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STAFF REPORT CDP APPLICATION

Application Number: 2-20-0443

Applicant: San Mateo County Harbor District

Project Location: Shoreline area within the Pillar Point Harbor and along the Harbor's West Trail (providing public access from the West Point Avenue parking area to Maverick's Beach) in the unincorporated Princeton-by-the-Sea community north of Half Moon Bay in San Mateo County.

Project Description: Construction of a 'living shoreline' project (comprised of a beach and dune system established through beach nourishment and stabilizing materials) to protect and restore the affected shoreline area, as well as related trail, stormwater/drainage and habitat improvements.

Staff Recommendation: Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

The San Mateo County Harbor District proposes to construct a living shoreline to protect and restore a severely eroded shoreline area associated with the Pillar Point Harbor's West Trail (providing public access to Maverick's Beach), including related stormwater and drainage improvements to address hydrological and ecological function, aesthetics, and maintenance needs. The living shoreline would create a roughly 1-acre nourished beach with an elevated back dune system along approximately 300 feet of the shoreline within the Harbor. Buried beneath the surface of the beach and dune would be stabilizing features, including a cobble berm (also referred to as a dynamic revetment) and two rock fingers extending perpendicular from the trail to help hold the nourished sand in place and provide necessary geomorphology for associated and affected

habitats. The stormwater drainage improvements would allow for removal of an existing shoreline outfall and redirection of filtered stormwater to portions of Pillar Point Marsh to help enhance terrestrial-wetland transition zones. Finally, about 300 feet of the West Trail would be regraded, constructed to a minimum of 15-feet wide, and slightly elevated to accommodate sea level rise.

The West Trail provides a public pedestrian/ADA pathway, as well as an emergency access route, from the West Point Avenue parking area to Maverick's Beach and is heavily used by pedestrians, dog walkers, surfers, and other recreationalists. The project area is within the Harbor's breakwaters, but it has experienced chronic coastal erosion, resulting in degradation of the existing trail, hazardous conditions for trail users, and periods of limited access. The project as proposed includes elements that would enhance public access and habitats in and around the project area, including through widening and slightly elevating the trail; creating a roughly 1-acre beach where none exists today; improving the stormwater management system (including removal of duplicative shoreline outfalls/infrastructure); and dune and wetland habitat enhancement. The use of living shoreline design techniques not only minimizes the use of hardscape armoring but creates additional beach area for public use that is consistent with the historical and current landscape of the shoreline area. Therefore, the project design would enhance and maximize public access and recreational opportunities in the project area, including to allow public access improvements to be realized in the near term, and would lead directly to habitat enhancement, providing immediate and tangible public benefits.

In short, the proposed project represents a unique opportunity to apply living shoreline principles to an area that is currently leading to coastal resource degradation, including fundamentally in terms of public access and habitat resources. The project would protect the shoreline and trail area while also resulting in net gains to both habitat and sandy beach area, presenting a type of 'win-win' for the public and coastal resources. In fact, the impacts of the living shoreline construction, including the proposed cobble berm and rock fingers, can here be appropriately offset by the creation of a recreated beach and back dune area, as well as removal of duplicative drainage infrastructure and addition of new filtration mechanisms that can help improve habitat function, resulting in a project that is essentially self-mitigating. Further, conditions are included to ensure that the project will be constructed and maintained in its approved configuration, and adaptively managed over time, to ensure the project's long-term stability and public utility while continuing to protect coastal resources. The project also includes a suite of construction best management practices and mitigation measures to protect habitats, water quality and marine resources, and also to maintain through access as much as possible at all times.

Staff believes that the project, as conditioned, is an important project, not only for the Pillar Point Harbor area and its users and habitats, but also for the Commission, where the promise of living shorelines can be put to the test, and where lessons learned here can be applied elsewhere along the California coast. As the Commission is well aware, the shoreline statewide is under attack from coastal hazards, including sea level rise, and living shoreline concepts hold significant promise for ensuring protection of certain

shoreline areas and infrastructure in a manner that can actually enhance natural resources and overall resilience and sustainability. Staff believes that to be the case here and recommends approval as conditioned. The motion and resolution to effectuate this recommendation are found on **page 5** below.

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EXHIBITS

- Exhibit 1 – Project Location Maps
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- Exhibit 3 – Site Photos
- Exhibit 4 – Sand Source Locations
- Exhibit 5 – Proposed Mitigation Measures and BMPs

1. MOTION AND RESOLUTION

Staff recommends that the Commission, after public hearing, **approve** a CDP 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 2-20-0443 pursuant to the staff recommendation, and I recommend a yes vote.*

Resolution to Approve CDP: *The Commission hereby approves Coastal Development Permit Number 2-20-0443 for the proposed development 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 construction of a living shoreline along approximately 300 feet of shoreline, and stormwater/drainage improvements, all substantially consistent with the proposed plans (i.e., as shown in *GHD, Inc., San Mateo County Harbor District Pillar Point Harbor West Trail Living Shoreline Project* dated June 25, 2020 (see **Exhibit 2**)) subject to the terms and conditions of this CDP.
2. **Construction Plan.** PRIOR TO ISSUANCE OF THE CDP, the Permittee shall submit two copies of a Construction Plan to the Executive Director for review and written approval. The Construction Plan shall, at a minimum, include and provide for the following:
 - (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 fullest extent feasible in order to have the least impact on public access and other coastal resources, including by using, as feasible, inland areas for staging and storing construction equipment and materials. Construction areas shall be sited and designed to minimize impacts to public beach access and public views from West Trail, including but not limited to public views across the site. Signage shall be posted in the West Trail parking lot indicating alternative parking and access options if portions of the lot are being used for staging activities.
 - (b) **Construction Methods.** The Construction Plan shall specify the construction methods to be used, including all methods to be used to keep the construction areas separate from public recreational use areas as much as possible (including using unobtrusive temporary fencing or equivalent measures to delineate construction areas), and including verification that equipment operation and equipment and material storage will not, to the maximum extent feasible, significantly degrade public access and public views during construction. The Plan shall limit construction activities to avoid coastal resource impacts as much as feasible, and lighting of the work area is prohibited.
 - (c) **Construction Timing.** Construction is prohibited during weekends, from the Saturday of Memorial Day through Labor Day inclusive, and during non-daytime hours (i.e., from one-hour after sunset to one-hour before sunrise), unless due to extenuating circumstances the Executive Director authorizes such work.
 - (d) **Construction BMPs.** The Construction Plan shall identify the type and location of all erosion control and water quality best management practices that will be implemented during construction to protect coastal water quality, including at a minimum all of the following:

- 1. Runoff Protection.** Silt fences, straw wattles, or equivalent apparatus shall be installed at the perimeter of all construction areas to prevent construction-related runoff and sediment from discharging from the construction area or entering into storm drains or otherwise offsite or towards the beach and ocean. Similar apparatus shall be applied on the beach area for the same purpose when potential runoff is anticipated. Special attention shall be given to appropriate filtering and treating of all runoff, and all drainage points, including storm drains, shall be equipped with appropriate construction-related containment, filtration, and treatment equipment. All erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each workday.
 - 2. Equipment BMPs.** Equipment washing, refueling, and servicing shall take place at an appropriate off-site and inland location to help prevent leaks and spills of hazardous materials at the project site, at least 50 feet inland from the beach and preferably on an existing hard surface area (e.g., a road) or an area where collection of materials is facilitated. All construction equipment shall also be inspected and maintained at a similarly sited inland location to prevent leaks and spills of hazardous materials at the project site.
 - 3. Good Housekeeping BMPs.** The construction site shall maintain good construction housekeeping controls and procedures at all times (e.g., clean up all leaks, drips, and other spills immediately; keep materials covered and out of the rain, including covering exposed piles of soil and wastes; dispose of all wastes properly, place trash receptacles on site for that purpose, and cover open trash receptacles during wet weather; remove all construction debris from the site; etc.).
 - 4. Rubber-tired Construction Vehicles.** Only rubber-tired construction vehicles are allowed on the beach, except track vehicles may be used if the Executive Director determines that they are required to safely carry out construction. When transiting on the beach, all vehicles shall remain as far away from the ocean as possible and avoid contact with ocean waters.
 - 5. Construction Material Storage.** All construction materials and equipment placed on the beach during daylight construction hours shall be stored beyond the reach of tidal waters. All construction materials and equipment shall be removed in their entirety from these areas by one-hour after sunset each day that work occurs, except for necessary erosion and sediment controls and construction area boundary fencing where such controls and fencing are placed as far inland as possible, and are minimized in their extent.
- (e) Restoration.** All construction debris shall be removed, and all beach area and other public recreational access and use areas and all beach access points impacted by construction activities shall be restored to their pre-construction condition or better within three days of completion of construction. Any native materials impacted shall be appropriately filtered as necessary to remove all

construction debris.

(f) Construction Site Documents. The Construction Plan shall provide that copies of the signed CDP and the approved Construction Plan be maintained in a conspicuous location at the construction job site at all times, and that such copies are available for public review on request. All persons involved with the construction shall be briefed on the content and meaning of the CDP and the approved Construction Plan, as well as 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 the construction coordinator's contact information (i.e., address, phone numbers, email, etc.), including, at a minimum, an email address and a telephone number 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 name and contact information (i.e., 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 on at least a weekly basis.

(h) Construction Specifications. The construction specifications and materials shall include appropriate control provisions that require remediation for any work done inconsistent with the terms and conditions of this CDP.

(i) Notification. The Permittee shall notify planning staff of the Coastal Commission's North Central Coast District Office at least three working days in advance of commencement of construction, and immediately upon completion of construction.

All requirements above and all requirements of the approved Construction Plan shall be enforceable components of this CDP. The Permittee shall undertake development in accordance with this condition and the approved Construction Plan. Minor adjustments to the above requirements, as well as to the Executive Director-approved Plan, which do not require a CDP amendment or 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.

3. **Additional Construction Habitat BMPs.** The Permittee shall comply with all habitat protection measures outlined in **Exhibit 5** and the following as described below:

(a) Eelgrass.

1. **Surveys.** A pre-construction eelgrass clearance survey for the project area 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 (typically April-October). The eelgrass survey and mapping shall be prepared in full compliance with the latest version of the "California Eelgrass Mitigation Policy (CEMP) and Implementing Guidelines" and shall be prepared in consultation with the National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW). Surveys shall include, at a minimum: sampling methods that include metrics on visibility, such as Secchi disk depths; vegetative cover; turion (shoot) density by area, spatial distribution or aerial extent of vegetation and unvegetated habitat; and a record of bathymetry. 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 construction activities.
2. **Potential Impacts.** If the eelgrass clearance survey identifies any eelgrass within the project area, the Permittee shall consult with applicable resource protection agencies including NMFS and CDFW, on how best to avoid, minimize, and mitigate such impacts, and shall implement all associated measures as directed by the Executive Director.
3. **Resource Agency Coordination.** The Permittee shall comply with all requirements, requests, and mitigation measures identified by the applicable resource agencies with respect to preservation and protection of eelgrass. Any change to the approved project that may be required by such agencies shall be submitted to the Executive Director in order to determine if the proposed change requires an amendment to this CDP.

(b) Nesting Birds

1. **Surveys.** For any construction work that would occur during the avian breeding season (i.e., January 15 to September 15), 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) in the proposed construction areas. The following shall apply:
 - (a) Surveys shall commence no more than 30 days prior to the initiation of construction and shall occur weekly thereafter over the project season,

with the last survey occurring no more than 72 hours prior to the start of construction.

- (b) Surveys shall extend 300 feet from the project work area to locate any active non-raptor nests, and 500 feet to locate any active raptor (bird of prey) nests.
 - (c) If active nests are located for non-colonial species, clearly marked no-disturbance buffers of 300 feet shall be established for non-raptor species and 500 feet for raptors, unless evidence is provided to demonstrate to the Executive Director's satisfaction that a different distance is appropriate. A qualified biologist shall determine when a nest has fully fledged or is no longer in use, at which point its no-disturbance buffer can be removed.
 - (d) For colonial nesting species (e.g., great blue herons, black-crowned night herons, white egrets), if more than three active nests are located within the cypress grove concurrently, a no-disturbance buffer of 500 feet will be established around the outermost extent of the colony.
 - (e) Maps identifying the location of any active nests detected shall be provided, and at a minimum, indicate the date of survey, nest stage (e.g., eggs, nestlings, etc.), and the buffers.
2. **Buffers.** Any birds that begin nesting within an active construction area or the designated survey area 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 shall be avoided, the nests shall continue to be monitored by the biologist, and if the nesting birds begin to show distress associated with construction activities, the qualified biologist shall reestablish the prescribed no-disturbance buffers.
3. **Disturbance.** 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.
4. **Monitoring.** A monitoring report shall be provided to the Executive Director within 90 days of construction completion and shall include: all survey results and associated maps; along with a brief narrative describing the survey methods and observations of the species' tolerances to noise, vibration, and visual disturbance cues. If any incidents have resulted in a need for further consultation with the project biologist and/or the Executive Director, these will also be noted and discussed.

All requirements above shall be enforceable components of this CDP, and the Permittee shall undertake development in accordance with this condition. Minor adjustments to the above requirements which do not require a CDP amendment or 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.

- 4. 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 the approved project. 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 both color hard copy 8½ x 11 and digital jpg formats) 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 upcoast, seaward, inland, and downcoast viewpoints on the beach, and from a sufficient number of viewpoints as to provide complete photographic coverage. Such photographs shall be at a scale that allows comparisons to be made with the naked eye between photographs taken in different years and from the same vantage points. The As-Built Plans shall include vertical and horizontal reference markers from inland surveyed benchmarks for use in future monitoring efforts. 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 project has been constructed in conformance with the approved project identified in **Special Condition 1** and the terms and conditions of this CDP.
- 5. Habitat Creation Plan.** PRIOR TO ISSUANCE OF THE CDP, the Permittee shall submit a final Habitat Creation Plan to the Executive Director for review and written approval. With an overarching goal to establish a self-sustaining natural beach dune habitat integrated into the living shoreline, and native wetland vegetation within the bioswale, the Plan shall be prepared by a qualified restoration ecologist and take into account the specific conditions of the site (including soil, exposure, water flows, temperature, moisture, wind, etc.). The Habitat Creation Plan shall be in substantial conformance with the proposed dune plan (i.e., by Peter R. Baye, Ph.D., *Pillar Point Harbor beach and foredune vegetation establishment and related environmental enhancement options* dated June 27, 2019 (see Substantive File Documents), and the bioswale design as shown in *GHD, Inc., San Mateo County Harbor District Pillar Point Harbor West Trail Living Shoreline Project* dated June 25, 2020 (see **Exhibit 2**)), but shall be modified to provide and be consistent with all of the following:

 - (a) Baseline Assessment.** A baseline assessment, including narrative, maps, and photographs, of the current physical and ecological condition of the habitat creation areas.

- (b) Project Goals and Objectives.** A description of the specific habitat goals and objectives, including supporting rationale based on historical conditions, relevant published information for the area, and/or appropriate reference sites.
- (c) Invasive Species Removal.** All invasive plant species (as listed by the California Invasive Plant Council) shall be removed from the project areas prior to habitat creation, and their establishment and encroachment from adjacent areas shall be addressed on an as-needed basis to ensure that absolute cover be maintained below 5%.
- (d) Vegetation Planting.** A detailed planting plan emphasizing the use of seeds, plugs, or container plants planted prior to fall rains, unless another time period or planting method is fully described and justified within the Plan. All vegetation planted in the habitat creation areas shall consist only of plants native to the target habitats and originating from local genetic stock, and the Plan shall be submitted with adequate evidence demonstrating that that is the case. The planting plan should be based on vegetation community structure (e.g., species and relative densities) at an approved nearby reference site and shall be designed to avoid the use of irrigation following the plant establishment stage. If irrigation is considered necessary to initiate restoration, it should be temporary and provisions for its removal must be included in the Plan.
- (e) Fencing and Signage.** Fencing and informational signs shall be installed around the dune areas to identify and protect them from activities that could harm the habitat. All signage and fencing details shall be provided, which shall be sited and designed to protect the habitat establishment and to protect public views as much as possible (e.g., materials that are made of natural materials and colors that blend with the environment, such as rope and post) while allowing for continued public access to the beach and water through designated footpaths consistent with **Special Condition 1**.
- (f) Monitoring and Maintenance.** A detailed monitoring program designed to evaluate the success of the habitat creation efforts, and to guide any adaptive management actions for ensuring long-term success shall be provided. Monitoring and maintenance of the habitat creation areas shall continue for as long as any portion of the approved development exists and shall at a minimum include:
- 1) Schedule.** An initial five-year monitoring schedule, with conditional inclusion of additional years of the same monitoring if success criteria are not met in the initial five-year time frame, until such time as they are met.
 - 2) Monitoring Methods.** The monitoring program shall be supported by a clear rationale for the selected approaches and must describe the monitoring methods that will be used in detail (e.g., metrics, sampling frequency, timing, etc.). Power analyses shall inform the design of the sampling scheme and the

analytical framework to be used for assessments shall also be clearly described in the narrative.

3) Success Criteria. At a minimum, final success criteria for vegetation species diversity (including richness and evenness), native vegetation cover, non-native vegetation with less than or equal to 5%, and specific measures for any sensitive plant or wildlife species located in the created areas, shall be provided. Criteria may be relative or fixed, may be based on reference sites or relevant literature, and shall be supported by a clear technical rationale.

4) Data and Statistical Analysis. A description of the data analysis methods and statistical thresholds employed shall be established as assessment rules for each success criterion. The statistical tests that will be used (e.g., a one or two sample t-test) to detect differences between success criteria and conditions observed at the restoration areas shall be specified.

(g) Reporting. Monitoring reports shall be submitted annually to the Executive Director for review and approval by December 31st of every year for 5 years or for an adjusted time period dependent on habitat creation success, as required in subsection (1) above. The reports shall identify the location of all vegetation plantings or seedings conducted in the habitat creation areas, present monitoring results, assessment of progress toward meeting success criteria, and any adaptive management recommendations. Raw data and associated metadata shall be provided in a digital format with the reports. The reports shall also include photographs (in both color hard copy 8½ x 11 and digital jpg formats) that clearly show the created habitat areas from at least the same vantage points as the initial photo documentation as well as subsequent monitoring reports. Any proposed actions necessary to maintain the created habitat areas shall be implemented within 30 days of Executive Director approval of the monitoring reports, unless a different time frame for implementation is identified by the Executive Director.

All requirements above and all requirements of the approved Habitat Creation Plan shall be enforceable components of this CDP. The Permittee shall undertake development in accordance with this condition and the approved Habitat Creation Plan. Minor adjustments to the above requirements which do not require a CDP amendment or 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.

6. Monitoring and Reporting. The Permittee shall ensure that the condition and performance of the approved as-built project is regularly monitored and maintained, with reports to the Executive Director as described in this condition. Such monitoring evaluation shall, at a minimum, address whether any significant weathering or damage has occurred that would adversely impact future performance, and identify any structural or other damage or wear and tear requiring repair to maintain the

living shoreline and the drainage improvements in a structurally sound manner and their approved state, including at a minimum with regards to the following:

- (a) Living Shoreline.** The approved living shoreline shall be monitored by a licensed civil engineer with experience in coastal structures and processes to ensure structural integrity and project performance consistent with the requirements of **Special Condition 8** (Adaptive Management Plan), and success of proposed dune habitat creation consistent with the requirements of **Special Condition 5** (Habitat Creation Plan).
- (b) Drainage Improvements.** The approved stormwater/drainage improvements shall be regularly monitored to ensure they are functioning properly, including that the uphill channels are kept free of build-up and debris, and wetland vegetation has been successfully established in the drainage swale consistent with the requirements of **Special Condition 5** (Habitat Creation Plan).
- (c) Photo Documentation.** All monitored elements shall be photographed at least bi-annually from an adequate number of inland and seaward locations as to provide complete photographic coverage of the approved project, including from all vantage points included in the approved As-Built Plans (**see Special Condition 4**). All photographs shall be documented on a site plan that notes the location of each photographic viewpoint and the date and time of each photograph, including to allow naked eye comparison of the same views over time. Such photo documentation shall commence no later than the date of construction completion. To assist in such an effort, monitoring plans should provide vertical and horizontal reference distances from armoring structures to surveyed benchmarks for use in future monitoring efforts.
- (d) Reporting.** Monitoring reports covering the above-described evaluations (**Special Condition 6 Sections (a), (b), and (c)**) shall be submitted to the Executive Director for review and approval by May 1st of every fifth year from the date of CDP approval (i.e., May 1, 2026, May 1, 2031, etc.) for as long as any part of the approved project remains extant. The reports shall identify the existing configuration and condition of the approved project, including providing vertical and horizontal reference distances between the approved As-Built Plans' surveyed reference markers and the inland benchmarks, and shall recommend any actions necessary to maintain these project elements in their approved and required state consistent with the final approved Adaptive Management Plan (**Special Condition 8**). The reports shall also include photographs (in both color hard copy 8½ x 11 and digital jpg formats) that clearly show all components of the as-built project from at least the same vantage points as the approved As-Built Plans and initial photo documentation as well as subsequent monitoring reports. Any proposed actions necessary to maintain the approved as-built project in a structurally sound manner and its approved state shall be implemented within 30 days of Executive Director approval unless a different time frame for implementation is identified by the Executive Director. In addition to the every five year requirement, separate and additional monitoring reports

shall be submitted within 30 days following either (1) an El Niño storm event comparable to a 20-year or larger storm, or (2) an earthquake of magnitude 5.5 or greater with an epicenter in Marin County.

(e) Future Mitigation. If the CDP authorization has not expired pursuant to the long-term adaptive management triggers identified in the final approved Adaptive Management Plan (**Special Condition 8**) by February 12, 2041, and if the Permittees intend to keep the approved living shoreline in place beyond the end of that initial 20-year mitigation period (i.e., past February 12, 2041), the Permittees shall submit a complete CDP amendment application to the Coastal Commission that shall reassess mitigation for the ongoing impacts of the approved living shoreline, including an evaluation of actions that could be taken to reduce or eliminate those impacts. The complete application shall be submitted no later than 6 months prior to the end of the original mitigation period (i.e., by August 12, 2040). The application shall include analysis of feasible alternatives to modify the living shoreline, trail, and any related development, in order to eliminate to the maximum extent feasible such living shoreline's impacts on coastal resources, and shall propose mitigation for unavoidable coastal resource impacts associated with the retention of the living shoreline and/or any modified living shoreline beyond the initial 20-year mitigation period. In addition, if the Permittee applies for a separate CDP or an amendment to this CDP to modify the approved living shoreline, or to perform repair work affecting 50% or more of the living shoreline, the Permittee shall be required to propose additional commensurate mitigation for the impacts on public views, public recreational access, shoreline processes, and all other affected coastal resources that have not already been mitigated through this CDP, at that time.

7. Future Maintenance/Repair. This CDP authorizes future maintenance and repair of the approved project components as described in this special condition. The Permittee acknowledges and agrees on behalf of itself and all successors and assigns that it is the Permittee's responsibility to: (1) maintain the approved project, including the living shoreline and drainage improvements (see **Special Condition 1**), and all related development in a structurally sound manner, visually compatible with the beach and bluff shoreline surroundings, and in their approved and required states, including the habitat creation areas pursuant to **Special Condition 5**, and shall be maintained throughout the life of the system; (2) retrieve any failing portions of the permitted structures or related improvements that might otherwise substantially impair the use, aesthetic qualities, or environmental integrity of the beach, ocean, trail, wetland and upland areas; and (3) bi-annually or more often inspect the living shoreline and drainage improvements for signs of compromise. Any such maintenance-oriented development associated with the approved living shoreline, drainage improvements, and related development shall be subject to the following:

(a) Maintenance/Repair. "Maintenance" and "repair" as understood in this special condition means development that would otherwise require a CDP whose purpose is to maintain and/or repair living shoreline and drainage improvements

in their approved and/or required state pursuant to the terms and conditions of this CDP.

(b) Other Agency Approvals. The Permittee acknowledges that these maintenance and repair stipulations do not obviate the need to obtain permits and/or authorizations from other agencies for any future maintenance or repair.

(c) Maintenance/Repair Notification. At least two weeks prior to commencing any maintenance and/or repair activity, the Permittee shall notify, in writing, planning staff of the Coastal Commission's North Central Coast District Office. The notification shall include: (1) a detailed description of the maintenance/repair proposed; (2) any plans, engineering, geology, or other reports describing the event; (3) a construction plan that clearly describes construction areas and methods, and that is consistent with the parameters of **Special Condition 2** above; (4) other agency authorizations; and (5) any other supporting documentation describing the maintenance/repair event. Maintenance or repair may not commence until the Permittee has been informed by planning staff of the Coastal Commission's North Central Coast District Office that the maintenance proposed complies with this CDP. If the Permittee has not been given a verbal response or sent a written response within 30 days of the notification being received in the North Central Coast District Office, the maintenance shall be authorized as if planning staff affirmatively indicated that the maintenance/repair complies with this CDP. The notification shall clearly indicate that maintenance/repair is proposed pursuant to this CDP, and that the lack of a response to the notification within 30 days constitutes approval of it as specified in the CDP. If the notification does not clearly and explicitly indicate same, then the automatic authorization provision does not apply. In the event of an emergency requiring immediate maintenance, the notification of such emergency shall be made as soon as possible, and shall (in addition to the foregoing information) clearly describe the nature of the emergency.

(d) Maintenance/Repair Coordination. Maintenance/repair activity shall, to the degree feasible, be coordinated with other maintenance/repair activity proposed in the immediate vicinity with the goal being to limit coastal resource impacts, including the length of time that construction occurs in and around the beach and beach access points. As such, the Permittee shall make reasonable efforts to coordinate their maintenance/repair activity with other adjacent property maintenance/repair activities, including adjusting their maintenance/repair activity scheduling as directed by planning staff of the Coastal Commission's North Central Coast District Office.

(e) Restoration. The Permittee shall restore all beach and other public access areas impacted by construction activities to their pre-construction condition or better within three days of completion of construction. Any beach sand impacted shall be filtered as necessary to remove all construction debris from the beach. The Permittee shall notify planning staff of the Coastal Commission's North Central Coast District Office upon completion of restoration activities to allow for a site

visit to verify that all project and beach-area restoration activities are complete. If planning staff should identify additional reasonable measures necessary to restore project and/or beach areas, such measures shall be implemented as quickly as feasible.

(f) Noncompliance Provision. If the Permittee is not in compliance with permitting requirements of the Coastal Act, including the terms and conditions of any Coastal Commission CDPs or other coastal authorizations that apply to the subject property, at the time that a maintenance/repair event is proposed, then maintenance/repair that might otherwise be allowed by the terms of this future maintenance/repair condition may be disallowed by the Executive Director until the Permittee is in full compliance with the permitting requirements of the Coastal Act, including all terms and conditions of any outstanding CDPs and other coastal authorizations that apply to the subject properties.

(g) Emergency. Notwithstanding the emergency notifications set forth in subsection (c) of this special condition, nothing in this condition shall affect the emergency authority provided by Coastal Act Section 30611, Coastal Act Section 30624, and Subchapter 4 of Chapter 5 of Title 14, Division 5.5, of the California Code of Regulations (Permits for Approval of Emergency Work).

(h) Duration of Covered Maintenance/Repair. Future maintenance under this CDP is allowed subject to the above terms throughout the duration of the authorization and as further specified in **Special Conditions 6 and 8** subject to Executive Director review and written approval every 5 years (i.e., by July 9, 2026; July 9, 2031; and so on) to verify that there are not changed circumstances associated with such allowance of maintenance/repair events that necessitate re-review. It is the Permittee's responsibility to request Executive Director approval prior to the end of each 5-year maintenance/repair period pursuant to these maintenance/repair provisions, and the term shall only be extended if the Permittee requests an extension prior to the end of each 5-year maintenance/repair period and only if the Executive Director extends the maintenance/repair term in writing. The intent of this CDP is to allow for 5-year extensions of the maintenance/repair term for as long as the approved project remains authorized unless there are changed circumstances that may affect the consistency of this maintenance/repair authorization with the policies of Chapter 3 of the Coastal Act. The Permittee shall maintain the approved project in its approved and required state.

8. Adaptive Management Plan. PRIOR TO ISSUANCE OF THE CDP, the Permittee shall submit two sets of a Final Adaptive Management Plan to the Executive Director for review and written approval. The Plan shall clearly describe how monitoring, maintenance and adaptive management of the living shoreline will be conducted consistent with the requirements of **Special Conditions 6 and 7** including analyzing dune change over time (shape and volume), beach change over time (e.g., mean sea level shoreline changes), and beach sand volume changes; frequency of beach overtopping and trail damage; and success of proposed dune habitat creation

(vegetative cover and composition as detailed in the Habitat Creation Plan (**Special Condition 5**)). The Adaptive Management Plan shall also describe 1) adaptive management efforts that will be used to maintain the living shoreline in its approved configuration based on defined maintenance triggers; 2) adaptive management efforts to adapt the living shoreline based on performance standards; and 3) adaptive management efforts to abandon and remove aspects of the living shoreline based on performance triggers. The Plan shall be in substantial conformance with the proposed plan (i.e., *GHD, Draft Adaptive Management and Monitoring Plan Pillar Point Harbor West Trail Living Shoreline Project* received on October 6, 2020), but shall be modified to provide for and be consistent with all of the following:

(a) Monitoring. The Permittee shall monitor the approved project for a period of 10 years after initial construction to measure the performance of the living shoreline and determine when or if maintenance or adaptation is needed. Quantifiable and measurable criteria shall be developed for performance metrics for which the physical monitoring plan is being prepared, including metrics that address, at a minimum, the following topics:

1. Viability of the actively managed dune, cobble, and rock finger system for preventing erosion of the trail;
2. The adequacy of the proposed dune size to prevent damage to the trail;
3. The stability of the dune system and sandy beach;
4. The sand losses for established native dune vegetation including how they will be measured and what, if anything, will be used for comparison;
5. Event characteristics (e.g., incident waves, water depth, duration of overtopping, etc.) that will be documented during 'extreme events' and what criteria will be used to characterize an event as extreme;
6. The size and amount of sand dredged from the overwash shoal beach and geomorphic response of the overwash shoal beach after dredging events;
7. The effects of the proposed project on down-drift beach conditions; and
8. Relationship between dune vegetation types, cover, etc. and physical dune resilience.

(b) Adaptation Triggers. Triggers for adaptive management efforts shall be clearly established and identified that could be applied to assist in maintaining and/or adapting the living shoreline, including additional or modified revegetation efforts and opportunistic events such as availability of dredged sand or identified impacts to recreational access including hazardous conditions or continued exposure of cobble or rock fingers. No changes to the design shall occur without written approval from the Executive Director.

(c) Adverse Impact Triggers. Triggers to address any detrimental impacts to the proposed source site (the overwash shoal beach), such as sustained periods of erosion at or downdrift of the overwash shoal beach, shall be clearly established and identified.

(d) Long Term Triggers. Triggers for implementation of a long-term strategy, including removal of all or portions of the living shoreline if necessary, shall be clearly established along with a schedule for reporting to the Executive Director on the reasons for implementation of a long-term strategy; if applicable, elements of the project that would be removed; and elements of the project that would be retained and continuation or changes to the other associated projects. If the triggers for implementation of a long-term strategy are met, within 30 days of reporting to the Executive Director, the Permittee shall apply for a permit or permit amendment to restore the beach to the pre-project condition, or agreed upon condition that reflects current conditions of the site.

All requirements above and all requirements of the approved Final Adaptive Management Plan shall be enforceable components of this CDP. The Permittee shall undertake development in accordance with this condition and the approved Final Adaptive Management Plan. Minor adjustments to the above requirements, as well as to the Executive Director-approved Final Adaptive Management Plan, which do not require a CDP amendment or a new CDP may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources.

9. Other Authorizations. PRIOR TO CONSTRUCTION, the Permittee shall provide to the Executive Director written documentation of authorizations from all entities from which such authorization is necessary for the approved project, including at a minimum San Mateo County, the California State Lands Commission, the Monterey Bay National Marine Sanctuary, and the U.S. Army Corps of Engineers, State Lands Commission, Natural Marine Fish and Wildlife Service, United States Department of Fish and Wildlife, California Department of Fish and Wildlife, or evidence that no such authorizations are required from each of these entities. The Permittee shall also obtain an encroachment permit from the San Mateo County Department of Public Works prior to any material transport on County roads. The Permittee shall inform the Executive Director of any changes to the project required by any other such authorizations. 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.

10. Future Permitting. All future proposed development related to this CDP shall require a new CDP or a CDP amendment that is processed through the Coastal Commission, unless the Executive Director determines a CDP or CDP amendment is not legally required.

11. Assumption of Risk, Waiver of Liability, and Indemnity. By acceptance of this CDP, the Permittee acknowledges and agrees, on behalf of itself and all successors

and assigns: (a) that the project area is subject to coastal hazards, including but not limited to episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, tidal scour, storms, tsunamis, coastal flooding, landslides, earth movement, and the interaction of all of these, many of which will worsen with future sea level rise; (b) to assume the risks to the Permittee and the properties that are the subject of this CDP 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; (d) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the CDP 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; and (e) that any adverse effects to property caused by the permitted project shall be fully the responsibility of the Permittee.

4. FINDINGS AND DECLARATIONS

A. Project Location, Background, and Description

1. Project Location

The West Trail is a north-south oriented trail located along the inner western edge of Pillar Point Harbor north of Half Moon Bay in unincorporated Princeton-by-the-Sea (see **Exhibit 1** for regional and project site maps) in the western area of San Mateo County. The project site is bound by Harbor waters and a coastal shoreline of rock (both native to the shoreline area and rock that has been imported¹) and sand to the east of the trail and a steep hillside with a dense stand of cypress trees to the west. Additionally, the surrounding area hosts northern coastal salt marsh (Pillar Point Marsh), freshwater marsh, northern coastal scrub, and coastal strand vegetation, as well as non-native grassland and Monterey cypress trees. Surrounding land uses consist of mainly open space lands, except for the Pillar Point Air Force Station immediately upslope of the trail, and commercial and harbor uses to the north and east. The coastal waters adjacent to the Harbor are identified Monterey Bay National Marine Sanctuary and Pillar Point State Marine Conservation areas.

2. Project Background

Pillar Point Harbor's West Trail provides a pedestrian pathway from the West Point Avenue access and parking area to the outer harbor and Maverick's Beach. West Trail was originally constructed in 1961 as an access way for the Army Corps of Engineers "Outer Breakwaters" project to reduce wave exposure to the Harbor and is generally about 13 feet wide but varies from 8 to 18 feet in width. The trail is used daily by

¹ Rock found along the shoreline in the project area includes natural or locally-derived gravel and small boulders, imported rip rap (in the vicinity of the existing stormdrain outfall pipe) and some miscellaneous concrete debris.

pedestrians, dog walkers, and other recreationalists, and is heavily used during the annual Maverick's surf season. Following the construction of the Pillar Point Harbor's outer breakwaters (1959-1961), the shoreline dynamics in the Harbor, including in the project area, were altered resulting in sediment transport away from some areas and deposition in other areas due to a change in wave patterns. A historical photograph from 1972 shows that the beach adjacent to and protecting the West Trail was much wider than it is today due to previous sediment transport which was predominantly directed to the west in the western half of the Harbor, before the construction of the breakwaters.²

The proposed project focuses on an approximately 300-foot length of shoreline that has been subject to erosion and emergency repairs since 1994 (see project area photos in **Exhibit 3**). The most recent repairs occurred in January 2016 under Emergency Coastal Development Permit (ECDP) G-2-15-0019 at the hillside drainage pipe outfall located at the northern end of the trail in the project area. ECDP G-2-15-0019 allowed the Applicant to replace the previous drainage basin located at the toe of the hillside on the western side of the trail with a larger manhole and grated lid, and replace the existing 12-inch drainage pipe running under the trail with a larger 36-inch diameter reinforced concrete pipe protected on the harbor side with sandbags. This ECDP work was intended to address erosion of the trail in this location from hillside drainage and coastal processes. The ECDP conditions required that the regular follow-up CDP application address stormwater conveyance more broadly as part of a longer-term solution to address trail erosion. This application covers the requisite follow-up CDP application to address the trail erosion as a result of storm water drainage and wave-action, in a more long-term fashion.

3. Project Description

The Applicant proposes to construct a living shoreline to protect and restore an eroded section of shoreline and a segment of Pillar Point Harbor's West Trail, including to construct improvements to the stormwater and drainage system in the vicinity of the project, and trail improvements. The living shoreline would provide a 0.95-acre nourished beach with an elevated dune system along 300 feet of shoreline fronting the trail alignment. Buried beneath the surface of the beach and dune would be stabilizing features including a cobble berm (also referred to as a dynamic revetment) and two rock fingers extending perpendicular from the shoreline, to hold the nourished sand in place and provide the proper geomorphology for the habitat restoration efforts. Finally, about 300 feet of the West Trail would be regraded and constructed to be a minimum of 15-foot wide and 13-foot high (North American Vertical Datum 88) to accommodate sea level rise.

Specifically, the cobble berm would be constructed using a combination of existing rock found in the project area (about 2,000 cubic yards of ¾ to 4 inch diameter rock) and approximately 4,000 cubic yards of 1-4-inch diameter imported rock, with a total footprint of 20,588 square feet and a depth ranging from 2 to 3 feet. The two rock

² Pillar Point West Trail Living Shoreline Project Geomorphic Basis of Design Report (ESA 2020).

fingers would be 8 to 10 feet wide, 4 feet tall, and extend about 80 feet seaward from the bluff to match the location of the existing adjacent beach and would be constructed of 280 cubic yards of 4-10 ton rocks, for a total footprint of 1,473 square feet. Rock used for the rock fingers would consist of either repurposed rock from the project area, rocks found on the Harbor side of the outer west breakwater, or faux rocks constructed of concrete (ranging from 4 feet by 4 feet to 4 feet by 8 feet long, staggered to mimic the fractured bedrock outcrops at the site). The large rock comprising the rock fingers would be placed using a large excavator with capacity to lift 9-ton rocks.

The cobble berm and rock fingers would be buried with approximately 10,000 cubic yards of sand with a minimum depth of 2 feet to create the beach and dune features. The project would beneficially reuse sand from local sources (within Pillar Point Harbor), including 1,600 cubic yards of sand that had accumulated at the Pillar Point Harbor boat launch ramp on the east end of the harbor (currently stockpiled at Half Moon Bay Airport pursuant to the requirements of CDP 2-18-0727). The remainder, up to 8,400 cubic yards, would be sourced from a 1.7-acre overwash shoal about 500 feet long and 90 feet wide with a three-foot cut depth (with a one-foot over-depth cut allowance), located in the southwestern part of the harbor near the project area. See **Exhibit 4** for sand source area. Sand would be excavated from the overwash shoal during low tide conditions and transported to the living shoreline area using dump trucks. Rocky intertidal areas would be avoided.

Once sand is placed at the site, materials will be spread using excavators. Installation of the living shoreline would result in about 0.945 acres of fill below the high tide line and 0.88 acres below mean high water. Once constructed, a 30-foot wide section of dune would be planted with native vegetation along the entire living shoreline reach of about 300 feet. Specifically, the backshore dune would reintroduce native species and discourage re-establishment of non-native invasive species through revegetation activities including low-density transplanting (wide spacing, 6 feet or more apart) of local native perennial pioneer foredune and beach species (primarily yellow sand-verbena (*Abronia latifolia*), beach-bur (*Ambrosia chamissonis*), Vancouver wildrye (*Elymus vancouverensis*), and saltgrass (*Distichlis spicata*) from Pillar Point Harbor) to allow for natural spread, vegetation patterning, and foredune landforms, as well as native species to diversify the low foredune vegetation, including silvery beach pea (*Lathyrus littoralis*), pink sand-verbena (*Abronia umbellata*), and beach morning-glory (*Calystegia soldanella*) to increase pollinator support and plant species diversity, and to enhance wildlife habitat and views.

Three four-foot-wide foot paths would be created across the dune habitat to provide for public access to the new beach. The existing trail would maintain a similar elevation to conform to the flat grades along the entire trail length (11.5 to 12 feet NAVD).

Construction and staging would occur in a 6,750 square-foot portion of the West Trail parking lot off of West Point Avenue, which directly connects to the project site via the existing West Trail. A portion of the parking lot would remain open and available for public parking (approximately 12 spaces) during construction, and a 10-foot wide pedestrian access path to the parking lot restrooms and trail would be available at all

times. Inland areas would also be used for staging and storing construction equipment and materials to avoid impacts to public parking in the West Trail lot. One or more temporary sand ramps would be constructed from the existing trail to the beach to enable vehicles and construction equipment to access the beach. The project as proposed includes extensive best management practices and mitigation measures to protect sensitive species, water quality, and habitat areas as detailed in **Exhibit 5**.

The living shoreline is proposed to be monitored and adaptively managed over time. The physical monitoring would include: dune change over time (shape and volume); beach change over time (e.g., mean sea level (MSL) shoreline changes, beach sand volume changes); frequency of dune overtopping and trail damage; and success of proposed dune habitat creation (vegetative cover and composition). Further triggers would be established based on a set of performance criteria (as laid out in the adaptive management plan) for maintenance and/or adaptive management of the living shoreline structure.

The proposed project also includes stormwater and drainage improvements needed to address the hydrological and ecological function, aesthetics, and maintenance needs of the existing stormwater management system (**see Exhibit 2**). The proposed work would include removing and replacing a damaged concrete ditch on the bluff; removing the existing corrugated metal pipe extending from the bluff top to the west side of the trail and replacing it with a concrete channel, check dam, and concrete energy dissipator; creating a native vegetation biofiltration retention basin on the inland side of the trail that would feed captured and filtered stormwater north towards the Pillar Point Marsh; improving an existing overflow discharge pipe from the new retention basin to feed water to upland portions of Pillar Point Marsh; and removing the existing 36-inch reinforced concrete pipe outfall and associated rock and sandbags which currently runs under the trail and discharges directly into the harbor (**see Exhibits 2 and 3**). The proposed work seeks to rehabilitate the existing stormwater system in order to improve its hydrological function during storm events; provide ecological benefits to the Pillar Point Marsh terrestrial-wetland transition zones through reconnection of freshwater inputs; and reduce maintenance needs for the constructed aspects of the system.

B. Standard of Review

The proposed project site is located in areas seaward of the mean high tide line within the Commission's retained CDP jurisdiction, as well as areas on Pillar Point Harbor land, in San Mateo County's CDP jurisdiction. The County, the Applicant, and the Executive Director all agreed to a consolidated CDP review for the project, as allowed by Coastal Act Section 30610.3 Therefore, the standard of review for development is Chapter 3 of the Coastal Act with the San Mateo County certified LCP providing non-binding guidance.

C. Coastal Hazards

Applicable Policies

Coastal Act Section 30235 addresses the use of shoreline protective devices:

30235. *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.*

...

Coastal Act Section 30253 addresses the need to ensure long-term structural integrity, minimize future risk, and to avoid landform altering protective measures for new development. Section 30253 provides, in part:

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. ...*

Consistency Analysis

Taken together, Coastal Act Sections 30235 and 30253 acknowledge that seawalls, revetments, bluff retaining walls, groins and other such structural or “hard” methods designed to forestall coastal erosion also alter natural landforms and natural shoreline processes. Accordingly, with the exception of coastal-dependent uses, Section 30235 only allows the construction of shoreline armoring that is otherwise inconsistent with the Coastal Act if that armoring is required to protect existing structures or public beaches in danger from erosion and if its impacts to coastal resources are eliminated or mitigated. Furthermore, Section 30253 requires that new development be sited, designed, and built in a manner so as not to neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or require construction of shoreline armoring that would substantially alter natural landforms along the shoreline. The Coastal Act provides these limitations because shoreline structures can have a variety of negative impacts on coastal resources, including adverse effects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, ultimately resulting in the loss of beaches, a fundamental coastal resource.

To protect these core coastal resources, the Coastal Act has a series of specific criteria that must be met in order to approve shoreline armoring. For example, shoreline protective devices compelled by Coastal Act Section 30235 must be supported by substantial evidence demonstrating: (1) there is an existing structure; (2) the existing structure is in danger from erosion; (3) shoreline-altering construction is required to protect the existing threatened structure; and (4) the required protection is designed to eliminate or mitigate its adverse impacts on shoreline sand supply.³ The first three criteria pertaining to Section 30235 relate to whether the proposed armoring is

³ CDP approval also requires that projects be found consistent with the other policies of the Coastal Act in addition to these Section 30235 requirements.

necessary, while the fourth criterion applies to mitigation for some of the impacts of such armoring.

The analysis below discusses both Section 30235 and 30253 consistency issues. Additional Coastal Act policies protect against other types of coastal resource impacts, and here the questions presented are not in terms of those policies per se, but the Coastal Act Section 30235 analysis for allowing armoring in the first place. For example, even where a shoreline protective device is determined to be necessary and is designed in a manner to be protective of shoreline sand supply pursuant to Section 30235, the structure will often result in significant adverse impacts to other protected resources, such as beach access and recreation and public views. There can often be considerable overlap, such as when shoreline sand supply issues translate into beach access issues, and this finding explores those overlaps as well.

Existing Structure or Coastal Dependent Use

The first Section 30235 test is whether or not armoring is proposed is to protect an “existing structure” or public beach or to serve a coastal-dependent use. Under Coastal Act Section 30235, coastal-dependent uses, or public beaches in danger from erosion are potentially allowed shoreline armoring if the remaining three criteria identified above are satisfied. Whether or not a structure for which armoring is proposed as protection is considered “existing,” is not a question of whether it is extant today, but rather whether it existed in its current form when the Coastal Act came into effect (i.e., January 1, 1977) and hasn’t been redeveloped since.⁴ Specifically, the Coastal Act distinguishes between that type of “existing structure” development that is allowed the protection offered by shoreline armoring and other forms of development that are not pursuant to Section 30235. Under Coastal Act Section 30235, those type of existing structures are potentially allowed shoreline armoring if the remaining three criteria identified above are satisfied. In addition, as mentioned previously, Section 30235 would allow armoring to protect coastal-dependent uses and/or public beaches in danger from erosion.

The West Trail was originally constructed in 1961 to serve as an accessway for the construction of the Pillar Point Harbor outer breakwaters by the United States Army Corps of Engineers, predating the effective date of the Coastal Act by 15 years (and

⁴ As described in the Commission’s 2015 Sea Level Rise Policy Guidance, the Commission interprets the term “existing structures” in Section 30235 to mean structures that were in existence on January 1, 1977, the effective date of the Coastal Act. In other words, Section 30235’s directive to permit shoreline armoring for structures in certain circumstances applies to development that lawfully existed as of January 1, 1977 and that has not subsequently been redeveloped (i.e., where changes to it since 1977 have been sufficient enough that it is considered a replacement structure required to conform to applicable Coastal Act and LCP provisions). This interpretation is the most reasonable way to construe and harmonize Sections 30235 and 30253, which together evince a broad legislative intent to allow armoring for development that existed when the Coastal Act was passed, when such development is in danger from erosion, but to avoid such armoring for development constructed consistent with the Act, which doesn’t allow shoreline altering armoring development to support same. This interpretation, which essentially “grandfathers” protection for development that predates the Coastal Act, is also supported by the Commission’s duty to protect public trust resources and interpret the Coastal Act in a liberal manner to accomplish its purposes.

also predating the requirements of 1972's Proposition 20 (The Coastal Initiative)⁵, and has since provided coastal access to the shoreline, Pillar Point Marsh, and Maverick's Beach. West Trail is heavily used by pedestrians as a recreation area along the coast and is also utilized by surfers and beachgoers as the sole accessway to the popular Maverick's Beach. West Trail also serves as an important emergency service access route to Maverick's Beach, including during the Maverick's surf season. It provides year-round shoreline access to the harbor beach, which is used by the public for picnicking, viewing wildlife, fishing, and dog walking. The calmer waters of the harbor also make it a popular destination for kayakers and paddle-boarders. Therefore, the West Trail is coastal-dependent inasmuch as it requires a site adjacent to the sea to function for its intended public purpose, and Section 30235 allows for consideration of armoring to protect it for this purpose as well.

Thus, the West Trail is both an existing structure and coastal-dependent use, eligible for consideration of armoring; and, therefore, the proposed project meets the first test of Section 30235 of the Coastal Act.

Danger from Erosion

The second Section 30235 test is whether the coastal dependent use is in danger from erosion. The Coastal Act allows shoreline armoring to be installed to serve coastal dependent uses and to protect existing structures and public beaches, that are in danger from erosion, but it does not define the phrase "in danger." There is a certain amount of risk involved in maintaining any development along the actively eroding California coastline that also can be directly subject to violent storms, wave attack, flooding, earthquakes, and other hazards, including at the subject location. These risks can be exacerbated by such factors as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. In a sense, all development along the immediate California coastline is in a certain amount of "danger." It is a matter of the degree of threat that distinguishes between danger that represents an ordinary and acceptable risk, and danger that requires shoreline armoring per Section 30235. Lacking a Coastal Act definition, the Commission has in the past evaluated the immediacy of any threat in order to make a determination as to whether an existing structure is "in danger" for the purposes of Section 30235 considerations. While each case is evaluated based upon its own particular set of facts, the Commission has previously interpreted "in danger" to mean that an existing structure would be unsafe to use or otherwise occupy within the next two or three storm season cycles (generally, the next few years) if nothing were to be done (i.e., in the "no project" alternative).⁶

The dynamics of all shorelines within Pillar Point Harbor were altered following the construction of the outer breakwaters between 1959 and 1961. It is around this time that the West Trail was formalized as a construction access road to haul materials and

⁵ Proposition 20, approved by California voters in November 1972, introduced coastal permitting requirements in February 1973. These were ultimately superseded by the Coastal Act in 1977.

⁶ See, for example, CDPs 3-07-019 (Pleasure Point seawall), 3-09-025 (Pebble Beach Company Beach Club seawall), 3-09-042 (O'Neill seawall), 2-10-039 (Land's End seawall), 3-14-0488 (Iceplant LLC seawall), and 2-17-0702 (Sharp Park Golf Course).

armor rock out to the breakwaters. The trail runs along an embankment that is approximately 4 feet high that has been subject to both long-term annual erosion and short-term episodic erosion from waves and extreme storms. From 1986 to 2016, the overall average rate of erosion along the project area was 0.6 feet per year. The recession rate was greater between 2002 and 2013 (1.1 feet per year) and much higher between 2012 and 2013 (time period was too short to calculate a specific foot per year erosion trend). In late November and early December of 2019 two storm events occurred that contributed to observed erosion on the order of six feet of shoreline along West Trail, including in the proposed project area (**see Exhibit 3**). Additional acute erosion events could happen during the current winter and have the potential to shut down portions of the trail. In addition, the construction of the outer breakwaters altered the sediment deposition dynamics within the Harbor including sediment that was previously directed to the western area of the harbor at the project location, creating a condition of chronic sand deficit that leaves the project area vulnerable to future erosion.

Further, the trail is situated at the base of steep slope, and stormwater draining from the upper bluffs downslope to the harbor waters has created chronic drainage issues resulting in slope failure and erosion hotspots.⁷ Specifically, the project location contains an existing stormwater conveyance pipe that runs down the adjacent bluff, under the trail and out to the harbor shoreline/beach area. Over the years, significant erosion has occurred around the shoreline stormwater outfall, which was believed to be from both water outflows and stormwater leaking out of the pipe and undermining the soil. As a result, the Commission issued emergency CDP (ECDP G-2-15-0019) in 2015 for the removal and replacement of the pipe and outfall, repair of an undermined portion of the trail, and the placement of a sandbag apron at the outfall to protect the trail from associated erosion.

Therefore, given the history of erosion and threats to the trail and drainage infrastructure, as well as the drainage issues that may further aggravate these problems, it is clear that West Trail is threatened by erosion from erosional processes. Absent a project, West Trail will continue to be in danger from erosion and could potentially be significantly undermined and rendered unsafe for public access use at the project location within a few storm cycles.

The Commission's Senior Coastal Engineer, Dr. Lesley Ewing, who has visited the site, and the Commission's Geologist, Dr. Joseph Street, have both reviewed the relevant materials associated with this project, and both concur that the danger to West Trail from erosion is imminent in a "no action" scenario. Therefore, the Commission concludes that West Trail is in danger from erosion for purposes of Section 30235, thus meeting the second Section 30235 test.

Feasible Protection Alternatives to a Shoreline Structure

The third test of Section 30235 that must be met is that the proposed armoring must be "required" to protect existing structures, or to serve coastal-dependent uses or public

⁷ ECDP G-2-17-0032 issued in June 2017 to temporarily close the trail, to remove debris caused by upper bluff failures.

beaches in danger from erosion. In other words, shoreline armoring shall only be permitted if it is the only feasible alternative capable of protecting the endangered structures or uses.⁸ Other alternatives to shoreline protective devices typically considered include the “no project” alternative, managed retreat (including abandonment and demolition of threatened structures), relocation of threatened structures and/or portions thereof, beach and sand replenishment programs, foundation underpinning, drainage and vegetation measures, and combinations of each. Additionally, if shoreline armoring is determined to be the only feasible alternative, this test also requires that the chosen structural design of the shoreline protective device be the least environmentally damaging option, including being the minimum necessary to protect the endangered existing structure, or coastal-dependent or public beach use.

The Applicant prepared an alternatives analysis for the proposed project, which included both armoring and the ‘no-project’ alternatives, each of which is discussed briefly below. Specifically, the Applicant’s analysis included evaluation of a no-project alternative and eight armoring alternatives, including a range of hard armoring alternatives, soft armoring alternatives, and some alternatives which propose a combination of hard and soft solutions, as follows: a soldier pile wall, rock slope protection, a shotcrete and soil nail wall, rock slope protection with vegetation, beach nourishment, native oyster reef living shoreline, and the proposed project, which is a combination of beach nourishment and habitat restoration with a cobble berm and rock finger armoring for stability.

No Project Alternative

The “no project” alternative means that no restoration of the shoreline and trail would occur. The existing issues of shoreline erosion and retreat, diminishing trail width, and possibly physical loss of the trail due to expected sea level rise would continue. There are no capital costs associated with the “Do-Nothing” alternative, but ongoing operation maintenance and repair would be necessary in the near-term to allow continued use of the trail. Without any intervention the erosion would continue unabated, presenting public safety hazards and ultimately cutting off coastal access along the trail permanently. This includes cutting off shoreline access, as well as emergency access, to the West shore of the Harbor and to Maverick’s Beach, Ross’ Cove, and the Fitzgerald Marine Reserve, leading to significant loss of access. The Applicant dismissed the no project alternative because it would fail to ensure safe public access throughout the harbor and would not meet the project goals, and the Commission concurs.

Non-Armoring Alternatives

Out of the nine alternatives analyzed, three involved non-armoring alternatives: beach nourishment, a native oyster reef living shoreline and a wider beach and dune through placement of additional sand. Beach nourishment is an option that is often considered to address erosion threats. However, successful beach nourishment programs generally

⁸ Coastal Act Section 30108 defines feasibility as follows: “Feasible” means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

require large quantities of sand materials over a large area and are subject to very specific program parameters intended to maximize their efficacy and utility. The “beach nourishment alone” alternative considered at this site entailed the import of approximately 12,000 cubic yards of sand. However, numerical modeling was undertaken to determine the resilience of a nourished beach to the erosive coastal forces within the harbor. While cross shore sediment transport was shown to be likely and significant during an extreme wave event, of more concern were the impacts of oblique waves that result from the specific dynamics of this site, and the resulting longshore transport under both ambient and extreme conditions. Because of this dynamic, waves overtopping the southern breakwater introduce intermittent long-period energy that approaches the shore from a more oblique angle and can influence the shore morphology. Thus, this alternative was dropped from consideration because of the uncertainty of how long sand would stay at this location, the resulting long-term maintenance costs, and the lack of resiliency offered by this alternative.

A similar alternative to beach nourishment was also considered which sought to incorporate the creation of a wider beach and restored dune field in an attempt to prevent or offset the long-term erosion that is forecasted to occur. This, again, was ruled out as the placement of additional sand for a wider beach resulted in increased erosion of the nourished beach due to the wave dynamics cited above given that the wider beach would be out of equilibrium with the natural condition. A final non-armoring option considered was the construction of a native oyster reef living shoreline offshore of the beach fronting West Trail. However, this option was not selected as the Harbor shoreline at the proposed project location, comprised of soft-sediment embayments and soft, erodible and smooth sandstone outcrops, does not offer conditions that would support native oyster populations such as Olympia oyster (*Ostrea lurida*). Additionally, a native oyster reef living shoreline structure would introduce a habitat and ecological setting that did not historically exist at the project site, so the likelihood of this being a viable alternative is uncertain at best.

Relocation

Another alternative that is usually considered when dealing with coastal development is relocation. Often times there are options to move proposed development to a safer location outside of coastal hazards. However, in this instance West Trail provides the only easily accessible accessway to Maverick’s Beach and the western shoreline of Pillar Point Harbor, and it is backed by a significant bluff that complicates any potential relocation options. Relocation options along the shoreline are limited and would call for significant re-routing, resulting in higher negative impacts to coastal resources and public access. Thus, there do not appear to be feasible non-armoring alternatives that could be applied in this case to the threat to the existing, coastal-dependent endangered West Trail.

Armoring and Combination Alternatives

In addition to the proposed project, the Applicant evaluated five other armoring alternatives, including one that integrated both hard and soft measures, as follows: (1) a soldier pile wall, (2) rock slope protection, (3) a shotcrete and soil nail wall, (4) rock

slope protection with vegetation, and (5) a cobble beach or dynamic revetment alone. The soldier pile wall would consist of precast reinforced concrete lagging placed between steel soldier piles which would then be textured to blend with the surrounding area. The rock slope protection alternative involved placing large rock boulders against the bank with an excavated toe key trench to provide stability for the revetment and filling voids within the rock slope protection with smaller rock. Another similar rock slope protection alternative was considered as well, however, instead of filling the voids with rocks, vegetation would be used to fill the gaps. The shotcrete and soil nail wall alternative proposed two rows of soil nails into the bank under the trail with rebar installation and reinforced mesh placed against the bank. Design plans for the shotcrete and soil nail wall concept were previously fully developed by the Applicant, and a Coastal Development Permit and other permits were pursued in 2016. However, Coastal Commission staff and the Harbor District Board of Harbor Commissioners requested that the District investigate additional alternative designs for a nature-based living shoreline approach. While the Applicant concluded that all of the previously examined hard armoring alternatives would provide necessary protection to the trail from erosion, none were consistent with the nature-based living shoreline approach favored by the Board of Harbor Commissioners. These hard-armoring solutions would also result in significant impacts to coastal resources, including the public beach, due to potential coastal squeeze and would not provide any habitat benefits.

The proposed project, the preferred alternative, would utilize an innovative design approach, in which multiple benefits are anticipated, including protection of the trail from damage by extreme storms, wave erosion and sea level rise, restoration and enhancement of biological habitat providing essential ecosystem services, and recreation of a public sandy beach area. While the project would include several “hard” shoreline stabilization elements to stabilize the shoreline, including the buried cobble revetment and the rock fingers, these features would be integrated with natural elements (i.e., beach nourishment, creation of elevated dunes, etc.) and designed to retain sand at the site while allowing for habitat restoration. The proposed “hybrid”, nature-based approach to shoreline protection will create resiliency, as well as public access and habitat benefits.

Thus, the Commission finds that the proposed project would be the least environmentally damaging feasible alternative to protect the West Trail and the beach that fronts it, provided its impacts over time can be mitigated consistent with Coastal Act Section 30235 and other Coastal Act policies. Thus, the project, if the design is so modified, meets the third test of Section 30235 of the Coastal Act.

Beach/Shoreline Area/Sand Supply Impacts

The fourth test of Section 30235 that must be met in order to allow Commission approval of a shoreline armoring project is that such armoring must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply.

Shoreline Processes

Some of the effects of engineered armoring structures on the beach (such as scour, end effects, and modification to the beach profile) are often temporary or may be difficult to

distinguish from all the other actions that modify the shoreline. In addition, there are effects that are more qualitative (e.g., impacts to the character of the shoreline and visual quality) that are imprecise proxies for understanding the total impact of an armoring structure to the coastline. However, some of the effects that a shoreline armoring structure may have on natural shoreline processes can be quantified, including: (1) the loss of the beach area on which the structure is located; (2) the long-term loss of beach that will result when the back-beach location is fixed on an eroding shoreline; and (3) the amount of material that would have been supplied to the beach if the bluff and back-beach were to erode naturally. The first two calculations affect beach and shoreline use areas, and the third is almost exclusively about providing materials that can feed the beach, but all three impact public recreational access to the beach as it relates to sand supply and, by extension, beach and shoreline recreational areas.

Encroachment on the Beach and Shoreline Recreational Area

Shoreline protective devices, regardless of their configuration, are all physical structures that occupy space that would otherwise be unencumbered. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used by the public. This generally results in a loss of public access and recreational opportunity as well as a loss of sand and areas from which sand generating materials can be derived. The area where the structure is placed will be altered from the time the protective device is constructed, and the extent or area occupied by the device will remain the same over time, until the structure is removed or moved from its initial location (or in the case of a revetment, as it spreads seaward over time). The beach area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint.

In this case, the proposed living shoreline would cover approximately 0.95 acres (41,382 square feet) of shoreline and beach area that would otherwise be unencumbered. However, the actual beach area is quite a bit smaller as the high tide line hugs the seaward side of the trail and at low tide only about 8,000 square feet of wet sandy area is exposed that the public can recreate on. In addition, in the case of a living shoreline, it is also important to consider the habitat and access benefits associated with such an encroachment, especially when it is providing for additional beach area. Namely, while the hard stabilization features associated with the proposed project would occupy 22,063 total square feet (1,474 square feet for the rock fingers, and 20,589 square feet for the cobble berm), the elevated dune and sandy beach would provide 46,765 total square feet (15,035 square feet of elevated dune and 31,730 square feet of sandy beach). In addition, approximately 150 square feet of rock and drainage infrastructure would be removed from the shoreline area as a result of the stormwater management improvements, opening additional beach area. Thus, the encroachment on the natural habitat would be offset by the habitat creation and removal of drainage infrastructure with an overall positive net benefit of 24,852 square feet of beach and dune habitat, provided the overall project can be maintained (see also below).

Fixing the Beach/Shoreline Position (the "Coastal Squeeze")

On an eroding shoreline, a beach will typically continue to recreate itself between the

waterline and the bluff as long as there is space to form a beach between the bluff and the ocean. As bluff erosion proceeds, the profile of the beach also retreats, and the beach area migrates inland with the bluff. This process stops, however, when the backshore is fronted by a hardened, protective structure such as a revetment or a seawall. Experts generally agree that where the shoreline is eroding and armoring is installed, the armoring will eventually define the boundary between the sea and the upland.⁹ While the shoreline up and downcoast of the armoring continues to retreat and reform new beach areas, shoreline in front of the armoring eventually stops at the armoring. This effect is also known as passive erosion, or “coastal squeeze.” The sandy beach area will narrow, squeezed between the moving shoreline and the fixed backshore.

The coastal squeeze phenomenon caused by armoring is exacerbated by climate change and sea-level rise. As climate change causes the seas to rise ever faster, beach and recreational shoreline areas will be lost at an increasingly rapid pace.¹⁰ If the inland area cannot also retreat, eventually there will be no available dry beach or shoreline area, and the shoreline will be fixed at the base of the armoring structure. In the case of an eroding shoreline, this represents the loss of a beach and shoreline recreational area as a direct result of the armoring. Specifically, beach areas are diminished as the beach is compressed between the ocean migrating landward and the fixed backshore. Such passive erosion impacts can be calculated over the time the proposed armoring is expected to be in place. Consistent with past practice, including the Commission’s experience that shoreline armoring often needs to be reinforced, augmented, replaced, or substantially changed within twenty years of its original installation, and to provide for

⁹ See, for example: Kraus, Nicholas (1988) “Effects of Seawalls on the Beach: An Extended Literature Review”, *Journal of Coastal Research*, Special Issue No. 4: 1-28; Kraus, Nicholas (1996) “Effects of Seawalls on the Beach: Part I An Updated Literature Review”, *Journal of Coastal Research*, Vol.12: 691-701, pages 1-28; and Tait and Griggs (1990) “Beach Response to the Presence of a Seawall”, *Shore and Beach*, 58, 11-28.

¹⁰ Sea level has been rising for many years, and there is a growing body of evidence that there has been an increase in global temperature and that acceleration in the rate of sea level rise can be expected to accompany this increase in temperature. The Coastal Commission’s Sea Level Rise Policy Guidance (2015) recommends using best available science at the time of application to understand the risks associated with sea level rise over the life of development. In March 2018, the California Ocean Protection Council adopted updated State Sea Level Rise Guidance, which incorporates recent scientific information and is now considered the best available science on sea level rise for the State of California. According to this Guidance, updated most recently in November 2018, the estimated range of sea level rise for the project area (based on the San Francisco tide gauge) for 2070 is approximately 1.9 to 3.5 feet; and 2.9 to 5.6 feet for 2090. Additionally, recent scientific studies have analyzed the potential for rapid ice loss and suggest that there could be extreme sea level rise of as much as 10 feet by 2100 (or an additional 5.2 and 8.3 feet of sea level rise that would be added to those estimates for 2070 and 2090, respectively), though this extreme scenario is currently less well understood. The observed trend for global sea level has been a long-term, persistent rise. Mean water level affects shoreline erosion several ways, and an increase in the average sea level will exacerbate all these conditions. On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore. This, too, leads to loss of the beach as a direct result of the armor as the beach is squeezed between the landward migrating ocean and the fixed backshore (e.g., even without any armoring, a 1-foot rise in sea level generally translates into a 40-foot inland migration of the land/ocean interface for a roughly 40:1 beach slope, typical of average sandy beach profiles).

re-review on a regular basis to allow for consideration of possible changes in policy, law and physical conditions associated with armoring, the Commission has evaluated this impact for an initial twenty year period.¹¹ After this 20-year initial mitigation period, additional impact analysis will be needed (see **Special Condition 6**) to assess the appropriate mitigation necessary at that time and moving forward.

The Commission has established a methodology for calculating passive erosion, or the long-term loss of beach due to fixing the back beach. The area of beach lost due to long-term erosion is equal to the long-term average annual erosion rate multiplied by the number of years that the back beach or bluff will be fixed, multiplied by the width of the property that will be protected. Applying the average annualized erosion rate (estimated by the Applicant to be 1.1 feet per year) over the first 20 years of the 300-foot-long living shoreline, 6,600 square feet of beach would have been created naturally if the back beach had not been fixed by the living shoreline through the first 20-year assessment period.¹² However, with regard to the proposed living shoreline at West Trail, the back beach would not be fixed in the traditional sense, but would be bolstered with project elements like the rock fingers and other project elements that will forestall erosion and restore the beach and dunes. While passive erosion may be a concern should hard structure project components fail, special project conditions (as discussed below) such as the adaptive management plan will assure the project can be resilient to increasing hazards without aggravating erosion for the project's expected life.

Typically, the total beach and shoreline use area impacts from a shoreline protective device would be quantified by adding the encroachment area to the potential beach area lost due to passive erosion. However, as discussed above, the proposed project leads to beach and shoreline use area benefits of approximately 24,852 square feet, and the typical impacts associated with fixing a back beach will be avoided through the project design and associated adaptive management measures. Thus, typical impacts to public recreational access, including a loss of the social-economic value of beach and shoreline recreational access, for which the Coastal Act requires mitigation, will be avoided provided the overall project can be maintained (see also below).

Retention of Potential Beach Material

The final impact calculation pertains to the loss of sand and sand generating materials due to the project and the way that affects the larger sand supply system. Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs feeding the beach. Bluff retreat/shoreline erosion is one of several ways that sand and sand generating materials are added to the shoreline. Bluff retreat and erosion are natural processes resulting from many different factors such as erosion by wave action causing cave formation, enlargement and eventual collapse of caves; saturation of the bluff soil from groundwater causing the bluff to slough off; and natural bluff deterioration. For

¹¹ See for example, CDPs 2-10-039 (Land's End), 2-16-0684 (Aimco Armoring), and 3-12-030 (Pebble Beach Company).

¹² That is, 300 feet multiplied by 1.1 feet of erosion per year multiplied by 20 years.

coastal dunes, the contribution to the system is typically more direct, with sand becoming part of the shoreline system during and as a result of climatic events, including wind, rain, and storms. When the bluff/shoreline is armored with a shoreline protective device, the natural exchange of material from the armored area to the beach and shoreline is interrupted, and, if the armored bluff area would have otherwise eroded, there will be a measurable loss of material provided to the beach and shoreline, contributing to a loss of sandy beach.

In bluff areas, if natural erosion were allowed to continue (absent of any shoreline armoring), bluff sediment would be added to the beach, as well as to the larger littoral cell sand supply system fronting the bluffs. The volume of total material that would have gone into the sand supply system over the life of the shoreline structure would be the volume of material between (a) the likely future bluff face location with shoreline protection; and (b) the likely future bluff face location without shoreline protection. Using a methodology used in previous Commission decisions, methodology¹³ the amount of beach-quality sand that would be retained from the living shoreline would be equal to 170 cubic yards of sand per year. Over the course of the initial 20-year mitigation horizon, the approved armoring would thus result in the loss of about 3,400 cubic yards of sand through the first 20-year mitigation horizon (i.e., 170 cubic yards/year x 20 years = 3,400 cubic yards).¹⁴

To mitigate for this loss of sand, the Commission oftentimes requires payment of an in-lieu fee to contribute to ongoing sand replenishment or other appropriate mitigation programs. In this case, the proposed project itself would employ beach nourishment by importing 10,000 cubic yards of sand, which would result in a net positive gain of sand to the project site. Thus, this aspect of the project would essentially be self-mitigating. However, as discussed in the project description, the sand would be sourced from stockpiled sand, previously dredged from the harbor boat ramp, as well as from the “overwash” shoal adjacent to the north of the outer breakwater where sand accumulates from wave action overtopping the breakwater. Thus, new sand will not be brought into the Harbor system but will be redistributed throughout the system from areas of accretion to areas of erosion. Coastal Commission technical staff have reviewed this aspect of the proposal and, based on the periodic overwashing of sand into the harbor and the relatively low longshore transport rates estimated for the site, have confirmed that adverse impacts to the overwash lagoon beach created by the dredging activity are likely to be minimal and occur relatively slowly. However, monitoring of the overwash

¹³ Sand generating materials loss is calculated with a formula that utilizes factors such as the fraction of beach quality material in the bluff material; the length of time the back beach will be fixed; the predicted rate of erosion with no armoring system; the height of the structure; and the width of property to be armored. In this case, the fraction of beach quality material was determined by the Applicant (and confirmed by the Commission's Geologist, Dr. Street) to be 0.87, the height of the living shoreline from the lowest point of the stabilizing materials to the top of the dune system would be approximately 16 feet, the width of the property to be armored is 300 feet, the rate of retreat is 1.1 feet per year, and the time period the system is installed is measured over the first 20-year mitigation period.

¹⁴ And Dr. Ewing and Dr. Street reviewed all calculations and concurred on these estimates.

dredge site is recommended (see **Special Condition 8** as further discussed below).

Conclusion

The project as proposed includes elements that would enhance public access in and around the project area including through widening, slightly elevating and protecting the trail; improving the stormwater management system and removing duplicative shoreline outfalls and infrastructure; and creating beach and dune habitat. As mentioned before, the project area has experienced chronic coastal erosion, resulting in degradation of the shoreline area and the existing West Trail and hazardous conditions for trail and shoreline users. The proposed project will enhance public recreational access amenities and utility by stabilizing the trail for an estimated 25 years or more and maintain connectivity to the Maverick's Beach and the Fitzgerald Marine Reserve. The use of living shoreline design techniques to the maximum extent possible not only minimizes the use of hardscape armoring but restores beach area for public use that is consistent with the historical and current landscape of the area.

Thus, in this case, the Commission finds it reasonable that the impacts of the proposed living shoreline, including the proposed cobble berm and rock fingers, are appropriately offset by the creation of a beach and dune system, resulting in a project that is self-mitigating with respect to the requirements of Coastal Act Section 30235. The project design would enhance and maximize public access and recreational opportunities in the project area and allow public access improvements to be realized in the near term, providing immediate and tangible public benefits.

Duration of Armoring Authorization

The Coastal Act compels approval of shoreline armoring to serve an existing structure, coastal-dependent use or public beach use in danger of erosion, and therefore such devices are no longer compelled after the existing structures or coastal-dependent uses they protect are no longer present or no longer require armoring. Further, it is expected that the proposed living shoreline system will be dynamic and may erode over time. Therefore, the Commission requires monitoring and maintenance of the approved project (**Special Conditions 6 and 7**) and submission of a Final Adaptive Management Plan (See **Special Condition 8**) to study the system to both inform other coastal communities considering such shoreline protection measures and also to establish a maintenance and management plan for this reach of shoreline.

As required by **Special Condition 6, 7 and 8**, the living shoreline will be monitored for a period of 10 years after initial construction to measure the performance and determine when or if maintenance or adaptation is needed. The physical monitoring plan will analyze and set performance standards for the following parameters: dune change over time (shape and volume); beach change over time (e.g., mean sea level shoreline changes, beach sand volume changes); frequency of dune overtopping and trail damage; and success of proposed dune habitat creation (vegetative cover and composition, as detailed in the separate Habitat Creation Plan required through **Special Condition 5**). In addition, the Plan will define triggers (e.g., when the average mean sea level beach width is within 10 feet of the dune vegetation, etc.) for implementing maintenance (e.g., opportunistic sand placement, maintenance of rock fingers or berm,

etc.) or adaptive management measures (e.g., altering the dune template, bolstering of the dynamic revetment, modification of the rock fingers, etc.) based on performance criteria. No changes to the design will occur without written approval from the Executive Director. Further, the Plan will require triggers for a more long-term adaptive management strategy for West Trail including potential removal of the living shoreline and relocation of the trail in the event that the living shoreline no longer provides a sufficient level of protection for the trail; maintenance costs become too burdensome; or the project cannot mitigate unforeseen coastal resource impacts. Thus, the authorization of the proposed project relies on its ability to effectively protect the “existing”, coastal-dependent West Trail in a manner that is feasible and continues to be the least environmentally damaging alternative consistent with Coastal Act Section 30235 requirements.

Long-Term Stability, Maintenance, and Risk

Coastal Act Section 30253 requires the project to assure long-term stability and structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. Given the dynamic shoreline environment in this area, the design and implementation of a formal long-term monitoring and maintenance program will be a critical tool for achieving Coastal Act consistency. If the subject living shoreline were damaged in the future (e.g., as a result of flooding, wave action, storms, etc.), it could lead to degraded public access conditions to and along the shore. In addition, such damages could adversely affect nearby beaches and recreational use areas by resulting in debris on the beaches and creating a hazard to the public using the beaches and offshore areas. To find the proposed project consistent with Section 30253, the project must be maintained in its approved state or adaptively managed over time pursuant to the requirements of **Special Conditions 7 and 8**. Further, in order to ensure that the Applicant and the Commission know when repairs or maintenance are required, the Applicant must regularly monitor the performance of the subject living shoreline, particularly after major storm events (**Special Condition 6**). Such monitoring will ensure that the Applicant and the Commission are aware of any damages and inform whether repairs or other actions are necessary to maintain the living shoreline and the offsetting access improvements in their approved state before such repairs or actions are undertaken.

Thus, to provide long-term structural stability and ensure that the proposed project is properly maintained, **Special Condition 6** requires monitoring and related reporting at five-year intervals consistent with the requirements of **Special Condition 8**. Regular monitoring allows for evaluation of the condition and performance of the proposed project, and provides the opportunity to identify any necessary maintenance, repair, changes, or modifications deemed necessary consistent with the performance standards outlined in **Special Condition 8**. **Special Conditions 6 and 7** require the Applicant to maintain the project in its approved state, subject to the terms and conditions identified herein. Future monitoring and maintenance activities must be understood in relation to the approved final as-built project plans (see **Special Condition 4**).

In terms of recognizing and assuming the hazard risks for shoreline development, the

Commission's experience in evaluating proposed developments in areas subject to hazards has been that development has continued to occur despite periodic episodes of heavy storm damage and other such occurrences. Development in such dynamic environments is susceptible to damage due to both long-term and episodic processes. Past occurrences statewide have resulted in public costs (through low interest loans, grants, subsidies, direct assistance, etc.) amounting to tens of millions of dollars. As a means of allowing continued development in areas subject to these hazards while also avoiding placing the economic burden for possible future damages onto the people of the State of California, applicants are regularly required to acknowledge site hazards and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed. Accordingly, this approval is conditioned for the Applicant to assume all risks for developing at this location (see **Special Condition 11**).

Coastal Hazards Conclusion

The West Trail is an existing structure and coastal-dependent use in danger from erosion and requires protection through the approved project. The project, as proposed and conditioned, is the least environmentally damaging feasible alternative. Conditions are included to ensure that the project will be constructed and maintained in its approved configuration, and adaptively managed over time, to ensure the project's long term stability and efficacy in a manner that will avoid, minimize and mitigate impacts to coastal resources. As conditioned, the Commission finds the project consistent with Coastal Act Sections 30235 and 30253.

D. Marine and Biological Resources

1. Wetlands and Open Coastal Waters

Applicable Coastal Act Provisions

Coastal Act Section 30233 limits fill in wetlands to seven allowable uses. Section 30233 further limits fill activities to instances where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects. Section 30233(a) states, in relevant part:

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...

(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...

(6) Restoration purposes...

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.

Analysis

The proposed project includes “filling” of open coastal waters and wetlands through construction of a portion of the living shoreline and through the improvements to the natural drainage on the inland side of the trail. Specifically, construction of the living shoreline would entail fill of 1.825 acres of intertidal and open water area and improvement to the natural drainage area consisting of installation of a bioretention basin planted with native vegetation would impact the 0.008-acre of existing wetland habitat.

Projects that include fill of wetlands and open coastal waters must satisfy the three-pronged test contained in Coastal Act Section 30233(a). Specifically, Coastal Act Section 30233 requires that fill of wetlands and coastal waters must be 1) an allowable use, 2) the least environmentally damaging feasible alternative, and 3) provide adequate mitigation.

The main purpose of the living shoreline and drainage improvements, which would result in 1.833 total acres of fill, is to protect the West Trail as further discussed in the Coastal Hazards Section above. This type of fill is not one of the seven allowable uses enumerated under Section 30233. However, there are aspects of both the living shoreline and drainage improvements, including the creation of beach, dune and wetland habitat, and improvements to hydrology and water quality, which represent a form of habitat restoration, even though they have not been purely designed for habitat restoration purposes, which is an allowed use under 30233(a)(6). Further, the project as a whole has been designed to maintain and enhance a public accessway used for both public recreation and emergency access at a working coastal-dependent facility and thus, to some extent, could also be found consistent with 30233(a)(1).

Regardless, as described above, Section 30235 requires the Commission to approve seawalls and other similar structures (such as the living shoreline aspect of the proposed project) when such protective devices are necessary to protect existing structures or coastal-dependent uses and public beaches in danger from erosion and provided that the protective devices are designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Thus, even if not an allowable use under Section 30233, the proposed project meets the requirements of the Section 30235 override. However, even allowing the project through this override provision, it still must be the least environmentally damaging alternative, and feasible mitigation measures must be incorporated into the project to minimize adverse environmental effects consistent with Coastal Act Section 30233.

The second prong of the 30233 test requires there to be no feasible less environmentally damaging alternatives to the proposed project. The project proposes a set of project components narrowly tailored to fit the needs of the site for protection

against erosion, while also improving public access amenities present, and assuring greater habitat function (as further discussed in the alternative analysis section in the Coastal Hazards section above). In addition, reuse of harbor dredge material to help nourish the beach for constructing the living shoreline would be consistent with 30233(b) which requires that dredge spoils suitable for beach replenishment be used for such purposes and transferred to appropriate beaches. Further, the drainage improvements would allow for removal of an existing shoreline outfall (resulting in removal of 150 square feet of existing wetland fill) and redirection of filtered stormwater to the north through two existing culverts into upland portions of Pillar Point marsh where it would enhance the Pillar Point Marsh brackish terrestrial-wetland transition zones and be naturally filtered prior to discharging into the harbor waters. Based on these considerations, the Commission therefore finds that there are no feasible less environmentally damaging alternatives to the proposed fill, and that the proposed project therefore meets the second prong of the Coastal Act Section 30233(a) test.

The third requirement of the Section 30233 test for such fill is that all feasible mitigation measures have been required to mitigate the impacts of the proposed fill. The Applicant proposes to implement best management practices and mitigation measures (as further detailed in **Exhibit 5**) to ensure that solid debris generated during dredging, construction, or any other aspect of the work is retained and properly disposed. In addition, the fill would also result in the creation of new dune and wetland habitat and would result in habitat conversion as opposed to habitat loss typically associated with such fill activities. Specifically, the backshore dune included in the living shoreline design would reintroduce native species and discourage re-establishment of non-native invasive species in a manner that would allow for natural spread, vegetation patterning, foredune landforms, pollinator support, plant species diversity, and enhancement of wildlife habitat and scenic views.

Thus, the Commission finds that the third prong of Coastal Act Section 30233(a) has been satisfied as feasible mitigation measures have been provided to minimize adverse environmental effects.

In addition, pursuant to Section 30233(c), the project must maintain and enhance the functional capacity of coastal wetlands and waters. As part of the backshore dune included in the living shoreline design, proposed plantings are designed to reintroduce native species and discourage reestablishment of non-native invasive species. Proposed works include relatively low-density transplanting (wide spacing, 6 feet or more apart) of local native perennial pioneer foredune and beach species (primarily yellow sand-verbena, beach-bur, Vancouver wildrye, saltgrass from Pillar Point Harbor) to allow for natural spread, vegetation patterning, and foredune landforms. Three historically native species are proposed to diversify the low foredune vegetation, including silvery beach pea, pink sand-verbena, and beach morning-glory. Inclusion would increase pollinator support, plant species diversity, enhance wildlife habitat and scenic views.

Conclusion

For the reasons above, and as conditioned, the Commission has determined that while the main purpose of the project is not an allowable use of fill of wetlands, it is consistent with the requirements of Section 30235 as discussed above; and the Commission further concludes that there is no feasible less environmentally damaging alternative, that feasible mitigation measures will be provided to minimize all adverse environmental effects associated with the filling of coastal wetlands, and that the functional capacity of the wetland habitat values will be maintained and enhanced, consistent with the remaining requirements of Section 30233.

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

A Biological Assessment (BA) of the project was prepared to determine to what extent the 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.¹⁵ Endangered or sensitive species with the potential to occur within the proposed project area include marbled murrelet (*Brachyramphus marmoratus*), western snowy plover (*Charadrius nivosus nivosus*), California least tern (*Sternula antillarum browni*), San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*), and California red-legged frog (*Rana draytonii*). The project site also falls within Essential Fish Habitat for a large community of commercially important fish that

¹⁵ 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.

are managed under three federal fisheries management plans: the Pacific Groundfish, the Coastal Pelagic, and the Pacific Coast Salmon Fisheries Management Plans. Potential adverse impacts associated with the proposed project activities include, but are not limited to, construction, including elevated levels of noise and visual disturbance; possible entrapment, injury, or mortality associated with excavation and use of heavy machinery on the site; and habitat loss or displacement. For example, elevated noise levels may result in potentially adverse effects to Marble Murrelets, Western Snowy Plovers, and California Least Terns during nesting season as they may temporarily degrade habitat quality (in terms of auditory environment) and alter avian behavioral patterns. Regarding reptiles and amphibians such as the San Francisco garter snake and the California red-legged frog, the greatest potential risk is harm (mortality or injury) resulting from crushing, entrapment or burying by heavy equipment during excavation and grading. The proposed project includes pre-construction surveys, exclusion fencing, and biological monitor presence during all construction activities to avoid and minimize these potential effects.

Because the creation of the living shoreline and stormwater drainage improvements, as proposed, has the potential to impact marine resources, the BA outlined best management practices (BMPs) that are incorporated into the proposed project including silt fences and straw wattles or the equivalent to prevent construction runoff or sediment discharge, fueling of vehicles and equipment away from sensitive habitats, prevention of leaks and spills of hazardous materials, construction and housekeeping controls and erosion and sediment controls (see **Exhibit 5** for the full list of BMPs) to avoid or minimize effects. In order to assure consistency with Coastal Act requirements regarding protections of sensitive species, special conditions (as described below) have been imposed to codify the proposed avoidance, minimization, and mitigation measures or provide additional protection and enhancement of coastal water quality, marine wildlife, and habitats consistent with the Coastal Act.

Avian Rookery

An avian rookery is located in a stand of Monterey Cypress on the inland side of the Pillar Point Harbor West Trail (see **Exhibits 2 and 3**). During a site survey conducted in July 2019, a number of avian species were found to roost here, including herons and egrets. The drainage that would be repaired along the upper bluff and down the hillside runs through this Monterey Cypress stand. In order to minimize any impacts to the avian rookery, **Special Condition 3** requires pre-construction nesting surveys during the avian nesting season (i.e., here from January 15 to September 15)¹⁶ within seven days prior to the initial onset of construction activities, and if active nests are detected within the construction footprint or within 500-feet of construction activities, a buffer would be required around each nest. Further, construction activities shall avoid nest sites until a qualified biologist determines that the young have fledged, or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but

¹⁶ As proposed by the Applicant and as codified in **Special Condition 2**, 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.

within 500-feet of the construction area, buffers will be implemented as needed. In general, the buffer size for common species would be determined on a case-by-case basis in consultation with the California Department of Fish and Wildlife (CDFW) and the Executive Director. Immediate rookery protection measures would also be implemented during construction (e.g. fencing off to prevent foot traffic, relocation of nearby trash bins which attract ravens, etc.).

Eelgrass

An eelgrass survey by a qualified marine biologist was undertaken in August 2019, and no eelgrass was identified within or near the project area. The seafloor across the surveyed area was fine sand and silt at depth and primarily fine sand close to shore. Another eelgrass survey completed in November 2019 also confirmed that there is no eelgrass in or adjacent to the project area. However, since eelgrass growth can fluctuate both seasonally and from year to year, **Special Condition 3** will require a pre-construction eelgrass clearance survey for the project area 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.

Essential Fish Habitat

An Essential Fish Habitat assessment (EFH) was undertaken for the project area which identified 21 managed species have a likelihood to occur here, but the Biological Assessment specific to the project concluded that based on reconnaissance site visits and literature review, this site does not provide suitable habitat for nearly all of these species, but could support leatherback sea turtle (*Dermochelys coriacea*), green sturgeon (*Acipenser Medirostris*), and black abalone (*Haliotis cracherodii*). Benthic habitat disturbance and temporary increases in turbidity could lead to smothering of the eggs and larvae for managed species known to spawn in the area and temporary disruption of foraging patterns for both marine and avian predators. However, project activities such as the placement of cobble, gravel, sand, and vegetation are expected to be temporary and minor. In addition, for the species identified, a number of mitigation measures have been incorporated into the project to avoid impacts during construction, as further required through **Special Condition 2**, including: all cobble, gravel, and sand used for shoreline rehabilitation placed under the waterline shall be clean with minimal inclusion of fine material; materials shall also be free of pollutants, pathogens, and invasive species; a “soft-start ” policy shall be implemented in order to allow fish and invertebrate species to vacate the area prior to construction activities; and finally, all construction materials proposed to be used for the living shoreline, including cobble, gravel, sand, and vegetation, shall be designed to mimic native environmental features of the surrounding area.

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 contaminated sediments in coastal waters.

To prevent impacts on the marine environment during construction, **Special Condition 2** will require the Applicant to do the following: minimize staging and construction areas, and site and design areas to avoid impacts on coastal waters and marine life; implement construction BMPs during construction to protect coastal water quality, including 1) use of silt fences or equivalent to prevent construction-related runoff from discharging to coastal waters; 2) equipment washing or servicing at least 50 feet from the water's edge; 3) inspection and maintenance of construction equipment at an off-site location to prevent leaks; and 4) maintaining good construction housekeeping controls and procedures at all times along with other construction site best management practices to assure impacts to coastal water quality are avoided.

Conclusion

The project represents a living shoreline and stormwater drainage improvements necessary to maintain and improve West Trail for coastal dependent used such as recreation and public access. The proposed drainage improvements would rehabilitate the existing stormwater system in order to improve its hydrological function during storm events; provide ecological benefits to the Pillar Point Marsh terrestrial-wetland transition zones through reconnection of freshwater inputs; and reduce maintenance needs for the constructed aspects of the system. The proposed project includes appropriate BMPs to protect water quality and marine resources, as discussed above and imposed as special conditions. Therefore, the Commission finds, as conditioned, the proposed project is consistent with Coastal Act Sections 30230 and 30231.

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:

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 West Trail proposed living shoreline and storm water drainage improvement activities have the potential to temporarily disrupt coastal access and recreation opportunities during construction. For example, there may be times when the section of the trail at the project site may be closed to public access. During those closures, site signage will be posted ahead of time and during the closures to inform the public of detours or alternative access areas during trail closures. West Point Avenue, the access point for the trail and parking lot, will generally remain open through the project, though it may be reduced to one lane at times during the movement of materials and mobilization of equipment. Short durations of full road closures should also be anticipated but likely for 10 minutes or less.

The staging area for the proposed project will be located in a 6,750 square-foot section of the West Trail parking lot, which will hold the construction materials and equipment. Construction is to take place for approximately four months during daytime hours between 8:00 a.m. and 5:00 p.m., Monday through Friday. The West Point Avenue parking lot is relatively small for staging for a project of this size, but, as proposed and required by **Special Condition 2**, the Applicant will limit the amount of equipment stored so as to maintain approximately 10 parking spaces and a 10-foot-wide public access path through the parking lot to the restrooms and trail. During construction, the intention is to keep the trail open to the public during daylight hours and have any trail closures occur at night. However, there may be times when the section of the trail at the project site may be closed to public access; in this case, site signage will be posted ahead of time and during the closure to inform the public of detours or alternative access areas during the trail closures. To mitigate for impacts to public access and parking during construction, **Special Condition 2** requires that the proposed project shall keep the construction areas separated from public recreational use areas, including using unobtrusive fencing or equivalent measures to delineate construction areas, to the maximum extent possible. In addition, **Special Condition 2** requires that information regarding alternate parking options be posted at the West Trail parking lot

(including the option of the secondary lot further inland along West Point Avenue and street parking in Princeton-by-the-Sea).

Finally, as discussed above, project components will remove infrastructure and help restore additional beach area that can be used by the public to promote recreational access at the project site. 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 is awaiting approval of the necessary approvals, including from the US Army Corps of Engineers (Sections 404, 410), the Regional Water Quality Control Board (401 certification), San Mateo County, the California State Lands Commission, the Monterey Bay National Marine Sanctuary, Natural Marine Fish and Wildlife Service, United States Department of Fish and Wildlife, and the California Department of Fish and Wildlife. The Applicant also needs to obtain an encroachment permit from the San Mateo County Department of Public Works prior to any material transport on County roads. To ensure the proposed project is authorized by all regulatory agencies, **Special Condition 9** requires the Applicant to submit evidence of all necessary approvals prior to issuance of this CDP.

Minor Modifications

If the Applicant proposes, or other agencies require, changes to the project, **Special Condition 10** 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. San Mateo County Harbor District, 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 Documents¹⁷

- GHD, Inc. – Delineation of Waters of the U.S., Including Wetlands, for the Pillar Point Harbor West Trail Living Shoreline Project
- GHD, Inc. - Biological Assessment West Trail Living Shoreline Pillar Point Harbor (June 2020).
- Sampling and Analysis Plan Results Report
- ESA Pillar Point West Trail Living Shoreline Project Geomorphic Basis of Design Report (July 2020)
- GHD, Inc. - West Trail Repair - Phase 1 Sea Level Rise and Erosion Study (November 2016)
- Memorandum by Peter R. Baye Pillar Point West Trail Foredune and Beach Vegetation

B. Appendix B – Staff Contact with Agencies and Groups

- San Mateo Harbor District
- San Mateo County Planning and Building Department
- California Department of Fish and Wildlife
- U.S. Army Corps of Engineers

¹⁷ These documents are available for review in the Commission's North Central Coast District office.