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Filed: 11/3/2022
Action Deadline: 5/1/2023
Staff: Kiana Ford - SC
Staff Report: 12/2/2022
Hearing Date: 12/16/2022

STAFF REPORT CDP APPLICATION

Application Number: 3-22-0165

Applicant: City of Santa Cruz

Project Location: The Murray Street Bridge above the waters of the Santa Cruz Small Craft Harbor, located between the Live Oak and Seabright neighborhoods on the eastern edge of the City of Santa Cruz, Santa Cruz County.

Project Description: Various improvements and enhancements to the Murray Street Bridge, including for seismic safety with new piles and supports, replacement of bridge railings/barriers, widened sidewalks and bicycle lanes, and relocation of utilities.

Staff Recommendation: Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

The City of Santa Cruz has requested approval of a coastal development permit (CDP) to rehabilitate and retrofit the existing Murray Street Bridge, located above the Santa Cruz Small Craft Harbor between the Live Oak and Seabright neighborhoods in the City of Santa Cruz. The bridge is a high traffic area for pedestrians, bicyclists, and cars, and is one of the few connections between the eastern and western sides of Santa Cruz. It thus serves as an important transportation corridor for residents as well as an important accessway to the Harbor and coastal environs. The existing bridge is seismically deficient and has sub-standard shoulders and bridge railings, all of which collectively pose a public safety hazard. The proposed project would both seismically strengthen the bridge to modern engineering standards and would also provide greater bicycle, pedestrian, and vehicular usability, including with widened sidewalks, shoulders, bike lanes, and see-through bridge railings.

More specifically, the purpose of the proposed project is to improve the structure's seismic resiliency and overall design to benefit public safety, circulation, and visual resources in an area that includes significant coastal recreation opportunities. The existing bridge provides a direct route between the coastal Twin Lakes and Seabright neighborhoods, the Santa Cruz Harbor, and area beaches. Thus, the bridge is heavily used, especially in the summer months and during commuting hours, but the relatively narrow confines of the bridge pose safety hazards, particularly to bicyclists and pedestrians. The proposed new bridge will ensure this critical public infrastructure is structurally sound and, once constructed, will substantially improve circulation and public access to and along the coast.

While the end result will be a much improved bridge, the project's construction impacts will adversely affect traffic and coastal access. The City estimates that construction will last over two years and will require full closure up to 70 total days. While the project itself can be understood to mitigate these impacts given that its purpose is to strengthen and improve the public access and transportation utility of this important public asset, these construction impacts remain significant during the construction window. To address these impacts, the CDP is conditioned to incorporate a public access plan that identifies all feasible measures to address local and regional traffic and coastal access and to minimize disruption as much as possible. The plan is meant to be adaptive and able to respond to on-the-ground conditions, and allows the City flexibility and a suite of potential tools to address traffic and access impacts, including identifying detour routes and street improvements (sidewalk extensions, curb ramps, ADA upgrades, etc.) on area streets to better facilitate multi-modal transportation. As conditioned, the project will include all feasible measures to reduce temporary construction impacts and, post-construction, should demonstrably improve area traffic and coastal access.

In addition, given the project's location over and in coastal waters, the project will result in some additional fill and has the potential to adversely impact the sensitive marine environment, including in terms of coastal water quality as well as to marine wildlife from noise and other construction impacts. Fortunately, these issues are readily addressed through a series of measures both proposed by the City and augmented by Commission staff, including the Commission's Staff Ecologist and pursuant to the measures employed in other similar projects. These measures are designed to minimize the potential for coastal resource impacts and disturbances to wildlife during construction (such as "soft startups" for pile driving work, pre-construction biological surveys, wildlife exclusion zones, nesting bird/bat protections, and worker training, etc.) in conformance with the Coastal Act.

In conclusion, the proposed project is a key public infrastructure project to overall improve and seismically strengthen one of the City's primary transportation and coastal access assets. Staff has worked cooperatively with City staff on project parameters for several years, and the end result of that effort is a project that will ultimately benefit traffic and coastal access in this area, along with necessary protections for the sensitive marine environment during construction. While the project's construction will undoubtedly disrupt traffic and coastal access in the area, such impacts are temporary and will be mitigated to the maximum extent feasible. Therefore, staff recommends

3-22-0165 (Murray Street Bridge Improvements)

approval as conditioned. The motion and resolution to effectuate this recommendation are found on **page 5** below.

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EXHIBITS

- Exhibit 1 – Regional Vicinity Map
- Exhibit 2 – Project Location Map
- Exhibit 3 – Project Plans
- Exhibit 4 – Proposed Mitigation Measures and BMPs

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 3-22-0165 pursuant to the staff recommendation, and I recommend a **yes** vote.*

Resolution to Approve CDP: *The Commission hereby approves Coastal Development Permit Number 3-22-0165 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. Approved Project.** This CDP authorizes the seismic retrofit and widening of the Murray Street Bridge and related components including the installation of bicycle and pedestrian pathways and relocation of the County Sanitation District's East Cliff Transmission Main (ECTM), all as more specifically described in the proposed project plans (see **Exhibit 3**) and as adjusted by these special conditions. Minor adjustments to these approved project parameters, including to both conditions and any Executive Director-approved plans, that do not require a CDP amendment or a new CDP (as determined by the Executive Director) may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources.
- 2. Final Construction Plans.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit for review and written approval of the Executive Director, final site and construction plans incorporating at a minimum, the following components:
 - a. Construction Areas.** The Construction Plan shall identify the specific location of all construction areas, all staging areas, and all construction access corridors in site plan view. All such areas within which construction activities and/or staging are to take place shall be minimized to the maximum feasible extent in order to have the least impact on public access to and along the Santa Cruz Small Craft Harbor, parking lots, and other coastal areas. The Plan shall incorporate the provisions of the Adaptive Public Access Management Plan pursuant to **Special Condition 3**.
 - b. Construction Methods.** The Construction Plan shall specify the construction processes to be used so as to keep construction areas separated from public use areas as much as feasible (including through use of unobtrusive fencing and/or other similar measures to delineate construction areas), including verification that equipment operation and equipment and material storage will not significantly degrade public views during construction. The Plan shall limit construction activities to avoid coastal resource impacts as much as possible.
 - c. Construction Timeline.** The Construction Plan shall include a final construction schedule detailing each phase of the project, the length of time each phase will require, and start and end dates for the project.
 - d. Construction Water Quality and Biological Resources Best Management Practices (BMPs).** The Construction Plan shall incorporate all of the water quality and biological resources avoidance and minimization measures as identified in the document titled "Mitigation-Avoidance Measures Summary Revised October 2, 2022" and as modified by **Special Conditions 4 and 5**.

- e. Debris Disposal.** The Construction Plan shall identify measures for the disposal of excess construction debris and materials (e.g., excavated soils) in a manner that will not adversely impact coastal resources. The Plan shall include, at a minimum, a description of the specific locations, methods, and procedures for staging, stockpiling, managing, characterizing, testing, and disposing of soil, groundwater, and waste material expected to be encountered during construction; provisions for ensuring that all staging, stockpiling, management, and disposal of waste is consistent with all special conditions of this CDP; BMPs for dust control, including but not limited to, measures to reduce the potential for exposure of staged and stockpiled materials to wind and stormwater runoff; and provisions for proper waste disposal at authorized facilities capable of receiving the waste(s). The Plan shall list the names of all authorized disposal site(s) where materials will be lawfully disposed of.
- f. Construction Site Documents.** The Construction Plan shall provide copies of the signed CDP and the approved Construction Plan will be maintained in a conspicuous location at the construction job site, and that a copy be available for public review on request. All persons involved with project construction shall be briefed on the content and meaning of the CDP (including explicitly its terms and conditions) and the approved Construction Plan, and the public review requirements applicable to them, prior to commencement of construction.
- g. Construction Coordinator.** The Construction Plan shall provide that a construction coordinator be designated to be contacted during construction should questions arise regarding the construction (in case of both regular inquiries and emergencies), and that their contact information (i.e., address, phone numbers, email address, etc.) including, at a minimum, a telephone number (with message capabilities) and an email that will be made available 24 hours a day for the duration of construction, is conspicuously posted at the job site where such contact information is readily visible from public viewing areas while still protecting public views as much as possible, along with indication that the construction coordinator should be contacted in the case of questions regarding the construction (in case of both regular inquiries and emergencies). The construction coordinator shall record the contact information (e.g., address, email, phone number, etc.) and nature of all complaints received regarding the construction, and shall investigate complaints and take remedial action, if necessary, within 24 hours of receipt of the complaint or inquiry. All complaints and all actions taken in response shall be summarized and provided to the Executive Director within one week of receipt of the complaints.
- h. Construction Specifications.** The construction specifications shall include appropriate provisions that require remediation for any work done inconsistent with the terms and conditions of the CDP.
- i. Notification.** The Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office at least three working days in advance of commencement of construction, and immediately upon completion of

construction.

Minor adjustments to the above Construction Plan 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 Construction Plan shall be enforceable components of this CDP. The Permittee shall undertake development in conformance with this condition and the approved Construction Plan, 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. Adaptive Public Access Management Plan.** PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit an Adaptive Public Access Management Plan (Plan) for the review and written approval of the Executive Director. The Plan's purpose is to: 1) minimize impacts to and disruption of public coastal access from vehicles, bicycles, and pedestrians to and along the Santa Cruz Small Craft Harbor, parking lots, and other coastal areas as much as possible during construction; and 2) mitigate for impacts and provide safe access to public access/recreation resulting from the estimated 38-month-long construction window. The Plan shall detail the vehicular and bicycle/pedestrian detour routes, estimated dates and duration of closures, signage, and any open/maintained public accessways in and around the construction area (and the timelines that these will remain open and/or be subject to closures). The Plan shall include mechanisms to mitigate for and improve access and circulation during and post-construction to better facilitate public access and circulation including providing for the plans, funding, and estimated construction timeline for implementing: 1) sidewalk completion and curb ramp upgrades to ADA standards on Hiawatha, Logan, and Mountain View streets; and 2) Rectangular Flashing Beacon (RRFB) and curb ramps at Murray/Mott streets to improve crossing safety. Finally, the Plan shall be adaptive and modified as needed to address on-the-ground construction-related public coastal access and traffic impacts, subject to review and approval by the Executive Director. All requirements above and all requirements of the approved Adaptive Public Access Management Plan shall be enforceable components of this CDP. The Permittee shall undertake development in conformance with this condition and the approved Adaptive Public Access Management Plan.
- 4. Hydroacoustic Monitoring Plan.** NO LESS THAN 90 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit two copies of a Hydroacoustic Testing Plan (HTP) for review and written approval by the Executive Director. The HTP shall outline an underwater hydroacoustic testing program to be implemented during the installation of an initial subset of concrete and steel piles using an impact hammer and/or a vibratory hammer to determine the appropriate exclusion zones specific to individual marine species (e.g., fish, cetaceans, sea otters, sea lions, harbor seals, etc.) to be implemented during in-water construction activities. The HTP shall be in substantial conformance with the measures outlined in the Marine Mammal Monitoring Plan (see **Appendix A**) and pursuant to the

following requirements:

- a. Determining Exclusion Zones for Future Pile Driving.** The HTP shall identify all underwater hydroacoustic testing parameters to be used for establishing exclusion zones (during the installation of an initial subset of a small number of concrete and steel piles using an impact hammer and/or a vibratory hammer, representative of all types and combinations that would potentially be used during the project) that will be implemented in all future piling installation for the project that uses a vibratory or an impact hammer. Such exclusion zones 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 species in the area. The maximum SPL or SEL thresholds used to determine the exclusion zones shall be based on the best available science on TTS and PTS levels for special status fish species and the National Oceanic and Atmospheric Administration's (NOAA) most up-to-date Marine Mammal Acoustic Technical Guidance.
- b. Exclusion Zones to be Implemented During Hydroacoustic Testing.** The following minimum exclusion zones (EZs) (consistent with the requirements of National Marine Fisheries Service) shall be implemented during all in-water activities done concurrently with hydroacoustic testing: 1) a 410-meter EZ for all marine mammals species (except sea otters) during concrete or steel pile installation with a vibratory hammer; 2) a 63-meter EZ for all marine mammals (except sea otters) during timber pile installation with an impact hammer; and 3) a 63-meter EZ for sea otters during all pile driving activities regardless of pile or hammer type.
- c. Hydroacoustic Testing Report.** No more than 30 days after the completion of the required initial hydroacoustic testing activities, the Permittee shall submit a hydroacoustic testing report to the Executive Director for review and approval. The report shall include a description of all initial pile driving activities, a description of the hydroacoustic testing equipment and protocols that were used during such activities, the results of the hydroacoustic testing, a determination of the necessary marine wildlife exclusion zones to be implemented during all future pile driving activities, and a description of any observable marine wildlife behavior that took place during hydroacoustic testing activities. The Executive Director shall sign off on all exclusion zones prior to commencement of future pile driving activities.
- d. Hydroacoustic Testing Parameters.** The HTP shall fully describe the underwater hydroacoustic testing program, the monitoring equipment, the number of proposed hydroacoustic testing sessions, the hydrophone locations, the distance of hydrophones from active pile work areas, the type of pilings being installed, the type of pile driving hammers being used,

and the rationale for how the program will capture a representative amount of readings that address changes in bathymetry and substrate in the waters surrounding the bridge. During hydroacoustic testing, underwater hydroacoustic testing devices (capable of recording both SPL and SEL at the frequencies corresponding with the hearing capabilities of marine wildlife 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. **Modifying Exclusion Zones.** If during hydroacoustic testing the SPL or SEL threshold levels are exceeded beyond the exclusion zones used during HTP implementation and/or if the Marine Wildlife Monitor (see **Special Condition 5**) observes dead or injured fish in the vicinity of active pile driving operations or otherwise finds that the size of the exclusion zones should be adjusted to be greater than defined in **subsection (b)** above, the EZs shall be expanded and/or the Permittee shall implement additional feasible power reduction and/or sound dampening measures, and the Permittee shall notify the Executive Director of the change.
- f. **Marine Wildlife Monitor (MWM).** The HTP shall identify protocols for communicating hydroacoustic testing results, including any changes in the boundaries of the exclusion zones, to the MWM.

All requirements above and all requirements of the approved Hydroacoustic Monitoring Plan shall be enforceable components of this CDP. The Permittee shall undertake development in conformance with this condition and the approved Hydroacoustic Monitoring Plan.

- 5. **Marine Wildlife Protection.** NO LESS THAN 90 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall prepare a Marine Wildlife Protection Plan (MWPP) for review and written approval by the Executive Director. The MWPP shall be in substantial compliance with the provisions detailed in the submitted Marine Mammal Monitoring Plan (MMMP) (see **Appendix A**) and the following parameters to be implemented during all pile driving activities (including during hydroacoustic testing activities) that are done using an impact or a vibratory hammer:

- a. **Soft Starts.** An initial ramp-up period or “soft start” procedure at the commencement of any 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 species that may be present in the exclusion zones. 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. 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. An initial ramp-up period or “soft start” procedure shall also apply to vibratory pile-driving activities, except that this shall constitute a gradual ramp up of vibratory intensity.

- b. Marine Wildlife Monitor.** One qualified marine wildlife monitor (MWM), or more if required to effectively observe all of the identified exclusion zones, shall be present to conduct observations during all pile driving activities. Each MWM shall be a qualified wildlife biologist, approved by the Executive Director, with experience observing marine wildlife and differentiating normal behavior from signs of injury or distress. MWM duties shall be dedicated to observing marine wildlife only, and MWMs shall not be assigned other duties. MWMs 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 all exclusion zones without obstruction.
- c. Construction Halts.** If the MWM(s) observe any marine wildlife within the specified exclusion zones, then the MWM(s) shall notify City staff and/or the Construction Manager as appropriate and require an immediate shut down of pile driving activities. Such activities may restart once such wildlife are observed to have left the specified exclusion zones or are not observed within the specified exclusion zones for at least 30 minutes. If the exclusion zones are 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 entirety of the exclusion zones is visible to the MWMs.
- d. Reporting.** MWMs shall maintain a daily log of observed marine wildlife behavior that shall be of sufficient detail to determine whether the project causes observable effects to marine wildlife. A copy of the MWM’s logs shall be submitted to the Executive Director when mitigation measures (i.e., shut down or delay of pile driving activities) are implemented five or more times within a seven-day period. 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., the number and type of piles being driven and their location on the wharf, the type of hammer being used (i.e. impact or vibratory) 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 wildlife; (6) a description of any observable marine wildlife behavior patterns, including those in response to pile 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.); and (8) a description of other human activities in the area (e.g., fishing, diving, swimming, etc.). A final report summarizing the results of monitoring activities shall be submitted to the Executive Director following completion of construction activities. The report shall include daily log observations from MWMs, descriptions of any project delays or cessation of operations due to the presence in the project area of marine wildlife subject to protection, and an evaluation of monitoring protocol effectiveness all determined by the MWMs.

All requirements above and all requirements of the approved Marine Wildlife Protection Plan shall be enforceable components of this CDP. The Permittee shall undertake development in conformance with this condition and the approved Marine Wildlife Protection plan. The requirements of the approved MWPP shall be implemented during all pile driving activities.

- 6. Other Agency Approvals.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit to the Executive Director written evidence that all necessary permits, permissions, approvals, or authorizations for the approved project have been granted by all other applicable agencies, including at a minimum the California Department of Fish and Wildlife (CDFW), the Regional Water Quality Control Board (RWQCB), and the U.S. Army Corps of Engineers (USACE), or evidence that no such authorizations are required from each of these entities. The Permittee shall inform the Executive Director of any changes to the project required by any other authorizations. Any such changes shall not be incorporated into the project until the Permittee obtains an amendment to this CDP, unless the Executive Director determines that no amendment is legally required.
- 7. As-Built Plans.** WITHIN THREE MONTHS OF COMPLETION OF CONSTRUCTION, the Permittee shall submit two copies of As-Built Plans to the Executive Director for review and written approval showing all elements of the bridge. The As-Built Plans shall be substantially consistent with the approved project identified in **Special Condition 1**. The As-Built Plans shall include color photographs (in hard copy and jpg format) that clearly show the as-built project, and that are accompanied by a site plan that notes the location of each photographic viewpoint and the date and time of each photograph. At a minimum, the photographs shall be from a sufficient number of viewpoints as to provide complete photographic coverage of the permitted bridge. The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, acceptable to the Executive Director, verifying that the bridge has been constructed in conformance with the approved project identified in **Special Condition 1**.
- 8. Seismic and Tsunami Hazard Response Plan.** WITHIN ONE YEAR OF COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit, for the review and approval of the Executive Director, a plan for mitigating the risks to the public

from potential impacts of extreme tsunami and seismic events, including how the bridge will be inspected and operational after such events. At a minimum, the plan shall identify the steps that would be taken in the event of a tsunami and/or seismic event to: (1) warn the traveling public of possible hazardous conditions; (2) physically close the bridge, if necessary; (3) detour traffic to alternate routes; (4) inspect the bridge for damage; and (5) inspect the attached ECTM for damage. The plan shall be developed in coordination with emergency response agencies, including the City of Santa Cruz, Santa Cruz County, and other relevant local governments. All requirements above and all requirements of the approved Seismic and Tsunami Hazard Response Plan shall be enforceable components of this CDP. The Permittee shall undertake development in conformance with this condition and the approved Seismic and Tsunami Hazard Response Plan.

- 9. Assumption of Risk, Waiver of Liability, and Indemnity Agreement.** By acceptance of this CDP, the Permittee acknowledges and agrees, on behalf of itself and all successors and assigns, to all of the following: (a) that the site may be subject to coastal hazards, including but not limited to episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, tsunami, tidal scour, coastal flooding, landslides, bluff and geologic instability, bluff retreat, liquefaction and the interaction of same, many of which may worsen with future sea level rise; (b) to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (c) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (d) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.
- 10. Liability for Costs and Attorneys' Fees.** The Permittee shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys' fees (including but not limited to such costs/fees that are: (1) charged by the Office of the Attorney General; and/or (2) required by a court) that the coastal Commission incurs in connection with the defense of any action brought by a party other than the Permittee against the Coastal Commission and/or its officers, employees, agents, successors and assigns challenging the approval or issuance of this CDP. The Permittee shall reimburse the Coastal Commission within 60 days of being informed by the Executive Director of the amount of such costs/fees. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission and/or its officers, employees, agents, successors and assigns.

4. FINDINGS AND DECLARATIONS

A. Project Location, Background, and Description

1. Project Location

The proposed project is located on the Murray Street Bridge over the Santa Cruz Small Craft Harbor in the City of Santa Cruz (see **Exhibit 1**). The existing bridge is approximately 540 feet long and crosses the Santa Cruz Small Craft Harbor, also known as Woods Lagoon. Its current 35 feet width allows for one lane of eastbound traffic and one lane of westbound traffic, with a narrow shoulder/bike lane and pedestrian sidewalk on both sides.¹ Underneath the bridge is the East Cliff Transmission Main (ECTM), which extends 10 feet beneath the waters of the Santa Cruz Harbor on the south side of the existing bridge. The ECTM is the primary sewer line conveying wastewater from the unincorporated area of Santa Cruz County to the City of Santa Cruz for treatment at the City's Wastewater Treatment Facility near Neary Lagoon.

The bridge is located directly above the Santa Cruz Small Craft Harbor (see **Exhibit 2**), which supports commercial and recreational boating activities. Two waterway openings currently allow boats housed in the northern portion of the harbor to pass underneath the bridge. A pathway for pedestrians and bicyclists' loops around the outer edge of the Harbor, passing underneath the eastern and western sides of the existing bridge, and allowing for connections between the trails at Arana Gulch, an open space preserve, on the northern side all the way to Harbor, Twin Lakes, and Seabright beaches on the south. A staircase on the southwest side of the bridge allows pedestrians to walk down to the Harbor area. The bridge itself connects the City of Santa Cruz to the Live Oak area of unincorporated Santa Cruz County, serving as a major thoroughfare for people traveling to numerous visitor-serving amenities such as beaches and parks.

2. Project Background

The existing Murray Street Bridge was constructed in 1962 and reinforced in 1989 following damage sustained during the Loma Prieta Earthquake. Following the 1989 earthquake, the Local Bridge Seismic Retrofit Program (Program) was mandated by emergency legislation² by the State of California. In total, the Program identified 1,235 bridges as requiring seismic retrofit work; the Murray Street Bridge was one of them and is the last in the City of Santa Cruz to be updated by this mandate. The City, in coordination with Caltrans, developed design plans for retrofitting of the existing bridge and received additional approval under the federal Highway Bridge Program (HBP) to undertake further bridge rehabilitation to bring the bridge up to current industry standards.

¹ The roadway is considered a portion of the Pacific Coast Bicycle route.

² The Local Bridge Seismic Retrofit Program was mandated by emergency legislation Senate Bill (SB) 36X (Kopp, Chapter 18, Statutes of 1989).

3. Project Description

The proposed development includes various improvements to the bridge, including for both seismic safety as well as visual and bike/pedestrian enhancements (see **Exhibit 3** for project plans). The existing bridge is past its design life, having been built in 1962, and is seismically deficient by current design standards. In addition, the existing bridge roadway has narrow shoulders and pedestrian sidewalks, making crossing the bridge a public safety hazard for pedestrians and bicyclists. The bridge also has non-standard bridge railings that generally block coastal/Harbor views for traveling motorists.

The proposed project will improve public safety by upgrading and strengthening the existing bridge, and provide improved public access between the Seabright and Twin Lakes neighborhoods. The existing bridge is currently supported by two abutments and 8 “bents”.³ Specifically, the project includes the installation of shear keys and seat extenders to the existing bents and abutments to effectively transfer the seismic load. Additionally, concrete infill walls will be installed at four specific bents to provide further support between columns. The seismic retrofit will also include removal and installation of land and in-water piles, totaling 84 bridge piles and 113 on-land piles to support three retaining walls.

The bridge would replace its current deficient barriers and widen the existing narrow shoulders to a new width of 5 feet. The shoulder widening would add approximately 2 feet to the north side of the bridge and 5-6 feet to the south side of the bridge. The proposed bridge would maintain the existing two-lane configuration with 11-foot-wide lanes and would meet modern safety standards for bridge railings (including with sea-through designs to allow for views of the Harbor and ocean) and shoulder widths. The new shoulders would accommodate a Class II bicycle lane to provide bicycle connectivity and would also allow vehicles to pull off the roadway in an emergency. Lastly, a new 7.5-foot-wide sidewalk will be paved on the eastbound/ocean side of the bridge. Collectively, the proposed improvements will increase highway safety for vehicular traffic, pedestrians, and bicyclists.

The project also includes relocation of the ECTM sanitary sewer from underneath the Harbor waters to the underside of the northern/westbound side of the bridge, requiring a total of 9 on-land piles to be added. The existing pipeline, when retired, will be filled with hardened slurry, capped, and abandoned in place. Removal of the pipeline was determined by the City to not be feasible, due to the depth of rock and sediment encasing the structure as well as overall disturbance to the Harbor and coastal waters. See **Exhibit 3** for proposed project plans.

B. Standard of Review

Under Coastal Act Section 30601.3, when a project requires a CDP from both a local government with a certified Local Coastal Program (LCP) and the Commission, the Commission may process a consolidated CDP application for the proposed

³ A bent is the combination of a cap (which sits on top of a group of piles and disperses pressure) and a pile, acting as support for the bridge.

development when the applicant, the local government, and the Commission's Executive Director agree to consolidate the coastal permit processing, and public participation is not substantially impaired by that review consolidation. Such is the case here. The legal standard of review for a consolidated CDP is Chapter 3 of the Coastal Act, with the policies of each relevant, certified LCP providing non-binding guidance.

C. 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 at the Santa Cruz Small Craft Harbor:

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 30212. *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where: (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) adequate access exists nearby, or (3) agriculture would be adversely affected...*

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.

These overlapping Coastal Act policies protect public recreational access to and along the beach/shoreline and to offshore waters for public recreational access purposes, particularly free and low-cost access. Importantly, Coastal Act Section 30210's requirement to maximize access and recreational opportunities represents a different threshold than to simply provide or protect such access, and it is fundamentally different from other like provisions in this respect. Namely, it is not enough to simply provide access to and along the coast, and not enough to simply protect access; rather such access must also be maximized. This terminology distinguishes the Coastal Act in certain respects, and it provides fundamental direction with respect to projects along the California coast that raise public access issues, like this one.

Analysis

The existing Murray Street Bridge serves as one of three (the other two being Soquel Avenue and Highway 1) east-west transportation corridors between the eastern side of the City of Santa Cruz and the western side of unincorporated Santa Cruz County and the City of Capitola. It is also the closest transportation corridor to the coast and provides access to multiple coastal recreation areas such as the Santa Cruz Harbor and area beaches such as Harbor Beach and Seabright and Twin Lakes State Beaches.

The bridge contains two vehicular traffic lanes travelling in opposite directions and spans the width of the Santa Cruz Small Craft Harbor. This transportation corridor is popular with pedestrians, cyclists, and vehicle users for both recreational and commuting purposes for locals and visitors. Pedestrians currently have access to an approximately three-foot-wide sidewalk on the lower harbor side of the bridge and an approximately one-foot-wide sidewalk on the upper side of the bridge; the narrow sidewalks are unprotected (no pedestrian railing) from bicycle and vehicular traffic. Cyclists currently utilize the existing two-foot-wide shoulders, as no separate bike lane exists; vehicles needing to pull off the roadway are unable to do so without significantly impeding traffic. Moreover, the existing bridge railing does not meet current height standards, compounding the risk associated with vehicular collisions with other vehicles as well as cyclists and pedestrians. In general, the bridge forms a hazardous "bottleneck" along this transportation corridor. The existing bridge as a whole also presents a public safety hazard because it is well past its design life and is seismically deficient.

The purpose of the project is to bring the Murray Street Bridge up to current design, seismic, and safety standards, ensuring it can continue to safely function as a needed public access and transportation link. The new bridge will alleviate public safety risks by having a widened bridge deck that will accommodate two 11-foot-wide travel lanes, a 7.5-foot-wide sidewalk on the down coast (ocean) side of the bridge, and 5-foot shoulders on either side. The wider shoulders will serve as a Class-II bicycle lane and provide a safer traveling space for cyclists. The replacement bridge railings will meet current safety and design standards while providing a more "see-through" appearance.

The bridge will also meet modern seismic standards and is the last bridge within the City to be brought up to these standards.

Collectively, these changes will dramatically improve the bridge's transportation and public access functions for motorists, bicyclists, and pedestrians. The bridge's seismic upgrades will help ensure its utility and resilience in the face of potential seismic and tsunami events, and its widened shoulders and sidewalks will help provide adequate (and safe) space for cyclists and pedestrians. Overall, the project will greatly enhance both the usability and visual aesthetic of this important transportation asset and should help aid in multi-modal coastal access in this part of Santa Cruz.

That said, while the end result of the project will be a resilient and enhanced bridge, the project's construction impacts will significantly (but temporarily) impact the circulation and flow of traffic throughout the City of Santa Cruz and its unincorporated areas, including for coastal access purposes. As mentioned before, the bridge is a critical regional transportation link, serving as one of only three east-west corridors connecting the City with the rest of the County. The project's construction will severely limit (or at times completely eliminate) vehicular, bike, and pedestrian use during its over two-year construction timeline. The City estimates that construction may reduce the two-lane bridge down to one-lane eastbound traffic during certain phases of construction (approximately 188 days of 795 total construction days). Full closures of the bridge to users may be necessary at certain times as well (estimated at approximately 69 days in total during the entire construction period). Thus, while the City has developed construction plans and protocols to limit disruption as much as possible, the project will still result in some full or partial bridge closures some estimated 257 days out of an estimated 795 construction days or approximately 32% of the projects estimated timeline.

While the project itself can potentially be understood to mitigate these impacts given that its purpose is to strengthen and improve the public access and transportation utility of this important public asset, these construction impacts remain significant during the construction window. To address these impacts, **Special Condition 3** incorporates a public access plan that identifies all feasible measures to address local and regional traffic and coastal access and to minimize disruption as much as possible. The plan is meant to be adaptive and able to respond to on-the-ground conditions, and allows the City flexibility and a suite of potential tools to address traffic and access impacts, including identifying detour routes and street improvements (sidewalk extensions, curb ramps, ADA upgrades, etc.) on area streets to better facilitate multi-modal transportation. As conditioned, the project will include all feasible measures to reduce temporary construction impacts and, post-construction, should demonstrably improve area traffic and coastal access.

Lastly, construction staging for the project is proposed to occur in existing areas around the project area. Construction staging for activities on the eastern side of the bridge will take place in an 8,000 square-foot portion of an existing boat yard beneath the eastern edge of the bridge. Boats located in the boat yard will be temporarily relocated to dry storage for a period of approximately 12 months. Construction staging for activities on

the western side of the bridge will occupy the northern portion (approximately 11,000 square-feet) of a parking lot located at the western edge of the bridge, temporarily impacting this area of harbor parking. **Special Condition 2** requires the submittal of final construction plans, including identification of staging areas, to be submitted prior to the start of construction. Additional temporary impacts will occur to various businesses, offices, bathroom facilities, and storage areas within the project area for a period of approximately six months; however, the proposed project will mitigate these impacts by temporarily relocating the businesses during this time.

In conclusion, the Commission finds that the proposed project will provide necessary public safety improvements for a route that is critical for providing access to and along the coast of Santa Cruz, and will provide for enhanced cycling and pedestrian access. Although the project will have temporary traffic impacts that will disrupt the commute between the eastern and western sides of Santa Cruz, the project incorporates minimization measures including detour pathways and limited bridge closures. Therefore, the Commission concludes that the project is consistent with the above-cited policies of the Coastal Act because it not only protects lower cost recreational facilities and access thereto and to areas suited for recreational activities, but it maximizes public access generally, by increasing the public's ability to utilize the bridge for cars, bikes, and pedestrians and minimizes construction-stage disruptions.

D. Fill in Coastal Waters

Applicable Coastal Act Provisions

Coastal Act Section 30233 (in relevant part) addresses filling of open coastal waters, including allowing for such fill solely for specifically defined purposes such as certain public service uses and public recreational access:

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;*
- (2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basin, vessel berthing and mooring areas, and boat launching ramps;*
- (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;*

(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines...

Analysis

Section 30233 sets standards for diking, filling, and dredging of wetlands and open coastal waters. Coastal Act Section 30108.2 defines “fill” as “earth or any other substance or material, including pilings placed for the purposes of erecting structures thereon, placed in a submerged area.” The Commission has long considered grading, excavating, and other ground-disturbing activities in coastal wetlands and estuaries to be a form of dredging/fill.

Filling, diking, or dredging in coastal waters is permissible under Section 30233 if: (1) it is for one of the seven allowable uses listed under Section 30233(a)(1)-(7), (2) there is no feasible less environmentally damaging alternative, and (3) feasible mitigation measures have been provided to minimize adverse environmental effects.

The proposed project consists of safety improvements within the existing transportation corridor, namely the retrofit of an aging, deteriorated bridge with new bridge improvements that meet current seismic and safety standards. Although the new bridge will be wider in order to meet current safety standards and to accommodate bike lanes and a sidewalk, these bridge safety improvements do not increase the overall bridge service capacity (i.e., no new travel lanes) but rather allows the existing capacity to operate more safely and with less impact to the surrounding environment. The fill is to accommodate a public bridge (a public service purpose) that provides public recreational access opportunities (vehicular, pedestrian, and bicycle use) to and over coastal waters.

More specifically, the “allowable use” question in this case comes down to whether the fill associated with the project qualifies as providing an incidental service purpose. In order to qualify as an incidental public service purpose, the fill of coastal waters being undertaken must demonstrate that: (a) it provides a “public service” insofar as it confers benefits to the public, either at large, or to those served by the public entity; and (b) is “incidental,” within the meaning of that term as it is used in the Coastal Act (i.e., is ancillary and appurtenant to an existing public service purpose). In the past, the Commission has determined that the fill for certain highway safety improvement projects that did not increase vehicular capacity could be considered an “incidental public service” pursuant to the requirements of Coastal Act Section 30233(a)(4). These actions have included road widening, road realignments, and bridge replacements, again, provided the widening was not to increase capacity.⁴ That such highway safety improvements can be considered to be for incidental public service purposes under Section 30233(a)(4) is supported by the Commission’s 1981 statewide interpretive guidelines (“Statewide Interpretive Guidelines for Wetlands and Other Wet

⁴ See, e.g., CDP 1-18-1078 (Eureka-Arcata 101 Corridor Improvement Project), CDP 6-15-1975 (San Diego West Mission Bay Drive Bridge Replacement), CDP 1-07-038 (Alton Interchange), CDP 1-07-013 (Mad River Bridge Replacement), CDP 1-90-295 (Highway 1 Widening and Realignment).

Environmentally Sensitive Habitat Areas” (hereinafter, the “Guidelines”). The Guidelines analyze the allowable uses in wetlands under Section 30233, including the provision regarding “incidental public service purposes.” In a footnote to that definition (no. 3) the Guidelines state: “When no other alternative exists, and when consistent with the other provision of this section, limited expansion of roadbeds and bridges necessary to maintain existing traffic capacity may be permitted.” This interpretation was upheld by the Court of Appeal in *Bolsa Chica Land Trust et al. v. Superior Court* (“*Bolsa Chica*”) (1999) 71 Cal.App.4th 493, 516, which agreed with Commission’s interpretation in the Guidelines and the footnote definition.

The proposed fill in this project consists of bridge expansion over coastal waters and some roughly 400 square feet of new fill in coastal waters associated with new pilings to support the retrofitted bridge, so there will be additional fill and therefore the fill must confirm with the test stated above. This project satisfies the first prong of the test, because the proposed fill has a public purpose, and it is being undertaken by a public agency to safely serve the public’s transportation and coastal access needs along this corridor. Secondly, the proposed fill is incidental to the primary public purpose of providing safe transportation on the existing bridge. Finally, although it widens the bridge, the purpose of the widening is to improve safety and will not increase capacity. Therefore, the Commission finds that for the reasons discussed above, the fill for the proposed project is for an incidental public service purpose, and thus, is an allowable use pursuant to Section 30233(a)(4) of the Coastal Act.

The Commission also finds that the proposed development is consistent with the second prong of Section 30233(a) because there is no feasible less environmentally damaging alternative to the proposed project as conditioned. The bridge serves a critical transportation and coastal access function, and its safe and continued operation is key to those functions. The project is required via a state mandate to bring the bridge up to current seismic safety standards; thus, the “no project” alternative is not feasible because a “no project” alternative would maintain a bridge that is susceptible to damage or failure as a result of seismic activity. The City also studied other alternatives, such as building a new bridge, and deemed other alternatives infeasible due to site constraints and more extensive impacts coastal resources such as impacts public access and coastal waters. The City determined through its project development process that modifying the existing bridge would have the fewest impacts on these resources compared to any alternative. The Commission concurs with the City’s assessment that the project represents the least environmentally damaging feasible alternative, and thus satisfies the second prong of the Section 30233(a) test.

And lastly, and as described in more detail subsequently, both as the project is proposed by the applicant and as conditioned by this permit, the project includes mitigation requirements to satisfy the third prong of Section 30233(a). To ensure that the development is limited to the activities explicitly authorized in this permit, **Special Condition 7** requires the submittal of accompanying as-built plans. As such, the project is consistent with Coastal Act requirements for the fill of coastal waters.

E. 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

The proposed project site is mainly located within and above the waters of the Santa Cruz Small Craft Harbor, located at the northern end of Monterey Bay. Species of marine mammals, fish, marine birds, and planktonic organisms inhabit the open water habitat within the harbor. Commonly observed species of marine mammals in the Harbor include the harbor seal, California sea lion, Harbor porpoise, and the California sea otter. Observed species of fish within the project area include steelhead trout, coho salmon, and green sturgeon. Marine bird species observed in the area include brown pelicans, double-crested cormorants, and gulls. Both shorebirds and migratory birds may utilize the open space areas in and around the project site. Lastly, the intertidal and subtidal habitats support many diverse species, including invertebrates such as anemones, barnacles, mussels, snails, and starfish.

As detailed above, the proposed project would bring the Murray Street Bridge up to current seismic and design standards while expanding the bridge to increase public access and public safety. Proposed activities with the potential to adversely affect sensitive biological resources include construction of structural elements in coastal waters, the use and transportation of materials hazardous to marine resources, as well as fluids and oils associated with mechanized construction equipment. Other potential impactful activities include pile driving 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 number of assessments were prepared for the project including a Biological Assessment (BA), Natural Environment Study (NES), Essential Fish Habitat study (EFH), Marine Mammal Monitoring Plan (MMMP), and Incidental Harassment Authorization (IHA) to determine to what extent project 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.⁵ The BA and NES presents technical information about project actions and assesses potential effects to threatened, endangered, or proposed threatened or endangered aquatic or terrestrial species and their habitats. Endangered or sensitive species observed to occur within the proposed project location include southern sea otter (*Enhydra lutris nereis*), Central California Coast steelhead (*Oncorhynchus mykiss*), North American green sturgeon (*Acipenser medirostris*), special-status bat species, and bird species protected under the Migratory Bird Treaty Act. Due to the highly developed and residential nature of the Harbor and surrounding areas, no federal or state-listed plant species were observed in those areas.

As described below, both as proposed by the City and as further augmented by **Special Conditions 4 and 5**, the project includes a series of minimization and avoidance measures to maintain and protect coastal water quality and biological resources consistent with the Coastal Act.

Pilings and Abutments

The proposed project includes the installation/augmentation of existing piles and abutments both in-water and on the land. The piles will be composed of steel or concrete and will range from 12 inches in diameter to 96 inches in diameter. The installation of piles will require the use of a crane sitting over the land, a drilling rig, pile driver, excavation and earthmoving equipment, concrete trucks and pumps, concrete vibrators, supply trucks, welding equipment, and other machinery. Piles will primarily be vibrated into the substrate rather than “hammering”; however, while vibratory driving will primarily be used, an impact hammer may be necessary to complete pile driving due to the density of substrate.

Because pile driving activities would be carried out both above and within marine waters, the project has the potential to result in adverse impacts to marine resources including marine organisms and the marine environment (see also “Water Quality” discussion below). Specifically, the proposed pile driving would elevate levels of underwater sound in nearshore waters known to support species of marine mammals, including harbor seals, California sea lions, and southern sea otters. These species are protected under the Marine Mammal Protection Act, and the southern sea otter, specifically, is listed as threatened under the Endangered Species Act. Additionally, waters near the project area support marine fish species,

⁵ These documents were prepared to support 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.

including steelhead trout, Coho salmon, and green sturgeon. Steelhead and green sturgeon are listed as threatened under the Endangered Species Act, while Coho salmon is listed as endangered.

Marine mammals 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.⁶ 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.

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

⁶ See, for example, <https://www.nrc.gov/docs/ML1225/ML12250A723.pdf>.

(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 2019.⁷ 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, 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.

While the project area and adjacent waters do not provide rookery, mating, breeding or molting habitats for southern sea otters, California sea lions, or harbor seals, these areas are utilized for foraging and haul-out activities by these mammals. Additionally, the project site is within designated critical habitat for central California coast steelhead; harbor waters provide a migratory corridor for adult and smolt steelhead to/from Arana Gulch.

⁷ Southall et al, 2019.

The Santa Cruz Harbor is a heavily modified environment high-trafficked by recreational boaters. Regular dredging of the harbor entrance area has occurred since 1965 and periodic dredging of the inner harbor has occurred since 1983.⁸ As such, the estuarine environment in the harbor has been heavily modified. Noise levels in-water within the harbor range from 127 to 138 decibels (dB) while on-land noise levels are similar to those associated with a highly urbanized residential area; therefore, it is expected that species inhabiting the area are habituated to these noise levels. Nevertheless, without appropriate mitigation measures, increased noise levels stemming from pile driving could still cause harm. The majority of noise generated by the project stems from pile installation operations which affect both in-water and in-air noise levels; additional noise events would include trucks delivering materials, bridge removal, equipment, concrete pumps, and other minor construction equipment.

To minimize the damaging effects of sound to marine mammals and fish during pile driving and other construction activities, the proposed project includes several noise minimization protective measures. Specifically, the proposed project will primarily use vibratory driving; however, when impact hammering is used additional measures such as implementation of the “soft start” technique and use of sound dampening devices will be utilized. 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. Impact pile driving activities will be designed to be in compliance with SEL equal or less to 187 decibels (dB) in any single strike and peak sound pressure less than or equal to 208 dB in any single strike. These noise minimization measures are codified into **Special Conditions 4 and 5** to be implemented during all pile driving activities, including with a qualified marine wildlife coordinator to document and halt construction activities based on field observations.

Additionally, **Exhibit 4** documents other proposed avoidance and minimization measures to address potential marine wildlife impacts, including pre-construction surveys of resting/haul-out sites, a July 1 to mid-November in-water work window to avoid fishery impacts, worker training and an on-site biological monitor, and use of sound dampening devices (e.g., cushioning blocks and bubble curtains).

With these measures in place, adverse impacts to marine mammals and fish species during pile driving and construction activities are appropriately minimized as to maintain marine resources, and the project can be found consistent with Coastal Act Sections 30230 and 30231.

Turbidity and Water Quality Impacts

⁸ See CDP 3-18-0160, the Harbor’s dredging CDP.

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 contaminated sediments in coastal waters. Specifically, the project includes pile removal and pile driving, which have the potential to increase sediment load in the water column. In particular, 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. Project activities may result in a temporary disturbance of harbor sediments, thereby increasing turbidity and total suspended sediment (TSS).

Both as proposed by the City and augmented via condition to incorporate the Commission's typical best management practices regarding water quality protection, the project includes a series of measures to minimize turbidity and water quality impacts. These measures include testing (for oils, arsenic, and lead) of dredged soils and their proper disposal, installation of erosion/sedimentation controls, and prohibitions on fueling/cleaning construction equipment adjacent to Harbor waters (see **Special Condition 2** and **Exhibit 4**).

Nesting Birds and Bats

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.

In general, the area around the Murray Street bridge is highly developed and provides low quality habitat for wildlife. Buildings and other structures around the harbor provide temporary perching places for bird species; these species are afforded protection under the Migratory Bird Treaty Act. The project area includes suitable habitat for species commonly found along harbors such as gulls (*Larus* spp.), double-crested cormorants (*Phalacrocorax auritus*), and brown pelicans (*Pelecanus occidentalis*). The Murray Street Bridge itself provides nesting habitat for avian species such as rock dove (*Columba livia*), barn swallow (*Hirundo rustica*), and cliff swallow (*Petrochelidon pyrrhonota*) nesting within the bridge structure, while species such as western gulls (*Larus occidentalis*), double-crested cormorants, and black-crowned night heron (*Nycticorax nycticorax*) nest or roost on the footings of the bridge. Bat species such as the Pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*) may utilize the interior structure of the bridge for roosting. Additionally, bats

have been shown to inhabit swallow nests⁹ and this behavior has the potential to occur within the project area.

The upper harbor area is in close proximity to rookeries of great blue herons (*Ardea Herodias*) and great egrets (*Ardea alba*), located within a eucalyptus grove. While eucalyptus trees are non-native, they provide habitat for a variety of wildlife species in the area. Other avian species which have the potential to roost or nest within the eucalyptus grove include the red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), merlin (*Falco columbarius*), and white-tailed kite (*Elanus leucurus*). Monarch butterflies (*Danaus plexippus*) frequently utilize eucalyptus groves for a nectar source and for roosting habitat; individuals have been observed within the eucalyptus grove in the upper harbor.

Bird and bat species which roost or nest within or on the bridge itself will be the most affected by project activities; however, other species in close proximity to the project area may be affected by construction noise disturbance. While complete avoidance of impacts to bird and bat species is unavoidable due to the necessity and scope of the proposed project, the City has included a number of measures to minimize these impacts throughout the construction period, including in conjunction with recommendations from Commission staff ecologists. These measures include pre-construction surveys, sealing of potential bat roosting crevices, work stoppage zones around active nests (e.g., 1,000 feet for large raptors and 300 feet for other MBTA-protected species), and a biological monitor during nesting/breeding season (see **Exhibit 4**). With these measures in place, marine resources will be maintained, notwithstanding any minor adverse impacts and the project can be found consistent with Coastal Act Sections 30230 and 30231.

Biological Resources and Water Quality Conclusion

The proposed project would allow for a critical update to the seismic standards of the current Murray Street bridge while also providing public access and safety improvements. The proposed project includes appropriate BMPs and minimization measures 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; maintenance of equipment to prevent leaks of petroleum products; and the presence of biological monitors. Additional measures to minimize noise impacts from pile driving on marine mammals and fish include: a “soft start” technique for pile driving with an impact hammer; work stoppage zones; and a limited work window during certain periods of the year. As conditioned, the project is consistent with Coastal Act Sections 30230 and 30231 regarding protection of marine resources and offshore habitats.

⁹ California Bat Working Group 2022. Bats in Swallow Nests (rev. 4 April 2022). Available: <https://www.calbatwg.org/resources/>

F. Visual Resources

Applicable Coastal Act Provisions

The following Coastal Act policies require that visual resources within the coastal zone be protected:

Section 30251. *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

Analysis

The existing bridge is currently utilized as a viewpoint with which pedestrians may watch harbor activities (such as boats going into and out of the harbor), view various birds and marine animals, and gaze out to the Harbor entrance and beyond into Monterey Bay. Currently, the bridge and its barriers are solid concrete which results in users needing to lean over the bridge barriers in order to view the waters below. The proposed project will replace current bridge barriers with post-and-horizontal railings that are more see-through, thereby enhancing views relative to existing conditions and improving overall visual quality at the site. Additionally, the existing pedestrian walkway will be replaced with a wider, and therefore larger, pathway structure. The increased size of the bridge is not expected to significantly change the current visual aspects of the area and will provide improved public safety and public access opportunities. As such, the proposed project will maintain and enhance visual resources in the area and the project can therefore be found consistent with Section 30251 of the Coastal Act.

G. Coastal Hazards

Applicable Coastal Act Provisions

Coastal Act Section 30253 (in relevant part) addresses coastal hazards, including requiring new development to, among other things, minimize risks to life and property in areas of high geologic and flood hazard, and to ensure stability and structural integrity in light of potential hazards risk:

Section 30253. New development shall do all of the following:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding

area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs...

Analysis

The project's intent is to seismically strengthen the bridge to meet modern safety standards and ensure its continued usability in light of potential geologic hazards. In its current form, it is at a risk of sustaining damage if a major earthquake or other hazardous event were to occur in the project area, thereby significantly impacting access between the eastern and western sides of Santa Cruz. While there are no active fault lines directly on the project site, there are active fault lines in the surrounding area which may impact the bridge in the future. Notably, the bridge sustained damage in the 1989 Loma Prieta earthquake and received improvements following the event. Given the bridge's importance in regional transportation, including for evacuation purposes in cases of future earthquake or tsunami events, **Special Condition 8** requires the preparation of a Seismic and Tsunami Hazard Response Plan that documents the protocols to be used to inspect the bridge and ensure its usability after a seismic/tsunami event. The plan is to be developed in coordination with emergency response agencies, including the City of Santa Cruz, Santa Cruz County, and other relevant local governments.

Finally, the bridge is located in and over the Harbor's coastal waters, and is thus in a location potentially subject to flooding and other hazards risks. Development in such dynamic environments is susceptible to damage due to long-term and episodic processes. Past occurrences statewide have resulted in public costs (through low interest loans, grants, subsidies, direct assistance, etc.) in the many, many millions of dollars. As a means of allowing continued development in areas subject to these hazards while avoiding placing the economic burden for damages onto the people of the State of California, the Commission has in the past required applicants to acknowledge site hazards and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed. Such a condition is appropriate under these circumstances. Accordingly, this approval is conditioned for the City to assume all risks for developing at this location (see **Special Condition 9**).

In summary, the proposed project will fix existing structural deficiencies and ensure the seismic stability of a key transportation asset in the City. With conditions to address seismic/tsunami events and to otherwise recognize and assume coastal hazard risks, the Commission finds the project consistent with Coastal Act Section 30253.

H. Other

Other Agency Approvals

The City currently is awaiting approval of permits from the Central Coast Regional Water Quality Control Board (Clean Water Act Section 401), California Department of Fish and Wildlife (Fish and Game Code Section 1602), and the US Army Corps of Engineers (Clean Water Act Section 404 and Rivers and Harbors Act Section 9). To ensure the bridge project is authorized by all regulatory agencies, **Special Condition 6** requires the Applicant to submit evidence of a valid permits from them prior to

construction.

Minor Modifications

Special Condition 1 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.

Attorney's Fees

Coastal Act Section 30620(c)(1) authorizes the Commission to require applicants to reimburse the Commission for expenses incurred in processing CDP applications. Thus, the Commission is authorized to require reimbursement for expenses incurred in defending its action on the CDP in the event that the Commission's CDP action is challenged by a party other than the Applicant. **Special Condition 10** is included to provide for attorney's fees in case of potential litigation, which is not expected.

I. 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 Santa Cruz, acting as the CEQA lead agency, adopted a Mitigated Negative Declaration for the proposed project in January 2008.

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 Documents¹⁰

- 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.
- Dudek Environmental Consulting, 2022. *Marine Mammal Monitoring Plan, Murray Street Bridge Seismic Retrofit Project*.
- CDP File 3-22-0165

B. Appendix B – Staff Contact with Agencies and Groups

- City of Santa Cruz
- Santa Cruz County
- California Department of Fish and Wildlife
- Central Coast Regional Water Quality Control Board
- U.S. Army Corps of Engineers
- Dudek Environmental Consulting

¹⁰ These documents are available for review in the Commission's Central Coast District office.