that act as elastic buffer devices that are used to slow ships down and prevent damage to the ship or dock structure in the mooring process. These systems may consist of steel or timber piles on the wharves' perimeters and serve to either protect the wharves' docks from vessel impacts or anchor the docks and other floating structures to the wharves while still allowing vertical movement with tidal fluctuations.
- Framing components include cap beams, stringers, and braces. Framing is typically timber but some framing components on both wharves are made of concrete or steel. The Program does not include the buildings (referred to as concessions) situated atop the wharves, as the buildings' maintenance needs are significantly

² The City's original application included repair and maintenance of the entirety of the wharves (meaning that although the tenants would still be required to pay for repair and maintenance of the wharf structures located below their tenancies, subject to their leases with the City, this CDP would authorize such repair and maintenance without the need for additional CDPs). However, during discussions with Commission staff, the City expressed concerns about liability if the tenants did not perform the repair and maintenance work consistent with the requirements of this CDP. For that reason, the City's application does not apply to repair and maintenance of wharf structures located below tenant-occupied buildings. It is envisioned that the tenants will incorporate the Program's best management practices, mitigation measures, and the conditions of this CDP into their CDP applications for repairs to wharf structures that are located below their buildings. The tenants would also be required to separately obtain water quality certifications and any other permits and authorizations needed from other agencies.

different from those of the structural elements of the wharves.

Program activities are anticipated to be performed in an approximately three-year repair cycle consisting of three phases (inspection, repair design, and implementation (i.e. construction)), with each phase requiring approximately one year. The focus of each repair cycle will vary to some degree. For example, the first cycle is proposed to focus on timber repairs and would minimize the amount of concrete work. In future cycles, it is expected that more concrete repairs would be performed.

To avoid impacts during the busy tourist summer season, construction work would typically take place on weekdays between 8:00 am and 5:00 pm after Labor Day and prior to the Memorial Day weekend. However, as proposed by the Applicant, construction activities may occur outside of this date range or at night during periods when the work could affect the wharves' businesses and tourism. Construction activities are expected to be performed by small teams working on skiffs, floats, temporary scaffolding, or from the wharves' decks. Pile sleeve and wrapping repairs may require the use of divers. All framing and deck work is expected to be done above water. Repairs to pile bracing, some of which may be submerged during high tides, would be completed during low tides. In-water activities range from minor, such as installing a pile wrap or patching a small area of spalling concrete, to major, such as pile replacement or repairs to concrete block foundations.

To maximize efficiency, the repair design will identify engineering recommendations for the repair plans for all the wharves' structural elements, regardless of tenancy. However, this CDP application for wharf maintenance will only cover work being completed by the City of Monterey, either by City of Monterey maintenance staff or contractors performing work for the City of Monterey, on portions of the wharves not occupied by tenants (see **Exhibits 2 and 3**).

The Program includes a variety of avoidance and mitigation measures (seen in **Exhibit 4**) identified in the Mitigated Negative Declaration for the Program that include (but are not limited to) use of floating booms to contain any accidental debris discharged into waters, pre-construction wildlife and eelgrass surveys, and incorporation of the Commission's standard best management practices (BMPs) to protect water quality during construction activities. In addition, the Program includes a series of mitigation measures to minimize noise impacts from pile driving such as implementation of a "soft start" or ramp-up technique to allow fish and mammals to vacate the area before full pile driving activities commence, use of at least one qualified marine mammal observer searching for marine mammals during pile driving activities with the authority to halt work if those activities pose a threat to marine mammals, and submittal of a Hydroacoustic Testing Plan (HTP) prior to commencement of pile driving activities. During hydroacoustic testing activities, the Applicant proposes implementation of temporary exclusion zones of 100 meters for cetaceans, 50 meters for pinnipeds,³ and

³ Pinnipeds (i.e., harbor seals and sea lions) are found in great numbers in the waters surrounding the wharves, as well as on the wharves' substructures themselves. Thus, the City is proposing that the 50-meter exclusion zone for pinnipeds is discretionary, meaning that work can commence if pinnipeds are

30 meters for otters. The HTP would determine the appropriate exclusion zones to be implemented during all future pile driving activities. The program has been approved by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS).

B. Standard of Review

The proposed project site is located seaward of the mean high tide line within the Commission's retained CDP jurisdiction. The standard of review for development within the Commission's retained jurisdiction is Chapter 3 of the Coastal Act.

C. Land Use Priorities

Applicable Coastal Act Provisions

The Coastal Act defines coastal-dependent and coastal-related as follows:

Section 30101: *"Coastal-dependent development or use" means any development or use which requires a site on, or adjacent to, the sea to be able to function at all.*

Section 30101.3: *"Coastal-related development" means any use that is dependent on a coastal-dependent development or use.*

Coastal Act Section 30001.5 states, in relevant part:

Section 30001.5: *The Legislature further finds and declares that the basic goals of the state for the coastal zone are to:*

(a) Protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources....

(c) Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners.

(d) Assure priority for coastal-dependent and coastal-related development over other development on the coast...

Coastal Act Sections 30234 and 30234.5 also provide specific protections for boating harbors and commercial fishing. They state:

Section 30234: *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute*

observed within the 50-meter exclusion zone; however, the marine mammal observer would have the discretion to stop work activities if such pinnipeds showed evidence of distress.

space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.

Section 30234.5: *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

Analysis

Wharf 1 and Wharf 2 accommodate a number of coastal-related and coastal-dependent activities, including commercial fishing and recreational boating. Marine biological resources in the Monterey Bay support numerous activities that emanate from the wharves, including recreational fishing (which includes fishing from Wharf 2, small boat rentals, and charter fishing boats), commercial fishing, sightseeing, whale watching, scuba diving, and bird watching, among others.

Coastal-dependent and coastal-related developments are among the highest priority Coastal Act uses. As indicated, the municipal wharves provide an array of commercial and recreational boating, fishing, and coastal-related opportunities. Commercial fishing and related waterfront activities on the wharves generate jobs, provide recreational opportunities, and draw tourists from around the world. The proposed Program activities not only support coastal-dependent and coastal-related uses but are in fact integral to a continuation of such uses and therefore have a priority under the Coastal Act. Further, commercial and recreational boating and fishing are coastal-dependent priority uses that cannot function without safe wharves. Accordingly, the proposed repair and maintenance program is considered a high priority under the Coastal Act.

Coastal Act Section 30234 calls for the protection of commercial fishing and recreational boating industries, as well as upgrading such facilities where feasible. Coastal Act Section 30234.5 recognizes the economic, commercial, and recreational importance of fishing activities. In an effort to decrease delays and cost, the City of Monterey has proposed to package all its repair and maintenance activities into one permit application to allow for efficient implementation of such activities required for safe operation and public use of the municipal wharves. While the Coastal Act provides exemptions from CDP requirements for certain routine repair and maintenance activities in order to facilitate ongoing work that does not involve a risk of substantial adverse environmental impact,⁴ Section 13252 of the California Coastal Commission's regulations requires a CDP for repair and maintenance in this case because the proposed activities are located in, adjacent to, and above coastal waters, and thus such activities involve a risk of substantial adverse environmental impact.

Program activities are limited to necessary structural maintenance to specific degraded structural wharf components to restore their original capacity and ensure safe and reliable continued and future use of the municipal wharves. Such activities will prevent unnecessary emergency repairs that have a greater risk for environmental impacts. This CDP allows the City of Monterey to proceed with repair and maintenance activities that

⁴ Coastal Act Section 30610.

are essential to maintaining and operating the commercial fishing fleet, as well as recreational fishing and boating. Therefore, the Commission finds that this project implements, and is consistent with, Coastal Act Sections 30234 and 30234.5.

D. Marine and Biological Resources

1. Fill in Open Coastal Waters

Applicable Coastal Act Provisions

Coastal Act Section 30233 (in relevant part) addresses filling of open coastal waters, stating:

Section 30233(a). *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities...

(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities...

Analysis

The proposed project includes potential for “filling” of open coastal waters through the replacement of pilings (including when removal of an existing piling is not possible during installation of a replacement pile⁵). More precisely, these proposed activities involve re-filling of coastal waters when existing structures, such as pilings, in coastal waters are replaced within the existing footprint, as opposed to new fill per se. This CDP is not intended to cover significant repairs or improvements but is instead intended to provide for the structural repairs of the municipal wharves.

Projects that include, or have the potential to include, fill of coastal waters must satisfy the three-pronged test contained in Coastal Act Section 30233(a). As described above, the wharves provide a slew of coastal-dependent and coastal-related functions, and qualify as both commercial fishing facilities as well as public recreational piers as a general rule. Thus, the project satisfies the first prong under Section 30233(a).

The second prong of the 30233 test requires there to be no feasible less environmentally damaging alternatives to the proposed project. The purpose of the proposed project is to perform the necessary structural repairs of the municipal wharves in order to facilitate safe and reliable continued and future uses of these facilities.

⁵ Pilings, or a portion of a piling, may not be able to be removed if direct pull fails to remove the existing piling from the substrate. Piles that cannot be pulled out will be cut off at least two feet below the mudline.

Therefore, avoiding the work, or the “no project” alternative, is not considered feasible because repairs are necessary to adequately maintain existing facilities or enhance their usability by the public and the commercial fishing industry. Secondly, the proposed project is to repair existing structures to existing configurations with materials generally similar to the original construction. Because the proposed work involves repair and maintenance of existing infrastructure, there are no alternative locations for the project that could entirely avoid coastal waters. Based on the above considerations, the Commission therefore finds that there are no feasible less environmentally damaging alternatives to the proposed fill, and that the project therefore meets the second prong of the Coastal Act Section 30233 test.

The third and final prong of the Section 30233 test is that all feasible mitigation measures have been required to mitigate the impacts of the proposed fill. The primary impacts of the proposed fill are associated with disturbance of the benthic habitat. The Applicant proposes to implement several mitigation measures to ensure that repair and maintenance activities do not result in unnecessary disturbance to the benthic habitat, such as: pre-construction biological surveys for sensitive benthic species; repair of existing piles with an epoxy grout instead of replacement (see further discussion of piling repair in the “Water Quality” section below) when possible; and when piling repair is not possible, removal of existing piles (when feasible) and replacement with new piles; and limiting maintenance and repair activities in coastal waters to that which will not expand existing development past its existing configuration and specifications.

In order to ensure that development that may create new fill in coastal waters does not occur, the CDP will authorize the project as proposed by the Applicant, except as modified by the special conditions. **Special Condition 1** would limit authorized activities to a five-year permit term limit to allow for evaluation of the City of Monterey’s procedures and methodologies sooner than the proposed ten-year permit term. **Special Condition 1** also codifies the Applicant’s proposal to only perform construction work after Labor Day and prior to the Memorial Day weekend. Further, **Special Condition 11** requires submittal of pre-activity reports and project plans prior to construction as well as post-activity reports. The pre-activity reports shall be submitted with project plans at least 90 days prior to construction and are subject to Executive Director review and approval. The post-activity reports will describe all repair and maintenance activities completed and shall be submitted within 90 days after completion of work. **Special Condition 12** requires that any modifications to activities authorized by this CDP shall require a CDP amendment, unless the Executive Director determines that no amendment is legally necessary. With these conditions in place, the Commission finds that the third prong of Coastal Act Section 30233(a) has been satisfied and that feasible mitigation measures have been provided to minimize adverse environmental effects.

For the reasons above, and as conditioned, the Commission has determined that the project has satisfied all three prongs of the Section 30233 test and is therefore consistent with Section 30233 of the Coastal Act.

2. Biological Resources and Water Quality

Applicable Coastal Act Provisions

Coastal Act Sections 30230 and 30231 protect marine and inland watercourse biological resources, stating:

Section 30230. *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231. *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Analysis

Background

The wharves are located at the southern end of Monterey Bay. Monterey Bay supports a diverse complex of marine and marine-related habitats including open ocean, kelp forests, rocky seashore, nearshore intertidal, sandy beaches, coastal streams, estuarine systems, and wetlands. Also, annual seasonal upwelling brings nutrient rich, cold water up from the Monterey Bay Canyon, which causes the bay to teem with microscopic life and krill. In turn, this upwelling provides an abundance of nutrition for numerous species along the food chain and supports a wide range of marine life, including benthic communities, marine mammals, turtles, and fish. While the abundance of some of the whale species varies seasonally in the bay, many marine mammal species such as seals, sea lions, porpoises, dolphins, and otters are year-round residents of the bay and are often found in the vicinity of the wharves.

Of the twenty-seven species of cetaceans seen in the Monterey Bay, about one-third occur with relative frequency. Gray whales are the most common and typically are present within three kilometers of the coastline during their predictable winter and spring seasonal migration, while others such as humpback whales are typically present in the bay during feeding aggregations in the summer and fall months. Five species of dolphin and two species of porpoise are also regularly present in the Monterey Bay. In addition to cetaceans, five species of pinnipeds (i.e., seals and sea lions), as well as the southern sea otter, are widely present in the bay, including in the vicinity of the wharves. However, marine mammal presence is difficult to predict and not all species and

individuals follow these general trends. Predictions of marine mammal presence and density are typically based on average observations over many years and therefore may not reflect the actual behavior of all individuals within a species, or the variation in abundance or occurrence that may occur in a single year or season.

The southern Monterey Bay area also has a significant bird population ranging from shorebirds that make their nests on various wharf structures, or migratory birds resting on the wharves during their journey on the Pacific Flyway.

The proposed project represents a long-term program for repair and maintenance activities necessary to maintain and improve the structural integrity of both municipal wharves. Proposed activities with the potential to adversely affect sensitive biological resources include repair or replacement of existing wharf structural elements in coastal waters, the use and transportation of materials hazardous to marine resources (including concrete, asphalt, wood preservatives), as well as fluids and oils associated with mechanized construction equipment. Potential direct and indirect impacts to biological resources from repair and maintenance activities include damage to sensitive species or habitats from pile driving activities or interference with movement, foraging, and/or reproduction of sensitive species from equipment operation (noise, disturbance, etc.), and the discharge of harmful materials into the marine environment.

A Biological Assessment (BA) of the Program was prepared to determine to what extent the repair and maintenance activities may affect aquatic or terrestrial species listed as threatened or endangered, or for species that are candidates for listing, along with any designated or proposed critical habitats, Essential Fish Habitat, and Habitat Areas of Particular Concern.⁶ This BA presents technical information about Program actions and assesses potential effects to threatened, endangered, or proposed threatened or endangered aquatic or terrestrial species and their habitats. Endangered or sensitive species with the potential to occur within the proposed project location include southern sea otter (*Enhydra lutris nereis*), leatherback sea turtle (*Dermochelys coriacea*), Chinook salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*Oncorhynchus tshawytscha*), South/Central California Coast steelhead (*Oncorhynchus mykiss irideus*), North American green sturgeon (*Acipenser medirostris*), black abalone (*Haliotis cracherodii*), western snowy plover (*Charadrius nivosus nivosus*), and California grunion (*Leuresthes tenuis*). The project site also falls within Essential Fish Habitat for a large community of commercially important fish, including sharks, that are managed under four federal fisheries management plans: the Pacific Groundfish, the Coastal Pelagic, the Pacific Coast Salmon, and the West Coast Highly Migratory Species. Lastly, the BA

⁶ This Biological Assessment was prepared to support informal consultation with the National Marine Fisheries Service (NMFS) and U.S. Fish & Wildlife Service under Section 7 of the Federal Endangered Species Act (ESA), and with NMFS for Essential Fish Habitat under the Magnuson-Stevens Fishery Conservation and Management Act.

also identified rocky reef and canopy kelp habitats that are located up and down coast of the wharves as habitats of particular concern.⁷

Because the repair and maintenance activities, as proposed, have the potential to impact marine resources, the BA outlined BMPs that are incorporated into the Program (see **Exhibit 4**) to avoid or minimize effects. Special conditions (as described below) are also required to codify the proposed minimization measures or provide additional protection and enhancement of coastal water quality, marine wildlife, and habitats consistent with the Coastal Act.

Piling Replacement

The project includes the replacement of approximately fifteen timber piles, five formed concrete piles, and thirty fender and/or guide piles every three years.⁸ All obsolete piles would be pulled or cut at the mudline to the extent practicable.

The large majority of piles needing replacement will be replaced with small-diameter (less than 18-inch diameter) timber piles, which would be installed using a small impact hammer (typically a 3,000-pound drop hammer, with cushion blocks to attenuate sound). The replacement piles are Douglas-fir piles treated with an ammoniacal copper zinc arsenate (ACZA) preservative and encapsulated within a continuous polymer coating, from just below the mudline to just above mean high water line, to prevent leaching of wood preservatives into the marine environment. Timber piles may also be wrapped in a high-density polyethylene (HDPE) sheet, that is attached to the timber pile by nails or cable ties, to prevent marine borer damage. Existing timber piles may also be replaced with small diameter (less than 18-inch diameter) concrete piles.

Concrete piles will be formed in place using forms made of polyvinyl chloride (PVC) or other inert material filled with pressurized marine-safe concrete or grout, and rebar, and cured in sections working upward. The concrete piles will be installed by either of the two following methods: with the use of hydraulic jetting, where a trained diver uses a water hose attached to a hand-held wand at the mudline until the pile point location reaches the desired depth or, when time permits, by allowing piles tethered to the wharf to settle several feet into the substrate via pressure from their natural weight over a period of several months. No driving of concrete piles is proposed or authorized by this CDP.

Fender and/or guide piles will be replaced with either steel pipe piles (typically 18- to 24-inch-diameter with a one-quarter-inch wall thickness) or solid timber pointed-tip piles. Timber piles will be installed with an impact hammer. Steel piles will be installed by either of two following methods: with the use of hydraulic jetting or, when

⁷ No rocky reef or mature canopy habitat is located within the footprint of either wharf. The majority of the wharves are located in deeper water with soft-bottom sands.

⁸ The numbers of pilings to be replaced per repair cycle will depend on the observed damage at the time. Thus, each specific cycle may be different than the estimated values presented, which are intended to present conservative estimates.

time permits, by allowing piles tethered to the wharf to settle several feet into the substrate via pressure from their natural weight over a period of several months. No driving of steel piles is proposed or authorized by this CDP.

Noise Impacts During Pile Driving

Because timber pile driving activities would be carried out both above and within marine waters, the project has the potential to result in adverse impacts to both marine organisms and the marine environment (see also “Water Quality” discussion below). Specifically, the proposed pile driving would result in the generation of elevated levels of underwater sound in nearshore waters known to support a number of species of marine mammals, including harbor seals, California sea lions, southern sea otters, and numerous species of dolphins, porpoises, and whales. All of these species are protected under the Marine Mammal Protection Act. Several of these species are listed under the federal endangered species act, including the southern sea otter (threatened) and four whale species: the blue, fin, right, and sperm whales (all endangered).

Marine mammals, in particular cetaceans such as whales, dolphins, and porpoises, are known to be susceptible to disturbance and injury from high levels of human-generated underwater sound (see also below). Marine mammals rely on sound for communication and the ability to sense their environment for a variety of critical life functions (e.g., traveling, finding mates or young, foraging, etc.). Although an animal may communicate and sense its environment in many ways and with a variety of different sensory organs, light can only penetrate a few hundred feet underwater while sound can travel much farther. Because water is denser than air, sound travels faster and farther in the ocean. Its speed and distance depend on the density of the water (determined by its temperature, salinity, and depth) and the frequency of the sound, measured in hertz (Hz). For example, noise waves bend toward colder, denser water.⁹ Some sounds, particularly low-frequency ones, can cover vast distances, even across ocean basins. As a result, cetaceans and other marine mammals have evolved to rely primarily on sound to sense their environment, communicate, and avoid predators. Increased anthropogenic generated noise in the marine environment has been shown to interfere with these activities and in some cases to cause internal injury, stranding, and mortality. Similar adverse impacts exist for fish and invertebrates as they also use sound for basic life functions.

Sound pressure pulses as a function of time are referred to as a waveform. Peak waveform pressure underwater is typically expressed in decibels (dB) referenced to 1 microPascal (μPa). Sound levels are generally reported as peak levels (peak), root-mean-square pressure (RMS) and sound exposure levels (SEL). In addition to the pressure pulse of the waveform, the frequency of the sound (in Hz) is also important to evaluating the potential for sound impacts. Low frequency sounds are typically capable of traveling over greater distances with less reduction in the pressure waveform than high frequency sounds.

⁹ See, for example, <https://www.nrc.gov/docs/ML1225/ML12250A723.pdf>.

The striking of a pile by a pile-driving hammer creates a pulse of sound that propagates through the pile and radiates out through the water column, seafloor, and air. Exposure of marine mammals or fish to low levels of sound for a relatively long period of time, or exposure to higher levels of sound for shorter periods of time, may result in auditory tissue damage (damage to the sensory hair cells of the ear) or temporary hearing loss referred to as a “temporary threshold shift” (TTS). Species may recover from TTS minutes to days following exposure.

An additional possible effect on hearing from loud underwater sound is referred to in the literature as a permanent threshold shift (PTS). PTS is a permanent loss of hearing and is generally accompanied by death of the sensory hair cells of the ear. Several studies carried out in recent years suggest that instantaneous exposure to a peak sound pressure level (known as SPL) as well as from accumulated exposure to a lower sound level over a longer period of time (known as cumulative sound exposure level (SEL)) can affect hearing through auditory tissue damage.

Marine mammals have been divided into hearing sensitivity groups, referred to as functional groups, under the assumption that there will be differences in hearing sensitivity and dynamic hearing range between the various species. For example, it is assumed that there are only minor differences between the hearing systems of baleen whales, and thus all baleen whales are classified into the Low-Frequency cetaceans hearing group, while pinnipeds in the water are divided into phocid seals (earless) and otariids (eared seals) (NMFS 2018). NOAA (National Oceanic and Atmospheric Administration) Fisheries compiled and summarized the best available information on the effects of sound on marine mammals' hearing into the NMFS (National Marine Fisheries Service) “Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing.” This document provides technical guidance for assessing the effects of underwater man-made sound on the hearing of marine mammal species (i.e., onset of PTS and TTS) by identifying acoustic thresholds that may harass or injure marine wildlife. In addition, substantial progress has been made in quantifying marine mammal hearing and the effects of noise on hearing for a range of taxa in the past few years with updated acoustic thresholds being released annually over the past two years, with the most recent guidance published in 2019.¹⁰ This most recent update reflects the latest science and generally indicates that animals are more sensitive than previously thought, and includes acoustic thresholds for amphibious species, such as the sea otter, and reclassified several function groups based on new scientific knowledge. Similarly, in 2008, an interagency working group comprised of representatives of state and federal resource management agencies from California, Oregon, and Washington developed recommendations of peak and accumulated sound levels to be used as thresholds for injury to fish, which are used as the current standard.

Pile driving produces high sound pressure levels in both the surrounding air and underwater environment. Sound levels vary substantially and are specific to the materials and methods in use, such as the method of pile driving, the pile materials,

¹⁰ Southall et al, 2019.

and the diameter of the pile. The two basic pile driving methods are impact pile driving, where the pile is driven by strikes from a high-energy hammer, and vibratory pile driving, where the pile is effectively vibrated into the sediment. One advantage of using a vibratory hammer is it creates reduced ground vibrations and noise levels compared to impact pile driving, which produces a loud, impulsive sound during every strike. This makes vibratory hammers the preferred alternative. However, according to the Applicant, the use of a vibratory hammer to install timber piles would result in damage to the pile because the hydraulic clamps needed to connect the vibratory hammer to the pile would damage the timber. Thus, the Applicant proposes that timber piles will only be driven using an impact hammer because this method of driving will preserve the integrity and extend the life of the replacement timber piles.

To minimize the damaging effects of sound to marine mammals and fish during pile driving activities, the proposed Program includes several noise minimization protective measures when driving piles with an impact hammer such as implementation of the “soft start” technique and use of sound dampening devices. The “soft start” or ramp-up technique allows fish and mammals to vacate the area before regular pile driving activities commence. The “soft start” technique begins with a slow increase of impact hammer energy (i.e., an initial set of three strikes made by the hammer at 40 percent energy, followed by a one-minute waiting period, then two subsequent three-strike sets) before initiating continuous pile driving. The Program also proposes the use of sound dampening devices and techniques, such as cushion blocks or caps placed between the pile hammer and timber pile, to reduce the sound energy transmitted from the hammer into the wooden piles. These noise minimization measures are codified into **Special Condition 4(a)** as part of a Marine Wildlife Protection Plan (MWPP) to be implemented during all pile driving activities.

In addition, the BA for the Program includes examples of sound levels produced from striking different types of piles and an analysis of potential hydroacoustic impacts on fish and marine mammals from pile installation. Based on sound modeling of the extent of sound pressure levels from impact pile installation relative to marine mammal thresholds, the Applicant proposes to implement monitoring of exclusion zones (EZs) that correspond to the radius where sound levels are no longer expected to adversely impact the hearing of marine mammals.¹¹ The EZs are proposed to be monitored by at least one qualified Marine Mammal Observer (MMO)¹² during all pile driving activities to effectively observe for marine mammals. The MMO will have the authority to halt work if those activities pose a threat to marine mammals. **Special Condition 4(b)** requires that an MMO be present during all pile driving activities to effectively observe the exclusion

¹¹ The exclusion zone is defined as the radial distance between the work site and the locations at which the maximum recorded peak sound pressure level (SPL) or cumulative sound exposure level (SEL) falls below the temporary threshold shift (TTS) and permanent threshold shift (PTS) levels for marine mammals and fish.

¹² More than one MMO may be needed, depending upon the locations of proposed work and any potential visual obstructions to the clear sight lines required to monitor the exclusion zones.

zone. **Special Condition 4** further requires that the MMO shall halt work if pile driving activities pose a threat to marine mammals or sea turtles (see below for further discussion).

The Applicant is proposing the following initial EZs for pile driving activities that will take place during proposed hydroacoustic testing activities: 100 meters for cetaceans and sea turtles, 50 meters for pinnipeds, and 30 meters for sea otters. These proposed EZs are based on proxy data from hydroacoustic testing results located in the California Department of Transportation's 2015 "Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish," which contains a "Compendium of Pile Driving Sound Data" that lists information on underwater sound pressure levels resulting from pile driving measured in California, Oregon, Washington, Nebraska, Idaho, Hawaii, and Alaska. Specifically, the surrogate data for hydroacoustic testing results when driving 18-inch concrete piles listed in the compendium was input into the NOAA marine mammal hydroacoustic impact calculator to characterize the potential effects of pile installation. However, the proposed exclusion zones may not represent the actual distance from active pile driving needed to prevent sound injury to marine mammals and special status fish species at the Monterey wharves, as the surrogate data is not based on the results of hydroacoustic testing done in the vicinity of these particular wharves. While the methodology and model used to derive the proposed EZs is supported by NMFS and provides the best estimate of harmful noise thresholds, this modeling can be technically difficult to complete and prone to error. This is because sound waves can bounce between the ocean surface and submerged features, such as rocks, and become magnified (rather than attenuating at a steady rate as can be the case in deeper waters with more homogenous conditions). For example, underwater sound recording carried out as part of a causeway repair project in shallow nearshore waters near Rincon Island in Ventura County showed that after declining steadily between 150 meters and 300 meters from the pile driving, sound levels rose again at roughly 450 meters from the source and reached levels that nearly exceeded those at the 150 meter distance.

Further, the proposed Program includes installation of timber piles using an impact hammer. The proxy data is based on driving concrete piles and does not specify the method of pile driving. Thus, the proposed EZs may not capture the TTS and PTS marine mammal sound thresholds resulting from the proposed pile driving activity here. Finally, the submitted hydroacoustic impact analysis was completed in 2018 and references the NMFS thresholds published at that time but does not reference the 2019 criteria and thus may not be relying on the most up-to-date science on TTS and PTS marine mammal sound thresholds published in 2019.¹³

Thus, to ensure that the modeling results are accurate, the Applicant proposes to submit a Hydroacoustic Testing Plan (HTP) to verify the size of the exclusion zones to be implemented for each wharf when driving timber piles with an impact hammer. The HTP would be implemented to determine the appropriate EZs that should be used for all future pile driving activities at these wharves, based on empirical pile driving results

¹³ Southall et al, 2019.

(including typical background noise) for these specific locations (**Special Condition 4(f)**). The HTP would include baseline information to be recorded (such as weather, waves, etc.), distances from piles where monitoring would be conducted, and monitoring methods. To ensure that adequate marine wildlife protection measures are in place during the driving of timber piles, **Special Condition 2** clarifies and codifies the requirements of the proposed HTP. The HTP would specify the testing scheme and methods used to obtain and report the results of the hydroacoustic testing and will ensure that the decibel units used in establishing the permanent marine mammal exclusion zones are consistent with the most current guidance provided by NMFS and Southhall et al. 2019. Further, **Special Condition 2** codifies that one or multiple (as necessary) MMOs will be present during all pile driving activities for which hydroacoustic testing is taking place. If sound thresholds are exceeded beyond the proposed exclusion zone used during HTP implementation and/or if the marine mammal monitor observes dead or injured fish in the vicinity of active pile driving operations, the exclusion zone shall be expanded, or additional feasible power reduction and/or sound dampening measures shall be employed. The MMO will also have the authority to trigger an immediate shut down of pile driving activities if a marine mammal (other than pinniped) or a sea turtle is observed within the EZ. Additionally, **Special Condition 2** includes protocols for communicating hydroacoustic testing results, including any changes in the boundaries of the exclusion zone, to the Commission's Executive Director. **Special Condition 3** requires the submission of a hydroacoustic testing report within 30 days of completion of the required hydroacoustic testing activities. The final report will compare hydroacoustic testing results on both Wharf 1 and Wharf 2 to determine the appropriate EZs for all future timber pile driving using an impact hammer for both wharves, including whether each wharf should have its own distinct set of EZs.

The extensive use of the wharves by California sea lions and harbor seals poses a challenge for observing the proposed 50-meter exclusion zone while conducting timber pile driving. Yet, it is understood that these species are accustomed to a noisy waterfront and are not easily deterred by human activities. For example, monitoring of behavioral disturbance of seabirds and marine mammals during similar construction at the U.S. Coast Guard breakwater, just northwest of the wharves and also in the Monterey Harbor, determined that disturbance resulting from construction was minor and did not cause long-term or permanent changes in behavior.¹⁴ Thus, it is anticipated that pinnipeds accustomed to living on the substructure of the wharves will tolerate some amount of commotion and disturbance associated with the project's pile driving activities. Instead of ceasing activities if a pinniped is observed within the 50-meter EZ, the effects of pile driving noise on all pinnipeds within 50 meters of pile driving activities will be monitored and the MMO will have the discretionary authority to cease pile driving activities if a pinniped appears injured or distressed. In addition, a series of protections for pinnipeds will be implemented during pile driving activities to ensure the protection of these species (**Special**

¹⁴ Revised Request for Incidental Harassment Authorization for Waterfront Repairs at U.S. Coast Guard Station Monterey, California (<https://www.fws.gov/ventura/docs/species/sso/2017%207-11%20Revised%20Request%20for%20IHA.pdf>).

Condition 4(c)).

Special Condition 4 further includes a number of measures to be implemented during all pile driving activities at the municipal wharves and describes the responsibilities of the MMOs, which include: monitoring the exclusion zone, evaluating the effects of pile driving on pinnipeds in the project area, requiring cessation of pile driving activities if marine mammals (other than pinnipeds) or sea turtles enter the exclusion zone or if pinnipeds show signs of distress or if the exclusion zone is not entirely visible (e.g., due to fog), the keeping of daily logs during piling driving events, and the submission of an annual report summarizing the results of that year's monitoring activities.

The Applicant's proposed EZs, which would be used during hydroacoustic testing activities, are 100 meters for cetaceans and sea turtles, 50 meters for pinnipeds (see above), and 30 meters for sea otters. However, the proposed EZ for sea otters may not be adequate because it is based on the otariid pinniped hearing group due to lack of data on sound thresholds for sea otters in the 2016 NMFS guidance. The most recently published guidance includes sound thresholds for amphibious species, such as the sea otter.¹⁵ Thus, the proposed EZ for sea otters is not based on published sound thresholds for that species. Given that the southern sea otter is a federally protected species, a 100-meter EZ for sea otters is warranted. **Special Condition 2(e)** specifies that a 100-meter EZ for marine mammals (other than pinnipeds) and sea turtles will be used for pile driving activities during which hydroacoustic testing will take place. **Special Condition 3** requires submittal of a hydroacoustic testing report that will determine the necessary exclusion zones to be implemented during future pile driving activities. With these measures in place, adverse impacts to marine mammals, sea turtles, and fish species during pile driving activities are appropriately addressed, and the project can be found consistent with Coastal Act Sections 30230 and 30231.

Turbidity Impacts during Hydraulic Jetting

The proposed Program includes use of hydraulic jetting to place concrete piles, and for installation of fender and/or guide piles in a short period of time.¹⁶ Hydraulic jetting has the potential to adversely impact sensitive benthic species because water jetting forces silt into the water column, which increases turbidity, reduces dissolved oxygen, and may smother and suffocate bottom-dwelling organisms, especially those that are suspension feeders.

Eelgrass (*Zostera pacifica*) is a federally protected species that is designated as Essential Fish Habitat and has the potential to occur adjacent to the wharves. Though no formal eelgrass survey was submitted with the application, California Department of Fish and Wildlife (CDFW) divers observed patchy eelgrass beds around Wharf 2 in

¹⁵ Southall et al, 2019.

¹⁶ The other proposed method of fender and/or guide pile installation, used when the time for completion of installation is not limited, is by allowing piles tethered to the wharf to settle several feet into the substrate via pressure from their natural weight, over a period of several months.

October 2019. **Exhibit 5** shows the approximate location of the observed eelgrass¹⁷ and potential locations where hydraulic jetting may be used to install fender and/or guide piles. Thus, proposed hydraulic jetting activities have the potential to adversely impact eelgrass that is located under or adjacent to the wharves, including by driving piles into existing eelgrass or smothering existing eelgrass during hydraulic jetting.

The Commission typically requires submittal of an eelgrass survey to determine the location of existing eelgrass prior to issuance of a CDP. However, the proposed Program would be implemented over a period of years and eelgrass is a dynamic species and habitat type that is continuously changing in density, biomass and distribution. Typical nearshore water movement can alter an eelgrass bed via tearing of eelgrass leaves, shifting sediment, exposing eelgrass rhizomes, burying eelgrass plant parts, and changing the amount of light in the water column that is available to eelgrass for photosynthesis. These natural processes result in “movement” of the eelgrass bed year by year. The Program’s first round of repairs does not include any piling replacement. Given that the proposed Program is structured such that construction will only occur every three years, the eelgrass beds may “move” from an existing location to a new location in the future and any surveys submitted now will not be applicable when piling replacement activities commence.

To avoid or minimize impacts to eelgrass beds due to future project activities, the Applicant proposes to complete pre-construction eelgrass surveys prior to any piling replacement activities (whether via hydraulic jetting or pile driving) to map the extent of eelgrass habitat within and immediately adjacent to the proposed activities. Such surveys are proposed to be conducted by individuals located either atop the wharves’ decks and/or from a small boat. Any eelgrass identified by the surveys would be avoided during piling replacement activities. However, CDFW staff confirmed that eelgrass beds cannot be reliably identified from above the water’s surface. To ensure the proposed pre-construction surveys accurately capture the extent of any eelgrass under or near the wharves, **Special Condition 5(a)** requires that the eelgrass pre-construction surveys be completed by divers and also requires such surveys to be completed in accordance with California Eelgrass Mitigation Policy guidelines. Further, to minimize the potential for smothering of eelgrass during hydraulic jetting, the Applicant proposes to use silt curtains (or other appropriate turbidity containment methods) if water jetting activities are proposed within 50 meters of eelgrass identified in the pre-construction surveys. This measure is codified in **Special Condition 6**. With these measures in place, adverse impacts to eelgrass are appropriately addressed, and the project can be found consistent with the requirements of Coastal Act Sections 30230 and 30231.

Piling replacement activities also have the potential to adversely impact Black Abalone (*Haliotis cracherodii*), a federally protected species. Black abalone live on rocky substrates in intertidal and shallow subtidal reefs (to about 18 feet deep) along the

¹⁷ The green polygons shown in **Exhibit 5** indicate the approximate areas where CDFW divers observed several smaller eelgrass beds or patches and should not be interpreted as the perimeter of a continuous eelgrass bed.

coast, and typically occur in habitats with complex surfaces and deep crevices that provide shelter for juveniles and adults. This species has the potential to be located on wharf elements, such as pilings or floating docks, or on rocky substrate in the vicinity of the wharves. No black abalone surveys were submitted with the application. However, NOAA staff has noted the presence of juvenile black abalone observed “on floating docks near H tier [the outer most row of boat slips on Wharf 2]”¹⁸ and MARINe, an organization that collects data on long-term monitoring and biodiversity surveys, also stated that a significant number of black abalone are known to be present at nearby sites.¹⁹

To minimize impacts from piling replacement on black abalone, the Applicant proposes to conduct pre-construction surveys of suitable habitats (i.e., pilings or floating docks proposed for removal/repair, the concrete breakwater along the eastern edge of Wharf 2, and rocky/intertidal areas) by a NMFS-qualified biologist within 30 days prior to commencement of activities to ensure no black abalone are present. Such surveys of the intertidal habitat or wharf components would be completed visually (i.e., from above the water’s surface in a boat) unless water visibility is too low to accurately assess the presence of black abalone, in which case divers will be used to complete the survey. However, it is unlikely that black abalone in the portion of the intertidal zone located below the mean lower low water (MLLW) datum could be observed during a visual survey by boat given the cryptic and crevice-dwelling nature of this species. To ensure the proposed pre-construction surveys accurately capture all black abalone, **Special Condition 5(b)** further requires that the pre-construction surveys be completed by divers, except for intertidal areas above the MLLW datum where such surveys may be conducted on foot.

In addition to general piling replacement, the proposed hydraulic jetting activities have the potential to smother black abalone larvae. Black abalone spawn in spring and early summer, and occasionally spawn for a second time in the fall, which coincides with when Program activities are proposed to occur. Black abalone are broadcast spawners and successful spawning requires that individuals be grouped closely together. Larvae are free-swimming for between 5 and 14 days before they settle onto hard substrate, usually near larger individuals, where they then metamorphose into their adult form, develop a shell and settle onto a rock or other hard substrate, such as pilings or floating docks. Thus, to minimize the potential for hydraulic jetting activities to adversely impact black abalone spawning, **Special Condition 6** requires that silt-curtains shall be used to minimize turbidity if any black abalone individuals are surveyed to be within 50 meters of proposed hydraulic jetting activities. With these measures in place, adverse impacts to black abalone during piling replacement and hydraulic jetting are appropriately addressed, consistent with Coastal Act Sections 30230 and 30231.

¹⁸ 2019 communication to Commission staff from Steve Lonhart, NOAA Office of Marine and Aviation Operations, Research Specialist and Unit Diving Supervisor.

¹⁹ 2019 communication to Commission staff from Rani Gaddam, MARINe Research Group at UC Santa Cruz Research Associate and Data Manager.

Lighting of Coastal Waters/Grunion

The effects of artificial light on shallow marine species, including fish, amphipods, and sessile invertebrates have been documented in recent years, and include effects on physiology, navigation, reproductive behavior, predation success, community structure, and ecosystem services (i.e., the benefits people obtain from ecosystems, such as food and recreation).²⁰ In addition, the locally rare California grunion (*Leuresthes tenuis*) is known to consistently spawn on the portion of Del Monte Beach located underneath the base of Wharf 2 and on the beach area just upcoast of Wharf 2. Grunion typically spawn on this beach between May and August during the highest nighttime spring tides. Female grunion swim ashore at night with the rising high tide and lays eggs in the sand, which are then fertilized by the male grunion. The eggs incubate in the sand for 10-14 days and then hatch on the next high tide. Program activities are proposed to occur following Labor Day (first Monday of September) and prior to the Memorial Day weekend, which coincides with the grunion spawning period in early and mid-May. Lighting of nighttime waters during spawning could make individuals more vulnerable to predators when they reenter the water, and thus the proposed activities also have the potential to adversely impact spawning events. Given the location of the municipal wharves in the Monterey Bay, which coincides with where sensitive or protected species, such as grunion and other intertidal organisms are present, the use of artificial lighting during Program activities has the potential to adversely impact intertidal species and grunion in the ways described above. **Special Condition 8** prohibits nighttime lighting of coastal waters by limiting the daily work window to daylight hours (i.e., one hour before sunrise to one hour after sunset). To protect grunion from piling construction activities prior to the Memorial Day weekend in May, **Special Condition 4(i)** prohibits piling replacement on the beach area located under the base of Wharf 2 during May. With these measures in place, adverse impacts to intertidal species and grunion from nighttime lighting, and to grunion from piling construction activities, are appropriately addressed, and the project can be found consistent with Coastal Act Sections 30230 and 30231.

Nesting Birds

More than 180 different marine bird species visit or live in the Monterey Bay. Some seabird or shorebird species flock to the area to feed on the teeming numbers of fish that are present due to the upwelling of nutrient-rich coastal waters, while others may stop on their annual "Pacific flyway" migration between southern wintering grounds in Central and South America to northern breeding sites along the North Slope of Alaska. While the Monterey Bay area is known to have a diverse assemblage of shore and seabirds, no federally listed bird species are known to occur in the immediate vicinity of the wharves. However, many of the bird species with the potential to be near the wharves are afforded protection under the Migratory Bird Treaty Act. Construction equipment and noise generated from the proposed project have the potential to impact bird nesting and roosting habitat on the wharves' substructures or at nearby shoreline sites. In order to minimize any impacts to nesting birds, the Applicant proposes to

²⁰ Garratt, M., et al. (2019). *Mapping the consequences of artificial light at night for intertidal ecosystems*. Science of the Total Environment, 691, 760-768.

conduct pre-construction nesting surveys during the avian nesting season (i.e., here from February 15 to September 1)²¹ within seven days prior to the initial onset of construction activities. Such surveys are proposed to be performed extending 300 feet out from the project work area to locate any active passerine (perching bird) nests and 500 feet out to locate any active raptor (bird of prey) nests. If active nests are located during the surveys, the Applicant proposes that a qualified wildlife biologist will determine the appropriate mitigation measures, which may include proceeding with construction with no restrictions or establishing a no-disturbance buffer around the nest of generally 300 feet for passerines and 500 feet for raptors (but, as proposed, changes may be made to these buffers depending on the species present).

The Applicant proposes to only do bird surveys seven days prior to the *initial* onset of construction activities. However, it is possible that birds could begin nesting on wharf substructures *after* the initial surveys are completed. Ongoing construction activities could result in disturbance to nesting birds who were not present (and thus were not identified) during the initial bird surveys. To ensure the proposed pre-construction surveys accurately capture all bird nests located either under or near the wharves, **Special Condition 7** includes modifications to the proposed surveys, including reducing the time between surveys and commencement of activities from seven days to three days (or 72 hours), requiring a no-construction-activity buffer of no less than 50 feet for all nests detected in the survey, and requiring that construction noise at the nesting site be attenuated to a level comparable to ambient conditions (i.e., <65 decibels). Further, the nesting bird survey, as modified by **Special Condition 7**, requires a series of bird surveys to occur in the vicinity of the proposed work site prior to commencement of the work, instead of one survey encompassing the entirety of both wharves prior to the initial commencement of construction activities that will proceed over the next eight+ months. The key point is that if work will occur in one area during point A in the nesting season and if additional work will occur at that same location or another location later during point B in the nesting season, a single survey encompassing the entirety of both wharves 72 hours prior to commencement of initial construction activities is not sufficient to avoid construction impacts to birds that have begun nesting since the initial survey took place. With these measures in place, adverse impacts to breeding birds are appropriately addressed, and the project can be found consistent with Coastal Act Sections 30230 and 30231.

Water Quality

The proposed project involves construction within or adjacent to coastal waters, which can cause water quality impairment from sediment disturbance and runoff, equipment leaks, and spill of construction materials with the potential to adversely affect water quality through the discharge of harmful materials and disturbance of

²¹ As proposed by the Applicant and as codified in **Special Condition 1**, construction work would occur only between the day after Labor Day and prior to the Memorial Day weekend. Thus, only the portion of the nesting season from February 1st to prior to the Memorial Day weekend would be potentially impacted by construction activities.

contaminated sediments in coastal waters. Of additional concern is the use of preservative-treated wood in or over aquatic environments.

Preservative-treated wood has been commonly used in the construction of wharves because it is economical, easy to install, and provides protection from corrosive saltwater, fungal decay, and marine boring organisms. However, the wood preservatives used to protect the integrity of the wood piles can adversely impact aquatic organisms, especially fish and invertebrates, by leaching into the water column or accumulating in the underlying sediment. When timber piling replacement is necessary, the Applicant proposes to use Ammoniacal Copper Zinc Arsenate-treated (ACZA) Douglas fir piles dipped with a marine-grade epoxy/polyurethane coating to prevent leaching of the ACZA preservative into marine environment. The marine-grade polyurethane coating is applied to encapsulate all portions of the pilings from the mudline to beyond the area in contact with water. Many timber piles will also be wrapped (in a thin polyethylene or HDPE wrap) to prevent borer deterioration, typically from just below the mudline to just above mean high water line. For the surface decking of the wharves, the Applicant proposes to use non-dipped ACZA-treated Douglas fir lumber.

ACZA is a wood preservative that includes both copper and arsenic, which is used to prevent insect infestation, rot, and other sources of wood degradation and breakdown. Dissolved copper is highly toxic to a broad range of aquatic species. However, the arsenic, chromium, and zinc in the metal-arsenate preservatives are less toxic than copper to aquatic organisms in both freshwater and marine environments. Further, the Coastal Commissions' Coastal Water Quality Program staff produced a memorandum in 2019 with recommendations for minimizing the water quality impacts of building materials used in overwater and waterfront structures. While Commission Water Quality staff recommends the use of alternative materials instead of treated wood when constructing overwater structures, such as reinforced concrete, steel, or fiber-reinforced polymer composites, the memorandum acknowledges that replacing piles in an existing treated wood structure is a valid engineering reason to use treated wood. Further, the memo states that when preservatives are used to treat wood piles and other in-water components of structures in saltwater, the best choices of approved preservatives are ACZA and Chromated Copper Arsenate (CCA)²² (which have the lowest aquatic toxicity) if the treated wood is dipped or wrapped in a polyurethane coating.

Therefore, the proposed wood preservative for pilings and decking and the marine-grade polyurethane piling coating are consistent with the Commission's actions in other cases to minimize leaching of preservatives, and this material is appropriate to use in coastal waters. Thus, the Commission finds that the proposed timber pilings are suitable for use in the Monterey wharves.

²² In this case ACZA is being used because, unlike CCA, ACZA effectively treats and preserves Douglas fir.

However, given that the pesticides in wood preservatives – commonly copper – can adversely impact aquatic species, especially fish and invertebrates, and may accumulate in the underlying sediment, the use of undipped or unwrapped treated wood in or over water is of particular concern in projects with one or more of these features: 1) installation of a large amount of treated wood; 2) a low water flow rate; and 3) where populations of especially copper-sensitive aquatic organisms may be present. In this case, the proposed project also has the potential to impact marine resources and coastal water quality through the incidental release of preserved wood into the marine environment during removal and replacement of preserved wood. The proposed project includes demolition and replacement of the preserved timber wharf components of both wharves such as decking, cap beams, stringers, bracing. Due to the significant amount of preserved wooden elements that may be deconstructed and replaced during implementation of repairs and the location of the wharves within the Monterey Bay, which supports a wide variety of sensitive marine habitats and wildlife species, the possible leaching of ACZA from preserved wood that may fall into adjacent marine waters presents a potential source of adverse impacts to both water quality and marine biological productivity.

To prevent release of preserved wood debris into the marine environment during deconstruction, the Applicant proposes to deploy floating booms to contain any accidental debris discharged into waters, and any debris shall be removed as soon as possible, and no later than the end of each workday (see **Exhibit 4**). Also, when feasible, personnel in workboats within the work area will immediately retrieve such debris for proper handling and disposal. Any non-buoyant debris discharged into waters shall be recovered (by divers) as soon as possible after discharge. In addition, to prevent release of preserved wood debris into the marine environment during construction, the Applicant proposes to utilize a float or skiff, or in some instances a tarp or platform, positioned directly below the repair area to catch any debris. Thus, as proposed, the Commission finds that adverse impacts from the proposed repair and replacement of preserved wooden components are appropriately addressed.

Wharf Piling Repair

Structural damage of timber piles at the waterline is commonplace in marine environments. Tidal action, saltwater exposure, marine borers, and general weathering are all examples of factors affecting the lifecycle of these structures. For timber wharf pilings and concrete pilings that may be damaged but do not require full replacement, the proposed project includes repair of existing wooden wharf pilings using the FX-70 structural piling repair and protection system, which is essentially a fiberglass jacket that is custom-made and assembled to the precise specifications of each repair project. The FX-70 system eliminates the need to dewater the site or build cofferdams as the structure can generally remain in service while the pile repair is executed. However, this type of piling repair includes the use of marine epoxy grout, which has the potential to introduce grout to the marine environment. However, the proposed project includes appropriate containment and mitigation measures to protect water quality during piling repair activities (see **Exhibit 4**). Thus, as proposed, the Commission finds that adverse impacts from the proposed piling repair method are appropriately addressed.

Biological Resources and Water Quality Conclusion

The project represents a long-term repair and maintenance program of the wharves' structural elements necessary to maintain and improve facilities for recreational boating and commercial fishing, as well as visitor-serving opportunities. The majority of the proposed Program activities, other than pile driving, would have relatively low potential for significant adverse impacts to biological resources and water quality because they limit the use for equipment in the water. The proposed project includes appropriate BMPs to protect water quality and marine resources, including pre-construction surveys and mitigation measures for protected or sensitive species; maintaining good construction-site housekeeping controls and procedures; a prohibition on equipment washing, refueling, or servicing over water; daily maintenance of equipment to prevent leaks of petroleum products; environmental awareness training for construction workers; and precautionary measures limiting the use of certain types of chemically treated wood products. Additional measures to minimize noise impacts from pile driving on marine mammals and fish, include: a "soft start" technique for timber pile driving with an impact hammer; utilization of sound dampening devices; and hydroacoustic testing to determine appropriate exclusion zones for marine mammals and sea turtles and submittal of hydroacoustic testing results. The full list of the Applicant's proposed mitigation measures can be seen in **Exhibit 4**. The BMPs and mitigation measures described in **Exhibit 4**, as modified by **Special Conditions 2, 3, 4, 5, 6, and 7**, are enforceable components of the project. To further protect marine wildlife, **Special Condition 8** prohibits nighttime lighting of coastal waters and restricts construction activity to daytime hours only. Finally, **Special Condition 9** requires the Applicant to submit a revised list of BMPs and mitigation measures that incorporates all the measures stated in **Exhibit 4** but modified as necessary to reflect and incorporate the Special Conditions of this permit. As conditioned, the project is consistent with Coastal Act Sections 30230 and 30231 regarding protection of marine resources and offshore habitats.

E. Public Access and Recreation

Applicable Coastal Act Provisions

The following Coastal Act policies require that public recreational access opportunities within the Coastal Zone be maximized and specifically protect public recreational activities in coastal areas, such as the boating, fishing, and visitor-serving activities and opportunities found on the City of Monterey's wharves:

Section 30210. *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30211. *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Section 30213. *Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred...*

Section 30220. *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Section 30221. *Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.*

Section 30224. *Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.*

Analysis

The municipal wharves provide a plethora of public access and visitor serving amenities such as restaurants, fish and abalone markets, art and gift shops, sport fishing, whale watching cruises, harbor sightseeing trips, and party charters. In addition, they provide recreational fishing opportunities with a public boat hoist and 700-foot-long public fishing promenade that extends out from Wharf 2 as well as significant visual access from ocean vantage points. Wharf 1, with its numerous concessions, typically has over three million visitors per year. Thus, the wharves provide numerous public access and visitor-serving opportunities for the general public.

The proposed repair and maintenance activities will protect and enhance the water-oriented public access and recreation facilities provided by Wharf 1 and Wharf 2 by ensuring that the wharves are maintained in a manner that facilitates safe and reliable continued and future uses of the wharves. However, the proposed repair and maintenance activities also have the potential to temporarily disrupt coastal access and recreation opportunities during operations. For example, active work areas on either wharf may be closed off to the public during construction for safety reasons and public parking spaces will be used for staging of materials and equipment, thereby temporarily reducing the number of parking spaces available in the wharves' parking lots. To mitigate for impacts to public access and parking, the proposed Program will typically take place on non-holiday weekdays between 8:00 am and 5:00 pm after Labor Day and prior to the Memorial Day weekend to reduce public access impacts during the busy tourist summer season. Further, the Program is structured such that construction activities would only occur every three years. In addition, the Applicant proposes to utilize two parking areas for construction staging, one being the East Depot parking lot and the other being a City-owned lot located five blocks inland (proposed staging areas

seen in **Exhibit 6**). The construction materials staged in the East Depot parking lot will be limited to those that will be used during that day's construction activities. Any unused materials will be moved to the inland lot at the end of every working day, when feasible. This should help to ensure minimal disruption to public parking access from necessary ongoing maintenance activities. '

As such, the proposed project will maintain and enhance public recreational access and facilities, including for fishing, recreation, and other visitor-serving activities, and is therefore consistent with the Coastal Act regarding public recreational access, including parking.

F. Other

Other Agency Approvals

The Applicant currently has permits from the Central Coast Regional Water Quality Control Board (Section 401 Number 32719WQ07), USFWS (Section 7 Number 08EVEN00-2019-I- 0721), and National Marine Fisheries Service (Section 7 Number WCRO-2019-02042), and is awaiting approval of the necessary US Army Corps of Engineers' (ACOE's) permit (Sections 106, 404, 410). To ensure the repair and maintenance program is authorized by all regulatory agencies, **Special Condition 10** requires the Applicant to submit evidence of a valid ACOE permit prior to issuance of this CDP.

Minor Modifications

Special Condition 12 requires that any modifications to activities authorized by this CDP shall require a CDP amendment, unless the Executive Director determines that such modifications will not adversely impact coastal resources and that no amendment is legally necessary.

G. California Environmental Quality Act (CEQA)

CEQA Section 21080.5(d)(2)(a) prohibits a proposed development from being approved if there are feasible alternatives and/or feasible mitigation measures available that would substantially lessen any significant adverse effect that the development may have on the environment. The City of Monterey, acting as the CEQA lead agency, adopted a Mitigated Negative Declaration for the proposed project in January 2020.

The Commission's review, analysis, and decision-making process for CDPs and CDP amendments has been certified by the Secretary of the Natural Resources Agency as being the functional equivalent of the environmental review required by CEQA (CCR Section 15251(f)). Accordingly, in fulfilling that review, this report has analyzed the relevant coastal resource issues with the proposal and has identified appropriate and necessary modifications to address adverse impacts to such coastal resources. All above findings are incorporated herein in their entirety by reference.

Accordingly, the Commission finds that only as modified and conditioned herein will the proposed project avoid significant adverse effects on the environment within the meaning of CEQA. As such, there are no additional feasible alternatives or feasible

mitigation measures available which would substantially lessen any significant adverse environmental effects that approval of the proposed project, as modified, would have on the environment within the meaning of CEQA. If so modified, the proposed project will not result in any significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A).

5. APPENDICES

A. Appendix A – Substantive File Documents²³

- National Marine Fisheries Service (2018). Revisions to: *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts*. U.S. Dept. of Commerce, NOAA. NOAA Technical Memorandum NMFS-OPR-59, 167 pp.
- Caltrans. 2015. *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish, Appendix I Compendium of Pile Driving Sound Data*. California Department of Transportation Division of Environmental Analysis. Pp. I-179 – I-180. November 2015.
- Southall, B., et al. (2019). *Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects*. *Aquatic Mammals* 45(2): 125-232.
- Monterey Municipal Wharves I and II – Structural Maintenance Program: Revised Endangered Species and Essential Fish Habitat Biological Assessment (January 2020).
- CDP File 3-20-0127

B. Appendix B – Staff Contact with Agencies and Groups

- City of Monterey
- California Department of Fish and Wildlife
- National Oceanic and Atmospheric Administration
- Multi-Agency Rocky Intertidal Network (MARINe)

²³ These documents are available for review in the Commission's Central Coast District office.