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STAFF REPORT CDP APPLICATION

Application Number: 2-23-0862

Applicant: City of Daly City

Project Location: The drainage and related infrastructure proposed spans the City of Daly City, unincorporated San Mateo County, and the City and County of San Francisco, with primary project components located in and around Lake Merced, along John Muir Drive, in Fort Funston, and at the base the bluffs and on the Funston beach, all in San Francisco.

Project Description: Modified stormwater and wastewater infrastructure throughout the Vista Grande drainage watershed, including: partial replacement of the existing Vista Grande canal to incorporate screening, treatment wetlands, and discharge structures to route stormwater flows to Lake Merced; modification of an existing wastewater pipeline connected to the existing ocean outlet (and abandonment of a related force main pipeline); modification of the existing Lake Merced overflow; replacement of the existing Vista Grande tunnel (between Lake Merced and the ocean); replacement/modification of the wastewater pipeline on the beach; and raising the water surface elevation of Lake Merced.

Staff Recommendation: Approval with conditions

SUMMARY OF STAFF RECOMMENDATION

The City of Daly City's proposed Vista Grande Drainage Basin project is a multi-jurisdictional stormwater and wastewater infrastructure project with two main goals: addressing periodic storm-related flooding due to inadequate stormwater drainage

capacity in the Vista Grande drainage watershed, and using such stormwater to augment water volumes in San Francisco's Lake Merced to enhance water quality. The major infrastructure to be replaced and modified in the project is quite old, with the Vista Grande tunnel and outlet originally dating back to the 1890s (with significant upgrades in the 1950s), and in need of significant redevelopment to perform its intended functions (including where the canal has a 500 cubic feet per second (cfs) capacity but the tunnel can only handle 170 cfs, causing flooding during high flow events). Meanwhile, Lake Merced is the most important habitat feature in the City of San Francisco's coastal zone, as well as its major backup emergency water supply. It is also on the Clean Water Act list of impaired waterbodies, due primarily to low dissolved oxygen and high pH levels. The proposed project seeks to address these issues moving forward through infrastructure upgrades and beneficial stormwater reuse, but it does so in a way that raises Coastal Act consistency issues, primarily related to shoreline armoring and hazards, habitat protection (i.e., lake/wetland, dune, and shoreline) and ESHA.

In terms of habitat issues, different project elements raise quite different concerns. With respect to Lake Merced, the Applicant and the Regional Water Quality Control Board (RWQCB) determined that the proposed diversion of filtered and treated stormwater to the lake is an important step to improving water quality and lake health. However, raising lake levels would also result in the loss/conversion of an important mosaic of habitats around the lake into one dominant and less ecologically productive type (bulrush marsh), leading to ESHA and wetland degradation. As to dunes, construction of the tunnel portion of the project will require development in coastal dunes, where such construction is not resource dependent. Under the Coastal Act, neither outcome is allowed, and would normally require a denial of the project. Here, as discussed below, staff believes that it is appropriate for the Commission to approve the project via the Coastal Act's conflict-resolution procedure. In that context, the staff recommendation includes a series of pre, during, and post-construction measures to minimize habitat impacts and to mitigate for those that are unavoidable, including through significant mitigation around the lake as well as at Fort Funston.

In terms of coastal hazards and armoring, the portion of the project that would outlet at the beach would include the roughly 11-foot diameter tunnel itself, as well as a total of nearly 200 feet of seawall extending along the bluffs on either side, approximately 3,400 square feet of riprap in front and behind the seawalls, and a concrete apron-like structure at the base. The proposed armoring is not allowed by the Coastal Act's resource protection policies, and it does not qualify for the Coastal Act Section 30235 "override" that might allow armoring notwithstanding (it would not protect an 'existing structure' or coastal dependent use in danger from erosion, it would not be the least environmentally damaging feasible alternative, and it would not eliminate or mitigate its adverse sand supply impacts). Again, this project element would also require denial under the Coastal Act, and the Commission could only approve it through conflict resolution (again, see below). In order to make conflict-resolution findings, the Commission must still condition the project to conform to Coastal Act requirements as much as possible, and thus the staff recommendation eliminates the seawalls, riprap, and concrete apron from the project, and requires a thorough adaptation plan (to relocate any project elements inland as they become threatened over time) in its place, among other project conditions.

In terms of conflict resolution, while denial of the proposed project would protect ESHA and shoreline resources in their current states, it would also mean that (1) the lake itself wouldn't experience an increase in water quality and (2) important and susceptible stormwater and wastewater infrastructure would be expected to fail, and would be expected to result in significant marine resource, public access, and water quality degradation. In other words, the project presents a conflict between Coastal Act policies, where the Act requires that conflict to be resolved "in a manner which on balance is the most protective of significant coastal resources". To be clear, however, resolving a conflict in this way does not mean simply allowing for a proposed project that has Coastal Act inconsistencies, rather it requires balancing those inconsistencies in a way that is most protective. An important component of a conflict resolution approval in that sense is avoiding as many of the coastal resource impacts as possible, and then minimizing and mitigating for those which are unavoidable. Thus, the staff recommendation does that through a variety of measures, most notably in terms of the above-described armoring removal and habitat requirements, but also in terms of important construction BMPs and siting, design, implementation, and adaptation criteria to protect and enhance habitat, public views, public access, and marine resources.

Overall, the project as conditioned would upgrade aging infrastructure that is at risk of collapse, improve Lake Merced's water quality and stormwater functions, enhance and restore wetlands and ESHA, improve public access and public views on the beach, and overall address what can be confounding critical infrastructure needs along the shoreline in a resilient manner and as consistent with the Coastal Act as possible with a project of this nature. Staff would like to thank City of Daly City and City of San Francisco staff for the long collaboration on a quite complicated and context-diverse project, leading to a staff recommendation on which all parties can agree. Accordingly, staff recommends that the Commission approve a CDP with conditions for this project, and the motion and resolution to do so are found on **page 5** below.

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- Exhibit 1 – Location Map
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- Exhibit 3 – Applicant’s Proposed Project Plans
- Exhibit 4 – Applicant’s Proposed Mitigation Plans
- Exhibit 5 – Applicant’s Wetlands and Water Resources Memo
- Exhibit 6 – Applicant’s Water Quality Analysis
- Exhibit 7 – Coastal Commission Staff Ecologist’s Habitat Mitigation Memo
- Exhibit 8 – Coastal Commission Staff Engineer’s Technical Memo
- Exhibit 9 – Armoring Mitigation Real Estate Evaluation

1. MOTION AND RESOLUTION

Staff recommends that the Commission, after public hearing, **approve** a CDP with conditions 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 2-23-0862 pursuant to the staff recommendation, and I recommend a yes vote.*

Resolution to approve CDP: *The Commission hereby approves Coastal Development Permit Number 2-23-0862 for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the Chapter 3 policies 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 effects 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 Applicant 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 Applicant to bind all future owners and possessors of the subject property to the terms and conditions.

3. SPECIAL CONDITIONS

1. **Revised Plans.** PRIOR TO ISSUANCE OF THE CDP, the Permittee shall submit one electronic copy and two paper copies of full size sets of Revised Plans to the Executive Director for review and written approval. The Plans shall be prepared by a licensed professional or professionals (i.e., geotechnical engineer, surveyor, etc.), shall be based on current professionally surveyed and certified topographic elevations for the project area, and shall include a graphic scale. The Plans shall be substantially in conformance with the proposed plans (titled "Project Plans for Construction of Vista Grande Drainage Basin Improvements" dated November 2019, see **Exhibit 3**, and all substantive file documents submitted, see **Appendix A**) except that they shall be modified to meet the following requirements:
 - a. **Screening Treatment.** All drainage/runoff associated with the project shall at a minimum flow through a gross solids screening device prior to discharge to the lake and/or ocean. Screened dry weather base flows (i.e., authorized non-stormwater runoff) and low-volume (up to 85 gpm) wet weather stormwater flows shall also be routed through the constructed advanced treatment wetlands, after which the treated flows shall drain into the Lake Merced outlet to Impound Lake. All such screening devices and constructed wetland components shall be permanently operated and maintained, and the plans shall identify all maintenance parameters for all such measures, based on manufacturers' recommendations if applicable, which shall be incorporated into the plans. It is the Permittee's responsibility to maintain screening devices, constructed wetlands, and all related infrastructure in a structurally sound manner and its approved state.
 - b. **Wing Walls, Riprap, and Concrete Apron Removed.** The wing walls, riprap, and concrete apron shall all be eliminated from the project (see **Exhibit 3**, page 100).
 - c. **Adaptable Design.** All drainage tunnel, outlet structure, and outfall pipe elements shall be sited and designed to allow for easy removal/restructure (e.g., dimensions structured to allow easy removal in response to erosion and retreat), including in response to coastal hazards, to the maximum extent feasible (see also adaptation plan requirements in **Special Condition 4**).
 - d. **Exterior Design and Surfacing.** The visible portions of drainage tunnel and outlet structure shall be sited and designed to appear as a natural outcropping emanating from the coastal bluff, including that all surfaces shall be faced with a sculpted concrete surface that mimics natural undulating bluff landforms in the vicinity in terms of integral mottled color, texture, and undulation to the maximum extent feasible. Any protruding elements (e.g., corners, edges, etc.) shall be contoured in a non-linear manner designed to evoke natural bluff undulations. All drainage and related elements within the sculpted concrete shall be camouflaged (e.g., randomly spaced, hidden with overhanging or otherwise protruding sculpted concrete, etc.) so as to be hidden or inconspicuous as seen from public viewing areas, including camouflage of any expected drainage staining over time, as much as feasible. The color, texture and undulation of all such surfaces shall

be maintained in their approved state throughout the life of the structure, including being reestablished as portions are removed in response to coastal hazards and the approved Adaptation Plans (see **Special Condition 4**). AT LEAST 30 DAYS PRIOR TO COMMENCEMENT OF FINISH CONCRETE SURFACING, the Permittee shall submit to the Executive Director for review and approval the qualifications of the contractors who will perform the finish concrete work, including photos and identification of similar completed projects. Such finished concrete work shall not commence until the Executive Director has approved the use of the chosen finish concrete contractors.

- e. **Surveyed Benchmarks.** Inconspicuous surveyed benchmarks, including location and elevation, shall be installed on project elements and at inland locations for future monitoring and potential adaptation, including being reestablished as they may be removed/moved in response to coastal hazards and the approved Adaptation Plan (see **Special Condition 4**).
- f. **Landscaping and Vegetation Restoration Requirements.** Non-native and invasive plant species within areas of the project work boundaries disturbed by construction activities shall be removed and not be allowed to persist, and such area shall be planted with native and noninvasive plant species that are tolerant of salt air and spray, with a preference along the bluff edge and bluff face for species capable of trailing vegetation that can persist along coastal bluff topography. All such plants shall be kept in good growing condition and shall be replaced as necessary to maintain the approved vegetation over the life of the project. Monitoring and provisions for remedial action (such as replanting as necessary) shall be identified to ensure landscaping success and shall be conducted on at least an annual basis for 5 years following completion of construction.
- g. **Public Recreational Access Improvements.** Public recreational access improvements, which shall be sited and designed to maximize coastal view protection and minimize visual intrusion, including through use of materials appropriate to the shoreline context that blend with the natural environment and existing improvements in the area, shall be provided to an extent sufficient to offset impacts commensurate to \$776,798.52. All such development shall be sited and designed in a way that maximizes public access utility and minimizes public view impacts and shall be maintained in their approved configuration for as long as any part of the approved project remains.

All requirements above and all requirements of the approved Revised Plans shall be enforceable components of this CDP. The Permittee shall undertake development in accordance with this condition and the approved Revised Plans.

- 2. **As-Built Plans.** WITHIN THREE MONTHS OF COMPLETION OF CONSTRUCTION, the Permittee shall submit one electronic copy and two paper copies of As-Built Plans to the Executive Director for review and written approval showing all elements of the approved development as built. The As-Built Plans shall be substantially consistent with the approved Revised Plans per **Special Condition**

1, where any discrepancies between the two shall be highlighted, and, for those portions of the approved development where coastal structures and processes affect the project, 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 was constructed in conformance with the approved Revised Plans. The As-Built Plans shall include color photographs (in hard copy and jpg format) that clearly show the as-built project, and that are accompanied by a site plan that notes the location of each photographic viewpoint and the date and time of each photograph. At a minimum, the photographs shall be from inland viewpoints, as well as upcoast, seaward, and downcoast viewpoints on the beach, and from a sufficient number of viewpoints overall as to provide complete photographic coverage of the approved development, including at both representative high and low tides. 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; recordation of GPS coordinates would be desirable for this purpose. Modified As-Built Plans consistent with all of the above parameters shall be provided within 30 days of completion of any construction pursuant to the approved Adaptation Plans (see **Special Condition 4**).

3. **Construction Plans.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit two copies of Construction Plans to the Executive Director for review and written approval. The Construction Plans shall, at a minimum, include and provide for the following:
 - a. **Construction Areas.** The specific location of all construction areas, all staging areas, and all construction access corridors shall be clearly identified in site plan view. All such areas within which construction activities and/or staging are to take place shall be minimized to the extent feasible in order to have the least impact on coastal resources, including by using inland areas for staging and storing construction equipment and materials as feasible. Construction, including but not limited to construction activities, materials, and equipment storage, is prohibited outside of the defined construction, staging, and storage areas.
 - b. **Construction Modifications.** (a) The Sloat Boulevard/Great Highway accessway shall be the primary accessway for beach area construction. If the Permittee can demonstrate to the satisfaction of the Executive Director that sole reliance on such accessway will substantially delay project construction, then Avalon Canyon construction access shall be allowed for the period of time that is necessary to offset such potential delays. If the Avalon Canyon construction access is used, the Permittee shall mitigate associated ESHA impacts as required under **Special Condition 6**, and shall remove all riprap and restore such area to natural bluff/beach conditions within a year of completion of construction, unless by that time the City has obtained a CDP for authorization; (b) Construction areas at and adjacent to the Fort Funston parking lot shall be minimized and scaled in intensity to the maximum feasible degree and shall be limited to the immediate construction area only. All other construction storage and staging shall be located offsite in existing developed areas able to accommodate it (e.g., existing parking lots, etc.), all of which shall be identified.

- c. Construction Methods and Timing.** All construction methods to be used shall be clearly identified, including at a minimum using unobtrusive fencing or equivalent measures to delineate construction areas and to protect coastal resources. Construction shall take place during low tides to the maximum extent feasible. 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), except for (1) tunnel boring activities and associated use of the Fort Funston work area adjacent to the Fort Funston parking lot which requires nighttime and weekend construction, (2) canal construction work on weekends during the five-month construction period, (3) work authorized by the Executive Director during these times due to extenuating circumstances of such work. Lighting of the beach, intertidal area, and ocean is prohibited.
- d. Construction BMPs.** All erosion control/water quality best management practices (BMPs) to be implemented during construction to protect coastal resources, such as but not limited to coastal water quality, shall be clearly identified, including at a minimum including all of the following:
- 1. Runoff Protection.** Silt fences, straw wattles, or equivalent apparatus shall be installed at the perimeter of construction areas to prevent construction-related runoff and sediment from discharging from the construction areas or entering into storm drains or otherwise offsite or towards the beach and ocean. Special attention shall be given to appropriate filtering and treating of all runoff, and all drainage points in the project area, including storm drains, shall be equipped with appropriate construction-related containment, filtration, and treatment equipment.
 - 2. Equipment BMPs.** Equipment refueling and servicing shall take place within spill containment areas with curbs and impermeable surfaces to prevent migration and to allow collection and disposal of hazardous materials, where such area on the beach shall be restricted to within the secured cofferdam area.
 - 3. Refueling.** Gasoline, lubricant, and/or other petroleum-based product shall not be deposited on the beach or at any beach facility. If such residues are discovered, the residues and all contaminated sand shall be reported to the Executive Director in order to determine the best method to remove and dispose of the contaminated matter in a manner that is most protective of coastal resources.
 - 4. 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.).

- 5. Rubber-tired and Track 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, and all possible measures are applied to ensure maximum coastal resource protection. When transiting on the beach, all such vehicles shall remain as far away from the ocean as possible and avoid contact with ocean waters.
- 6. Materials/Equipment Storage.** All construction materials and/or equipment placed on the beach during daylight construction hours shall be stored beyond the reach of tidal waters. Any construction materials and equipment that cannot be easily removed from the beach daily shall be stored beyond the reach of tidal waters (e.g., on or behind a sand embankment) during non-daylight hours (i.e., from one-hour after sunset to one-hour before sunrise). Once the coffer dam is constructed, any such storage shall occur behind the coffer dam. All other 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, any ocean barriers (e.g., sand bags, water-filled bags, etc.) authorized by the Executive Director, and construction area boundary fencing where such controls, barriers, and fencing are placed as close to the toe of the development/approved construction area as possible, and are minimized to the maximum feasible degree in their extent.
- 7. Erosion and Sediment Controls.** All erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each workday.
- e. Construction Site Documents.** Copies of the signed CDP and the approved Construction Plans shall be maintained in a conspicuous location at the construction job site at all times where 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 Plans, as well as the public review requirements applicable to them, prior to commencement of construction.
- f. Construction Coordinator.** A construction coordinator shall be designated to be contacted during construction should questions arise regarding the construction and/or the approved development overall (for both regular inquiries and emergencies), and the coordinator's contact information (i.e., address, phone numbers, email address, etc.), including, at a minimum, a telephone number with voicemail and an email address that are available 24 hours a day for the duration of construction, shall be conspicuously posted at the job site where such contact information is readily visible from public viewing areas while still minimizing impacts to public views to the maximum feasible degree, along with indication that the construction coordinator should be contacted in the case of questions regarding the construction (for both regular inquiries and emergencies). The construction coordinator shall record the contact information (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. All complaints and all actions taken in response shall be summarized and provided to the Executive Director on at least a weekly basis.

- g. Construction Specifications.** All construction specifications, materials, and contracts shall include appropriate penalty provisions that require remediation for any work done inconsistent with the terms and conditions of the CDP.
- h. Notification.** The Permittee shall notify planning staff of the Coastal Commission's North Central Coast District Office at least 3 working days in advance of commencement of construction, and immediately upon completion of construction.
- i. Property Owner Consent.** For any construction activities that may occur on properties not owned and controlled by the Permittee, including but not limited to construction that requires equipment access on such other properties, evidence of review, approval and consent from such property owners allowing such activities shall be provided, where such consent shall only be deemed to have been given if the consent is for development consistent with the terms and conditions of the CDP, including as it affects such properties.
- j. Public Access.** 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 reopened and restored to their pre-construction condition or better within three days of completion of construction (including where any native materials impacted shall be appropriately filtered as necessary to remove all construction debris).

All requirements above and all requirements of the approved Construction Plans shall be enforceable components of this CDP. The Permittee shall undertake development in accordance with this condition and the approved Construction Plans.

- 4. Adaptation Plans.** WITHIN ONE YEAR OF ANY OF THE FOLLOWING CRITERIA BEING MET, the Permittee shall submit two copies of Adaptation Plans to the Executive Director for review and written approval that account for all of the following in response to coastal hazards (as defined in **Special Condition 8**) when any of the following criteria are met. Within two years following Executive Director approval of any Adaptation Plans, the Permittee shall submit a complete CDP amendment application to implement the Adaptation Plans. In cases where removal and associated activities must occur more rapidly than can be accommodated through the CDP amendment process, the Permittee may also apply for an Emergency CDP. The Adaptation Plans' criteria shall include:
 - a. Unsafe Conditions.** If a government agency/entity with appropriate jurisdiction has issued a final order, not overturned through any appeal or written proceedings, determining that any portion of the approved development is unsafe due to coastal hazards and that there are no feasible measures that could make

such portion of the development suitable for operation and use without the use of shoreline armoring (as defined in **Special Condition 8**), then the Adaptation Plans shall provide that all such development is removed (and properly disposed of) or relocated inland in such a way as to result in the lifting of the order.

- b. Abandoned Infrastructure.** If any of the abandoned-in-place infrastructure, including pipelines, become exposed due to coastal hazards, then the Adaptation Plans shall provide that that infrastructure and all approved and related development dependent on it is removed and properly disposed of.
- c. Adaptive Retreat.** The trigger threshold for adaptive retreat shall be 50 feet of exposure of the outlet structure where exposure is defined as the distance from the seaward edge the outlet structure to the adjacent bluff face. Should the distance to the adjacent bluff face differ as measured to the upcoast or the downcoast adjacent bluff face, an average of the two sides shall be used. After 20 years from the date construction is completed for the outlet structure, if the 50-foot exposure threshold has been met, then the Permittee shall commence planning for adaptive retreat via Adaptation Plans that shall provide that the outlet structure is reconfigured so that it is only exposed seaward of the bluff face as much as its approved configuration (see **Special Condition 1**), where all related connecting elements are lengthened and/or reconfigured accordingly. The Adaptation Plans shall be submitted to the Executive Director for approval within one year of this criterion being met, and a CDP application to implement the Plans shall be submitted within two years of the Adaptation Plans approval by the Executive Director, and then the adaptive retreat threshold herein will 'reset' and be based on the then location of the bluff following the next 20 year period.
- d. Essential Services.** If essential services to the site (e.g., utilities, roads, etc.) can no longer feasibly be maintained and/or provided to the site due to coastal hazards, then the Adaptation Plans shall provide that all approved development dependent on such services is removed (and properly disposed of) or relocated inland in such a way that other essential services can accommodate the modified development.
- e. Debris.** If any portion of the approved development falls onto the bluff, onto the beach, and/or into the ocean, then the Adaptation Plans shall provide that all such development is removed and properly disposed of.
- f. Lateral Access.** If the approved development blocks lateral public access along the beach due to coastal hazards and bluff erosion, then the Adaptation Plans shall provide that modifications are made to ensure continuous lateral public access along the beach. Specifically, the Permittee shall monitor lateral beach access conditions at least monthly at high tide (defined here as being when predicted tides for the San Francisco NOAA tide station at the time of monitoring are above mean high water), including the degree to which the approved development blocks and/or impairs such access. If such access is significantly blocked or impaired at the general location of outlet structure for at least two consecutive months, then further analysis shall be conducted to evaluate lateral

access conditions more closely by a qualified professional who shall prepare a brief report to determine if beach users cannot readily pass by the approved development for more than half of daylight hours. This report shall be submitted to the Executive Director within 30 days of the most recent monthly monitoring event, and the Permittee shall initiate discussion with the Executive Director regarding feasible measures that might be taken to alleviate such blockage/impairment (e.g., beach nourishment, ramps, stairs, relocation of the outlet structure, etc.) in the manner most protective of coastal resources. The Permittee shall implement such measures as directed by the Executive Director.

- g. Adjacent Infrastructure.** If the City and County of San Francisco (CCSF) relocates, retreats, and/or alters its drainage infrastructure just upcoast of the approved development, then the Adaptation Plans shall provide that the Permittee is required to coordinate with CCSF on such activities. If modifications to the approved development are required to comply with other sections of this condition, the Permittee shall design and implement such modifications in such a way as to account for CCSF infrastructure modifications and to maximize coastal resource protection as much as feasible.
- h. LCP Planning.** If removal and/or relocation of some or all of the approved development is required pursuant to LCP provisions associated with coastal hazards, including sea level rise adaptation planning, then the Adaptation Plans shall provide that future modifications to the approved development shall be removed or relocated consistent-with such LCP provisions.

When any of the above criteria are met, the Adaptation Plans shall also provide that: (a) approved development that is not required to be removed/relocated is modified if necessary to maintain remaining function (and provided such modifications are consistent with the terms and conditions of this CDP); (b) all removal/relocation activities are undertaken consistent with the approved Construction Plans (see **Special Condition 3**); (c) all removal, relocation, and related construction areas are restored to natural areas of a quality consistent with adjacent natural areas and the landscaping and vegetation restoration requirements of this CDP (see **Special Condition 1**); and (d) all modifications necessary to ensure that the modified development is consistent with the terms and conditions of this CDP, including the objectives and performance standards of these conditions, are implemented as part of the Adaptation Plans.

All requirements above and all requirements of the approved Adaptation Plans shall be enforceable components of this CDP. The Permittee shall undertake development in accordance with this condition and the approved Adaptation Plans.

- 5. Monitoring.** The Permittee shall ensure that the condition and performance of the approved development is regularly monitored, with reports to the Executive Director as described in this condition. Such monitoring evaluation shall, at a minimum, evaluate whether any of the criteria in **Special Condition 4** are met (and/or are nearing being met), and shall otherwise evaluate whether any maintenance, repair, and/or other alterations are necessary to maintain the approved development in a

structurally sound manner and its approved state. Monitoring reports covering the above-described evaluations 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, 2029, May 1, 2034, etc.) for as long as any part of the approved development remains extant. The reports shall identify the existing configuration and condition of the approved development, including identifying 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 the approved development in its approved and required state. Any proposed actions necessary in response to adaptation criteria, and/or to otherwise maintain the approved development 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 subject to the same requirements 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 or offshore of San Mateo County, unless a different time frame for submittal is identified by the Executive Director.

6. Habitat Mitigation and Monitoring Plan. PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit two copies of a Habitat Mitigation and Monitoring Plan to the Executive Director for review and written approval that include and account for all of the following:

- a. Impact Validation.** Each area that would be impacted or potentially impacted (e.g., Avalon Canyon) by the approved development shall be identified via map and detailed description, including clearly identifying all existing conditions in detailed pre-construction surveys that include, at a minimum: delineation of the physical extent and acreage of each habitat (including coastal wetlands) within proposed impact areas; each vegetation community's native species diversity, native species cover, invasive species cover, and the relative cover of dominant native vegetation species; and the vegetation community's age classes and/or size structure distributions. Post-construction surveys shall be completed within 90 days of completion for each habitat, and at a minimum, document: the physical extent and acreage of all impacts; the general nature of activities that occurred within each area; and any vegetation clearance, death, significant woody vegetation removal, or ground disturbance. All surveys shall include sampling sufficient to provide a statistically robust analysis (90% power at $\alpha=0.10$ to detect an ecologically relevant effect size) and be supported by a clear rationale. Final mitigation acreage requirements for construction impacts shall be based on final impact values and as described below.
- b. Compensatory Mitigation Framework.** Mitigation shall be provided for the following impacted sensitive habitats and resources: all wetlands, riparian areas, native grasslands, oak woodlands, dunes (including ice plant mats), and coastal scrub, and any others determined necessary following impact validation. For sensitive vegetation communities, mitigation shall be provided in-kind, unless a clear rationale with nexus for out-of-kind is provided for review and is approved

by the Executive Director. For the purpose of this condition, mitigation strategies that may be used include: creation, which includes the development of new habitat where none currently exists; substantial restoration, which focuses on areas where habitat exists in a degraded state but a full suite of self-sustaining functions would be restored; enhancement, which involves improvement of some limited ecological functions rather than recovery of a full suite; and preservation, which represents a passive management approach where habitat is placed under a form of permanent protection. Short-term temporary impacts shall be mitigated in-place at a ratio of 1:1 and long-term temporary impacts shall be mitigated at a ratio of 1.5:1 for ESHA and 2:1 for wetlands, with 1:1 occurring in-place and the remainder occurring nearby but outside of areas that may be ultimately affected by project operations. Minimum ratios of 3:1 and 4:1 shall be applied for permanent ESHA and wetland impacts, respectively, where these base ratios assume compensation is provided as habitat creation or substantial restoration. Alternatively, enhancement or preservation strategies may be proposed at no less than double or triple the base ratios, respectively. Any out-of-kind mitigation that is proposed shall be provided at double the base ratio as creation or substantial restoration, or triple the base ratio as enhancement (e.g., 6:1 for substantial restoration as ESHA or 8:1 for wetlands). For wetlands, a minimum of 1:1 shall be provided as creation to assure no net loss whereas the remaining fraction may be provided as other mitigation strategies.

If the required mitigation has not commenced within 5 years of construction commencement, then the required mitigation acreages shall be required to be increased by 0.5 acres to the base mitigation ratio (e.g. 3:1 for ESHA becomes 3.5:1 after year 5, then 4:1 after year 6) for each portion of a year beyond the initial 5-year period. If such mitigation has not commenced within 10 years of construction commencement, mitigation under the approved HMMP is not completed (e.g., met all success criteria in an approved Final Monitoring Report), or been underway for at least 3 years and is meeting designated success criteria in the approved HMMP, then the required mitigation acreages shall follow the 0.5-acre increase per year and the Permittee shall additionally be required to submit a supplemental HMMP to address the lack of performance within 90 days of the ten-year anniversary of construction commencement, for the review and approval of the Executive Director. The Executive Director may apply a lesser rate of increase if the Permittee can demonstrate diligent pursuit of mitigation implementation that has been delayed by matters outside of Permittee control (e.g., litigation complications, etc.).

- c. Goals/Objectives.** Mitigation shall be premised on substantially restoring habitat so that it is self-functioning, high quality habitat in perpetuity, and each mitigation area shall include: clear identification of the desired habitat types/outcomes, major vegetation components, and sensitive species and wildlife support functions; description of the desired habitat with rationale (e.g., to be based on a high functioning reference site); clear, specific, actionable, and measurable objectives, implementation measures, and success criteria (see below) to support and achieve stated goals; and, a detailed timeline laying out all major activities, including any outstanding preliminary work such as surveys, site

preparation, mitigation implementation (including revegetation activities, interim and final monitoring periods, etc.); and for wetland mitigation, appropriate hydrological considerations.

- d. Design, Site Preparation and Revegetation Plans.** Plans detailing the mitigation design, including those for final topography, revegetation, any significant features characteristic of the intended habitat, and how these connect to the surrounding environment shall be provided, and shall consider future conditions including surrounding land use, climate, and other potential stressors. Methods and Plans for site preparation including any salvage and storage of material for reuse (e.g., topsoil, seed, plants), debris removal, landform alteration, soil treatment, etc. shall be included. Invasive species removal plans shall be described for all mitigation areas and constitute the least environmentally damaging feasible alternative, with provisions for continued removal on an as-needed basis. All mitigation areas shall be covered by a detailed revegetation plan that prioritizes 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 HMMP. Only native species appropriate for the mitigation areas shall be used, source material shall be limited to local genetic stock (i.e. within coastal San Francisco and San Mateo Counties), and the plan shall be submitted with adequate evidence demonstrating that that is the case. The planting plans shall be based on relevant vegetation community structure (e.g., species and relative densities) with a clear technical basis (e.g., an approved reference site, published literature, etc.), 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, above-grade, and provisions for its removal must be included.
- e. Sensitive Resource Parameters.** Mitigation areas shall include special provisions to facilitate the survival and success of affected sensitive species and vegetation communities, and such provisions shall be consistent with applicable state and federal requirements for these.
- f. Success Criteria.** Success criteria shall have a clear empirical basis (i.e., reference sites and/or published technical literature appropriate for the local area) and generally include representativeness of target vegetation communities (e.g., species composition, cover, structure, diversity, and presence of major structure-producing and habitat-defining species as characterized by the Manual of California Vegetation community alliances and/or associations); physical parameters such as topography, bare substrate, and hydrology; and target wildlife support functions or usage. Criteria may be fixed values where there is a strong empirical basis, but, where feasible, should be relative to high-functioning reference sites in order to account for environmental variability. Any such reference sites proposed shall be informed by consideration of proximity to the mitigation sites, current and future conditions including stressors, similarity to mitigation areas with regard to soil type, aspect, slope, and other relevant abiotic characteristics; and shall be clearly identified, sampled, and quantitatively described. Invasive species at the mitigation sites shall be maintained at less

than 5% cover with no more than 1% of that being attributed to species ranked as highly invasive by Cal-IPC.

- g. Performance Assessment.** Methods for assessing mitigation success shall include clear supporting rationale for their selection and be specified in terms of the types of comparison, including whether relative to fixed criteria or reference sites; clear identification of any proposed reference sites; tests of similarity; specification of the maximum allowable difference or effect size between the mitigation value and the reference value for each success criterion, based on sound ecological principles; and where statistical tests will be employed (as opposed to the use of censusing), statistical power analyses to document that the planned sample sizes will provide adequate power (typically 90%) to detect maximum allowable differences (and, for such a test, alpha must equal beta; these values are typically 0.10 and any proposal to deviate from this shall be supported by a clear technical rationale).
- h. Sampling Design.** The field sampling program shall be designed in conjunction with the success criteria and selected methods of assessment, and relate logically to these. The sampling design and methods shall provide sufficient detail to enable an independent scientist to implement them, including description of the randomized placement of sampling units, unit size, replication, etc. If non-traditional survey methods are proposed (e.g., remote-sensing), these shall be demonstrated as capable of informing quantitative analyses with confidence relative to more traditional methods (e.g., point-intercept).
- i. Ecological Monitoring and Reporting.** Eight weeks after completion of mitigation site construction and activities, an as-built report summarizing mitigation activities to-date, a description of consistency with approved plans, documentation of acreage treated, maps and descriptions any temporary infrastructure installed, photos taken from fixed points, and a description of consistency with all terms and conditions, shall be submitted to the Executive Director. Once an annual monitoring report is approved by the Executive Director, recommendations identified in the report shall become prescriptive (and enforceable components of this CDP) unless otherwise advised in writing. All mitigation areas shall be monitored by a qualified restoration ecologist (or ecologists) acceptable to the Executive Director for consistency with the approved HMMP on at least an annual basis for at least 5 years following initial revegetation (and 10 years, in the case of proposed tree plantings) and for at least 3 years following the conclusion of all remediation and maintenance activities other than weeding, whichever is later. Results of such monitoring (including recommendations for adaptations to better achieve consistency with the approved goals, objectives, and success criteria and the other terms and conditions of this CDP) shall be provided in an annual report submitted to the Executive Director for review and written approval no later than December 31st of each year. Raw data and associated metadata shall also be provided in digital format with each report. If the final annual monitoring report indicates that the mitigation effort has been unsuccessful, in part or in whole, based on the approved success criteria, the Permittee shall submit within 90 days a revised or

supplemental HMMP prepared by a qualified restoration ecologist acceptable to the Executive Director, to compensate for those portions of the original program which did not meet the approved success criteria, to the Executive Director for review and written approval.

- j. **Avalon Canyon.** Within one month of the Executive Director authorizing use of Avalon Canyon for construction access, the Permittee shall submit an amendment to the HMMP that will mitigate for the impacts to coastal scrub ESHA, where all of the above apply to the Avalon Canyon impacts as well.

All requirements above and all requirements of the approved HMMP shall be enforceable components of this CDP. The Permittee shall undertake development in accordance with this condition and the approved HMMP.

- 7. **Operational Impact Mitigation Plan.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit two copies of an Operational Impact Mitigation Plan (OIMP) to the Executive Director for review and written approval. Final impacts shall be determined as described below and interpreted and mitigated as consistent with the compensatory mitigation framework and other requirements for the HMMP in **Special Condition 6**, except as further modified below. At a minimum, the OIMP shall include:

- a. **Baseline.** The OIMP shall be initially based on the predicted change in vegetation communities (i.e., alliances and associations) due to project operations, as provided in the *Vista Grande Drainage Basin Improvement Project Mitigation Approach Plan for California Coastal Commission* (dated November 2022), and consistent with the pre-construction surveys required in **Special Condition 6**, and shall clearly map and quantify wetland and upland ESHA acreages surrounding the lake, extending from the existing shoreline to vegetation at the 11-foot City datum or the roadway, whichever is nearer.

- b. **Early and Advance Mitigation Options.** The required mitigation base ratios provided in **Special Condition 6** (i.e. 3:1 for ESHA and 4:1 for wetlands) may be reduced if compensatory mitigation is provided per the following schedule(s), where construction diversions are limited to no more than 9 inches cumulatively, and operational impacts are interpreted as those associated the managed phase to further elevate lake water levels following construction. If construction diversions exceed 9 inches cumulatively, the Executive Director may consider any evidence provided to evaluate whether the commencement of operational impacts should instead be calculated from an earlier point in time since significant lake level increases resulting from the project could impact sensitive resources sooner. Reductions to the mitigation ratios shall apply only where the complete set of final performance criteria for a habitat area has been met over the minimum period specified in the OIMP (i.e. mitigation has been delivered)

- 1. Where early mitigation is delivered 0-4 years after the commencement of operational impacts and assuming a minimum 5-year performance period, the required mitigation ratios may be reduced by 0.25 acres per year for ESHA and 0.33 acres per year for wetlands (e.g., for ESHA starting at 3:1, the

- obligation becomes 2.75:1 if delivered only 4 years following initial impact, 2.5:1 if delivered only 3 years following initial impact, etc.).
2. Where advance mitigation is delivered 1-5 years prior to the commencement of operational impacts, and assuming a minimum 5-year performance period, the required mitigation ratios may be reduced according to the above schedule for early mitigation and thereafter, by an additional 0.1 acres per year for ESHA and 0.2 acres per year for wetlands (e.g., for ESHA starting at 3:1, the obligation becomes 1.5:1 if delivered 1 year before initial impact, 1.4:1 if delivered 2 years before, etc.).
 3. Where advance mitigation is delivered more than 5 years prior to the commencement of operational impacts, for either ESHA or wetlands, a 1:1 ratio may be applied.
- c. Impact Monitoring and Reporting.** Three years following the increase of lake water levels to the operational target of 8.5 feet, or no more than five years following initial managed increases if the operational target has not yet been reached, all habitats shall be resurveyed, mapped, and accounted for (including coastal wetland delineations) to enable comparison with pre-construction conditions and inform initial changes (direct losses, shifts, and/or conversions of habitat or vegetation communities) to the surrounding habitats due to the increased lake levels. Within 90 days of the resurvey, an interim report shall detail the observed extent and nature of impacts, including direct loss and habitat conversions, and be submitted to the Executive Director for review. Five years thereafter, the habitats shall be again surveyed, mapped, and accounted for, in order to detect slower vegetation community responses. Within 90 days of this second, a final report shall update the observed extent and nature of impacts as necessary and be submitted to the Executive Director for final review and written approval.
- d. Impact Determination and Mitigation.** The pre-construction surveys shall be used as baseline for measuring the actual extents of permanent habitat impacts due to project operations, including habitat conversions. Though the predicted changes shall be used for initial mitigation planning and the first monitoring report is intended to refine expectations, the second monitoring report shall serve as the basis for final compensatory mitigation requirements, consistent with the framework specified in **Special Condition 6**, except in the case where the operational target of 8.5 feet has not been met for at least three years, and in which case, part (e) below shall apply.
- e. Provision for Possible Further Action.** If either the interim or final report indicates that the actual operational impacts on habitat will or have exceeded the Permittee's predicted changes (including conversions) by more than 20%, the Permittee shall submit within 90 days a revised or supplemental OIMP prepared by a qualified restoration ecologist acceptable to the Executive Director, detailing the additional mitigation acreages and strategies proposed to compensate for the impacts, in accordance with all aspects of **Special Condition 6**. Revisions to the

OIMP shall be processed as an amendment to the original CDP, unless the Executive Director determines that no such amendment is necessary. If by the time of the second monitoring report per (d) above, the operational target of 8.5 feet has not been met for at least three years, the Permittee shall include in the report detail on why and whether or how project implementation and operations have varied significantly from the authorized development, propose a feasible course of action to resolve differences in authorized versus impacts (e.g., continuation of a monitoring program and future mitigation determination, changes to project goals for managed water levels, etc.) based upon the existing circumstances, and the Executive Director shall determine whether a review and/or potential amendment is necessary to bring before the Commission for reconsideration.

All requirements above and all requirements of the approved OIMP shall be enforceable components of this CDP. The Permittee shall undertake development in accordance with this condition and the approved OIMP.

8. **Coastal Hazards.** By acceptance of this CDP, the Permittee acknowledges and agrees on behalf of itself and all successors and assigns that:
 - a. **Coastal Hazards.** The approved development is and may be subject to future coastal hazards including but not limited to episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunami, tidal scour, coastal flooding, landslides, bluff and geologic instability, bluff retreat, liquefaction and the interaction of same, many of which are likely to worsen with future sea level rise.
 - b. **Assume Risks.** The Permittee: assumes the risks to the Permittee and the property that is the subject of this CDP of injury and damage from coastal hazards in connection with the approved development; unconditionally waives any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; indemnifies and holds 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 accepts full responsibility for any adverse effects to people and/or property caused by the approved development.
 - c. **CDP Intent.** The intent of this CDP is to allow for the approved development to be constructed and operated/used consistent with the terms and conditions of this CDP for only as long as such development remains safe for such operation/use without additional measures (such as shoreline armoring, see below) beyond ordinary repair or maintenance to protect such development from coastal hazards.
 - d. **Shoreline Armoring Prohibited.** Other than the extent to which portions of the approved development (see **Special Condition 1**) itself constitutes shoreline armoring, shoreline armoring (including but not limited to seawalls, revetments,

retaining walls, gabion baskets, tie backs, piers, groins, caissons/grade beam systems, etc.) shall be prohibited to protect the approved development. Any rights to construct shoreline armoring that may exist under Coastal Act Section 30235, or any other applicable laws are waived, and no portion of the approved development qualifies as an “existing structure” for purposes of Section 30235 and the LCP.

- e. Future Mitigation.** If the Permittee intends to keep the approved development in place beyond the end of that initial 35-year shoreline mitigation period (i.e., past June 13, 2059), the Permittee shall submit a complete CDP amendment application to the Coastal Commission that shall reassess mitigation for the ongoing shoreline impacts of the approved development, 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 December 13, 2058), and it shall include a clear analysis of feasible alternatives to modify the approved development in order to eliminate shoreline impacts to the maximum extent possible, and it shall propose mitigation for unavoidable shoreline impacts associated with remaining approved development beyond June 13, 2059. If the Permittee does not submit the required complete CDP amendment application by December 13, 2058, then any required mitigation beyond the end of that initial 35-year shoreline mitigation period shall be subject to a required multiplier (i.e., 2 times the calculated/required mitigation if received less than one year late, 3 times the calculated/required mitigation if received one year or more to two years late, 4 times the calculated/required mitigation if received two years or more to three years late, etc.).

9. Protection of Archaeological and/or Tribal Cultural Resources. The Permittee shall undertake the approved project in compliance with the following measures to protect archaeological and/or tribal cultural resources to the maximum extent feasible.

- a. Notification.** At least one month prior to commencement of any ground-disturbing construction activities, the Permittee shall (1) notify the representatives of Native American Tribes listed on an updated Native American Heritage Commission (NAHC) contact list, including but not necessarily limited to the Ohlone, Costanoan, Bay Miwok, Plains Miwok, and Patwin Tribes; (2) invite all Tribal representatives on that list to be present and to monitor ground-disturbing activities; and (3) arrange for any invited Tribal representative that requests to monitor and/or a qualified archaeological monitor to be present to observe project activities with the potential to impact archaeological and/or tribal cultural resources.
- b. Monitoring.** A qualified, locally experienced archaeologist and a tribal monitor, if requested and approved by relevant tribe(s), shall be on site to monitor all activities with the potential to impact archaeological and/or tribal cultural resources, including all ground disturbing activities. The monitor(s) shall have experience monitoring for archaeological resources of the local area during

excavation projects, be competent to identify significant resource types, and be aware of recommended tribal procedures for the inadvertent discovery of tribal cultural and/or archaeological resources and/or human remains.

- c. Discovery Protocol.** If any tribal cultural deposits are discovered during the course of the project, all construction within 200 feet of such deposits shall cease and shall not re-commence until a qualified cultural resource specialist (which could be a person identified in subpart (b), above), in consultation with the relevant tribe(s), analyzes the significance of the find and, if deemed significant, prepares a supplementary archaeological plan for the review and approval of the Executive Director that evaluates and provides suggested measures related to the discovery. The Executive Director shall review the plan and either: (1) approve it and determine that its recommended changes to the project or mitigation measures do not necessitate an amendment to this CDP, or (2) determine that the changes proposed therein necessitate a CDP amendment. The location of any and all identified archaeological and tribal cultural resources shall be kept confidential, and only those with a “need to know” shall be informed of their locations.
- d. Human Remains.** Should human remains be discovered on-site during the course of the project, immediately after such discovery, the on-site archaeologist and/or tribal monitor shall notify the City and County of San Francisco Coroner within 24 hours of such discovery, and all construction activities shall be temporarily halted until the remains can be identified. If the Coroner determines that the human remains are those of a Native American, the Coroner shall contact the NAHC within 24 hours, pursuant to Health and Safety Code Section 7050.5. The NAHC shall deem the Native American most likely descendant (MLD) to be invited to participate in the identification process pursuant to Public Resources Code Section 5097.98. The Permittee shall comply with the requirements of Section 5097.98 and work with the MLD person(s) to discuss and confer with the descendants all reasonable options regarding the descendants' preference for treatment. Within 5 calendar days of notification to NAHC, the Permittee shall notify the Coastal Commission's Executive Director of the discovery of human remains. The Executive Director shall maintain confidentiality regarding the presence of human remains on the project site.

10. Other Agency Approvals. PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit to the Executive Director written evidence that all necessary permits, permissions, approvals, or authorizations for the approved project have been granted by any other applicable agencies that may have such oversight over the approved development (including by the U.S. Army Corps of Engineers, U.S. National Park Service, San Francisco Regional Water Quality Control Board, California State Lands Commission, California Department of Fish and Wildlife, the City and County of San Francisco, San Mateo County, etc.), or written evidence that no such permits, permissions, approvals, or authorizations are required by these agencies. Any changes to the approved project required by these agencies shall be reported to the Executive Director. No changes to the approved project shall occur without a Commission amendment to this CDP unless the

Executive Director determines that no amendment is legally necessary.

- 11. Daly City/San Francisco Agreement.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit two copies of an executed copy of a memorandum of understanding, cooperative agreement, or similar legally binding document between the City of Daly City and City and County of San Francisco (CCSF) to the Executive Director for review and written approval, where such document shall provide guarantees that are sufficient in the Executive Director's opinion that the Permittee will be able to construct and operate the approved development consistent with all terms and conditions of this CDP in relation to such development that is on and/or associated with CCSF properties and interests.
- 12. Public Rights.** By acceptance of this CDP, the Permittee acknowledges and agrees, on behalf of itself and all successors and assigns, that approval of this CDP shall not constitute a waiver of any public rights that may exist on the properties involved. The Permittee shall not use this CDP as evidence of a waiver of any public rights that may exist on such properties now or in the future.
- 13. Future Permitting.** Any and all future proposed development related to this project, and/or this CDP shall be subject to the Coastal Commission's continuing CDP jurisdiction. This CDP authorizes limited future repair, maintenance, and/or improvement development that is determined by the Executive Director to: 1) fall within the overall scope and intent of this CDP; 2) be consistent with the City of San Francisco, San Mateo County, and Daly City LCP; and 3) not have any significant adverse impacts to coastal resources. Any development that the Executive Director determines does not meet such criteria shall require a separate CDP or a CDP amendment, as directed by the Executive Director.
- 14. Minor Adjustments.** Minor adjustments to the above special condition requirements that 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.
- 15. Liability for Costs and Attorneys' Fees.** The Permittee shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys' fees (including but not limited to such costs/fees that are: (1) charged by the Office of the Attorney General; and/or (2) required by a court) that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the Permittee against the Coastal Commission, its officers, employees, agents, successors and/or assigns challenging the approval or issuance of this CDP, the interpretation and/or enforcement of CDP terms and conditions, or any other matter related to this CDP. The Permittee shall reimburse the Coastal Commission within 60 days of being informed by the Executive Director of the amount of such costs/fees. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission, its officers, employees, agents, successors and/or assigns.

4. FINDINGS AND DECLARATIONS

A. Project Location

The proposed project spans three jurisdictions: City and County of San Francisco (CCSF), San Mateo County (SMC), and the City of Daly City. The Vista Grande drainage watershed covers an approximately 2.5 square mile area in Daly City and unincorporated SMC, and drains to the Vista Grande canal and tunnel, and ultimately the Pacific Ocean, via an underground collection system. The proposed improvements to the Vista Grande canal are located along John Muir Drive, primarily within CCSF with a small portion in unincorporated SMC. The proposed tunnel replacement would occur within the existing tunnel footprint which runs beneath private lands and Skyline Boulevard in Daly City, and Fort Funston, which is managed by the National Park Service (NPS) as part of the Golden Gate National Recreation Area (GGNRA). The outlet structure and armoring are located on GGNRA land primarily under the bluffs of Fort Funston and on/at Funston Beach. Proposed construction access to the proposed outlet structure, armoring, and ocean outfall would occur via the Avalon Canyon access point in the City of Daly City (within SMC). Lake Merced, to which the proposed improvements to the Vista Grande canal would connect, is located within the CCSF and is managed by the San Francisco Public Utilities Commission (SFPUC). See location maps in **Exhibit 1**, and site area photos in **Exhibit 2**.

B. Project Background

Lake Merced was historically a coastal lagoon fed by five relatively small streams and groundwater that was occasionally connected directly to the Pacific Ocean near where modern day Sloat Boulevard meets the beach. During urbanization of San Francisco in the 1800s, the lake was disconnected from the ocean, and was used as a part of the municipal water supply for the burgeoning city. In the 1890s the Vista Grande canal and tunnel were constructed to divert stormwater from the Vista Grande drainage watershed away from the lake to an outlet on the Pacific Ocean under what is now Fort Funston. Combined with an overflow structure and pipeline, the Vista Grande tunnel was last significantly upgraded in the 1950s and serves as a means for overflow control of the lake. Also in the 1950s, CCSF constructed a parallel tunnel and outlet structure for its stormwater/wastewater system immediately upcoast of the Vista Grande tunnel.¹ In the 1960s, Daly City constructed a new wastewater outfall, supported across the beach on reinforced concrete piers, to discharge the effluent in deeper water through a pipeline that discharges in the open ocean about a quarter mile offshore, and then in the 1970s, added a force main (separate from the existing tunnel) that carried effluent directly into the outfall for discharge offshore during wet weather events. Today, the City's tunnel continues to provide for both stormwater and wastewater functions, where the wastewater extends even further from the terminus of the tunnel, first across the beach and then into the ocean offshore.

¹ More recently it appears that such CCSF infrastructure on the beach has been modified without CDPs. Specifically, Coastal Records Project photos show that the wingwalls were replaced in 1979 with new and different wingwalls further inland without a CDP. These matters have been reported to the Commission's enforcement unit for further research and potential action.

As a result of shoreline and bluff erosion over the years surrounding the tunnel, Daly City's brick and concrete tunnel and outlet structure currently stretch approximately 80 feet across the beach from the bluff toe, with the wastewater pipe extending seaward of that point, and the CCSF outfall extends about 40 feet across the beach, all of which at times blocks lateral beach access (again, see photos in **Exhibit 2**). In the past 40 or so years, the Applicant indicates that it has carried out repairs about every 8 to 12 years to prevent collapse of the exposed portion of the tunnel, with each such event lasting multiple weeks and requiring considerable construction work on the beach and on the Fort Funston bluffs. The Applicant indicates that the Vista Grande tunnel and its outlet are over 120 years old and have exceeded their useful life in terms of age, material composition and related factors, and the risk damage or collapse if not replaced is high.

Toward that end, the Applicant began planning for the proposed project in the mid 2000s, focusing on critical deficiencies that should be corrected in any such upgrade/replacement. One such deficiency is that the infrastructure is lacking hydraulic capacity in the existing canal and tunnel to carry peak flows, which results in upstream flooding. The canal currently has capacity for a flow rate of 500 cubic feet per second (cfs), whereas the tunnel has capacity of 170 cfs. This mismatch of capacity causes flooding during high flow storms in the nearby neighborhoods around John Muir Drive. The proposed project would upgrade the tunnel to have a capacity of 500 cfs to match the canal. Additionally, other critical deficiencies that the Applicant identified included lateral access blockage during low beach sand conditions, frequent repair and maintenance leading to construction-related coastal resource impacts, force main vulnerabilities, stormwater discharge of trash onto the beach and into the ocean, and overall the need to address aging infrastructure before its failure.

Thus, the project's primary function is to address storm-related flooding that periodically occurs as a result of inadequate stormwater capacity in the Vista Grande drainage watershed by providing stormwater capacities capable of handling a 25-year/4-hour design storm (1,070 cfs max flow rate) in the lower portion of the watershed.² At the same time, revisioning the drainage infrastructure also opened up other possibilities, including related to the potential for some beneficial reuse of filtered and treated wastewater in relation to Lake Merced. Lake Merced is one of the most important habitat features in the City of San Francisco's coastal zone, as well as its major backup emergency water supply. It is also on the Clean Water Act list of impaired waterbodies, due primarily to low dissolved oxygen and high pH levels. In addition, the City was sued over its handling of Lake Merced's water quality, and to settle that litigation had agreed to recycled water and groundwater management strategies.³ Put another way, the project thus has to potential to address Lake Merced issues for the City of San

² Again, the canal and tunnel would both have capacity for 500 cfs, and thus the remainder of such a design storm above that amount would be diverted to the lake.

³ During the mediation process, the parties also identified a need to reconnect historical drainage flows to Lake Merced as a mechanism to restore Lake Merced's lake level more expeditiously. After years of extensive discussions with stakeholders and regulatory agencies, the Vista Grande Drainage Basin Improvement Project was borne to address the remaining water management necessary to complete Lake Merced's restoration.

Francisco at the same time, including by augmenting water levels in San Francisco's Lake Merced to help enhance water quality.

C. Project Description

The Applicant's proposed project consists of the following elements:

- **Canal:** The canal is a 3,600-foot-long open water conveyance structure with a maximum capacity of 500 cfs that is located on the west side of John Muir Drive. The proposed project would partially replace the existing canal to incorporate a gross solid screening device, a constructed treatment wetland, and diversion and discharge structures to route some stormwater flows from the canal to Lake Merced.
- **Treatment Wetlands:** The treatment wetlands would be located adjacent to the canal and would be used primarily for nitrogen treatment and pollutant removal. The wetland areas would be planted with emergent reeds that would improve water quality by intercepting and settling out suspended particles. After water passes through the wetlands, the water would flow to Lake Merced.
- **Lake Merced Overflow Structure:** The project would replace the existing Lake Merced overflow structure with a weighted 42-inch pipe equipped with a fish screen that would allow water from the lake to flow into the canal, and from there through the tunnel to discharge at the beach, in lake overflow conditions. The overflow structure would also be used to manage lake levels, and it would maintain its existing capacity of 50 cfs.
- **Tunnel:** The existing tunnel would be replaced to expand its capacity (from 170 cfs to 500 cfs) and would be changed from a smaller oval shape to an approximately 10.5 feet internal diameter circular tunnel. The Lake Merced portal to the tunnel would also be replaced, and replacement wastewater effluent pipelines would be placed within the tunnel.
- **Ocean Outlet:** The ocean outlet structure (i.e., where the tunnel discharges stormwater on the beach) and a portion of the wastewater pipeline that crosses the beach would also be replaced. The Applicant proposes a lower profile outlet structure set back nearer to the bluff face, with the new outlet structure proposed to be 17 feet wide by 25 feet tall and square shaped. The outlet structure would be flanked by a total of nearly 200 feet of seawall extending along the bluffs on either side, approximately 3,400 square feet of riprap in front and behind the seawalls, and a 1-inch thick by 50-foot by 45-foot concrete apron below the outlet, intended to prevent scour and maintain access during low beach levels.
- **Wastewater Treatment:** Portions of an existing wastewater gravity pipeline located adjacent to the canal would be partially replaced and relocated, where the effluent would then flow to two new 24-inch diameter wastewater pipelines that would be installed within the new tunnel to convey treated effluent through the new tunnel to connect to the ocean outfall pipeline that crosses underneath Fort Funston beach to the existing offshore diffuser (approximately 2,500 feet offshore). These changes are intended to allow treated effluent from the nearby North San Mateo County Sanitation District Wastewater Treatment Plant to be discharged year-round and

would allow abandonment of the no-longer-needed force main pipeline. The defunct force main would be abandoned in place, with the exception of a segment that is currently exposed to the surf and waves on Fort Funston beach, which would be removed.

- **Lake Merced:** Filtered and treated stormwater flows would be directed to Lake Merced, and volumes would be managed for water quality purposes in coordination with the Regional Water Quality Control Board (RWQCB). The Applicant expects to raise lake levels approximately 2.5 feet⁴ City Datum.⁵

See **Exhibit 3** for proposed project plans.

D. Standard of Review

As noted above, this proposed project spans both Coastal Commission original retained, as well as City and County of San Francisco, San Mateo County, and City of Daly City jurisdictions. The Applicant requested a consolidated permit for the proposed development and all parties agreed. Thus, the standard of review for the project is the Chapter 3 policies of the Coastal Act, with the various certified LCPs (San Francisco, San Mateo County, and Daly City) used as non-binding guidance.

E. Habitat Resources – Lake Merced

Applicable Coastal Act Provisions

The Coastal Act protects a variety of habitats, including lakes and wetlands,⁶ and including areas that constitute environmentally sensitive habitat area (ESHA), including as follows:

30107.5. *“Environmentally sensitive area” means any area in which plant or animal life, or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

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*

⁴ This would raise the water surface elevation (WSE) from the baseline of 6 feet City Datum to 8.5 feet WSE.

⁵ Elevations in San Francisco are commonly referenced to three vertical datums, including the North American Vertical Datum of 1988 (NAVD 88), the National Geodetic Vertical Datum of 1929 (NGVD 29), and the San Francisco City Datum (City Datum). NAVD 88 was established in 1991 and is the most up-to-date and accurate datum. NGVD 29 was used by surveyors and engineers for most of the 20th century and is 2.76 feet lower than NAVD 88. The San Francisco City Datum was set at 6.7 feet above the City’s former high-water mark and is 11.38 feet higher than NAVD 88 and 8.62 feet higher than NGVD 29. Lake Merced elevations have commonly been referenced to the City Datum, where a “+” indicates feet above that datum, and a “-” indicates feet below it.

⁶ Section 30121 defines a wetland as “lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens.”

waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

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 waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

30233. *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following: (1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities. (2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps. (3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities. (4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines. (5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas. (6) Restoration purposes. (7) Nature study, aquaculture, or similar resource dependent activities.*

(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.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. ...

30240. *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

Additionally, as indicated above, LCP policies can serve as non-binding guidance in the CDP determination for a consolidated CDP application like this. Lake Merced is located within the City and County of San Francisco, and the LCP objective for Lake Merced is to “preserve the recreational and natural habitat of Lake Merced.”

In summary, the Coastal Act and supporting LCP policies recognize the importance of lakes, wetlands, and ESHA. For lakes and wetlands, the primary goal is protecting biological productivity and healthy function, where fill is limited to specific, enumerated uses, and provided that it is the least environmentally damaging feasible alternative and impacts are mitigated. In addition, 30230, 30231, and 30233 together require that marine resources, the biological productivity and quality of coastal waters, and the functional capacity of wetlands and estuaries be maintained and enhanced. Regarding ESHA, Section 30240 is particularly demanding, where allowable development must be resource dependent and capable of avoiding significant disruption of habitat values. When a wetland area also constitutes ESHA, however, as is the case along much of Lake Merced, Section 30233 governs.⁷

Coastal Act Consistency Analysis

Lake Merced is the largest freshwater lake in San Francisco, and it is made up of four interconnected lake areas, referred to as North, East, South, and Impound Lakes (see **Exhibit 1**). The lake’s shoreline is comprised of freshwater emergent wetlands, including California bulrush marsh (*Schoenoplectus californicus*) and smartweed cocklebur patches (*Polygonum (=Persicaria) lapathifolium – Xanthium strumarium Herbaceous Alliance*).⁸ The Applicant also identifies Arroyo willow thickets as wetlands (on the basis of qualifying as hydrophytic vegetation), see **Exhibit 4 and 5**. However, in the absence of wetland hydrology and hydric soil indicators and taking into consideration the specifics of the landscape as well as the assemblages of vegetation within the thickets, Commission Ecologist, Dr. Lauren Garske-Garcia, determined that the thickets are more appropriately interpreted as riparian than wetland in this case (more aptly called out as lacustrine where surrounding the lake rather than a linear water feature) and also considered ESHA.^{9,10} In addition, several other vegetation

⁷ As stated in *Bolsa Chica Land Trust v. Superior Court* ((1999) 71 Cal.App4th 493, 515.): “...the ESHA protections provided by Section 30240 are more general provisions and the wetland protections provided by Section 30233 are more specific and controlling when a wetland area is also an ESHA.... Section 30240, a more general policy, also applies, but the more specific language in the former sections is controlling where conflicts exist with general provisions of Section 30240.”

⁸ California bulrush marsh is ranked S3S4 by the California Department of Fish and Wildlife (CDFW) as a vegetation community alliance, which indicates that it is a sensitive community that is vulnerable, and it is therefore also considered ESHA in this context.

⁹ Such areas are typically recognized as especially valuable habitat because of their importance in buffering water features and aquatic habitats from adjacent activities or terrestrial pollutants, and their role as habitat corridors for plant and animal species, independent of any specific vegetation community ranking. The arroyo willow thickets described at the alliance level are not considered a sensitive vegetation community per se by CDFW. However, these areas are clearly dominated by the eponymous species in the shrub layer, which suggests that these areas are likely sensitive associations per CDFW, in addition to being considered riparian or lacustrine ESHA.

¹⁰ Since the mid-1990’s, the State of California has used hierarchical classification standards for mapping and describing vegetation communities (see <https://wildlife.ca.gov/data/vegcamp/publications-and-protocols>). Under the Manual of California Vegetation (available online at: <https://vegetation.cnps.org/>),

communities around the lake also qualify as ESHA but were not identified by the Applicant as such, including Himalayan blackberry-rattlebox-edible fig riparian scrub (as riparian/lacustrine ESHA); tufted hairgrass meadow (*Deschampsia cespitosa Herbaceous Alliance*) as a CDFW rank S3 and as native grassland; and coyote brush scrub (*Baccharis pilularis* Shrubland Alliance) (as a sensitive community based on the associations within it). A determination of whether any of these associations are represented within affected areas at the lake will be verified during the pre-construction surveys but are conservatively estimated as potential impacts. Therefore, these impacts will need to be accounted for, minimized where possible, and mitigated appropriately, as discussed further below.

The proposed project affects Lake Merced in three main ways: (1) work conducted east of John Muir Drive along Lake Merced to create treatment wetlands and related facilities (Treatment Wetlands and Overflow Structure); (2) work conducted west of John Muir Drive to replace the existing drainage canal and to direct drainage to the lake (Canal); and (3) and increasing and managing lake levels (Lake Levels). At a basic level, lake hydrologic inputs and outputs would be modified to allow water to flow from the Lake to the canal and tunnel, and to include weirs and control gates to allow flows from the canal to either enter the tunnel, lake, or treatment wetlands.

Overflow and Diversion Structures

The Applicant proposed two staging options for the construction of the overflow structure: staging areas A and B. Staging area A avoids bulrush marsh and smartweed, but the trade-off is greater impacts to arroyo willow and tufted hairgrass meadow. The total ESHA impact in this scenario is 1.0373 acres and involves more long-term temporary impacts of 0.0303 acres. Staging area B affects more habitat types, but results in slightly fewer wetland and ESHA impacts. Staging area B has total ESHA impacts of 1.0350 acres and fewer long-term temporary impacts of 0.0203 acres. As Coastal Act Section 30240 (ESHA protections) is more restrictive than Section 30233 (limits on fill of wetlands), the option with the fewer total ESHA impacts and fewer long-term temporary impacts is the preferred option, or Staging B, albeit the difference is minimal. The Applicant indicates that the location of the chosen staging area is dependent on coordination with the City of San Francisco due to overlap with other projects occurring around the Lake. Given there is only a minor difference in impacts between the staging area, if San Francisco determines that Staging A is the feasible option, there will not be a markedly different impact to resources.

However, the long-term temporary and permanent construction of the overflow structure creates impacts to arroyo willow thickets, tufted hairgrass meadow, Himalayan blackberry-rattlebox-edible fig riparian scrub, and any potentially sensitive coyote brush

alliances are quantitatively defined by their membership rules, which include plant species compositions, constancy, cover values, and the presence of indicator species. Associations are the most granular level within the hierarchy, represent variations of communities within each alliance, and where available, are the preferred level for evaluating communities in terms of resource protection. Alliances and associations with State rankings 1-3 are considered sensitive and are generally considered ESHA. All associations within a sensitive alliance are considered sensitive; however, sensitive associations can also occur under alliances not ranked as sensitive. The list of community rankings for both alliances and associations per CDFW is updated regularly and is available at the website identified above.

scrub associations that may be present are not allowable under Coastal Act Section 30240 because the development is not dependent on the ESHA, and rather is replacing such with public infrastructure. As such, Section 30240 directs denial of the CDP application in this case. However, the Commission has determined that doing so overall would lead to a conflict with other Coastal Act policies, and that approval is most protective of significant coastal resources in this case (see Conflict Resolution section below). In a conflict resolution approval context, these non-wetland ESHA impacts are allowable provided they are avoided as much as possible, and that any unavoidable impacts are properly mitigated.

As to wetland ESHA, allowable fill in wetlands per Coastal Act 30233 is limited to circumstances when there is no feasible less environmentally damaging alternative and where impacts are fully mitigated, including through measures to minimize harm and provide compensation for resource losses. In this case, filling wetlands is allowable due to the project's purpose of improving incidental public services, including maintenance of existing intake and outfall lines, and further, it is the least environmentally damaging alternative. Thus, filling these wetlands is allowable here if proper mitigation is provided.

The Applicant has provided a Mitigation Approach Plan (**see Exhibit 4**) where they indicate that the wetlands will receive 4:1 mitigation for permanent impacts, 1.5:1 mitigation for long-term temporary impacts, and 1:1 for short-term temporary impacts, (consistent with Dr. Garske-Garcia's past recommendations and definitions). However, the 1.5:1 ratio for long-term temporary impacts was primarily focused on ESHA rather than wetland impacts, with the intent to reflect half of the typical 3:1 mitigation ratio for ESHA. Extending the rationale to wetlands, half of the typical ratio would be 2:1 and is thus adjusted by required conditions of approval here. As mentioned previously, the impact acreages are estimated based on surveys that are or would be considered outdated by the start of construction, and conditions will be necessarily validated prior to construction, and thus the final impact numbers may change. Regardless, using the data provided thus far the staging area B option (which may change per **Special Condition 3**), the estimated impacts and mitigation requirements for wetlands are outlined in the table below (Table 1).

Vegetation Community	Type	Impact (acres)	Mitigation Ratio	Mitigation Required (acres)	Total Mitigation Required (acres)
California bulrush marsh (<i>Schoenoplectus californicus</i>)	Wetland	0.0129 (P)	4:1	0.0516	0.1508
		0.050 (LTT)	2:1	0.0992	
Smartweed cocklebur patches (<i>Polygonum (=Persicaria) lapathifolium – Xanthium strumarium Herbaceous Alliance</i>)	Wetland	0.0788 (LTT)	2:1	0.1576	0.1576
Arroyo willow thickets (<i>Salix lasiolepis Shrubland Alliance</i>)	ESHA	0.2867 (P)	3:1	0.8601	0.87165
		0.0077 (LTT)	1.5:1	0.01155	
Himalayan blackberry-rattlebox-edible fig riparian scrub (<i>Rubus armeniacus - Sesbania punicea – Ficus carica Shrubland Alliance</i>)	ESHA	0.0222 (LTT)	1:5:1	0.0333	0.0333
Coyote brush scrub (<i>Baccharis pilularis Shrubland Alliance</i>)	ESHA	0.0133 (STT)	1:1	0.0133	0.0133
Total					1.22665
Note: P = Permanent Impacts; LTT = Long-term temporary impacts; STT = Short-term temporary					
Note: Calculated using Staging Area B.					

Thus, the total amount of mitigation required for the construction impacts around the lake from the overflow and diversion structure is 1.22 acres. The Applicant proposes to restore 0.128 acres of bulrush marsh and smartweed-cocklebur patches, and 0.274 acres of arroyo willow thickets in their respective Lake Merced construction impact locations (a total of 0.402 acres). Additionally, the Applicant proposes to use project operation to mitigate the rest of the impacts not covered by that acreage. As further discussed in the operational impacts section below, using the conversion and migration of wetlands from raising lake levels is not sufficient mitigation for the impacts. Thus, the additional acreage required to mitigate the impacts to these wetland types are required to be identified in the HHMP per **Special Condition 6**. Additionally, mitigation for tufted hairgrass meadow, Himalayan blackberry-rattlebox-edible fig riparian scrub, and any potentially sensitive coyote brush scrub were not accounted for in the Applicant's proposed Mitigation Approach Plan, and therefore are also required to be accounted for in the HHMP, per **Special Condition 6**

Finally, the Applicant relied on data from an assortment of pre-project surveys that occurred between 2012-2021 to estimate project impacts to wetlands, ESHA, and other vegetation (see **Exhibit 4** and **Tables 1 - 6** in this report). Due to the age of the surveys and their differences in relation to certain mapping standards, pre-construction surveys are required in **Special Condition 6(a)** to inform post-construction impact validation relative to those estimated in the submitted Mitigation Approach Plan (see **Exhibit 4**). Thus, all impacts stated in this analysis and in the Applicant's Mitigation Approach Plan

are considered informed estimates but will be validated and then those validated amounts will be used to ensure appropriate mitigation is required following the compensatory mitigation framework defined in **Special Condition 6(b)**. Additionally, while the submitted Mitigation Approach Plan provides a valuable starting point and reference to build from, **Special Condition 6** requires that a Habitat Mitigation and Monitoring Plan (HMMP) be submitted prior to commencement of construction that expands upon the Mitigation Approach Plan with the guidance and conclusions of this staff report incorporated. The HMMP would include specific information concerning proposed mitigation objectives, design, implementation, special provisions for sensitive resources, robust success criteria informed by clear technical rationales, quantitative performance assessments based in sound ecological principles, sampling designs, monitoring schedules, and reporting requirements.

In terms of impacts, the Commission usually considers two categories of impacts: temporary and permanent. However, at times, a third category has been used, long-term temporary¹¹ (as opposed to the typical shorter-term definition) and given the duration of construction for this project, the Commission's ecologist, Dr. Garske-Garcia, recommends the use of the long-term temporary impact designation is appropriate here.

Canal

The Vista Grande Canal is a 3,600-foot-long brick and cement lined, trapezoidal, man-made channel within the project area originally constructed over a century ago to capture and direct stormwater and agricultural waters away from Lake Merced. The proposed project would partially replace the existing canal, and would add a gross solid screening device, treatment wetlands, and related infrastructure needed to connect the diversion and overflow structures to the canal. All such development would adversely affect ESHA habitat values, and it is not dependent on the habitat resource, and thus the Coastal Act would direct denial of this project component. Again, as indicated above, the Commission has determined that doing so overall would lead to a conflict with other Coastal Act policies, and that approval is most protective of significant coastal resources in this case (see Conflict Resolution section below). In a conflict resolution approval context, these ESHA impacts are allowable provided they are avoided as much as possible, and provided mitigation is provided for unavoidable impacts.

As mentioned above, long-term temporary impacts to ESHA and wetlands would have required mitigation ratios of 1.5:1 and 2:1, respectively, permanent impacts to ESHA have a required mitigation ratio of 3:1, and wetland impacts have a mitigation ratio of

¹¹ Temporary impacts are defined here as those that require that 1) there be no significant ground disturbance, and 2) that vegetation recovers to comparable age classes and/or size structure distributions by the end of the designated period; short-term temporary impacts are defined here as those where vegetation recovery occurs within 12 months of the initial point of disturbance; and long-term temporary impacts are defined here as those that may be intermittent or sustained for up to a 24-month period such that vegetation recovery may require more than 12 months from the initial point of disturbance but no more than 12 months from the conclusion point of disturbance, thus effectively allowing for as much as 36 months to fully recover. Meanwhile, permanent impacts include areas or key ecological functions that would be lost to development, frequently disturbed in order to maintain development, involve significant ground disturbance, or necessitate more than 12 months for recovery following the conclusion of disturbance.

4:1. Construction work at the canal will have impacts on several habitats and vegetation alliances, as noted below and in Table 2.¹²

Coast live oak forests and woodlands present in canal area (*Quercus agrifolia* Forest and Woodland Alliance) are considered ESHA due to their foundational role in creating an ecosystem that supports a rich multitude of living resources as well as their longevity and provision of many ecosystem services. Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance) are found around the canal, positioned in the landscape and functioning more as riparian areas than wetlands, and similar to the impacts described above around the lake from construction, would be mitigated as riparian ESHA. The Himalayan blackberry-rattlebox-edible fig riparian scrub (*Rubus armeniacus* - *Sesbania punicea* – *Ficus carica* Shrubland Alliance) that would be impacted by construction also qualifies as riparian ESHA, as do the Australian wattle-Grevillea-Tea tree ruderal patches (*Acacia* spp. – *Grevillea* spp. – *Leptospermum* Shrubland Alliance), and Pepper tree or Myoporum groves (*Schinus [molle, terebinthifolius]* – *Myoporum laetum* Forest and Woodland Semi-Natural Alliance) despite being non-native alliances because they provide the support functions of a riparian habitat. Ice plant mats will also experience permanent and long-term temporary impacts. In this case, areas occupied by ice plant qualify as ESHA due to the presence of conditions supporting dune species in relic sands and documented occurrences of the rare San Francisco spineflower (*Chorizanthe cuspidata* var. *cuspidata*, CRPR 1B)¹³ at this site. CalFlora occurrence documentation indicates that there were 11-50 plants observed along the canal and project footprint in June 2017. While the Applicant's biological reports do not report observations of spineflower during 2021 and 2022 surveys, this is likely due to interannual variability in seed bank expression and potentially, coincidence with drier years. Spineflower species are annuals with known seed bank dormancies that can extend at least a decade and then following favorable conditions, can suddenly appear as a flush. Additionally, records in the California Natural Diversity Database indicate historical records of San Francisco spineflower from multiple dates going back to the 1950's and extending to the early 2000's and note several other dune species often associated with it, including Dune tansy, a rare gilia, and a rare wallflower. Thus, it is evident that the area presently characterized by ice plant mats along the canal has the potential to support native dune species, including several rare and with at least one confirmed in recent history, and should be considered ESHA. ESHA totals for canal construction and required mitigation

¹² As provided in **Special Condition 6**, these ratios all assume that compensating mitigation would be provided as habitat creation or as substantial restoration; however, if an enhancement strategy were to be used that represents significantly less ecological benefit, these ratios would be doubled, respectively, so that wetlands would be provided for at 8:1 and ESHA at 6:1. In addition, delays in mitigation delivery would be subject to escalators of 0.5:1 acre per year after a certain point, as described in **Special Condition 6** and further illustrated in **Exhibit 7** as part of a broader mitigation framework. This will ensure that temporal lags in mitigation delivery are adequately addressed through compensation over a broader spatial extent to account for the ecological functions and values affected.

¹³ A California Rare Plant Rank (CRPR) of 1B indicates that a species is considered rare, threatened, or endangered throughout its range, and is limited to occurrences primarily in California. Plants with a 1B rank meet the definitions of the California Endangered Species Act and are eligible for state listing. San Francisco spineflower is considered a coastal endemic species and is only known from scattered records between southern Sonoma County and northern Monterey County, primarily around San Francisco.

are presented in Table 2 below.

Vegetation Community	Type	Impact (acres)	Mitigation Ratio	Mitigation Required (acres)	Total Mitigation Required (acres)
Arroyo willow thickets (<i>Salix lasiolepis</i> Shrubland Alliance)	ESHA	0.0616 (P)	3:1	0.1848 (P)	0.1848
Himalayan blackberry-rattlebox-edible fig riparian scrub (<i>Rubus armeniacus</i> - <i>Sesbania punicea</i> – <i>Ficus carica</i> Shrubland Alliance)	ESHA	0.4675 (P)	3:1	1.403 (P)	2.378
Pepper tree or Myoporum groves (<i>Schinus [molle, terebinthifolius]</i> – <i>Myoporum laetum</i> Forest and Woodland Semi-Natural Alliance)	ESHA	0.2573 (P)	3:1	0.7719 (P)	0.7719
Coast live oak forest and woodland (<i>Quercus agrifolia</i> Forest and Woodland Alliance)	ESHA	0.3692 (P)	3:1	1.1076 (P)	1.1076
Australian wattle-Grevillea-Tea tree ruderal patches (<i>Acacia</i> spp. – <i>Grevillea</i> spp. – <i>Leptospermum</i> Shrubland Alliance)	ESHA	0.1529 (P)	3:1	0.4587 (P)	0.4587
Ice plant mats (<i>Mesembryanthemum</i> spp. – <i>Carpobrotus</i> spp. Herbaceous Semi-Natural Alliance)	ESHA	0.8902 (P)	3:1	2.6706 (P)	4.1886
		1.0117 (LTT)	1.5:1	1.518 (LTT)	
Total					9.0896

Note: P = Permanent Impacts; LTT = Long-term temporary impacts; STT = Short-term temporary

As such, the total mitigation required around the canal is 9.09 acres. The Applicant's Mitigation Approach Plan indicates that a total of 4.454 acres of coastal scrub uplands and 0.381 acres of riparian mitigation will be restored within the construction disturbance areas between the canal and John Muir Drive (a total of 4.835 acres). A combination of regionally appropriate, native tree species, including coast live oak, will be planted within this disturbance area to account for the 51 trees that will be removed during construction. However, the Applicant is proposing that, instead of mitigating 4.118 acres of the ice plant mats (dune areas) along the canal, the mitigation will instead be added to the Fort Funston dune mitigation and restoration area discussed below. Mitigation for the Arroyo willow thickets around the canal, interpreted by the Applicant as coastal wetlands in their submission, are proposed to be mitigated by project operation, which as discussed above and below in the operational impacts section, is not appropriate compensatory mitigation. While the proposed approach is conceptually acceptable in part, the ecological basis for selected seed mixes and material sources remains insufficient and need to be refined. In addition, the proposed

use of long-term irrigation for some areas is inconsistent with general restoration and mitigation goals for self-sufficiency, reflecting a landscaping rather than restoration approach. Proposed tolerances for invasive vegetation cover are double what the Commission typically allows, and monitoring criteria focused on plant survival and cover neglect to account for important aspects of the ecosystems, including biodiversity and wildlife support. Sampling and quantitative assessment methods need to be defined and supported by a strong technical rationale, and as proposed they are insufficient in this regard. In addition, the HMMP will need to include the additional mitigation identified above for areas impacted by canal construction that were not originally accounted for by the applicant (i.e., Himalayan blackberry-rattlebox-edible fig riparian scrub, Australian wattle-Grevillea-Tea tree ruderal patches, and Pepper tree/Myoporum groves).

The construction area around the canal is 7.4055 acres, whereas the total mitigation required for the canal is 9.09 acres. Instead of the proposed approach, the entire canal-side area could serve as the mitigation site for most of this portion of the project. It would need to be addressed robustly with mitigation requirements such as protection in perpetuity, monitoring, robust performance standards, and a healthy mosaic of resources including those that support San Francisco spineflower. While the proposed Mitigation Approach Plan is a start towards mitigation required for both the lake and canal construction impacts, the information above will need to be accounted for in the HMMP design and requirements, and per the conditions must submitted for review and approval prior to construction per **Special Condition 6**.

Lake Merced

Construction

Additionally, beyond the biological impacts from construction, there would be water quality impacts to the Lake. As the infrastructure to transmit stormwater to the ocean outfall will be under construction for an extended period, the Lake Merced diversion and overflow structures would necessarily be completed before tunneling begins so that construction-phase stormwater flows could be diverted to Lake Merced and/or SFPUC's combined sewer system during this time. The project's EIR/EIS analyzed two alternatives given that an agreement between the applicant, Daly City, and SFPUC had not been finalized: 1) diversion of all canal flows to Lake Merced during tunnel construction and 2) diversion of base flows and first hour of storm flows following a defined antecedent dry period to SFPUC and all other flows to Lake Merced during tunnel construction. ESA's analysis found that diverting all canal flows to Lake Merced during the tunnel construction period would cause short-term localized increases in bacteria, metals, and nutrient concentrations in the immediate vicinity of the diversion outlet, but monitoring conducted by Daly City and SFPUC during the pilot diversion period found that concentrations typically equilibrated with the background levels of the lake within 48 to 72 hours following a diversion event. The temporary diversions could also result in estimated increases of lake algae during the summer, but only equal to a level that would be at the lower range of that which would be analytically detectable over a few years and would then eventually decrease following construction of the treatment wetland and implementation of in-lake treatment measures. With diversions of portions of the flow away from the Lake system during periods of high concern, these short-term localized increases in contaminants could be reduced.

However, since submitting the application, the Applicant has been further developing the proposed work approach for routing of stormwater flows in the time between when the Lake Merced outlet construction is completed, and when the tunnel is finished and the project is fully operating. This detail is needed to inform an agreement between Daly City and San Francisco on how much stormwater the SFPUC system will be able to process, without affecting SFPUC existing and planned operations. The construction work approach requires that non-storm flow and flow after periods of dry weather will be diverted to the SFPUC system during tunnel construction as a water quality control step. Additional flow volumes that can be supported by SFPUC will also be diverted to their combined stormwater/sewer system. The Applicant modeled how diverting these flows to the lake would impact lake levels. Considering existing net loss in lake levels between precipitation, groundwater interaction, evaporation, and with some stormwater flow diversions while the canal is offline, the net lake level gain would be less than 3.5 inches in an average year, per the Applicant's modeling (see **Appendix A**). As such, diverting flows to the lake during construction for two years would not contribute to a major increase in lake levels and therefore would likely have a minor impact on the vegetation around the lake within this timeframe. **Special Condition 6(b)** allows for construction diversions up to 9 inches cumulatively before the Applicant would need to provide further information to determine if additional mitigation may be required. However, it is unlikely that this would occur per the Applicant's modeling.

However, it is difficult to evaluate these impacts without further information and mapping. Therefore, the final impact numbers are required to be determined during the surveys **Special Conditions 6 and 7** call for, in order to assure any potential impacts from lake level fluctuations are accounted and mitigated for as required by the Coastal Act.

Water Levels

Lake Merced is comprised of four individual, but connected, lakes with precipitation and localized stormwater serving as its primary source of freshwater. Water loss from the lake is typically due to evaporation, plant transpiration, seepage from the lake to groundwater, and groundwater pumping in the Westside Groundwater Basin. The Lake is also cited as a source of non-potable emergency water supply for the San Francisco Public Utilities Commission (SFPUC). Historically, the lake was a lagoon fed by five relatively small streams and groundwater, with occasional connection to the Pacific Ocean prior to development of the area, but this connection was permanently closed in 1895 with construction of Skyline Boulevard and the Great Highway. Since the development of the area, the only physical outlet from Lake Merced is the current overflow structure which connects the tunnel to the ocean outlet. Due to the lack of connection to the historical watershed, the lake's water surface elevation (WSE) has fluctuated throughout the years, with drought years posing additional reductions in WSE. During the 1940's lake levels varied between 9 and 13 feet above City Datum, and from 1950-1980 the lake experienced a declining trend with the levels ranging from +4 to +10 feet City Datum. In 1993 the lowest WSE was -3.2 feet City Datum following a major drought. Since that time, the WSE has steadily risen due to precipitation, reduced irrigation pumping at the Lake Merced-area golf courses, and reduced municipal groundwater pumping. Since 2006, lake levels have consistently remained between +5 and +7 feet City Datum, and the baseline WSE that the Applicant uses in the application

materials is +6 feet City Datum.

The Applicant indicates that the project has two primary and mutually supporting objectives: to address storm-related flooding that periodically occurs as a result of inadequate storm drainage capacity in Vista Grande canal and tunnel, and to augment water surface levels in San Francisco's Lake Merced for management of both lake volume and water quality. Additionally, the proposed project originated in response to a January 29, 2001 Petition for Review filed by California Trout (CalTrout) with the State Water Resources Board alleging declining lake levels were due to unregulated groundwater pumping and that the State agencies and relevant parties (City and County of San Francisco, Cypress Hills Golf Course, Lake Merced Golf and Country Club, Olympic Club, San Francisco Golf and Country Club, Harding Park Golf Course, Golden Gate Park, San Francisco Zoo, San Francisco State University, and nearby cemeteries) had not limited the groundwater pumping and therefore must act under statutory and common laws to assure the beneficial uses of public waters to restore Lake Merced to its historical condition (see **Appendix A** for the CalTrout Petition). Primary parties involved in the matter entered into legal mediation (overseen by Judge Cahill presiding), and as a result, a variety of recycled water and groundwater management strategies were agreed upon and implemented (e.g., the City of Daly City and the City and County of San Francisco's Public Utilities Commission constructed additional recycled water infrastructure and now provide recycled water to the golf courses and cemeteries, thereby reducing groundwater pumping; agreements providing for conjunctive use of the groundwater basin by the various stakeholders were executed and implemented, etc). As such, those elements of CalTrout's petition have been addressed. During this mediation process, however, the parties also identified a need to reconnect historical drainage flows to Lake Merced, affected by urbanization and associated storm water management infrastructure (e.g., curbs, gutters, and underground piping, which operates to manage flow by sending the storm water to the constructed Vista Grande canal and Pacific Ocean), as a mechanism to restore Lake Merced's lake level more expeditiously. After years of extensive discussions with stakeholders and regulatory agencies, the Vista Grande Drainage Basin Improvement Project was borne and if this project is implemented as proposed by the Applicant, all actions stemming from the CalTrout petition mediation will be successfully completed.

Thus, given the mediation requirements, a component of this project is to implement a Lake Management Plan (LMP) that the City of Daly City coordinated with the Regional Water Quality Control Board (RWQCB) to raise lake levels to beneficially reuse stormwater and improve water quality by diverting stormwater from the canal to the Lake. As proposed, the LMP indicates that the annual target WSE is between +6.5 to +8.5 feet City Datum, with a maximum WSE of +9 feet City Datum. Provided sufficient rainfall occurs, Daly City would manage diversions to achieve a mean annual lake WSE level of +8.5 feet City Datum. Following a large storm event (or successive storm events), the WSE of +9 feet City Datum could only be exceeded up to +9.5 feet City Datum for up to fourteen (14) days, at which point the WSE must be returned to at or below +9 feet City Datum unless further mitigation is provided, consistent with the conditions analyzed in the EIR/EIS. Two main impact areas must be evaluated to determine Coastal Act consistency of the LMP operational components of the project: water quality of the lake and biological resources.

Water Quality

Lake Merced is on the Clean Water Act Section 303(d) list of impaired waterbodies due to impairment by low dissolved oxygen (DO) and high pH. DO concentrations in the lake are affected by water temperature and algal photosynthetic activity, as well as by decomposition of organic matter. Episodes of depleted DO levels frequently occur within deeper waters of the lake during the summer and fall, due to prolific algal growth and the oxygen demand from the subsequent decomposition of organic matter in bottom sediments of the lake. However, extended periods of very low DO that may lead to acute adverse impacts on fish have not been observed in the lake. The high pH level (i.e., alkalinity) in the lake is likely a result of algal photosynthesis, combined with the historical accumulation of alkaline minerals in the lake since the permanent closure of the lake's outflow to the ocean in the 1890s.

The Applicant submitted a water quality analysis (see **Exhibit 6**) that was completed as part of the EIR process, which analyzed water quality data collected in 2011-2012 and routine water quality data collected by the SFPUC since 1997. This analysis looked at how increased WSE would impact water quality. In summary, the water quality analysis concluded that temperature, DO, and pH profiles are not expected to change significantly with increased water surface elevations, and thus, raising the lake levels would not impact the Impaired Body listing of the lake or improve water quality regarding those key parameters on its own. However, RWQCB indicates that raising the lake levels is one important component to improving the impaired listing and will work in conjunction with other water quality improvements that will come later for Lake Merced. Water quality will likely improve due to less frequent mixing of the lake waters as lake depth increases, resulting in less nutrients stirred up from the lake bottom and consequently less algae growth and eutrophication, and potentially a decrease in algae could result in an increase in DO and a reduction in pH. Additionally, the proposed constructed treatment wetlands could increase filtration and treatment of lake inputs and reduce algae. This action is expected to reduce the annual average algal concentrations in the lake and thereby improve the lake's eutrophication conditions. The eutrophication conditions may potentially further improve over time as a reduction in algae concentration reduces the organic matter loading to the lake sediment, thereby reducing the oxygen depletion and nutrient load within the lake. Limiting the nutrient load could reduce the risk of harmful algal blooms in the lake, thus improving the resiliency of the lake.

While stormwater discharges to the lake may cause short-term increases in bacterial, metal, and nutrient concentrations in the receiving waters in the immediate vicinity of the diversion outlet, concentrations would likely rapidly equilibrate with the background levels in the lake within several days following a diversion event. Further, the constructed treatment wetland is expected to reduce bacteria, metal, and nutrient concentrations in base flows and low-volume stormwater flows through settling, natural die-off, adsorption, solar irradiation, oxidation, competition, and predation such that it is unlikely that lake concentrations would increase to a significant degree and result in substantial water quality effects.

Thus, while the proposed project will likely not remove the lake from the impaired bodies listing, the RWQCB believes that the improvements to water quality will be beneficial to

the overall effort to improve water quality for Lake Merced.

Habitat

The Applicant prepared a Mitigation Approach Plan (see **Exhibit 4**) for all mitigation they expected would be required for the project. One section in the Plan is focused on how the lake shoreline vegetation would change in regard to rising WSE. This analysis relies on vegetation mapped within the Lake Merced system in 2011 under the Lake Merced Vegetation Mapping Update.¹⁴ Using +6 feet City Datum as the baseline condition, the Applicant mapped biological impacts for WSE between +8 feet and +9 feet City Datum as that is the proposed target WSE. For the purposes of this analysis, a WSE of +9 feet City Datum was used as this provides a more conservative approach for understanding potential impacts.

The change in WSE as a result of the project is expected to drive changes in shoreline vegetation composition, resulting in significant habitat conversions. The Applicant's modeling uses the assumption that wetlands higher than the operational WSE will migrate upslope and wetlands inundated by WSE are considered permanently lost as they would not be expected to move upslope. Habitats other than wetlands are presumed to be lost rather than responsive to a shifted water table or incursion of wetland habitats. The following wetlands and wetland ESHA are mapped at +6 feet City Datum, and would need to be mitigated at a ratio of 4:1, with the impacts predicted for +9 feet City Datum as follows and as seen in Table 3:

- California Bulrush Marsh (Bulrush wetland) were mapped to have 25.05 acres above +6 feet City Datum, and at +9 feet WSE would increase by 13.3 acres (+52.4% change). This vegetation community is ranked S3S4 and considered sensitive by CDFW.
- Smartweed cocklebur patches (knotweed wetland) were mapped to have 7.02 acres above +6 feet City Datum, and at +9 feet City Datum would decrease by 0.89 acres (-12.6% change).
- Slough sedge – water-parsley – small-fruited bulrush marsh (Rush meadow) were mapped to have 0.40 acres above +6 feet City Datum, and at 9 feet would see a decrease of 0.14 acres (-35.0% change). This vegetation community is ranked S3 and considered sensitive by CDFW.
- Giant vetch wetland was mapped to have 0.25 acres above +6 feet City Datum and at +9 feet City Datum would decrease by 0.09 acres (-36.0% change).
- Lastly, cattail marshes were mapped to have 0.01 acres above +6 feet City Datum and would be 100% eliminated at +9 feet City Datum.¹⁵

¹⁴ While Commission staff requested more recent mapping data be used to determine operational biological impacts as part of this CDP application, that material was not provided, and thus the 2011 data is the best available to evaluate impacts.

¹⁵ In addition, the Applicant's model interprets the arroyo willow thickets (arroyo willow riparian scrub) as wetland for the purposes of their analysis. The submitted materials indicate that there are 17.03 acres

Table 3: Wetland Operational Impacts and Mitigation

Vegetation Community	Estimated Impact at 9 ft WSE (acres)	Mitigation Ratio	Estimated Mitigation Required (acres)
Smartweed cocklebur patches (<i>Polygonum (=Persicaria) lapathifolium</i> – <i>Xanthium strumarium</i> Herbaceous Alliance)	0.89	4:1	3.56
Slough sedge – water-parsley – small-fruited bulrush marsh (Rush meadow) (<i>Juncus lescurii</i> Herbaceous Alliance)	0.14	4:1	0.56
Giant vetch wetland (<i>Vicia gigantea</i>)	0.09	4:1	0.36
Cattail marshes (<i>Typha (angustifolia, domingensis, latifolia)</i> Herbaceous Alliance)	0.01	4:1	0.04
Total			4.52
Note all impacts are estimates that are subject to change per Special Condition 7.			

The Applicant states that the overall percent change of all wetlands would be a net increase, such that at +8 feet City Datum there would be a net increase of wetland acreage by 4.3%, and at +9 feet City Datum there would be an increase in wetlands of 7.2%. However, this neglects to consider the habitat conversions that would occur in these operational scenarios. For example, half of the modeled riparian arroyo willow thickets would be converted to California bulrush marsh and all the cattail marsh at the lake would be lost. While a no net loss of wetlands might be generally interpreted by the Applicant, and other entities might interpret that there would be no net type conversion (meaning generally, from wetland to open water), the biological analysis conducted in the Mitigation Approach Plan reveals that the reduction and loss of several wetland communities through conversion to one particular community. This equates to a homogenization of wetland resources (and significant loss of arroyo willow lacustrine

above 6 feet City Datum, and at 9 feet City Datum would decrease by 8.44 acres (-50.4% change). At the alliance level for which information is presently available, arroyo willow thickets are not considered a sensitive vegetation community by CDFW but at the more refined association level as would be mapped during pre-construction surveys, it is likely that some or all of the Lake Merced willow habitat may delineate as sensitive. Regardless, as discussed above, Dr. Garske-Garcia determined that the Lake Merced arroyo willow thickets are more representative of riparian [lacustrine] ESHA than wetlands, and consequently, the willow thickets are analyzed as lake-associated vegetation below.

ESHA) relative to what is presently a relatively more diverse and mosaic landscape. Given that California bulrush marsh is already the dominant wetland community at Lake Merced, its expansion through conversion of less abundant wetland communities and ESHA diminishes the ecological diversity across the landscape, and in turn, limits ecological resilience under future conditions as well as the services provided by unique natural resources.

In addition to lake shoreline wetland changes and those to surrounding arroyo willow ESHA, there are anticipated changes to additional upland vegetation communities. As reported in the submitted materials, Eucalyptus trees (Blue gum eucalyptus groves) along the shores of North and South Lakes support several double crested cormorant and great blue heron rookeries. Trees located within the inundation area for each operational scenario would permanently die-off after one month of continuous inundation, resulting in a loss of an estimated 2.27 acres at +8.5 feet City Datum. It is expected that the rookery documented at the North Lake would be entirely lost while the rookery at South Lake would have room to migrate upslope, though there is no assurance that it would. In addition, there is evidence of a rookery on the shore of the East Lake, known as the Mesa rookery, which may be vulnerable but has not been specifically described relative to the elevations anticipated to be affected by the project; however, submitted vegetation mapping indicates 0.0011 acres of eucalyptus in this area below +9 feet City Datum, which could potentially support the rookery along the shoreline. While the eucalyptus trees themselves are non-native, here they support heron and cormorant rookeries, which are considered sensitive due to their communal nature and consistent/repeated nesting use by the animals. Double-crested cormorants are also maintained on CDFW's Watch List, as the species has been previously characterized as a California Species of Special Concern due to historical declines, though populations have improved over recent decades. Ongoing use by both cormorants and herons has been documented in data provided by the San Francisco Bird Observatory for 1997-2023, with tens to even hundreds of cormorant nests (and herons in fewer numbers) being supported at a time. These observations are further reinforced by occurrence reports across databases such as the California Natural Diversity Database and iNaturalist. Under the Coastal Act's ESHA definition, the areas occupied by the rookeries may be readily interpreted to qualify as especially valuable habitat because of this special role in supporting the communal reproductive success of these avian species.

Additionally, permanent inundation of upland vegetation communities would result in losses since they are not anticipated to migrate upslope. Several of the communities in Table 4 below were identified as potential ESHA by the Applicant, with which the Commission concurs, and as discussed above, arroyo willow thickets are being interpreted as lacustrine ESHA rather than wetlands. However, the Applicant did not include several other communities that their model predicts may be affected and could qualify as ESHA following updated mapping pre-construction. These include Himalayan blackberry-rattlebox-edible fig riparian scrub, ice plant mats, poison oak scrub, Vancouver rye grassland, coyote brush shrubland, and yellow bush lupine scrub. The Himalayan blackberry-rattlebox-edible fig riparian scrub, which, as discussed above, is considered ESHA as it provides habitat functions that are acting as a vegetated buffer to a waterbody that supports wildlife and its movement along that waterbody.

Information concerning the ice plant mats surrounding the lake system is presently vague but presumably, some or all of it may occur where substrates support dune-associated species. Poison oak scrub, coyote brush shrubland, and yellow bush lupine scrub are all alliances that include sensitive associations within them, and which could occur here but will be determined during pre-construction surveys. Vancouver rye is a native grass species and what the Applicant describes as Vancouver rye grasslands presumably has a significant native fraction, which would qualify it as ESHA.¹⁶

Therefore, all of these are incorporated into Table 4 below. Other vegetation communities are also mapped within the inundation zone but are unlikely to qualify as ESHA except where they could be interpreted as riparian or lacustrine habitat or support other sensitive resources such as listed species. Beyond the inundation zone, additional ESHA communities such as Hazelnut scrub and California rose briar patches are known to occur though the Applicant predicts these will not be impacted by the increased lake levels.

Thus, this estimate of direct impacts to lakeside vegetation provides an important first step in quantifying the effects of inundation, and that it can be used as a starting point for planning compensatory mitigation. However, the model considers only direct impacts and does not contemplate how an increased water table following lake level increases could affect upland vegetation through root zones, upward shifts, and/or intergrading between the migrating wetland communities. Making specific predictions about such vegetation responses can be difficult because of the many factors and unknowns that could affect vegetation. For example, differences in soil composition, bedrock, variance in specific vegetation types' needs and tolerances, and temporal lags between physical drivers and biological systems all complicate knowing exactly what will transpire. For this reason, taking a conservative approach by planning for the maximum inundation level to be permitted (i.e., +9 feet City Datum), acknowledging that much change that will occur may be unknowable with the information presently available, and providing time for more gradual biological responses to express will be important to allow for a fair assessment of project impacts.

¹⁶ Native grasslands in California have been so severely impacted by a history of development, disturbance, and invasion by non-native species that few pristine examples remain; however, the importance of native grassland species continues to be widely recognized, including by CDFW and the California Native Plant Society. Generally, the threshold for considering grassland stands as native is where 10% or more relative cover is made up of native grass and forb species at any point during the growing season. The Commission has typically followed this guidance as well and considered native grasslands to qualify as ESHA.

2-23-0862 (Vista Grande Drainage Improvements)

Table 4: Vegetation Operational Impacts and Mitigation			
Vegetation Community	Estimated Impact at 9.0 WSE (acres)	Mitigation Ratio	Estimated Mitigation Required (acres)
Arroyo willow thickets (<i>Salix lasiolepis</i> Shrubland Alliance)	8.59	3:1	25.77
California blackberry shrubland alliance (<i>Rubus ursinus</i> Shrubland Alliance)	0.43	3:1	1.29
Choke cherry thickets (<i>Prunus virginiana</i> Provisional Shrubland Alliance)	0.03	3:1	0.09
Coyote brush – seaside wooly sunflower scrub (<i>Baccharis pilularis</i> Shrubland Alliance)	0.01	3:1	0.03
Wax myrtle scrub (<i>Morella californica</i> Shrubland Alliance)	0.01	3:1	0.03
Canyon live oak shrubland (<i>Quercus chrysolepis</i> Shrubland Alliance)	0.01	3:1	0.03
Himalayan blackberry-rattlebox-edible fig riparian scrub (<i>Rubus armeniacus</i> Semi-Natural Shrubland Stands)	0.15	3:1	0.45
Ice plant mats (<i>Mesembryanthemum</i> spp. – <i>Carpobrotus</i> spp. Herbaceous Semi-Natural Alliance)	0.11	3:1	0.33
Poison oak scrub (<i>Toxicodendron diversilobum</i> Shrubland Alliance)	0.05	3:1	0.15
Coyote brush shrubland (<i>Baccharis pilularis</i> Shrubland Alliance)	0.03	3:1	0.09
Vancouver rye grassland (NA - <i>Elymus x vancouverensis</i>)	0.01	3:1	0.03
Yellow bush lupine scrub (<i>Lupinus arboreus</i> Shrubland Alliance, in part)	0.01	3:1	0.03
Total			28.32
Note all impacts are estimates that are subject to change per Special Condition 7.			

Raising lake levels would increase aquatic habitat by approximately 10 acres, which would provide more water column habitat for recreationally fished species. These fish species are primarily non-natives that were introduced to the Lake Merced system for fisheries, including largemouth bass, channel catfish, and common carp. Rainbow trout, which are native to California but not native to Lake Merced, are stocked monthly by CDFW in order to maintain that fishery. Other native fish present in the lake system include Sacramento blackfish, tule perch, and prickly sculpin, the latter two of which are minor components. Other than benefiting fisheries for introduced species and a few native but minor fish species that occur within the system, increasing water levels around the lake is expected to have significant adverse impacts and result in the loss of several different vegetation communities to habitat conversion. The Applicant did not consider the habitat conversion and loss as adverse effects and describes the habitat loss as “self-mitigating” and did not provide mitigation for these losses. They stated that project operation will result in a net ecosystem benefit and that the project’s restoration of historic lake levels is predicted to compensate for the permanent loss of wetlands that could result from construction phase installation of new project infrastructure through the expansion of both open water habitat and herbaceous wetlands. The Applicant did not consider changes to shoreline vegetation in response to higher lake levels to be “impacts” because the project’s operational scenarios will be restoring historic water surface elevation, and by extension, the presumed associated vegetation communities, to Lake Merced.

However, the Commission disagrees with the Applicant’s interpretation of impacts and mitigation requirements because any loss needs to be accounted for and mitigated. Vegetation communities, wetland or otherwise, are typically expected to be mitigated in-kind so as to maintain and improve ecological diversity and resilience across multiple levels (i.e., species, communities, and regions). For the Commission, in-kind does not refer to a general type (e.g., wetland) but rather, a specific community or species-associated resource (e.g., vegetation alliance or affected species habitat needs). In many situations, the substitution of one type or community for another degrades the unique structure, functions, and values that an affected resource provides within and across the landscape. Here, the inundation and homogenization of lake-associated habitats through conversion to more of the already dominant aquatic habitat supporting primarily non-native species and the already dominant California bulrush marsh community comes at a cost to native resources presently composed as a mosaic across the system. In addition, the proposed interpretation of the project as self-mitigating neglects that wetlands and ESHA are treated under separate policies, for which each needs to be mitigated at differing ratios. Thus, substituting for the loss of ESHA with aquatic habitat and wetlands (or vis versa) would be not only out-of-kind, but out-of-policy.

Importantly, the restoration to historic water surface elevations lacks ecological context and leans on a target elevation range without basis other than it once was, or that it would address other non-ecological objectives. Were the project based in ecological restoration, it would necessarily be informed by past ecological condition, but the proposed effort neither considers past condition for the many native lake-associated resources nor contemplates appropriateness of any such expectations given likely future conditions beyond a simple bathtub analysis (i.e., direct effects of inundation). In

a system that has been so heavily manipulated and managed over the past century, it may be unreasonable to expect restoration to a pre-impacted system, but reference to a target condition would be helpful and is simply lacking. Other actions in-line with ecological restoration would include work to limit threats to remaining native and sensitive resources rather than favoring expansion of non-native aquatic communities and passively relying on vegetation to recalibrate under inundation stress with little proactive effort to promote successful reestablishment. Thus, it is challenging to consider the proposed project as restorative in any true ecological sense, and by extension as accomplishing the habitat protection, and mitigation, goals required by the Coastal Act for such habitat types and species.

While Coastal Act Section 30233 allows in limited circumstances fill, diking, or dredging of wetlands, flooding of wetlands does not constitute fill per the definition of fill in Coastal Act Section 30108.2: "Fill means earth or any other substance or material, including pilings placed for the purposes of erecting structures thereon, placed in a submerged area." As such, Section 30233 cannot be used to allow flooding of wetlands via deliberately increased lake levels.

All such development would adversely affect wetland ESHA habitat values, and it is not dependent on the habitat resource, and thus the Coastal Act would direct denial of this project component. Again, as indicated above, the Commission has determined that doing so overall would lead to a conflict with other Coastal Act policies, and that approval is most protective of significant coastal resources in this case (see Conflict Resolution section below). In a conflict resolution approval context, these ESHA impacts are allowable provided they are avoided as much as possible, and provided mitigation is provided for unavoidable impacts.

Lake Merced Conclusion

Coastal Act Section 30231 requires that the productivity of coastal waters necessary for the continuance of healthy populations of marine species be maintained and restored by minimizing wastewater discharges and entrainment and controlling runoff while maintaining natural vegetation buffer areas, including for coastal lakes and wetlands such as Lake Merced. In this case, some limited water quality improvements are expected and, according to the RWQCB, are key elements to improving the water quality in Lake Merced as a whole over the long-term. However, the raising of lake levels would significantly adversely affect several sensitive ecological resources around the lake including those in wetlands and ESHAs, thereby failing to maintain the natural vegetation buffer areas required per Section 30231, and is not allowable per Sections 30233 and 30240. Thus, a conflict of Coastal Act policies exists and must be resolved through Conflict Resolution as presented the section below.

Additionally, the Applicant will need to properly mitigate for the biological resources impacted by the increased lake levels. Therefore, **Special Condition 7** requires the Applicant to prepare an Operational Impacts and Mitigation Plan to monitor and assess operational impacts as well as put forth specific plans for mitigating those impacts in a timely manner. Operational impacts that won't be realized for several years enable a unique situation to introduce an advanced and early mitigation framework, where compensatory mitigation initiated ahead of adverse impacts facilitates reductions in

temporal losses of ecological functions and values, and uncertainties with performance. **Special Condition 7(b)** lays out the framework and **Exhibit 7** explains the approach in more detail. The intent of this framework is to provide an adaptive schedule that meets the Coastal Act's mitigation requirements while also reducing the time lags between mitigation delivery and the impacts such mitigation is intended to compensate for. By adjusting ratios based on the timing of mitigation delivery (meaning when it has met its approved final success criteria), the framework enables flexibility with the Applicant's project timeline, including potential delays in construction schedules, can be adapted for differences in required performance periods, and can adjust for different mitigation strategies and their associated ratios (e.g., habitat creation, restoration, or enhancement). It can also be applied to subparts of the mitigation effort (i.e., if one contiguous area of significant scale is implemented earlier than others, it could be accounted for via a different ratio). In this framework, 'advance mitigation' refers to the completion of mitigation ahead of any project impacts whereas 'early mitigation' refers to when mitigation has been implemented ahead of any project impacts but has not yet achieved the approved final success criteria but assumes it is on-track. Regardless, should the observed final impacts exceed those anticipated by the Applicant (articulated above, based on the direct impact estimates and 2011 mapping) by more than 20%, a revised or supplemental mitigation plan would be prepared and submitted for Commission review and approval via a permit amendment.

F. Habitat Resources – Dunes and Scrub

Applicable Coastal Act Provisions

The Coastal Act protects coastal dune and scrub habitats, where such areas typically constitute ESHA. The Coastal Act states:

30107.5. *“Environmentally sensitive area” means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

30240. *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The primary proposed tunnel construction area would take place in dunes on the blufftop at Fort Funston in the City of San Francisco (see **Exhibit 1**). On this point, the City of San Francisco LCP objective for Fort Funston is to “conserve the natural cliff environment along Fort Funston” (Objective 9), including to “Maximize the natural qualities of Fort Funston [and] Conserve the ecology of entire Fort and develop recreational uses which will have only minimal effect on the natural environment” (Policy 9.1)

Additionally, the Applicant also proposes construction access to the beach through

Avalon Canyon in Daly City (south of Fort Funston), and the Daly City LCP states that Avalon Canyon (referred to in the LCP as Daisaku Ikeda Canyon) is an area with sensitive habitat and requires that canyon resources be protected, stating:

Recreation Policy 4: *Development plans for Mussel Rock Park and Daisaku Ikeda Canyon shall incorporate the following: a) Protection measures for all existing or potential resources, including significant plant and animal habitats and historical and archaeological sites;... c) Minimal formal improvements and other physical modifications to reflect a low intensity of use in Daisaku Ikeda Canyon... (page 38)*

Habitat Area Policy 2: *The development and use of Mussel Rock Park, Daisaku Ikeda Canyon, and Thornton State Beach shall include measures to protect and mitigate impacts on existing plant and animal communities. Designated sensitive habitat areas shall include measures to protect and mitigate impacts on existing plant and animal communities. Designated sensitive habitat areas shall be limited to uses dependent on or compatible with such resources.... Buffer areas, to be at least ten feet wide, shall be established and maintained between the canyons and the recreational areas to isolate these sensitive areas. (page 40)*

Coastal Act Consistency Analysis

Avalon Canyon Coastal Scrub

Avalon Canyon is located in the City of Daly City, north of Mussel Rock and south of the project location at Fort Funston. In 1998, El Nino winter storms produced severe wave action, surface erosion and ground saturation from runoff, and caused the rupture of a major storm drainage discharge pipe in Avalon Canyon. In February 1998, the rupture of the 30-inch diameter pipe, designed to carry 80 cubic feet of water per second, undercut the slopes at the canyon head. Approximately 150,000 cubic yards of soil eroded from the canyon into the ocean, causing a landslide that forced the evacuation of nine residences on Avalon Drive and removed a portion of the street. The landslides threatened properties adjacent to the canyon and destroyed the surface drainage system and service road.

Ultimately the Governor declared Avalon Canyon a State emergency area, and the City undertook work to repair the pipe and road, remove a church, stabilize the slope, construct a temporary access road, install drainage pipes and storm drains, replace sediment control basins, and to install new surface drainage. The Commission authorized the work through its federal consistency authorities in 1999 (via a no effects determination (see **Appendix A**)). Ultimately, however, the City also installed approximately 250 linear feet of rip rap that was not included in the Commission's no effects determination, and that rip rap never was authorized through federal consistency or a CDP. As a result, the rip rap is unpermitted.

The Avalon Canyon area currently includes a partially paved (and basically unused and

damaged) access road area surrounded by coastal scrub habitat,¹⁷ a transitional area between upland and beach zones of coastal dune scrub where the rip rap is located, and the beach from the end of the access road north to the ocean outlet. Habitat identified in this area includes non-native forest, coastal dune scrub, and coastal scrub.¹⁸ The Applicant proposes to use the Avalon Canyon access road as the project's main access to the beach and outlet work, where the road would be modified to accommodate acceptable slopes and curvature for the equipment to be used. Where the road has completely washed out nearest the beach, the Applicant intends to cover the existing revetment with soil to allow equipment to travel on top of it and to/from the beach.

Avalon Canyon is identified as ESHA because of the nature and variety of plant and animal life present. Based on surveys and information submitted by the Applicant's consultant, ESA, the coastal scrub was identified as *Baccharis pilularis* Shrubland Alliance, also known as Coyote brush scrub, and later refined to recognize the presence of the *Baccharis pilularis-Eriophyllum staechadifolium* Association, referred to as coyote brush-seaside wooly sunflower scrub, within the proposed disturbance area. The impacts to this coastal scrub along Avalon Canyon would result in 0.1029 acres of permanent impacts. Upon completion of the road repairs and use of the access road, the Applicant indicates in their proposed Mitigation Approach Plan that the construction area would be hydroseeded with a native coastal scrub mix onsite resulting in 0.091 acres restoration in the project footprint and the additional creation or substantial restoration of 0.218 acres elsewhere within Avalon Canyon, as indicated in Table 5.

Vegetation Community	Impact (acres)	Mitigation Ratio	Total Mitigation Required (acres)
Coyote brush – seaside wooly sunflower scrub (<i>Baccharis pilularis</i> Shrubland Alliance)	0.1029 (P)	3:1	0.3087
Total			0.3087

Note: P = Permanent Impacts; LTT = Long-term temporary impacts; STT = Short-term temporary

There is an alternative that can allow construction access to the ocean outlet area without the ESHA impacts identified at Avalon Canyon. Instead of Avalon Canyon, **Special Condition 3** indicates that construction access to the ocean outlet can be achieved via the beach access at Ocean Beach through the Sloat Avenue entrance. In addition to avoiding ESHA, access through this entrance results in a shorter lateral distance to traverse across sandy beach area than via Avalon Canyon, where the distance from Avalon Canyon to the ocean outlet is approximately 2.5 miles and Sloat to

¹⁷ The access road was originally constructed in 1999 as part of the storm damage repairs conducted part of the no effects determination, but since has been effected by landslides and erosion which has undermined a bend in the road.

¹⁸ Vista Grande Drainage Basin Improvement Project EIR published September 8, 2017.

the ocean outlet is approximately 1.4 miles. While some areas of the beach may be challenging during high tides from the Sloat entrance, beach construction access is inherently bound to the tides and beach condition and, therefore, no matter which access the Applicant would use, the ocean outlet would and should only be accessible during low tides regardless, in order to assure protections of coastal waters. Lastly, by utilizing the access point at Sloat Avenue, the Applicant would not be relying on the unpermitted revetment to access the project site. Therefore, Ocean Beach construction access is the least environmentally damaging option, and Avalon Canyon access is not necessary if such access can be used.

However, the Applicant has raised concerns regarding limiting construction access to just Ocean Beach, suggesting that tidal conditions, future sea level rise, and other projects occurring around Sloat (i.e., SFPUC's armoring project south of Sloat Boulevard in that area)¹⁹ could lead to access issues for construction and maintenance of the ocean outlet. While the Coastal Act requires the above-described ESHA impacts to be avoided, the Commission also recognizes the Applicant's concerns, and the fact that this project is a conflict resolution approval, as described above. In a conflict resolution approval context, these ESHA and related impacts are allowable provided they are avoided as much as possible, and provided mitigation is provided for unavoidable impacts.

Therefore, **Special Condition 3(c)** adds flexibility for the Applicant for access purposes, if they can demonstrate to the satisfaction of the Executive Director that sole reliance on the Sloat Boulevard-area access at Ocean Beach will substantially delay project construction, then Avalon Canyon construction access would be allowed for the period of time that is necessary to offset such potential delays. If the Avalon Canyon construction access is used, the Permittee is also required to mitigate associated ESHA impacts (i.e., 0.3087 acres of Coyote brush and seaside wooly sunflower scrub) as required under **Special Condition 6** and is also required to remove all riprap at the Avalon Canyon access and restore such area to natural bluff/beach conditions following completion of construction.²⁰

Fort Funston Dunes

The proposed Fort Funston staging and work area would occupy approximately 4 acres of dunes north and east of the main Fort Funston public access parking lot. These four acres include central dune scrub, which was observed to host the special-status plant San Francisco Spine follower (California rare plant rank 1B.2) and Central dune scrub has the state ranking as imperiled (S2.2). Surveys done in 2021 identified that the central dune scrub could be further classified as *Lupinus chamissonis* – *Ericameria ericoides* shrubland alliance, or silver dune lupine – mock heather scrub, which is identified by CDFW as a sensitive natural community (S3). Thus, these areas supporting sensitive vegetation species and communities readily qualify as ESHA and

¹⁹ CDP Application Number 2-21-0912, also scheduled to be heard by the Commission at the Commission's June 2024 meeting in Morro Bay.

²⁰ As a violation, the City is already required to remove all such rip rap and to restore the area, but this condition makes it a requirement of this CDP as well.

warrant protections under Coastal Act Section 30240.

The Applicant indicates in its Mitigation Approach Plan that it will mitigate 1.926 acres of such habitat onsite. In the same location, however, 2.260 acres of disturbed dune scrub (ice plant mats) were identified in the EIR, and 0.2438 acres of sand dunes were characterized as developed areas. The Commission has a long history of recognizing dunes as ESHA categorically, independent of the presence of sensitive species or vegetation communities and even where heavily impacted, in large part due to their limited distribution that is further constrained by environmental factors to the westernmost edges of the coast, the many highly adapted species that are associated with them, and the ability to meaningfully restore those areas that remain where appropriate substrate and the characteristic climate conditions occur.²¹ Here, these impacted dunes occur directly adjacent to the areas of native vegetation and are part of a much larger dune system perched on the bluffs and across Fort Funston, making them (and their potential enhancement/restoration) particularly meaningful. Though ice plant may dominate some areas, and others may be affected by the wear of recreation footpaths and trails, this does not preclude potential San Francisco spineflower occurrences or the presence of other native dune vegetation, nor detract from their ecological value or potential, or recognition as ESHA. Table 6 shows that the prescribed mitigation ratios and final estimated mitigation requirements (i.e., the total amount of dune ESHA impacted by the staging and tunnel construction area in Fort Funston that needs to be mitigated in a conflict resolution approval) is 13.29 acres.

Vegetation Community	Impact (acres)	Mitigation Ratio	Total Mitigation Required (acres)
Silver dune lupine – mock heather scrub (<i>Lupinus chamissonis</i> - <i>Ericameria ericoides</i> Shrubland Alliance)	1.9262 (P)	3:1	5.7786
Ice plant mats (<i>Mesembryanthemum</i> spp. – <i>Carpobrotus</i> spp. Herbaceous Semi-Natural Alliance)	2.2604 (P)	3:1	6.7812
Developed sand dune	0.2438 (P)	3:1	0.7314
Total			13.2912
Note: P = Permanent Impacts; LTT = Long-term temporary impacts; STT = Short-term temporary			

²¹ For example, see California American Water Company (CDP Appeal A-3-MRA-19-0034 and CDP 9-20-0603), CEMEX Sand Mining (Consent Cease and Desist Order CCC-17-CD-02), City of Malibu (LCP Amendment 1-07, Malibu Bay Company), City of Oxnard (LCP Amendment 1-05, Oxnard Shores), Fort Ord Dunes State Park (CDP 3-14-1613), Monterey Bay Aquarium Research Institute (CDP Appeal A-3-MCO-17-0068), and Oceano Dunes State Vehicular Riding Area (Permit Review [2021] for CDP 4-82-300).

Additionally, ice plant mats were surveyed at two other locations in the larger project site that will have construction impacts: at the ocean outlet and at the canal (see Table 4 for canal ice plant impacts). The ocean outlet construction has a long-term temporary impact on ice plant mats, as seen in Table 7 below. These ice plant mats are also considered ESHA, much like those elsewhere at Fort Funston, due to their occurrence within what would be recognized as part of a larger perched dune system.²² The Applicant indicated that 0.030 acres of such area would be mitigated at the Fort Funston dune mitigation area and the remaining 0.060 would be mitigated onsite.

Vegetation Community	Type	Impact (acres)	Mitigation Ratio	Total Mitigation Required (acres)
Ice plant mats	ESHA	0.0596 (LTT)	1.5:1	0.0894
Total				0.0894

Note: P = Permanent Impacts; LTT = Long-term temporary impacts; STT = Short-term temporary

Again, and as discussed above, Coastal Act Section 30240 does not allow development in ESHA unless it is resource dependent. In this case, the development is not dependent on the dune ESHA, and instead would be permanently impacting the dune ESHA at Fort Funston. While the Applicant is proposing to mitigate the impacts by restoring dunes within Fort Funston, 30240 would not allow this work regardless and such an impact would dictate denial of the aspect of the project.

The Applicant and the Commission considered alternatives to identify options that would avoid conflict with Coastal Act policies, but none were appropriate primarily because the work and staging area is limited by the location of the tunnel alignment. The work being done in this site consists of excavating the old tunnel, installing the new tunnel lining, installing the new effluent pipes, and hosting personnel to do so, where access to the tunnel from above is required. This area is limited, as seen in **Exhibit 2**.

1, and the only other viable locations for this work area are the Fort Funston parking lot and other dune habitat areas. The City and NPS reviewed alternative construction work areas to the south and east and found a higher level of special-status plant species presence than in the location of the proposed construction work area. As a result, NPS requested the work area be limited to the southern-most point where it is currently proposed. NPS also expressed a firm need to avoid visitor access disturbances, including to the entrance road, public access parking area, and highly used areas (such as trails, and areas commonly used by dog walkers). If the work area was to be in the Fort Funston parking lot, access to the park would be eliminated for an estimated 17 to 36 months. This closure would conflict with Coastal Act public access policies, which require that access must be maximized and provided. Additionally, closure of the Fort Funston parking lot would be inconsistent with the NPS's policies that state that impacts to a park cannot be inconsistent with a park's purpose, interfere with programs, activities, or uses. By closing the Fort Funston Parking lot potentially for years, visitor access would be substantially restricted and therefore unacceptable to NPS. Thus,

²² Ibid (Commission dune cases).

there is not an acceptable alternative location for such work.

Accordingly, **Special Condition 3** requires that the Fort Funston work area be minimized as much as possible in a revised final plan. This would eliminate some of the impacts to the dunes by requiring that items not essential to tunnel construction activities (such as shop facilities and office trailers and parking) be stored elsewhere, however this does not eliminate the ESHA impacts entirely. Thus, this project component raises conflict with Coastal Act policies that result in denial of this project component, which is further explored in the below Conflict Resolution section.

The total amount of dune ESHA impacted from the staging and work area in Fort Funston that needs to be mitigated is 13.2912 acres, and 4.218 acres of mitigation is additionally proposed at the same Fort Funston site for the impacts to degraded dunes and areas supporting dune-associated species despite being covered by ice plant at the ocean outlet and along the canal. The Applicant is proposing that the Fort Funston dune mitigation area will be identified and coordinated with NPS. However, given **Special Condition 3** requires that the Fort Funston work area be minimized as much as possible, this acreage may be reduced depending on the area of dunes that can be avoided in revised final plans.

Additionally, as stated previously, pre- and post-construction surveys must be completed as part of **Special Condition 6** and by applying the mitigation framework described therein to the final impact acreages, the required ratios ensure that all adverse impacts are adequately mitigated for while accommodating present uncertainty. Additionally, all mitigation will be monitored and adapted accordingly per **Special Condition 6** and the Mitigation Approach Plan provided.

Lastly, the construction work at Fort Funston is proposed to be 24-hour work with some lighting and construction noise. Nighttime lighting would be directed downward and only towards the construction area; would use yellow, orange, or other warm colored lighting; and would be avoided as much as possible during nesting season (January 1 – August 15) and bat maternity roosting season (April 15 – August 31); and shall be used where feasible.

Overall, dune ESHA impacts have been avoided where possible, revisions within the final plans will further minimize their potential, and all remaining impacts documented will be mitigated appropriately where unavoidable.

G. Coastal Hazards

Applicable Coastal Act Provisions

The Coastal Act is, at its core, a law that requires coastal resource protection. In adopting the Act in 1976, the State Legislature included a series of goals and objectives. For example, Coastal Act Sections 30001 and 30001.5 state:

Section 30001. *The Legislature hereby finds and declares: (a) That the California coastal zone is a distinct and valuable natural resource of vital and enduring interest to all the people and exists as a delicately balanced ecosystem. (b) That the permanent protection of the state's natural and scenic resources is a*

paramount concern to present and future residents of the state and nation. (c) That to promote the public safety, health, and welfare, and to protect public and private property, wildlife, marine fisheries, and other ocean resources, and the natural environment, it is necessary to protect the ecological balance of the coastal zone and prevent its deterioration and destruction. (d) That existing developed uses, and future developments that are carefully planned and developed consistent with the policies of this division, are essential to the economic and social well-being of the people of this state and especially to working persons employed within the coastal zone.

Section 30001.5. *The Legislature further finds and declares that the basic goals of the state for the coastal zone are to: (a) Protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources. (b) Assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state. (c) Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners. (d) Assure priority for coastal-dependent and coastal-related development over other development on the coast. (e) Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone. (f) Anticipate, assess, plan for, and, to the extent feasible, avoid, minimize, and mitigate the adverse environmental and economic effects of sea level rise within the coastal zone.*

In short, the law recognizes the coastal zone as a special place, where coastal resources are of “paramount concern”, and requires that it both be protected against degradation, and enhanced where feasible. To implement these objectives, Chapter 3 of the Coastal Act includes a series of specific provisions that clearly and emphatically require the protection of coastal resources, from public recreational access to coastal habitats to public views and landforms.²³ And, perhaps just as clearly, and as explained in detail subsequently, armoring generally has significant adverse impacts on the coastal resources protected by Chapter 3 of the Coastal Act, leading to unavoidable impacts on natural landforms, public recreational access, natural processes (which also significantly impacts public recreational access) and public views.²⁴ These impacts are all inconsistent with the Coastal Act’s resource protection requirements, and consequently, the Coastal Act generally directs that armoring be denied in order to meet

²³ See, for example, more than 40 sections nested in Chapter 3, including sections related to public access, recreation, the marine environment, and land resources.

²⁴ See, for example, Commission findings in LCP amendments LCP-3-SCO-20-0066-2 (Santa Cruz County Hazards Update) and LCP-3-MRB-21-0047-1 (Morro Bay Land Use Plan Update), and in CDPs A-3-SCO-07-095/3-07-019 3-07-019 (Pleasure Point Seawall), 3-09-025 (Pebble Beach Company Beach Club Seawall), 3-09-042 (O’Neill Seawall), 2-10-039 (Lands End Seawall), 3-14-0488 (Iceplant LLC Seawall), 3-16-0345 (Honjo Armoring), 3-16-0446 (Rockview Seawall), 2-17-0702 (Sharp Park Golf Course), 3-18-0720 (Candau Armoring), 3-20-0166 (Wavefarer Partners LLC Armoring), and 3-22-0440 (Casanova Armoring).

these coastal resource protection requirements. In other words, the Coastal Act generally prohibits armoring except under very limited circumstances, and this general prohibition is echoed by Coastal Act Section 30253, which makes it clear that all development, including armoring, is not to be approved if it will cause erosion or destruction of the site, or substantially alter natural landforms,²⁵ which past cases have shown is predominately the case with armoring.²⁶

In fact, as contrasted with the numerous Coastal Act resource protection provisions, both broad and specific, there is only one Coastal Act section that specifically allows armoring, Section 30235, and it includes important – and severely limiting – criteria. Section 30235 states, in applicable part:

Section 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.*

...

Section 30235 requires the Commission to approve armoring under very limited circumstances, namely when required to serve coastal-dependent uses or to protect public beaches or existing structures in danger from erosion, and only when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. In other words, when there are qualifying uses, beaches, or structures,²⁷ armoring must be allowed only if it is required to serve/protect them, meaning when there are no other less environmentally damaging feasible alternatives that can perform that same function. Put differently, given that armoring has significant adverse impacts on a variety of protected coastal resources and is only required to be approved in very limited circumstances, implementation of the Coastal Act's resource protection policies generally requires denial of proposals for armoring.²⁸ When framed in this way, Section 30235's limited

²⁵ Section 30253 states, in applicable part, that "New development shall...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" (emphasis added).

²⁶ See above.

²⁷ Two of the three qualifying uses are based on protecting important State shoreline priorities (coastal-dependent uses and public beaches). Importantly, armoring rarely protects beaches; rather, armoring typically leads to the incremental loss of beaches. In fact, when public beaches are in danger of erosion, such danger is typically exacerbated by armoring as opposed to protected by it because armoring typically not only occupies beach and shoreline space that would otherwise be available to public recreational uses, but it also inhibits the transmittal of beach-generating materials from bluffs, and typically leads to loss of beaches over time as an eroding shoreline bumps up against such armoring (also referred to as the 'coastal squeeze' or passive erosion). Thus, bracketing groins in certain circumstances, armoring is typically not a viable/fruitful response to protect a public beach in danger from erosion. Finally, past these two important State shoreline priorities, the only other development allowed armoring by Section 30235 are existing structures, including private structures (e.g., residences) and in certain cases public coastal pathways.

²⁸ In very rare circumstances, a project may include shoreline armoring and the overall project may still be consistent with Coastal Act, and the Commission may not need to invoke Section 30235.

requirement to approve shoreline armoring is probably best understood as an exception with respect to the Coastal Act's coastal resource protection provisions, or put another way, an 'override' of the other Coastal Act sections found in Chapter 3 that would require the Commission to otherwise deny the project.

The purpose and structure of the Coastal Act support such an interpretation as well, as reflected in numerous policies of the Act. For example, not only does Section 30009 require a liberal interpretation to protect shoreline and beach resources,²⁹ but Section 30007.5 also directs the Commission to resolve conflicts in a manner that is "most protective of significant coastal resources."³⁰ And Courts have relied on Section 30009 to find that exceptions to the Act's requirements must be read narrowly.³¹ Accordingly, the courts have upheld that the Coastal Act's requirements are to be implemented so as to be most protective of coastal resources, and this methodology applies to the limitations on allowable armoring including in light of the discernible adverse coastal resources impacts associated with such armoring.³²

On these points, the City of San Francisco LCP objective for Fort Funston is to "conserve the natural cliff environment along Fort Funston" (Objective 9), including to "Maximize the natural qualities of Fort Funston [and] Conserve the ecology of entire Fort and develop recreational uses which will have only minimal effect on the natural environment" (Policy 9.1). The areas further south that could be impacted by construction access via Avalon Canyon, the Daly City LCP notes that:

The entire 2+ mile stretch of sea cliffs in the coastal zone presents major physical hazards affecting public safety and access. The principal physical hazards present are the result of erosion and landslides. The net effect of these processes is a retreating cliff line and unstable bluffs... The possibilities of constructing slope stabilizing structures using a variety of techniques have been suggested. The implications of this type of bluff stabilization are that it would be prohibitively expensive to build and effectively maintain, and would provide a limited level of public safety. The most effective means of enhancing bluff stabilization would be the protection and addition of native vegetative ground covers.

And the Daly City LCP also directly cites and incorporates Coastal Act Sections 30253 and 30235, and the LCP's Hazard Area Goals (Numbers 2 and 3): "Encourage use of the coastal zone only where hazards do not create risks to public safety; mitigate and

²⁹ Section 30009 requires that: "This division [i.e., the Coastal Act] shall be liberally construed to accomplish its purposes and objectives."

³⁰ Section 30007.5 states, in applicable part: "The Legislature further finds and recognizes that conflicts may occur between one or more policies of the division. The Legislature therefore declares that in carrying out the provisions of this division such conflicts be resolved in a manner which on balance is the most protective of significant coastal resources."

³¹ See, for example, *Citizens for a Better Eureka v. California Coastal Com.* (2011) 196 Cal.App.4th 1577, 1586-87 ("[i]n light of the legislative directive to construe the Act liberally...it is appropriate to construe the exceptions narrowly", quoting *Capon v. Monopoly Game LLC* (2011) 193 Cal.App.4th 344, 355).

³² *Ibid.*

warn of hazards where public safety and uncontrolled public use is a problem; and Where possible, eliminate all artificially-induced physical hazards.”

Coastal Act Consistency Analysis

As indicated above, Coastal Act Section 30235 is an override over other Coastal Act provisions that allows armoring if required to serve a coastal-dependent use or to protect an existing structure in danger from erosion (as applicable to this proposed project) subject to the requirement that adverse impacts to local shoreline sand supply are mitigated or eliminated. The Coastal Act provides for these limitations because shoreline armoring 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.³³

Thus, the applicable questions here under Coastal Act Section 30235 are whether: (1) there is an existing structure and/or a coastal-dependent use; (2) that existing structure is in danger from erosion and/or that coastal-dependent use needs to be served; (3) shoreline-altering construction is required to protect that existing endangered structure and/or to serve that coastal-dependent use; and (4) the required protection is designed to eliminate or mitigate its adverse impacts on shoreline sand supply.³⁴ The first three criteria relate to whether the proposed armoring is necessary, while the fourth criterion applies to mitigating some of the impacts from the proposed armoring if it is deemed necessary.

Existing Structure or Coastal Dependent Use

The issue of what constitutes an “existing structure” for Section 30235 purposes has been debated for many years, where some, including some local governments in their LCP implementation, have argued at times that it means whether a structure is simply ‘extant’ at the time of armoring application. Another interpretation is that the Legislature intended the word to mean exactly what it meant at the time when the Legislature chose to use the word. In other words, in enacting the statute in 1976, the Legislature included the word “existing” in the natural sense, to mean existing at that time.

This controversy over these competing interpretations did not fully arise until roughly the early 2000s. This is likely due, in large part, to the fact that, prior to then, the only structures for which the distinction would be relevant (those built along the shoreline after 1976) were relatively new, and the parties who had secured permits to construct them had had to demonstrate that they would be safe without requiring armoring. Thus, even if that showing would eventually prove to have been mistaken, coastal erosion had not yet progressed far enough for that error to have become significantly evident and problematic. Since the early 2000s, as the issue has become increasingly contentious, and with few exceptions, the Commission has not found that a structure built after 1977

³³ Ibid.

³⁴ CDP approval also requires that projects be found consistent with other Coastal Act provisions that independently protect coastal resources in addition to these Section 30235 requirements. The discussion in this Coastal Hazards analysis speaks to consistency with Section 30235, but overlapping and distinct discussions regarding consistency with other Coastal Act provisions are covered separately below.

qualifies as an “existing structure” for purposes of Section 30235. Rather, it has been increasingly consistent in finding that “existing structures” as the phrase is used in Section 30235 refers to structures that were legally in existence as of January 1, 1977, the effective date of the Coastal Act.

The interpretation that ‘existing’ means ‘extant’ fails for other reasons as well. For example, Section 30253, the only other Coastal Act section that explicitly refers to armoring, prohibits new development that would “in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.” Thus, development approved since the Act’s effective date is not allowed such armoring³⁵ that leads to substantial natural shoreline landform alteration (which, in the case of shoreline armoring, is essentially all armoring cases)³⁶ pursuant to Section 30253. If Section 30235’s ‘existing’ meant ‘extant’ at the time of an application, then it would require approval of armoring that Section 30253 prohibits, and the two cannot readily be harmonized.

More appropriately, the application of Section 30253 since 1977 creates two types of development under the Coastal Act: pre-Coastal Act development that may not have been built to meet Section 30253 requirements to avoid armoring, and post-Coastal Act development that has (including because it is required by Section 30253). Put another way, the Section 30235 requirement to allow for armoring regardless of its coastal resource impacts or its inconsistencies with other Coastal Act resource protective provisions is intended to only apply to pre-Coastal Act development, and not anything else, essentially ‘grandfathering’ pre-Coastal Act structures and allowing them armoring as an exception to the otherwise applicable Coastal Act requirements.³⁷ In addition,

³⁵ It is noted that some have argued that the use of the term “require the construction of” in Section 30253 means that Sections 30253’s provisions in that sense only apply prospectively to the future construction of armoring, and do not extend to armoring that may exist at the time that proposed development is being pursued, and thus that such proposed development can rely on such armoring notwithstanding it may lead to the types of prohibited impacts. However, such an interpretation completely ignores the qualifying language that proceeds such text, which states that the development cannot “in any way” require armoring construction. Proposed development attempting to rely on existing armoring is still dependent on that armoring having been constructed, which falls under the rubric of “in any way” requiring the construction of armoring to protect it. That such construction may have been constructed before the proposed development is being considered is immaterial to Section 30253’s application for that reason (and such conclusion is bolstered by the Section 30009 requirement to liberally construe the Act to protect coastal resources). In addition, if new development relies on armoring that is already present, it will also have to rely on the continued upkeep, expansion, or eventual rebuilding of that armoring. If the armoring needs to be expanded or rebuilt, then the new development would be relying on the construction of new armoring, in violation of Section 30253.

³⁶ *Ibid.*

³⁷ As described in the Commission’s 2015 Sea Level Rise Policy Guidance, the Commission interprets the term “existing structures” in Section 30235 as meaning structures that were in existence on January 1, 1977, the effective date of the Coastal Act, and that have not been redeveloped since in a way that would require them to be reevaluated against the Coastal Act/LCPs as if new. 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 extensive 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

such pre-Coastal Act structures lose their ‘existing’ status under Section 30235 if they are modified in such a way that they are no longer the same structure, but rather a replacement structure (often referred to by the Commission as a ‘redeveloped’ structure).³⁸

In short, the Coastal Act reflects a broad legislative intent to allow armoring under certain very limited circumstances generally only for structures that existed when the Coastal Act was adopted and when such structures are in danger from erosion (Section 30235), but to prohibit armoring for new development constructed after adoption of the Act (Section 30253). This interpretation to allow protection only for certain structures that predate the Coastal Act is also supported by the Commission’s duty to protect public trust resources, and the Coastal Act requirement that the Act “shall be liberally construed to accomplish its purposes and objectives” (Section 30009, previously described), where, as described, the Act on this point protects these natural shoreline and beach resources and only allows for armoring as an exception – or, put another way, as an override – under extremely narrow circumstances and criteria.

Furthermore, Section 30270 requires the Commission to “take into account the effects of sea level rise in coastal resources planning and management policies and activities in order to identify, assess, and, to the extent feasible, avoid and mitigate the adverse effects of sea level rise;” and recognizing the inevitability of ever increasing impacts from armoring in an era of sea level rise underlines the importance of limiting the circumstances under which armoring can be approved. Thus, the only types of structures that qualify as ‘existing structures’ allowed armoring under Section 30235 are those that existed before January 1, 1977 and have not been redeveloped since.

In this case, the proposed shoreline armoring at the ocean outlet, which includes almost 200 feet of 12-foot high seawalls, riprap, and a concrete apron, are intended to protect

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 does not allow shoreline altering armoring development to support same. This interpretation, which narrowly allows 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.

³⁸ Coastal Act Section 30610(d) and Title 14 of California Code of Regulations (CCR) Section 13252(b) help define when structures meet or don’t meet the redevelopment threshold. CCR Section 13252(b) specifically states that replacement of 50% or more of a structure, including single-family residences, is not repair and maintenance under Coastal Act Section 30610(d) but instead constitutes a replacement structure that must be evaluated for Coastal Act compliance purposes. In applying Section 13252(b)’s 50% criteria, the Commission has, in the past, found that a structure will be considered a replacement structure (also referred to as redevelopment) if at least one of the following takes place: 1) 50% or more of the major structural components (i.e., including exterior walls, floor, roof structure, or foundation, where alterations are not additive between individual structural components) are altered; 2) there is a 50% or more increase in gross floor area; 3) alteration of less than 50% of a major structural component results in cumulative alterations exceeding 50% or more of that major structural component (taking into account previous replacement work undertaken since January 1, 1977); and 4) a less than a 50% increase in floor area where the alteration would result in a cumulative addition of 50% or more of the floor area, taking into account previous additions to the structure since January 1, 1977 (see, for example, LCP amendments LCP-2-MAR-13-0224-1 Part A and LCP-3-MRB-21-0047-1, and CDP 3-16-0345 (Honjo armoring)).

the replacement tunnel and related replacement infrastructure to connect Lake Merced and the Vista Grande canal to the ocean. While the current iteration of the tunnel was built in the 1950s, the project proposes to demolish this “existing” tunnel and construct a new tunnel in approximately the same, but expanded, footprint. Thus, under Coastal Act Section 30235, this new tunnel would not be considered an “existing” structure.

In addition, the Applicant argues that the ocean outlet is a coastal-dependent use and therefore allowed armoring. However, the ocean outlet is not a coastal-dependent use as the Coastal Act defines such development to be a use which requires a site on, or adjacent to, the sea to be able to function at all. Stormwater and wastewater outlets do not require a site on or adjacent to the sea to be able to function at all, where such conclusion is evidenced by the fact that such infrastructure exists in a variety of other places throughout the state.

This project therefore fails the first “existing structure or coastal dependent use” test for shoreline armoring to be approved under Section 30235. As a result, the armoring proposed does not qualify to use the Section 30235 “override”, and because it has significant adverse coastal resource impacts that are inconsistent with a myriad of other Coastal Act provisions,³⁹ the Coastal Act directs denial of the proposed project.

Danger from Erosion

The second 30235 test is whether the existing structure is in danger from erosion or whether the coastal-dependent use would be served by the proposed project. The Coastal Act allows shoreline armoring to be installed to serve coastal-dependent uses and to protect existing structures 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. These risks can be exacerbated by such factors as sea level rise and localized geography. 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 is allowed shoreline armoring per 30235. Lacking a more concise Coastal Act definition, the Commission has in the past evaluated the immediacy of any threat in order to decide whether an existing structure is “in danger” for the purposes of 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 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 armoring” alternative).⁴⁰

There is evidence that the outlet location of the proposed tunnel is in danger from erosion, both historically and into the immediate future. As noted previously, the bluffs

³⁹ Ibid (Commission armoring deliberation cases)

⁴⁰ 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), 2-17-0702 (Sharp Park Golf Course) 3-18-0720 (Candau Armoring), 3-20-0166 (Wavefarer Partners LLC Armoring), 3-22-0440 (Casanova Armoring), and 3-22-1027 (Hofmann Seawall).

through which the existing tunnel was constructed have eroded approximately 80 feet since the last major tunnel reconstruction episode in the 1950s, as evidenced by the fact that the existing outlet structure and tunnel protrude over 80 feet across the beach from the base of the bluff. This has required multiple efforts by the Applicant to repair and maintain the existing tunnel as the bluff erodes and the tunnel becomes undermined and exposed to more and more direct wave action. Project consultants hired by the Applicant, Moffatt & Nichol, determined that bluff retreat at the site has occurred through episodic landslides influenced by marine processes (i.e., wave attack at the base of the bluff), and originally estimated average annualized bluff retreat rates of 0.5 to 1 foot per year as derived from aerial photo interpretation spanning 1938 through 2012, with an average annualized bluff retreat rate of up to 3 feet per year, and evidence of much larger episodic retreat events from time to time. Moffatt & Nichol ultimately updated their average annualized erosion rate estimates to 2.5 feet per year in 2020^{41,42} to account for the OPC sea level rise updates in the time since their original estimates (which were from 2013 and 2017).

According to the Applicant's analysis, which was conducted in 2019 based on Moffatt & Nichol reports from 2013 and 2017, if the existing outlet structure were to be left in place as-is, in the absence of shoreline armoring, the bluff in the project area would erode up to 87 feet by 2050 and 249 feet by 2100. With seawalls, the Applicant projects that the outlet would be exposed and has the potential to be undermined as the bluff erodes, which would lead to necessary repairs and/or replacement. With the proposed seawalls, which reduce the anticipated erosion rate for the immediate outlet area, the Applicant estimates little to no erosion by 2050 and up to 21 feet of erosion by 2100. However, even with the proposed armoring, erosion would continue on either side of the seawalls, creating a promontory headland at the location of the seawalls, which would take up sandy beach space and hinder public access over time, as further discussed in the public access section below. The Applicant estimates that, without seawalls, the first repairs would be needed about 10 years from initial construction of the new outlet, and with seawalls in approximately 30 years. Therefore, while the structure may face long term risk from bluff erosion, it is not immediately in danger from erosion and faces the type of longer term risks that any development on the coast experiences. Further, the structure will need repairs regardless of the presence of seawalls.

Put another way, and as with any such infrastructure at the beach/bluff interface here, such infrastructure would be at danger from erosion, but not within the next two to three years. Therefore, the project also fails the second Section 30235 first test, and is thus ineligible to make use of the Section 30235 override for that reason alone.

Feasible Protection Alternatives

The third Section 30235 test that the project must meet is that the proposed armoring must be "required" to protect the existing structures in danger from erosion. In other words, Section 30235 is structured that the third test is met if shoreline armoring is the

⁴¹ "Assessment of beach sand replenishment volume," Moffatt & Nichol, dated February 11, 2020.

⁴² "Evaluation of Coastal Components" report, Moffatt & Nichol, dated May 2020.

only feasible⁴³ alternative capable of protecting the existing endangered structures or serving the coastal-dependent uses. When read in tandem with other applicable Coastal Act provisions cited in these findings, the Commission has in the past conceptualized this Coastal Act Section 30235 evaluation as a search for the least environmentally damaging feasible alternative that can serve to protect existing endangered structures or to serve the coastal-dependent uses. 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 underpinnings, drainage and vegetation measures, and various combinations of these options. 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 structure in question.

The Applicant prepared an alternatives analysis for the proposed project as part of its Environmental Impact Report/Environmental Impact Statement (EIR/EIS) in addition to further analysis of alternatives prepared during the Commission’s CDP filing process. Each of the relevant alternatives evaluated are discussed briefly below.

No Project

In a “no project” alternative, no physical component of the proposed project would be constructed and none of the proposed operational changes to stormwater routing would occur. As-needed maintenance activities including those necessary to prevent the collapse of the increasingly undermined tunnel would continue, likely every eight to ten years. Flooding along John Muir Drive and in local neighborhoods in the lower Vista Grande drainage watershed would continue. The outlet structure and increasingly protruding exposed pipeline would remain a barrier to lateral access. It is unknown how much longer the repair and maintenance approach implemented thus far by the Applicant could continue to be a feasible approach to prevent failure of the pipeline. Additionally, with the current condition of the exposed 100+ year old pipe and increasingly exposed effluent force main, the risk of collapse or failure of the pipes would pose a risk to water quality by discharging effluent and dry flows onto the beach. The Applicant rejected the no-project alternative because of the catastrophic impacts due to the failure that it would have on coastal resources, and the Commission agrees.

Stormwater Storage

The Applicant also considered alternatives that would meet the project’s flood protection objectives through storage/detention of stormwater elsewhere in the drainage basin, where smaller amounts could then be metered out, thus leading to a smaller project and project footprint/scope/impact overall. The analysis determined that achieving the amount of storage necessary to offset current flooding problems would require the construction of a fairly massive storage facility (43 million gallons, with approximate dimensions of 310 feet long, 290 feet wide, and 65 feet deep) presumably beneath

⁴³ 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.

Westlake Park in Daly City. This alternative would not facilitate the management of Lake Merced water quality nor ground and surface water elevations as the stormwater would be stored elsewhere, and the potential for sequential storms and limited storage capacity means the water would only be detained on a temporary basis and would still require pumping back into the canal for discharge to the ocean. The Applicant also considered stormwater reuse opportunities, including a pervious subfloor and drainage system beneath the storage structure. However, to reach the levels of infiltration needed to manage the detained stormwater, which would require injection wells, the detained water would first require treatment. Similarly, the Applicant considered groundwater replenishment as a potential means to manage the stormwater, however groundwater replenishment would require substantial land area for infiltration facilities, of which there is limited space in the highly urbanized drainage basin. An alternative that eliminates the ocean outlet component of the project would also need to consider options to address how the treated wastewater effluent would be discharged or reused beyond the now-operating tertiary recycle water reuse program used for irrigation during the dry season. Altogether, the Applicant's analysis concluded that even if retention and groundwater replenishment were implemented, an ocean outfall would still be required to account for both sufficient stormwater and wastewater effluent capacity, meaning the measures to address the danger from erosion would still be needed.

The Applicant also considered using Lake Merced for additional storage to reduce the proposed size of the ocean outlet. The proposed project would divert into Lake Merced: (1) authorized non-stormwater base flows that first pass through the project's constructed treatment wetlands; and (2) all wet season stormwater flows except the "first rinse," as required by the RWQCB, which is defined as the first 0.2 inches of rain within a 48-hour period if preceded by an antecedent dry period of fourteen (14) days or more, equivalent to the first 4.6 million gallons of stormwater within a 48-hour time period. In this alternative, Lake Merced would be used for further storage beyond what is already proposed by the project to limit the size of the ocean outlet and stormwater pipe. However, the ability to use Lake Merced for additional storage is severely limited by the fact that as part of project permitting, the RWQCB is requiring the City to commit to maintaining an annualized lake level (with lake levels only allowed to exceed a water surface elevation (WSE) of +9 feet City Datum up to +9.5 feet City Datum for fourteen days annually to accommodate specific events), assuming adequate rainfall. In fact, this project originated as one element necessary for the State Water Resources Control Board along with named urban water suppliers, golf courses and parks, and cemeteries that pump from the Westside Basin to resolve a January 29, 2001 Petition for Review filed by California Trout with the State Water Board alleging public trust issues regarding declining water levels of Lake Merced resulting from groundwater pumping and other claims that were resolved via a confidential mediation process (other resolution elements included changes to groundwater pumping schemes, increased use of recycled water among other items, and other items already implemented as part of an overall water resource management package). One of the project's core focuses is ensuring water quantity increases and water quality improvements to Lake Merced, as the Clean Water Act and California's Porter-Cologne Water Quality Control Act require that any project to divert municipal stormwater flow to waters of the United States/ State address water quality, including in this case, the status of Lake Merced as an impaired waterbody on the Clean Water Act Section 303(d) list (impaired for dissolved oxygen

and pH, which the project is intended to help remedy). To divert flow into Lake Merced (both a waters of the U.S. and State), the City is required to submit a report of waste discharge pursuant to Water Code Section 13260, which triggers the San Francisco Regional Water Quality Control Board to issue a Clean Water Act NPDES Permit and Waste Discharge Requirements (WDRs) pursuant to Water Code Section 13376 and 13263, respectively, that contain prohibitions, discharge limitations, receiving water limitations and a myriad of other provisions governing all aspects of municipal stormwater discharge. Therefore, while the resolution was confidential and not legally binding, the Applicant concluded that it is infeasible to pursue Lake Merced as a storage area beyond what the project already proposes. Additionally, as described in the above biological resources section, raising lake levels has negative impacts to wetlands and ESHA around the lake which adds to the infeasibility of this alternative.

Additionally, the Applicant states that the proposed size of the tunnel is not directly correlated to the magnitude of diversion of flows to Lake Merced and instead the proposed size of the tunnel and outlet structure is driven by the need to replace the aged infrastructure using modern engineering and sound construction standards (i.e., a larger tunnel is needed to encapsulate the old tunnel in order to retain the current alignment). In order for the new tunnel to encapsulate the current tunnel to create a new pipeline that can accommodate the water flow needed, the tunnel has to be a specific circumference regardless of storage options. Therefore, using the lake as storage would not have an impact on the size of the tunnel and ocean outlet unless all stormwater was diverted, and as discussed above no feasible storage alternative has been presented.

As such, this alternative is not feasible.

Using Other Infrastructure

Other options for diverting the stormwater could include using existing drainage infrastructure in the neighboring City of San Francisco, with an outlet to the north of the proposed project. However, the existing wastewater effluent line there is often already at capacity and cannot accept any additional flow (per North San Mateo County Sanitation District Waste Discharge Requirements Order No. R2-2017-0026 NPDES No. CA0037737). Further, the neighboring City infrastructure does not have excess capacity to convey the quantity of Vista Grande's typical stormwater flows; Daly City does not have the rights to use City infrastructure; and the City has no plans to modify its conveyance or discharge facilities at this time. Lastly, the SFPUC utilizes a combined storm and sewer system, and introducing additional stormwater flow to this combined system would increase the potential frequency of undesirable combined untreated stormwater/sewer overflows by CCSF. This alternative too is not feasible.

Different Tunnel Alignments

As currently proposed, the wastewater effluent (WWE) pipes are nestled within, but are separate from, the stormwater pipe that runs through the proposed tunnel. One way to address what are actually disparate infrastructure functions is to separate the two pipes into different alignments to reduce the size of the ocean outlet on the beach, but the Applicant has maintained that this would create duplicative beach discharge infrastructure and would not reduce the size of the ocean outlet due to the constructability requirements including current building standards (i.e., in order to

encapsulate the current tunnel the proposed new tunnel must be the proposed size regardless).

Additionally, locations to the north and south of the currently proposed tunnel were analyzed and rejected as viable options. To the north, there is a variety of other existing infrastructure that restricts the ability to construct a new tunnel, including San Francisco's Lake Merced overflow tunnel and the Lake Merced three compartment sewer to the east. Both of these systems are located at the same elevation as the Vista Grande canal and tunnel, which would prevent the Vista Grande tunnel from discharging by gravity flow. Therefore, moving the project to the north would require a complete redesign to include a large pumping station that could accommodate flows of up to 500 cfs, which would have a large footprint and require large amounts of power to convey flows. Additionally, even if a pumping station were feasible, there is no existing ocean outlet to the north that could accommodate the Vista Grande tunnel and therefore a new ocean outlet would need to be constructed regardless.

To the south, several alignments were considered but deemed infeasible because of evidence of deep-seated landslides and geological instability beginning in the southern portion of Fort Funston and continuing south to the vicinity of Thornton State Beach.⁴⁴ Potential alternative sites for the outlet structure at Fort Funston and Thornton State Beach are all located within this landslide deposit, which is prone to land sliding and aggressive bluff erosion. Routine outlet structure maintenance would involve removing landslide material from the structure and waterway using large earthmoving equipment. Daly City also would need to relocate the beach structure landward more frequently than if the structure were constructed further north, outside of this landslide deposit. The existing and proposed Daly City ocean outlet site at Fort Funston is considerably less susceptible to landslides and aggressive bluff erosion.⁴⁵ For this reason, the alternatives that included an outlet structure south of Fort Funston, including at Thornton State Beach, are considered technically infeasible and were not explored further. Another alignment option would be to bury the effluent pipe deeper, at a lower elevation, to make the beach structure smaller and less intrusive. However, the elevation point for the tunnel is constrained by the elevation tie-in on the beach level to the submarine outfall, neither of which are proposed to be reconstructed as part of this project. The proposed project lowers the elevation of the effluent pipe between the bluff and the outlet as much as possible, and due to this elevation constraint, it would not be feasible to make the pipeline any lower in elevation without reconstructing the submarine outfall completely, which is outside the scope of this project and would likely have other adverse impacts to the marine environment. This alternative too is not feasible.

Armoring Alternatives

The Applicant's preferred alternative would retain the same outlet location with a new outlet structure pulled 80 feet back from the current structure, closer to the bluff face, with an approximately 70-foot long seawall to the north that would connect the new outlet structure to the existing City of San Francisco seawall (associated with its

⁴⁴ As detailed in the 2007 Draft Alternatives Evaluation Report.

⁴⁵ Jacobs Associates, 2008 (Supplemental Analysis Project Memorandum)

drainage infrastructure on the beach),⁴⁶ and an approximately 100-foot long seawall to the south to provide protection from flanking. Behind the approximately 172 linear feet of seawalls would be an area of 12-ton riprap, and in front of the seawalls there would be an area of 4-ton riprap, in total encompassing an area on the beach of approximately 3,400 square feet of riprap.

The Applicant included only brief information as to the types of armoring considered, including riprap and “lower-profile” seawalls on either end of the outlet structure as well as the proposed concrete apron. Seawalls were ultimately selected for their reduced footprint and success and longevity elsewhere in San Francisco. The Applicant also considered an alternative that did not use seawalls but instead tried to address the risk of undermining of the proposed pipeline through stabilization of the bluff material underneath the pipeline. The Applicant determined that cement grouting was not possible due to the type of soil and, further, was not viable over the long-term due to the saline marine environment posing issues for its durability. Other forms of ground improvement, such as jet grouting, were deemed infeasible inside of the proposed tunnel due to staging limitations and large amounts of generated waste material. Various other armoring alternatives were also considered but all posed the same, if not worse, issues in terms of coastal erosion and stability.

Lastly, the Applicant considered a “no armoring” alternative in their evaluation of coastal components. This analysis assumed the project would be constructed without seawalls or the associated riprap (no additional shoreline armoring beyond what the outlet structure itself constituted), similar to the existing condition of the outlet but with the new outlet structure sited as far landward as possible at the base of the bluff. However, the Applicant’s “no armoring” alternative included the proposed concrete apron, although the Commission considers such a structure to be armoring (including in terms of impacts to sand supply and recreation). In their analysis of the coastal components of the project, Moffatt & Nichol concluded that the “no armoring” alternative “[w]ould allow the bluff behind the outlet structure to recede, which would affect the stability of the bluff with a potential to negatively affect the integrity of the structure in the future.” The Applicant’s analysis also considers that the relocated outlet structure without armoring would result in greater exposure of the City of San Francisco outlet structure to wave attack and thus erosion. Moffatt & Nichol also analyzed the erosion rates, including the effects of sea level rise, of the bluff with and without the proposed seawalls and found that, similarly to the existing outlet structure and exposed pipeline, the bluff would erode beyond the outlet structure and expose the new tunnel/pipeline which would increasingly become a barrier to lateral access along the beach. Therefore, with no armoring the structure would need to be periodically maintained and retreated to match the bluff location to prevent undermining and access issues, similar to its current operation. Without seawalls, the City estimates that repairs would be needed every ten years, similar to the current rate of major repairs of approximately every eight to ten years, and estimates the cost for periodic relocation would be approximately \$1.25 million for outlet structure demolition and removal, and \$5 million for reconstruction in 2022 dollars.

⁴⁶ Which, as noted previously, appears to have replaced the wingwalls without permits in 1979.

Commission staff and the Applicant worked together to determine that all potential alternatives have been considered, and staff ultimately concluded (and the Commission here agrees) that the no armoring alternative is the least environmentally damaging feasible alternative. Such an alternative would not allow the approximately 172 linear feet of seawalls and associated rip rap, as well as not allow the proposed concrete apron that would surround the outlet structure. However, the outlet structure itself, which will take up a substantially more limited beach area, would still itself constitute armoring for the purposes of this analysis. While seawalls would lessen the speed of bluff retreat and risk to the pipelines, the creation of a headland promontory would be an impactful unintended consequence of the proposed solution in the areas protected by the seawalls. As discussed in **Exhibit 8** by the Commission's engineer, Jeremy Smith, the adjacent City of San Francisco outlet seawalls have already begun to create such a headland (again, see photos in **Exhibit 3**). With the addition of seawalls to the Vista Grande outlet, this would create an even larger promontory, with the potential to block lateral public access at higher tides, and possibly completely by 2030, as further discussed in the public access section of this report.

Additionally, the seawalls, riprap, and concrete apron would have adverse impacts to the sand supply of the beach, which as discussed in more detail below would need to be mitigated. While the Commission typically does not require mitigation fees for local governments, in lieu of such fees the Commission generally requires public access mitigation that is commensurate to the amount of fees that would otherwise be required. In this case, the required mitigation for the seawalls, riprap, and concrete apron alone as proposed, not factoring in the outlet structure, would be approximately \$13 million.⁴⁷

As such, a project without seawalls, riprap, and the concrete apron would allow for natural processes to continue and for public access to be protected as much as possible with a project like this, and with less mitigation required for the Applicant with regard to the sand supply and related impacts. Given the issues the Applicant notes in regard to potential scour and undermining of the tunnel due to bluff erosion in the absence of armoring, **Special Condition 4 and 5** requires the Applicant to monitor the condition of the outlet for specific criteria laid out in the conditions. If these criteria are met, the Applicant is required to complete an adaptation plan with recommendations for how to remedy the situation, which may require an amendment to this CDP. The criteria include unsafe conditions, exposed abandoned force main and pipes, bluff recession and pipe undermining, disruption of essential services, debris falling in the ocean, creation of a promontory, changes or alterations to the CCSF outlet, and/or changes to LCP adaptation planning policies. Therefore, per Coastal Act Section 30235, the proposed armoring elements and shoreline altering construction is not permissible as a less environmentally damaging feasible alternative exists. The proposed project does not meet the third test.

Sand Supply Impacts

⁴⁷ As calculated similarly to the beach encroachment and sand supply impacts below, the mitigation for these project elements, as proposed, would amount to \$13 million over an initial 35-year mitigation period (the concrete apron would amount to \$2,260,792.62; the wingwalls would amount to \$5,202,357.35; and the riprap would amount to \$6,312,221.79).

The fourth test of Section 30235 that must be met in order for the Section 30235 'override' to apply is that such projects must be designed to eliminate or mitigate adverse impacts to local beach and shoreline sand supply. Some of the effects of these types 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 related to shoreline sand supply impacts, 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 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 outlet structure, which is the only portion of the proposed armoring system that is allowable as it is necessary for termination of the tunnel and pipelines, would cover approximately 696 square feet of shoreline and beach area that would otherwise be encumbered.⁴⁸

Fixing the Back Beach (the "Coastal Squeeze")

On an eroding shoreline, a beach will typically continue to re-create 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

⁴⁸ The proposed outlet structure would be approximately 17.4 feet wide and 40 feet from the toe of the bluff to its seaward limit.

upland.⁴⁹ 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 seaward toe of 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. This impact represents the loss of a beach as a direct result of the installed armoring.

The coastal squeeze phenomenon caused by armoring is exacerbated by climate change and sea-level rise. As climate change causes seas to rise ever faster, beach and recreational shoreline areas will be lost at an increasingly rapid pace.⁵⁰ If the inland area cannot also retreat, eventually, there will be no available dry beach 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. The Commission typically evaluates this impact over an initial 20-year mitigation period, which is based on the Commission’s experience that shoreline armoring often needs to be reinforced, augmented, replaced, or substantially

⁴⁹ 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.

⁵⁰ 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 (updated November 2018) 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). This change could also expose previously protected backshore development to increased tidal/wave action and flooding, and those areas that are already exposed to such conditions will be exposed more frequently and with greater severity. In addition, recent research has suggested that winter wave heights and winter storm intensity in the North Pacific have, on average, increased over the last 50 years in parallel with climate change, sending larger and more powerful waves to the California shoreline. Some studies suggest that wave heights could continue to increase in the future, generally extending the reach of wave run up and further exacerbating the erosion that is already expected to increase due to rising sea levels, though this is an area of developing research.

changed within twenty years of its original installation, meaning that re-review is necessary on that schedule to allow for consideration of possible changes in policy, law, and physical conditions associated with armoring. Here, the Applicant has requested that the Commission instead evaluate the armoring for an initial 35-year period, suggesting that that period is more reflective of the needs for this type of infrastructure, and better ties into expectations regarding the need for periodic adaptation (**see Special Condition 4**).

The Commission has established a methodology for calculating the impacts of 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. The average annualized erosion rate at this location has been estimated by the Applicant's geotechnical analyses to be approximately 2.5 feet per year.⁵¹ Applying the 2.5 feet per year average annual erosion rate over 35 years as applied to the 17.4 foot wide outlet structure equates to 1,522.5 square feet of beach that will be lost during that time period due to the presence of hard structures on the beach, as that area would otherwise have been created naturally if the back beach was not fixed by such structures during the 35-year assessment period.⁵²

Thus, the aspects of this project associated with authorized hard armoring structures going forward lead to beach and shoreline use area impacts of approximately 2,218.5 square feet (696 square feet associated with the footprint plus 1,522.5 square feet associated with passive erosion due to fixing the back beach) through the initial 35-year impact horizon. There is no doubt that such impacts represent a significant public recreational access impact, including a loss of the social-economic value of beach and shoreline recreational access, for which the Coastal Act requires mitigation. The most obvious in-kind mitigation for these impacts would be to create a new nearly 2,218.5 square foot area of beach/shoreline to replace that lost over the 35 years with an identical area of beach/shoreline in close proximity to the lost beach/shoreline area. While in concept this would be the most direct mitigation approach, in reality, finding an area that can be turned into a beach and ensuring it does so appropriately over time is very difficult in practice. At the same time, the calculations of affected area do provide a means to identifying an appropriate relative scale for evaluating alternative mitigations. For example, in the past the Commission has looked at several ways to value such lost beach and shoreline areas in order to determine appropriate in-lieu mitigation fees, including evaluating the recreational value of the beach/shoreline in terms of the larger economy, as well as the real estate value of the land that would have otherwise gone to public beach/shoreline use.

In terms of the recreational beach/shoreline value, the Commission has recognized that in addition to the more qualitative social benefits of beaches and shoreline areas (e.g.,

⁵¹ Based on "Assessment of beach sand replenishment volume," Moffatt & Nichol, dated February 11, 2020, which used their prior 2017 report rate for long term average annualized erosion and updated it to include the 1 in 200 chance high emissions sea level rise projection scenario based on OPC's 2018 guidance.

⁵² That is, 17.4 feet multiplied by 2.5 feet per year multiplied by 35 years equals 1,522.5 square feet.

recreational, aesthetic, habitat values, etc.), beaches and shoreline areas provide significant direct and indirect revenues to local economies, the state, and the nation. It is well known that the ocean and coastline of California contribute greatly to the state's economy through activities such as tourism, fishing, recreation, and other commercial activities.⁵³ There is also value in just spending a day at the beach and having wildlife and clean water at that beach and being able to walk along a stretch of beach and shoreline. There is also the societal benefit of beaches and shoreline areas, including the ways they contribute to local community and State social fabric and cultural identity. However, it can be difficult to put a price tag on these types of benefits, including 'existence' values, where people are asked how much it is worth to them for a beach to exist, even if they do not visit the beach or seldom visit the beach. Depending on the person, even one beach can be priceless.

Thus, these types of beach impacts are in many cases are difficult to quantify. In other cases, including where detailed visitation data is lacking, as it is here, the Commission has found that using a real estate valuation method as a basis for identifying mitigation allows for objective quantification of the value of lost beach and shoreline area, and that this valuation is appropriate both in terms of the scope of the impacts and the rational basis for applying such methodology.⁵⁴ This method requires an evaluation of the cost of property that could be purchased and allowed to erode and turn into beach naturally to offset the area that will be lost due to the construction and continued placement of the proposed armoring over time.

Toward this end, the market values of representative blufftop properties near the project area supply a means to identify what it might cost to purchase such property and allow it to erode in this way to create offsetting beach/shoreline recreational space. Specifically, this review was conducted by looking at the sales of blufftop property in this specific area within the last five years. This value is then divided by the property square footage to arrive at a price per square-foot. The price per square-foot calculated value serves as a way to gauge the cost of acquiring an equivalent blufftop property, where any development on it could be removed, and then the area could be allowed to erode to provide an equivalent amount of beach and shoreline area to that which will be lost over the 35-year mitigation timeframe.

This evaluation focused on a total of five blufftop properties within the vicinity of the proposed project representing a range of properties for which sales information was available over the past four years (see **Exhibit 9**).⁵⁵ The range of values starts at the high end for the property at 30 Roslyn Court with a value of \$435.73 per square foot to

⁵³ See Coastal Commission's Adopted Sea Level Rise Policy Guidance at <https://www.coastal.ca.gov/climate/slrguidance.html>: "Just over 21 million people lived in California's coastal counties as of July 2014 (CDF 2014), and the state supports a \$40 billion coastal and ocean economy (NOEP 2010)."

⁵⁴ See, for example, CDPs 2-10-039 (Land's End Seawall), 2-11-009 (City of Pacifica Shoreline Protection), A-3-PSB-12-042 and A-3-PSB-12-043 (Pismo Seawalls), and 3-16-0345 (Honjo Seawall).

⁵⁵ As the project area is at Funston Beach, which is far removed from developed blufftop lots, neighborhoods in the City's Westlake area were evaluated, seaward of Skyline Boulevard, approximately 1.5 miles to the south. Although this distance is further, in general, from the place of impact than the Commission typically applies in such an analysis, it can still provide appropriate proxy values here.

the low end for the property at 3 Skyline Drive with a value of \$212.23 per square foot.⁵⁶ This average per square-foot value (\$341.24) represents a reasonable estimate of the market value of blufftop properties nearest the subject site based on actual sales data in the last four years, and thus serves as a valid estimate for mitigation purposes at this time.⁵⁷

Applying this average land acquisition value to the 2,218.5 square foot impact due to the armoring over 35 years would result in a mitigation fee of \$757,040.94 for the loss of beach and shoreline use areas based on the 35-year mitigation period (i.e., 2,218.5 square feet x \$341.24 square foot = \$757,040.94). The Commission finds that this potential mitigation fee amount is most closely tied to specific property values in the vicinity of the project and is thus both reasonably related and roughly proportional to the anticipated impacts of the armoring on beach and shoreline use areas through the 35-year mitigation period.

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 that loss 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 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 shoreline armoring, 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 armoring; and (b) the likely future bluff face location without shoreline armoring. Using the Commission's methodology, the amount of beach-quality sand that would be retained due to the outlet structure over 35 years would be equal to 284.2 cubic yards of

⁵⁶ The property sales used to derive the average price per square foot for blufftop properties in the immediate vicinity are for property sales at the following locations: 3 Skyline Drive (\$212.23/sq ft); 30 Roslyn Court (\$435.73/sq ft); 62 Seacliff Ave. (\$347.06/sq ft); 39 Skyline Drive (\$363.69/sq ft); and 92 Roslyn Court (\$347.50/sq ft).

⁵⁷ Source: Zillow.com (March 2023) and Redfin.com (May 2024).

sand.⁵⁸

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 such cases, the Commission has typically mitigated for such sand retention impacts with an in-lieu fee based on the cost of buying and delivering an equivalent volume of beach quality sand to the affected area. In this case, as discussed above, the outlet structure would result in the retention of about 284.2 cubic yards of sandy material throughout the 35-year mitigation period. The Applicant submitted three bids for the cost that would be required to purchase and deliver comparable beach quality sand to the site, the average of which resulted in \$69.52 per cubic yard.⁵⁹ Thus, an in-lieu fee to address this initial sand retention impact would be \$19,757.58 (284.2 x \$69.52 = \$19,757.58).

Required Mitigation Package

Accordingly, the value associated with the proposed project's sand supply and related beach/shoreline loss impacts for the first 35 years of estimated impacts is nearly \$800,000 (i.e., \$757,040.94 + \$19,757.58 = \$776,798.52), which could be accommodated by collecting a mitigation fee in that amount. While requiring such a mitigation fee could commensurately mitigate for these impacts, the Commission has also instead required the provision of in-lieu public recreational access improvements to offset such impacts, particularly when a public agency is an applicant for a shoreline armoring project. Such mitigation strategies can allow for bona fide improvements to public recreational access infrastructure and utility so that mitigation benefits can be realized in the near term, and in the area of the impacts. This is especially opportune in this case given the Applicant is a public agency and given there are many and varied immediate public recreational, access, and park facilities in the area. Accordingly, **Special Condition 1(g)** requires that the Applicant provide public recreational access improvements commensurate with the estimated fee proxy for impacts of \$776,798.52. The Applicant has indicated that they intend to coordinate with NPS to determine locations in Fort Funston for such access improvements.

Duration of Authorization

The Commission typically imposes conditions that restrict the use of armoring to the time frame when the existing structure being protected has not been redeveloped (and requiring armoring removal upon redevelopment) and imposes such a requirement here too. Accordingly, **Special Condition 8** authorizes the shoreline armoring until the time when the outlet pipe is no longer present, or no longer requires armoring, whichever is first, at which time, the Permittee is required to remove the armoring and restore the

⁵⁸ Sand supply 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 seawall; the height of the seawall; and the width of property to be armored. In this case, the fraction of beach quality material was estimated by the Applicant's consultants to be 0.2; the height of the outlet structure is 25.2 feet; the width of the property that is armored is 17.4 feet; the rate of retreat is 2.5 feet per year; and the time period the of installation is 35 years.

⁵⁹ The bids were submitted in 2020 by LindMarine (\$62.73 per cubic yard); West Coast Sand & Gravel Inc. (\$78.12 per cubic yard); and Broadmoor Landscape Supply (\$62.40 per cubic yard).

affected area to natural conditions. **Special Condition 8** also requires that the Permittee submit a complete CDP amendment application to reassess required mitigation for the ongoing impacts of the approved armoring, if the CDP authorization has not expired within the initial 35-year mitigation period of this CDP. **Special Condition 4** requires the Applicant to provide adaptation plans with long-term triggers for relocation within one year if any of the criteria are met. These criteria include if the development has unsafe conditions, has abandoned infrastructure, 50-feet of erosion has occurred after 20 years, essential services can no longer be provided, lateral access is blocked and others (See **Special Condition 4**).

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. This is particularly critical given the dynamic shoreline environment in this area. Also critical to the task of ensuring long-term stability, as required by Section 30253, is a formal long-term monitoring and maintenance program. If the completed project were damaged in the future (e.g., as a result of wave action, storms, an earthquake, etc.), it could lead to a degraded public access condition as well as loss of the integral public access improvements. In addition, such damages could adversely affect nearby beaches and recreational use areas by resulting in debris on the beaches and/or creating a hazard to the public using the beaches and offshore areas. Therefore, in order to find the proposed project consistent with Coastal Act Section 30253, the project must be maintained in its approved and required state. Further, in order to ensure that the Applicant and the Commission know when repairs or maintenance are required, the Applicant must regularly monitor the condition of the completed project, particularly after major storm events. Such monitoring will ensure that the Applicant and the Commission are aware of any damage to or weathering of the completed project, and can determine whether repairs or other actions are necessary to maintain the completed project in their approved state. To assist in such an effort, monitoring plans should provide vertical and horizontal reference distances from the completed project to surveyed benchmarks for use in future monitoring efforts.

Thus, to ensure that the project is properly maintained to ensure its long-term structural stability, **Special Condition 5** requires regular submission of monitoring and maintenance reports. Such reports are required to provide for evaluation of the condition and performance of the completed project and its overall stability, and to provide for necessary maintenance, repair, changes, or modifications to the completed project. In addition, **Special Condition 5** authorizes the Applicant to maintain project components in their approved state through this CDP, subject to the terms and conditions identified by the special conditions. Such future monitoring and maintenance activities must be understood in relation to clear as-built plans that are required to be submitted by the Applicant (**Special Condition 5**).

In terms of recognizing and assuming the hazard risks for shoreline development, the Commission's experience in evaluating proposed development in areas subject to hazards has been that development has continued to occur despite periodic episodes of heavy storm damage and other such occurrences, as well as more steady erosion and other coastal hazards, all as may be exacerbated by sea level rise. Separate from its

impact on coastal resources directly, development in such dynamic environments is also susceptible to damage due to such long-term and episodic processes. Past occurrences statewide have resulted in public costs (through low interest loans, grants, subsidies, direct assistance, etc.) in the many, many millions of dollars. As a means of allowing continued development in areas subject to these hazards while avoiding placing the economic burden for damages onto the people of the State of California, the Commission has in the past required applicants to acknowledge site hazards and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed. Accordingly, this approval is conditioned for the Applicant to assume all risks for developing at this location (see **Special Condition 8**).

Finally, the Commission has long analyzed consistency with Section 30253 in terms of analyzing a project's risks and structural integrity over time, taking sea level rise into account. However, Section 30270 now explicitly requires the Commission to consider sea level rise when analyzing risks under Section 30253 and also requires the Commission to assess and, to the extent feasible, avoid and mitigate the adverse effects of sea level rise. The findings above identify and assess the project's hazards-related impacts in a manner that accounts for sea level rise. As described above, the Commission has also imposed conditions to avoid, where feasible, and mitigate the adverse, hazard-related impacts of sea level rise, as they relate to these projects. For example, **Special Condition 5** requires submission of monitoring and maintenance reports to ensure that the project remains stable over time, and **Special Condition 13** authorizes maintenance of the project to ensure it does not erode or cause destruction of the site or surrounding area over time as sea levels rise and potentially cause the project to deteriorate. The above findings also describe how it is not feasible to completely avoid all project-related impacts because there is no less damaging alternative to the armoring in this instance. With these findings and conditions, the project can be found consistent with Section 30270.

Coastal Hazards Conclusion

The proposed project is inconsistent with Section 30235. Therefore, it does not qualify for the shoreline armoring "override" available when Coastal Act Section 30235 tests are met, and because such armoring is inconsistent with Section 30253 (and other coastal resource protection policies), the project cannot be found consistent with the Coastal Act, which directs denial. However, given that the existing infrastructure in question is potentially at risk of being compromised, denial could lead to threats to the to it, including damage to and/or destruction of the tunnel. This approach would be inconsistent with Coastal Act Sections 30230 and 30231 that affirmatively require that marine resources and water quality be protected (because the infrastructure would be likely to fail in the short term and lead to debris and pollution on the beach and in the ocean). In other words, denial of the project would also be inconsistent with the Coastal Act. Therefore, it is appropriate to approve a project through the Coastal Act's conflict resolution procedures (see Conflict Resolution findings), provided that impacts can be minimized and unavoidable impacts mitigated for.

Here, in a conflict resolution approval, **Special Condition 1** requires revised final plans be submitted for a project without seawalls, riprap, and a concrete apron. Additionally, **Special Condition 4** requires that an adaptation plan, and subsequent CDP

application, be submitted to adaptively retreat the outlet structure back over time. Specifically, the trigger threshold for adaptive retreat is 50 feet of exposure of the outlet structure, where exposure is defined as the distance from the seaward edge of the outlet structure to the adjacent bluff face. The 50 feet trigger was used as that is expected to represent around 20 years of erosion with a rate of 2.5 feet/year and reflects the Applicants feasible ability to conduct the retreat of the outlet given available funding. After 20 years from the date construction is completed for the outlet structure, if periodic monitoring (required by **Special Condition 5**) identifies that the 50 feet exposure threshold has been met, then the Applicant would commence planning for adaptive retreat via an Adaptation Plan which shall provide that the outlet structure is reconfigured so that it is only exposed seaward of the bluff face as to its original approved configuration where all related connecting elements are lengthened and/or reconfigured accordingly. As such, the outlet will be retreated to its approved configuration when the trigger is met, and this represents a Coastal Act consistent least environmentally damaging alternative instead of armoring.

H. Marine Resources

Applicable Coastal Act Provisions

As previously cited, Coastal Act Section 30230 requires that marine resources be maintained, enhanced, and restored. New development must not interfere with the biological productivity of coastal waters or the continuance of healthy populations of marine species. In addition, Coastal Act Section 30231 requires that the productivity of coastal waters necessary for the continuance of healthy populations of marine species shall be maintained and restored by minimizing wastewater discharges and entrainment and controlling runoff.

Coastal Act Consistency Analysis

Given the proposed project is located at the shoreline interface with the Pacific Ocean, there is the possibility that, without the project, stormwater, sewer effluent, and debris could be deposited on the beach and into the ocean to the extreme detriment of marine resources. Thus, despite its Coastal Act inconsistencies, the project here is being approved through conflict resolution (see Conflict Resolution finding for more detail). In a conflict resolution approval, there remains the potential for impacts to marine resources and coastal water quality from both construction and from operation.

In terms of the latter, stormwater runoff volumes that would be deposited on the beach and into the ocean would be expected to increase substantially with the proposed project, with what had been inland flooding turning into beach/ocean depositing as the system is increased in size to be able to handle larger volumes of runoff. While the treatment wetlands and lake settling would be expected to enhance filtration and treatment at times, larger storms and volumes would not be so treated, and could continue to negatively impact marine and recreational resources and water quality by contributing additional urban contaminants to the beach and ocean. Such runoff is known to carry a wide range of pollutants (including nutrients, sediments, trash and debris, heavy metals, pathogens, petroleum hydrocarbons, and synthetic organics such as pesticides), and it can also alter the physical, chemical, and biological characteristics

of water bodies to the detriment of aquatic and terrestrial organisms.⁶⁰ Such impacts would be at the expense of both Funston Beach and the Pacific Ocean.

To address such concerns, the City must receive a National Pollutant Discharge Elimination System (NPDES) Construction General Permit from the State Water Resources Control Board, which entails complying with BMPs and other control measures to avoid and minimize pollutants. As such, the City would minimize and reduce any potential for degradation of water quality as much as possible, per requirements of the State Water Resources Control Board.

In terms of potential construction impacts, the main marine resource concern is equipment storage and maintenance on the beach. Specifically, the Applicant proposes to store and refuel construction equipment on the beach behind a temporary sheet pile cofferdam that would surround the ocean outlet area in a “U” shape that would occupy 0.2 acres of beach area and would serve to protect the work area from ocean waves. The cofferdam sheet piles would be impact-driven to a depth of approximately 20 feet and would be approximately 15 feet tall above sand level. Drip pans and/or liners would be stationed beneath all equipment staged on the beach to minimize spill of deleterious materials, and spill kits would be available within the cofferdam for easy accessibility during beach work. Following construction, the cofferdam would be removed and excavated areas would be returned to the beach grade.

In many past decisions, the Commission has typically required that construction staging and refueling be located off of the public beach and away from tidal areas. However, in this case, construction of the outlet must be conducted on Fort Funston Beach due to the location of the existing ocean outlet. As the nearest construction access point is 1.4 miles away, refueling and staging offsite would add trips on the beach would be limited by low tides and could have negative impacts on public access, habitat, and increased greenhouse gas emissions.⁶¹ Given that context, the Commission can approve the cofferdam and storage provided that it can be approved with required conditions of approval that assure impacts from this project activity will be avoided, lessened, and mitigated where unavoidable. Due to the project’s location within proximity to coastal waters, it is necessary to ensure that construction activities will be carried out in a manner that will not adversely affect water quality or marine resources. Construction equipment used for the project has the potential to contaminate the sand from minor spills and leaks from equipment. In addition, discharge to the marine environment would result in adverse effects to offshore habitat from contamination and/or increased turbidity caused by erosion and siltation of coastal waters. The presence of construction equipment, building materials, and excavated materials on the subject site could also

⁶⁰ Pollutants of concern found in urban runoff include, but are not limited to: sediments; nutrients (nitrogen, phosphorous, etc.); pathogens (bacteria, viruses, etc.); oxygen demanding substances (plant debris, animal wastes, etc.); petroleum hydrocarbons (oil, grease, solvents, etc.); heavy metals (lead, zinc, cadmium, copper, etc.); toxic pollutants; floatables (litter, yard wastes, etc.); synthetic organics (pesticides, herbicides, PCBs, etc.); and physical changed parameters (freshwater, salinity, temperature, dissolved oxygen).

⁶¹ The City could also use a crane at the site to deposit equipment, workers, and supplies at the base of the bluffs, and to remove same as well as debris etc., but this option has not to date been deemed feasible.

pose hazards to beachgoers or swimmers if construction site materials were discharged into the marine environment or left inappropriately or unsafely exposed on the project site. Therefore, to ensure that adverse effects to the marine environment are minimized, **Special Condition 3** requires the applicant to submit a Construction Plan and implementation of construction best management practices. In addition, **Special Condition 3** also requires a Final Construction Staging Plan to identify the staging areas, minimize them as much as possible, and identify the equipment stored in the staging areas.

Additionally, the Applicant proposes to either store demolished materials behind the cofferdam until they can be transported via the tunnel, or to remove them via the beach access route. The Applicant estimates that there will be approximately 300 cubic yards of concrete and exposed brick and shotcrete tunnel materials that will be demolished at this location. Additionally, 120 feet of the 33-inch concrete pipe from the submarine outfall will be demolished. All demolished materials will be disposed of at an appropriate inland (non-coastal zone) location.

As such, the project has been conditioned to minimize marine resource impacts as much as possible for a project of this nature.

I. Public Access and Recreation

Applicable Coastal Act Provisions

The Coastal Act provides that maximum opportunities for public recreational access be provided, including in new development projects, taking into account considerations including the location of existing public accessways and parties responsible for maintenance of new public accessways, including:

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.*

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.*

30212(a). *Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects...*

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

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

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.*

30223. *Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.*

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

30240(b). *Development in areas adjacent to ... parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those ... recreation areas.*

Coastal Act Consistency Analysis

Lake Merced is a public recreational asset that is utilized by many San Francisco residents and visitors to it every year. There is a 4.5-mile paved pedestrian path surrounding its perimeter, which provides a variety of recreational opportunities including a trail for runners, walkers, and cyclists, picnic facilities, and water access for fishing, rowing, and boating. Facilities around the lake include many picnic areas and a boathouse, fishing pier, and boat launch. During construction activities, traffic and pedestrian access would be rerouted temporarily, but the pedestrian bridge between impound lake and south lake would not be altered or restricted. After completion of construction no permanent public access impacts would occur around Lake Merced.

Additionally, Fort Funston serves as another popular public access and recreational area. The 200-foot high bluffs on the most western edge of San Francisco serve as one of the premier hang-gliding spots in the country. A network of trails make it ideal for accessible hiking, horseback riding, and dog walking. As mentioned previously, a fenced off work and staging area is proposed within Fort Funston, temporarily blocking pedestrian access. However, this would be the only closure within the park, leaving approximately 100 acres for recreational use outside of the work area, including the public hiking trails and California Coastal Trail that would remain open and maintained. Thus, the closure involved in the work and staging area would not have a significant impact on Fort Funston access.

Pedestrian access along the portion of the beach within the project site is accessible during low and moderate tides, when there can be more than 100 feet of sandy beach area between the terminus of the ocean outlet structure and the water. However, during high tides, waves reach to the end of the existing ocean outlet structure, making it difficult and/or unsafe for pedestrians to cross this portion of the beach. In addition, the sewer outfall pipeline that extends from the existing ocean outlet structure is at least partially buried during summer months and at times completely buried, but becomes exposed during winter months, impeding beach access. Separate from the cycles of beach access due to the current condition of the structures, during construction, beach access will be restricted due to construction vehicles and construction work occurring at

the ocean outlet. Construction at the ocean outlet would occur along the beach at the base of a steep bluff and would result in some related closures. This activity would not close the Sunset Trail in Fort Funston but would temporarily impact the trail via the presence of equipment and associated noise for an estimate of 5.5 months. During such time, signs would be posted at the Fort Funston parking lot and up and downcoast of the project site listing dates and durations of potential disruptions and/or closure of lateral access.

As to the cofferdam and project activities on the beach, the cofferdam could block access at times. The project EIR specified that the cofferdam work area must be configured so that during periods of low tide and public access would be maintained during construction. However, during high tides, the waves would likely reach the cofferdam making it difficult for the public to laterally cross this barrier. The cofferdam would be in place for the 5.5-month construction period. This is addressed via signs posted about the potential barriers throughout Fort Funston and construction best management practices.

As to beach access impacts more broadly, including in terms of construction access on the beach, whether it be from Sloat Boulevard or from Avalon Canyon, all such activities will diminish the recreational value of the beach area and users of it for the 5.5 months of construction. Such impacts can be minimized by virtue of construction BMPs (see **Special Condition 3**), but they cannot be completely avoided. The public access mitigation required by **Special Condition 1(g)** can help to offset this impact.

Ultimately, however, and other than the impacts associated with stormwater runoff discussed above, the project will have an overall positive impact on public access once construction is complete. The project would remove the existing ocean outlet that currently projects across the beach, limiting and at times blocking north-south lateral beach access, and replace it with a new structure located 80 feet landward of the current structure that better blends with the natural surroundings as compared to the current structure. This would immediately improve lateral access, which is currently disrupted during periods of low sand and high tides. Additionally, the project would include reducing the elevation of the sewer outfall pipeline as much as possible, thus in effect reducing the number of times the pipelines are exposed during the winter months, further improving lateral beach access.

Additionally, the adjacent City of San Francisco drainage outlet seawalls have begun to create a headland. As explained in **Exhibit 8**, a promontory formed by the proposed armoring at the outlet structure would result in the blocking of lateral access during periods of low sand conditions and high tides (not considering waves) by the 2030s (assuming 0.8-1.3 feet of sea level rise). With modest amounts of sea level rise (1-2 feet), the promontory caused by armoring the bluffs could prevent the public from walking along the beach on most days in the winter. With higher amounts of sea level rise (3-5 feet), the promontory could block lateral access almost every day of the year. As such, by conditioning the project without armoring, this public access impact would not be realized.

Additionally, **Special Condition 4** requires that an adaptation plan, and subsequent CDP application, be submitted to adaptively retreat the outlet structure back over time. Specifically, the trigger threshold for adaptive retreat is 50 feet of exposure of the outlet structure, where exposure is defined as the distance from the seaward edge the outlet structure to the adjacent bluff face. After 20 years from the date construction is completed for the outlet structure, if periodic monitoring (required by **Special Condition 5**) identifies that the 50 feet exposure threshold has been met, then the Applicant must commence planning for adaptive retreat via an Adaptation Plan which shall provide that the outlet structure is reconfigured so that it is only exposed seaward of the bluff face as much as its approved configuration. This ensures that the outlet structure and pipes will not extend onto the beach more than 50 feet, and therefore reduce access impediments.⁶² This would improve the current condition of the outlet as it currently sticks out approximately 80 feet.

In addition, if the approved development blocks lateral public access along the beach due to coastal hazards and bluff erosion, then the Adaptation Plan in **Special Condition 4** requires that modifications are made to ensure continuous lateral public access along the beach. Specifically, the Applicant would be required to monitor lateral beach access conditions at least monthly at high tide (defined here as being when predicted tides for the San Francisco NOAA tide station at the time of monitoring are above mean high water), including the degree to which the approved development blocks and/or impairs such access, and to make changes as directed by the Executive Director to protect public access resources.

And finally, all beach and shoreline related impacts discussed in the Coastal Hazard findings above are applicable here, too, and that analysis is incorporated by reference. Provided the Applicant offsets those impacts via mitigation consistent with the fee amount identified, those access impacts will be addressed (see **Special Condition 1(g)**).

Therefore, the project can be found consistent with the public recreational access provisions of the Coastal Act.

J. Public Views

Applicable Coastal Act Provisions

The Coastal Act provides that the scenic and visual qualities of coastal areas are resources of public importance that must be protected, and that new development is required to protect public views and be designed to be visually compatible with the surrounding area. Section 30251 states:

30251. *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be*

⁶² While 50 feet is a significant distance, the reality is that the City of San Francisco's drainage infrastructure here extends significantly further seaward than this would, bracketing that it may need to be reconstructed/relocated itself at some point. In any case, given the presence of this infrastructure, and the headland just north of the project area, the 50-foot threshold makes public access sense in this context as it would not be expected to significantly block access that wouldn't already be blocked for the most part.

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

Coastal Act Section 30240(b) also protects the aesthetics of beach recreation areas such as those located directly adjacent to and at the project site and requires that development protect public views and be designed to be visually compatible with the surrounding area.

30240(b). *Development in areas adjacent to ... parks and recreation areas shall be site and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those ... recreation areas.*

Analysis

Fort Funston is one of the few undeveloped stretches of coastline on San Francisco's open coast, and the beach here generally provides views of natural coastal bluffs that appear essentially undeveloped on top, which is in stark contrast to more developed coastlines, including both north and south of this area. As such, the beach area here provides a respite of sorts in an otherwise urban stretch of coastline that is heavily impacted visually by the built environment. Within that natural visual setting, however, there are two significant man-made structures that significantly adversely impact public views; namely the existing City of San Francisco and Daly City outlet structures. These structures are enormous, and developed at a time when the impacts from such infrastructure were apparently more tolerated than today, including as this type of significant concrete infrastructure – especially out on a public beach – is simply oxymoronic under the Coastal Act, and examples on the California coast are few and far between. It just so happens that at this location two such structures are right next to each other. See photos of the project area in **Exhibit 2**.

The proposed project, which involves pulling back the outlet structure to the base of the bluff, will reduce its visibility and intrusive nature. The existing outlet structure to be removed as part of this project is covered almost entirely in graffiti, as is the CCSF outlet structure and wingwalls. Removal of the structure and replacement with a new outlet structure pulled back to the bluff will result in a more natural visual character. At the same time, even if the seawalls, rip rap and concrete apron are removed (which is required independently for public view reason in addition to the other reasons already identified), the project still represents a large (roughly 17 by 25 feet) artificial structure at the base of the bluff and on the beach that will continue to detract from public view values, albeit less so than is currently the case. Accordingly, it will be critical that the outlet structure and project as a whole is constructed to best blend in with the surrounding natural bluff material and avoid significant impacts to public views, including over time (see requirements to this effect in **Special Condition 1**). Even still, and even with the sewer effluent pipe on the beach being lowered partially as part of the project, that aspect to the project will still be visible at lower tides, in stark contrast to the

otherwise natural beach viewshed. The Commission encourages the city to look into projects that in the future can lessen these remaining impacts.⁶³

Thus, the proposed project can be found consistent with the scenic and visual resource policies of the Coastal Act.

K. Cultural Resources

Applicable Coastal Act and LCP Provisions

Coastal Act Section 30244 requires reasonable impact mitigation for development that would adversely impact archeological or paleontological resources.

Section 30244. *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

Consistency Analysis

Coastal Act Section 30244 requires reasonable mitigation measures be provided where archaeological or paleontological resources exist. During its EIR review process, the City of Daly City sent notification to local Native American tribal representatives requesting consultation or identifying tribal cultural resources. They did not receive any tribal interest at that time, and there has been no additional communication from tribal representatives since that time.

No prehistoric or historic-period archaeological resources, and no known burial locations, have been previously identified in the project area, nor were they observed during the surface pedestrian survey for the project. However, while unlikely, ground-disturbing activities would expose and cause impacts on unknown archaeological resources or human burial locations. As such, the EIR required mitigation measure 3.5-3, which would require construction activities to halt if archaeological resources are identified so a qualified archaeologist and NPS can inspect and provide additional recommendations as necessary, with the goal of avoiding, minimizing, or mitigating adverse impacts. Additionally, mitigation measure 3.5-4 requires that construction activities halt in the case of inadvertent discovery of human remains.

With these measures, the City's Final Environmental Impact Report (EIR) identified that the project would not result in a substantial adverse change in the significance of a tribal cultural resource, and in combination with the cumulative projects, would not result in significant cumulative impacts on tribal cultural resources. Given the EIR's findings of less-than-significant impacts to tribal and cultural resources, no mitigation is proposed at this time, however **Special Condition 9** provides a process and procedure in the event that such tribal, cultural, or archaeological resources are found during the project construction.

⁶³ And likewise encourages the City of San Francisco with respect to its drainage infrastructure on the beach as well. In the City of San Francisco case, as detailed earlier, there also appear to be some unpermitted components that have been constructed on the beach, and the Commission's enforcement unit is investigating.

As such, the proposed project can be found consistent with the tribal and cultural resource protection requirements of the Coastal Act.

L. Other

Indemnification

Coastal Act Section 30620(c)(1) authorizes the Commission to require applicants to reimburse the Commission for expenses incurred in processing CDP applications. Thus, the Commission is authorized to require reimbursement for expenses incurred in defending its actions on the pending CDP application in the event that the Commission's action is challenged by a party other than the Applicant. Therefore, consistent with Section 30620(c), the Commission imposes **Special Condition 15** requiring reimbursement for any costs and attorney fees that the Commission incurs in connection with the defense of any action brought by a party other than the Applicant challenging the approval or issuance of this CDP, or challenging any other aspect of its implementation, including with respect to condition compliance efforts.

Other Agency Approvals

The project may require authorization from several other entities, including but not limited to the U.S. Park Service, U.S. Army Corps of Engineers, Monterey Bay National Marine Sanctuary, California State Lands Commission, California State Water Resources Control Board, and San Francisco Bay Regional Water Quality Control Board. To ensure that the Applicants are able to carry out the proposed project consistent with the terms and conditions of this CDP, and to ensure that the proposed project is authorized by all applicable agencies, **Special Condition 10 and 11** requires the Applicants to submit written evidence of these other agencies authorizations of the project (as conditioned and approved by this CDP) or evidence that such authorizations are not required.

Minor Changes

Although a great deal of thought and planning has gone into the proposed project, including as it is affected by CDP terms and conditions, oftentimes minor unforeseen issues present themselves in complicated projects of this nature, particularly as construction gets underway, and it is important that the CDP is nimble enough to account for potential minor changes. Thus, minor adjustments to special condition requirements that do not require a CDP amendment or a new CDP (as determined by the Executive Director) may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources (**Special Condition 14**).

Future Development

The project site presents complicated coastal resource issues, and is the site of past Commission approvals as well as this CDP, and the Commission finds that it is critical that any future development associated with the approved development be considered in that context. Thus, **Special Condition 13** specifies that none of the CDP exemptions that might be provided by Coastal Act Section 30610 (and/or related implementing regulations) will apply to the approved development, and any and all future proposed development related to this project, this project area, and/or this CDP will require new

CDPs or CDP amendments that are processed through the Coastal Commission, unless the Executive Director determines that such CDPs or CDP amendments are not legally required.

M. Conflict Resolution

Applicable Coastal Act Provisions

In actions such as this where one Coastal Act provision requires denial but denial would frustrate a mandate of another Coastal Act provision, the Commission is tasked with resolving such differences “in a manner which on balance is the most protective of significant coastal resources” (often referred to as conflict resolution), as detailed in the Coastal Act as follows:

30007.5. *The Legislature further finds and recognizes that conflicts may occur between one or more policies of the division. The Legislature therefore declares that in carrying out the provisions of this division such conflicts be resolved in a manner which on balance is the most protective of significant coastal resources. In this context, the Legislature declares that broader policies which, for example, serve to concentrate development in close proximity to urban and employment centers may be more protective, overall, than specific wildlife habitat and other similar resource policies.*

30200(b). *Where the commission or any local government in implementing the provisions of this division identifies a conflict between the policies of this chapter, Section 30007.5 shall be utilized to resolve the conflict and the resolution of such conflicts shall be supported by appropriate findings setting forth the basis for the resolution of identified policy conflicts.*

To be clear, however, the fact that a proposal is consistent with one Chapter 3 policy and inconsistent with another policy does not necessarily result in such a conflict. In fact, virtually every proposal will be consistent with some Chapter 3 policy, and almost no project would violate every such provision. Put another way, a proposal does not present a conflict between two statutory directives simply because it violates some policies and not others.

In order to invoke conflict resolution, the Commission must find that although approval of a proposal would be inconsistent with a Chapter 3 policy, denial of such proposal based on that inconsistency would result in coastal zone effects that are inconsistent with some other Chapter 3 policy. In most cases, denial of a proposal will not lead to any coastal resource effects at all because it will simply maintain the status quo. However, in some cases such denial can result in coastal resource effects that are inconsistent with a Chapter 3 policy in that some Chapter 3 policies, rather than prohibiting a certain type of development, affirmatively mandate the protection and enhancement of coastal resources.⁶⁴ If there is ongoing degradation of one of these

⁶⁴ See, for example, Sections 30210 (“maximum access...and recreational opportunities shall be provided”), 30220 (“Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses”), 30230 (“Marine resources shall be maintained [and] enhanced”), and 30253 (Development shall “Minimize risks to life and property in areas

resources, and a proposal would cause the cessation of that degradation, then denial would result in coastal resource effects (in the form of the continuation of the degradation) inconsistent with the applicable policy. Thus, the only way that a true conflict can exist is if: (1) the proposal will stop some ongoing coastal resource degradation, and (2) there is a Chapter 3 provision requiring that the resource being degraded is protected and/or enhanced. Only then is the denial option rendered problematic because of its failure to fulfill the Commission's protective mandate, and only then can the Commission invoke the Coastal Act's conflict resolution provisions.

With respect to the second of those two requirements, though, there are relatively few Chapter 3 provisions that include such an affirmative mandate to enhance a coastal resource. Moreover, because the Commission's role is generally a reactive one, responding to proposed development rather than affirmatively seeking out ways to protect resources, even provisions that are phrased as affirmative mandates to protect resources more often function as prohibitions.⁶⁵ Denial of a project cannot result in a coastal resource effect that is inconsistent with a prohibition on a certain type of development. As a result, there are relatively few Coastal Act policies that can serve as a basis for a conflict.

Similarly, denial of a proposal is not inconsistent with Chapter 3 and thus does not present a conflict simply because the proposal would be less inconsistent with a Chapter 3 policy than some alternative project would be, even if approval of the proposal would be the only way in which the Commission could prevent the more inconsistent alternative from occurring. For denial of a proposal to be inconsistent with a Chapter 3 policy, the proposal must produce tangible, necessary enhancements in resource values over existing conditions, not over the conditions that would be created by a hypothetical alternative. In addition, the proposal must be fully consistent with the Chapter 3 policy requiring resource enhancement, not simply less inconsistent with that than the hypothetical alternative proposal would be. If the Commission were to interpret the conflict resolution provisions otherwise, then any proposal, no matter how inconsistent with Chapter 3, that offered even the smallest, incremental improvement over a hypothetical alternative proposal would necessarily result in a conflict that would justify a balancing approach. The Commission concludes that the Coastal Act's conflict resolution provisions were not intended to apply based on an analysis of different

of high geologic, flood, and fire hazard" and "(a)ssure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site").

⁶⁵ For example, Section 30240's requirement that environmentally sensitive habitat areas "shall be protected against any significant disruption of habitat values" generally functions as a prohibition against allowing such disruptive development, and its statement that "only uses dependent on those resources shall be allowed within those areas" is a prohibition against allowing non-resource-dependent uses within these areas. Similarly, Section 30251's requirement to protect "scenic and visual qualities of coastal areas" generally functions as a prohibition against allowing development that would degrade those qualities. Section 30253 begins by stating that new development shall minimize risks to life and property in certain areas, but that usually requires the Commission to condition projects to ensure that they are not unsafe. Even Section 30220, an affirmative mandate, can be seen more as a prohibition against allowing non-water-oriented recreational uses (or water-oriented recreational uses that could be provided at inland water areas) in coastal areas suited for such activities.

potential levels of compliance with individual provisions or to balance a proposal against a hypothetical alternative.

In addition, if a proposal is inconsistent with at least one Chapter 3 policy, and the essence of that proposal does not result in the cessation of ongoing degradation of a resource the Commission is charged with enhancing, the proposal's proponent cannot "create a conflict" by adding on an essentially independent component that does remedy ongoing resource degradation or enhance some resource. The benefits of a project must be inherent in the essential nature of the project. If the rule were to be otherwise, such proponents could regularly "create conflicts" and then demand balancing of harms and benefits simply by offering unrelated "carrots" in association with otherwise unapprovable proposals. The balancing provisions of the Coastal Act could not have been intended to foster such an artificial and manipulatable process. The balancing provisions were not designed as an invitation to enter into a bartering game in which proponents offer amenities in exchange for approval of their proposals.

Finally, a project does not present a conflict among Chapter 3 policies if there is at least one feasible alternative that would accomplish the essential purpose of the proposal without violating any Chapter 3 policies. Thus, an alternatives analysis is a condition precedent to invocation of conflict resolution. If there are alternatives available that are consistent with all the relevant Chapter 3 policies, then the proposal does not create a true conflict among Chapter 3 policies.

In sum, in order to invoke conflict resolution, the Commission must conclude all of the following with respect to the proposal before it: (1) approval of the proposal would be inconsistent with at least one of the policies listed in Chapter 3; (2) denial of the proposal would result in coastal resource effects that are inconsistent with at least one other Chapter 3 provision by allowing continuing degradation of a resource the Commission is charged with protecting and/or enhancing; (3) the proposal results in tangible, necessary resource enhancement over the current state, rather than an improvement over some hypothetical alternative proposal; (4) the proposal is fully consistent with the resource enhancement mandate that requires the sort of benefits that the proposal provides; (5) the benefits of the proposal are a function of the very essence of the proposal, rather than an ancillary component appended to the proposal's description in order to "create a conflict"; (6) the benefits of the project are not independently required by some other body of law; and (7) there are no feasible alternatives that would achieve the objectives of the proposal without violating any Chapter 3 provisions.⁶⁶

⁶⁶ As an example, the Commission applied conflict resolution to a 1999 proposal involving the placement of fill in a farmed wetland area in order to construct a barn atop the fill and to install water pollution control facilities on a dairy farm in Humboldt County (CDP 1-98-103, O'Neil). In that case, one of the main objectives of the project was to create a more protective refuge for cows during the rainy season. However, another primary objective was to improve water quality by enabling the better management of cow waste. In short, the use of the site was degrading water quality, and the barn enabled consolidation and containment of manure, thus providing the first of the four necessary components of an effective waste management system. Although the project was inconsistent with Section 30233, which limits allowable fill of wetlands to seven enumerated purposes, the project also enabled the cessation of ongoing resource degradation. The project was fully consistent with Section 30231's mandate to maintain

Conflict Resolution Analysis

The Commission finds that the proposal meets all seven above-stated tests, and thus presents a true conflict between Chapter 3 policies. As noted previously in this report, the proposed project is inconsistent with Sections 30233, 30235, 30240, and 30253 (and by extension other coastal resource policies implicated by the coastal resource degradation that would accrue due to the proposed armoring), thus meeting the first test.

This proposal meets the second test because the Commission's denial of the proposal would result in nonconformity with other Coastal Act policies, namely Sections 30230 and 30231. Specifically, Coastal Act Sections 30230 and 30231 affirmatively require the Commission to maintain, enhance, and restore marine resources and the biological productivity and quality of coastal waters (including lakes and wetlands). Without this project's approval, there will be significant risk of infrastructure compromise, posing a risk of debris and potentially sewage discharging to the beach and Pacific Ocean, resulting in adverse impacts to marine resources and water quality. Additionally, the State Water Board, as well as the EIR for the project, have shown that increasing lake levels in Lake Merced would both enhance and restore water quality which offers its own independent reason to justify this test. Thus, the proposed project would both increase water quality and protecting critical infrastructure while being required to monitor the shoreline on an ongoing basis and continue to develop adaptive management strategies once constructed and implemented, and as such, Commission approval of the project would Carry out the Coastal Act's affirmative mandate under 30230 and 20321.

The third step of conflict resolution requires that the proposal results in a tangible, necessary resource enhancement over the current state. This is the case here as the goal is to prevent flooding on John Muir Drive, replace aging and exposed stormwater and wastewater infrastructure that is likely to fail without intervention and expose Coastal zone waters to more pollution and improve water quality of Lake Merced.

The fourth and fifth tests require that the proposal is fully consistent with the resource enhancement mandate that requires the sort of benefits that the proposal provides and that the benefits of the proposal are a function of the proposal itself and not an ancillary component appended to the proposal description in order to create a conflict. In this case the marine resource protection aspects of the project directly result from its primary purpose of improving the functionality of aging beach infrastructure used to manage flooding while also improving the water quality of lake Merced by raising lake levels.

The sixth test is that the benefits that would cause denial of the project to be inconsistent with a Chapter 3 policy cannot be those that an Applicant is already being

coastal water quality and offered to tangibly enhance water quality over existing conditions, not just some hypothetical alternative. Thus, denial would have resulted in impacts that would have been inconsistent with Section 30231's mandate for improved water quality. Moreover, it was the very essence of the project, not an ancillary amenity offered as a trade-off, that was both inconsistent with certain Chapter 3 provisions and yet also provided benefits. Finally, there were no alternatives identified that were both feasible and less environmentally damaging.

required to provide pursuant to another agency's directive under another body of law. In other words, if the benefits would be provided regardless of the Commission's action on the proposed project, the Applicant cannot seek approval of an otherwise unapprovable project on the basis that the project would produce those benefits. In this case, the benefits would not be realized without Commission action.

The seventh test of conflict resolution requires there to be no feasible alternative that would achieve the objectives of the project without violating any Chapter 3 policies. As discussed above, there are no feasible alternatives that would achieve the objectives of the project without violating any Chapter 3 policies. Possible alternatives for the proposed project include 1) "no project", 2) stormwater storage, 3) using other infrastructure, 4) using different tunnel alignments, and 5) eliminating Lake Merced lake level changes (see above Coastal Hazard alternatives findings incorporated herein by reference). In conclusion, while alternatives exist, none of the identified alternatives would be both feasible and fully consistent with all relevant Chapter 3 policies.

Therefore, in order to resolve the identified conflict, the Commission must take an action which is, on balance, the most protective of significant coastal resources. Such a determination is a discretionary decision for the Commission, where the pros and cons for various outcomes can be considered and applied.

In this case, the Commission finds that the impacts on marine resources, and the biological productivity and water quality of coastal waters, streams, wetlands, estuaries, and lakes from not constructing the project as conditioned would be more significant than the project's potential adverse impacts to wetlands, landform alteration, sand supply, and ESHA. Denying the proposed project because of its inconsistency with Sections 30233, 30235, 30240, and 30253 (and other relevant policies) would result in 30320 and 30321 impacts on the beach due to increasingly exposed pipes, risk of collapse and discharge of harmful contaminants as well as a failure to not restore Lake Merced's water quality. In contrast, approving the development as proposed would improve the stormwater conveyance to reduce flooding, replace aging infrastructure at risk of collapse, and protect and restore marine resources and water quality.

Finally, the test for conflict resolution approval under Section 30007.5 is not for the project to be "more" protective of coastal resources, rather it must be most protective of significant coastal resources. In order for that finding to be made, the adverse coastal resource impacts caused by the project must be avoided, minimized, and mitigated to the maximum feasible extent. As such, and only in a conflict resolution context, aspects of the project where wetland or ESHA impacts could be avoided have been eliminated from the project, minimized where possible (i.e., reducing the work area of Fort Funston staging), and mitigated to the maximum feasible extent for all other impacts as described above. Likewise, all armoring that can be removed from the project has been removed from the project, limiting armoring impacts on the beach and shoreline area. In addition, project modifications further reduce impacts include monitoring, reporting, and adaptation requirements, revisions to the monitoring and adaptive management plan to ensure appropriate performance measures, triggers, monitoring, design, and sufficient habitat mitigation are provided, assumption of risk, and a requirement to return to the

Commission in the future for recalculation and reassessment of mitigation for armoring impacts.

As so modified, and by applying the Coastal Act's conflict resolution provisions as described above, the proposed project as conditioned is most protective of significant coastal resources, and can be found consistent with the Coastal Act.

N. CEQA

Section 13096(a) of the Commission's administrative regulations requires that Commission approval of a CDP application be supported by a finding showing that the application, as conditioned by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment. In addition, CEQA Guidelines Section 15042 states that "[a] Responsible Agency may refuse to approve a project in order to avoid direct or indirect environmental effects of that part of the project which the Responsible Agency would be called on to carry out or approve."

The City of Daly City, as lead agency under CEQA, and the National Park Service as the lead agency under the National Environmental Policy Act (NEPA), prepared and certified a combined Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) in 2017. The Coastal Commission, acting as a responsible agency pursuant to CEQA, has reviewed and considered the information contained in the EIR/EIS on the project. The Coastal Commission's review and analysis of land use proposals such as this CDP application has been certified by the Secretary of Resources as the functional equivalent of environmental review under CEQA (14 CCR Section 15251(c)).

The Commission incorporates its findings on Coastal Act consistency above at this point as if set forth in full. The findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of this report. As specifically discussed in these above findings, mitigation measures that would minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible mitigation measures available which would substantially lessen any significant adverse impacts, either individually or cumulatively, that the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act to conform to CEQA Section 21080.5(d)(2)(A).

5. APPENDICES

A. Substantive File Documents⁶⁷

- Draft and Final EIR
- Geotechnical Investigation and Geological Evaluation Report
- Geotechnical Data Report
- 2007 Alternatives Analysis
- 2009 Supplemental Analysis
- 2011 Alternatives Supplemental Analysis
- Alternatives Summary
- Applicant Sand Supply Calculations
- Evaluation of Coastal Components Memo
- Coastal Impacts Memo
- Tree Assessment Report
- NMFS-USFWS Biological Assessment
- ESHA Memo
- Construction Vegetation Mapping
- Lake Management Plan
- Construction Diversion Modeling
- CalTrout Petition to the State Water Board
- Avalon Canyon No Effects Determination (NE-072-98)

B. Staff Contact with Agencies and Groups

- San Francisco Public Utilities Commission
- San Francisco Planning Department
- California State Water Resources Control Board
- San Francisco Bay Regional Water Quality Control Board
- National Park Service
- Surfrider Foundation
- CalTrout

⁶⁷ These documents are available for review from the Commission's North Central Coast District office.