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F19a

Prepared July 11, 2012 for July 13, 2012 Hearing

To: Commissioners and Interested Persons

From: Madeline Cavalieri, Central Coast District Manager
Karen Geisler, Coastal Planner

Subject: STAFF REPORT ADDENDUM for F19a
CDP Application Number 2-11-024 (City of Daly City Mussel Rock Revetment)

The purpose of this addendum is to modify the staff report (dated prepared June 29, 2012) for the above-referenced item. Staff worked closely with the City of Daly City on the recommended special conditions leading up to the staff report being released, and has continued to work with the City on potential refinements to them in the time since. This addendum reflects those refinements, and addresses the City's identified need for phasing certain elements of the project to ensure successful implementation, including in relation to the required public access provisions. The addendum changes do not alter the base staff recommendation, but rather simply provides implementation specificity and detail. Thus, the staff report is modified as shown below (where applicable, text in underline format indicates text to be added, and text in ~~strikethrough~~ format indicates text to be deleted). As modified by this addendum, the City is in agreement with the staff report recommendation, including its terms and conditions.

1. Modify Subsection 1.A of Special Condition 1 (starting on staff report page 4) as follows:

A. PRIOR TO CONSTRUCTION OF PHASE ONE (comprised of subsection 1a; see below), ~~WITHIN 180 DAYS OF COMMISSION APPROVAL OF THIS CDP, or within such additional time as the Executive Director may grant for good cause, or no less than 60 days prior to construction, whichever is earlier,~~ the Permittee shall submit two full size sets of Revised Final Plans for phase one to the Executive Director for review and approval. WITHIN 180 DAYS OF COMMISSION APPROVAL OF THIS CDP, or within such additional time as the Executive Director may grant for good cause, the Permittee shall submit two full size sets of Revised Final Plans for phase two (comprised of all subsections other than 1a; see below) to the Executive Director for review and approval. All components of phase two not yet constructed/implemented shall be constructed/implemented per the approved Revised Final Plans within 60 days of approval of the Plans. The Revised Final Plans shall be in substantial conformance with the plans submitted to the Coastal Commission (dated April 2, 2011) except that they shall be revised and supplemented to comply with the following requirements:

1. Revetment.

a.) The plans shall show the 450-foot section of revetment to be repaired and expanded and all related development in this 450-foot section (i.e., access road and other infrastructure) in plan view and with at least two cross-sections showing the typical configuration of this 450-foot section of revetment and related development.

b.) The plans shall show the entire revetment in plan view and with at least ~~three~~ five cross-sections showing the typical configuration of the entire revetment.

…

2. Modify Special Condition 2 (starting on staff report page 5) as follows:

A. WITHIN ONE YEAR OF COMPLETION OF PHASE ONE ~~COMMISSION APPROVAL OF THIS CDP~~, or within such additional time as the Executive Director may grant for good cause, the Permittee shall submit two copies of As-Built Plans showing all development ~~approved~~ constructed as part of phase one (see Special Condition 1) of the project. The As-Built Plans shall be substantially consistent with the approved revised final plans described in Special Condition 1 above, including providing for all of the same requirements specified in those plans, and shall account for all of the parameters of Special Condition 3 (Monitoring Plan) and Special Condition 10 (Future Maintenance). The As-Built Plans shall include a graphic scale and all elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD). The As-Built Plans shall include color photographs (in hard copy and jpg format) that clearly show all components of phase one of 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 representative viewpoints from the beach located directly upcoast and downcoast~~, and seaward~~ of the project site; and from the public access and maintenance service road upcoast and downcoast along the top of the approved revetment. The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, acceptable to the Executive Director, verifying that the revetment has been repaired and augmented in conformance with the approved revised final plans.

B. WITHIN 120 DAYS OF APPROVAL OF REVISED FINAL PLANS FOR PHASE TWO (see Special Condition 1), or within such additional time as the Executive Director may grant for good cause, the Permittee shall submit two copies of As-Built Plans showing all development identified and/or constructed/implemented as part of phase two of the project. The As-Built Plans shall be substantially consistent with the approved revised final plans for phase two described in Special Condition 1 above, including providing for all of the same requirements specified in those plans, and shall account for all of the parameters of Special Condition 12 (Public Access Management Plan). The As-Built Plans shall include a graphic scale and all elevation(s) shall be described in relation to NGVD. The As-Built Plans shall include color photographs (in hard copy and jpg format) that clearly show all components of phase two of 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.

3. Modify Subsection 4.A Special Condition 4 (starting on staff report page 6) as follows:

A. *PRIOR TO ANY CONSTRUCTION, ~~WITHIN 180 DAYS OF COMMISSION APPROVAL OF THIS CDP, or within such additional time as the Executive Director may grant for good cause, or no less than 60 days prior to construction, whichever is earlier,~~ the Permittee shall submit two copies of a Construction Plan to the Executive Director for review and approval. …*

4. Modify Subsection 12.A.8 of Special Condition 12 (starting on staff report page 13) as follows:

8. Public Access Areas and Amenities Maintained. The public access components of the project shall be maintained in their approved state ~~in perpetuity~~ for as long as the landfill, transfer station, parking lot, revetment, gabions, drainage infrastructure, access roads, trails, fencing, signs, and/or any related development remains at the Mussel Rock site.

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F19a

Filed:	2/24/12
180th Day:	8/22/12
Staff:	K. Geisler-SF
Staff Report:	6/29/12
Hearing Date:	7/13/12

STAFF REPORT: REGULAR CALENDAR

Application No.: **2-11-024**

Applicant: **City of Daly City**

Location: Mussel Rock Landfill site (APN 008-460-010), located along the oceanfront north and west of Westline Drive, City of Daly City, San Mateo County

Project Description: (1) Repair and expand 450 feet of an existing 2,600-foot long riprap revetment; (2) repair and expand an existing access road along the southern portion of the landfill area; (3) after-the-fact (ATF) approval for previous unpermitted expansion of the existing revetment; and (4) ATF approval for previous installation of fencing, expansion of gabion walls and relocation of a portion of an existing access road at the landfill site.

Staff Recommendation: Approval with conditions.

I. SUMMARY OF STAFF RECOMMENDATION

The proposed project is for repair and expansion of a 450-foot section of an existing 2,600-linear-foot riprap rock revetment, repair and expansion of an existing access road, installation of fencing and gabion walls and relocation of a portion of an existing access road, all at the Mussel Rock area of Daly City. The Mussel Rock site was formerly a shoreline landfill that is now closed and capped, and it is now open and available for general public access via a system of trails and roads. These types of public access features were required by the Commission as part

of the landfill closure in 1978, and the public access area at Mussel Rock is now a significant recreational resource to the City and surrounding area. The riprap revetment at the site, originally constructed in 1969, serves to contain the landfill, which lies directly inland of the revetment in an area of significant erosion and landslide, including due to nearby earthquake faults. There is limited beach, and the revetment essentially is located directly at the ocean's edge where continuous tidal and wave action, along with more severe winter storm events and in combination with site instability and episodic landslides, all contribute to undermine the structural stability of the revetment and the long-term stability of the landfill site.

Staff believes that the proposed armoring is appropriate in this case under the Coastal Act. Although an appropriate longer term goal is to remove the landfill from this unstable shoreline area and remediate the site (including for enhanced access, views, and marine resource protection), such an option would cost an estimated $125 million making it infeasible at the current time, and the armoring work is necessary to avoid a situation where landfill materials find their way into the ocean. Similarly, the related road, fence, and gabion development is appropriate in this case to facilitate site stability and management operations. The impacts from the project can be appropriately offset in this case through public access and public view enhancements at the site that build on those originally required by the Commission, and potential site options can be reevaluated in ten years.

Thus, Staff recommends that the Commission approve a CDP for the proposed project with conditions designed to avoid coastal resource impacts and to limit and mitigate for those that are unavoidable, including conditions that require: 1) limiting authorization of the revetment to its expected design life of 10 years; 2) meeting requirements for other agency approvals; 3) assumption of risk, waiver of liability and indemnity agreement for coastal hazards; 4) monitoring and maintenance of the revetment over the life of the project; 5) appropriate best management practices to protect water quality and public access during construction (for this project and for ongoing site maintenance); 6) revaluation of alternatives to site management in ten years; and 7) implementation of a Public Access Management Plan designed to enhance and facilitate public access and public views at the site, including through modified signage, fencing, and public access amenities.

Staff recommends **approval** of coastal development permit application 2-11-024 as conditioned.

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EXHIBITS

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II. MOTION AND RESOLUTION

Motion:

> *I move that the Commission **approve** Coastal Development Permit Application No. 2-11-024 subject to the conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves a coastal development permit 2-11-024 and adopts the findings set forth below on grounds that the development, as conditioned, will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

III. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Interpretation.** Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

3. **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.

4. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

IV. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Revised Final Plans.**

A. **WITHIN 180 DAYS OF COMMISSION APPROVAL OF THIS CDP**, or within such additional time as the Executive Director may grant for good cause, or no less than 60 days prior to construction, whichever is earlier, the Permittee shall submit two full size sets of Revised Final Plans to the Executive Director for review and approval. The Revised Final Plans shall be in substantial conformance with the plans submitted to the Coastal Commission (dated April 2, 2011) except that they shall be revised and supplemented to comply with the following requirements:

   1. **Revetment.** The plans shall show the entire revetment in plan view and with at least three cross-sections showing the typical configuration of the revetment.

2. **Public Access.** Public access shall be provided and maintained through the site. The plans shall show all access locations consistent with Special Condition 12 below. All public access areas shall be managed and maintained consistent with the Public Access Management Plan required in **Special Condition 12**, below.

3. **Signs.** The plans shall identify, in site plan view, the public access signs to be installed, consistent with **Special Condition 12**, below. All other signs shall be identified, including sign text, materials, dimensions, etc. Signs shall be limited as much as possible so as to avoid impacting public views, and text shall integrate with public access sign text in a way to facilitate public access. All signs shall be of a unified design and theme that best blends with the shoreline and public access aesthetic. Signs, other than those shown on the approved revised final plans (or approved subsequently as addendums to the plans), shall be prohibited.

4. **Fencing.** The plans shall show the location of the proposed fencing and details of the fencing design and materials, as well as the fencing to be removed, consistent with **Special Condition 12**, below.

5. **Gabion Walls.** The plans shall identify all gabion wall sections in site plan view, and shall identify their size and configurations.

6. **Drainage.** The plans shall show the location and size of all existing and new drainage features, including storm drains, trenches and outfalls.

7. **Screening** The Plans shall provide for exposed portions of the gabion walls, drainage pipes and related infrastructure, the top of the revetment, and other landfill related elements to be screened from public view through the use of native non-invasive landscaping and other screening methods (i.e., placing infrastructure underground, painting infrastructure to blend with site, moving infrastructure to less visually sensitive parts of the site, combinations of each, etc.). All site infrastructure shall be identified on the plans. Landscaping shall be maintained in its approved state. All new plants shall be native plant species that are tolerant of salt air and salt spray; and all new plants shall be maintained in good growing conditions. Regular monitoring and provisions for remedial action (such as replanting as necessary) shall be provided for to ensure landscaping success.

8. **Debris and Other Materials Removal.** The Plans shall provide that all debris and other materials not associated with landfill infrastructure and operations on the site are removed from the site.

B**.** The Permittee shall undertake development in accordance with the approved Revised Final Plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the approved plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

2. As Built Plans.

WITHIN ONE YEAR OF COMMISSION APPROVAL OF THIS CDP, or within such additional time as the Executive Director may grant for good cause, the Permittee shall submit two copies of As-Built Plans showing all development approved as part of the project. The As-Built Plans shall be substantially consistent with the approved revised final plans described in **Special Condition 1** above, including providing for all of the same requirements specified in those plans, and shall account for all of the parameters of **Special Condition 3** (Monitoring Plan) and **Special Condition 10** (Future Maintenance). The As-Built Plans shall include a graphic scale and all elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD). The As-Built Plans shall include color photographs (in hard copy and jpg format) that clearly show all components of 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 representative viewpoints from the beach located directly upcoast, downcoast, and seaward of the project site; and from the public access and maintenance service road upcoast and downcoast along the top of the approved revetment. The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, acceptable to the Executive Director, verifying that the revetment has been repaired and augmented in conformance with the approved revised final plans.

3. Monitoring Plan.

The Permittee shall ensure that the condition and performance of the approved as-built revetment project is regularly monitored by a licensed civil engineer with experience in coastal structures and processes. Such monitoring evaluation shall at a minimum address whether any significant weathering or damage has occurred that would adversely impact future performance, and identify any structural or other damage requiring repair to maintain the as-built revetment in a structurally sound manner and its approved state. Monitoring reports prepared by a licensed civil engineer with experience in coastal structures and processes, and covering the above-described evaluations, shall be submitted to the Executive Director for review and approval at five year intervals by May 1st of each fifth year (with the first report due May 1, 2018) for as long as the revetment exists at this location. The reports shall identify the existing configuration and condition of the revetment and shall recommend actions necessary to maintain it in its approved and/or required state, and shall include photographs taken from each of the same vantage points required in the As-Built Plans (Special Condition 2) with the date and time of the photographs and the location of each photographic viewpoint noted on a site plan. Actions necessary to maintain the approved project in a structurally sound manner and its approved state shall be implemented within 30 days of Executive Director approval, unless a different time frame for implementation is identified by the Executive Director.

4. Construction Plan.

A. **WITHIN 180 DAYS OF COMMISSION APPROVAL OF THIS CDP**, or within such additional time as the Executive Director may grant for good cause, or no less than 60 days prior to construction, whichever is earlier, the Permittee shall submit two copies of a Construction Plan to the Executive Director for review and approval. The Construction Plan shall, at a minimum, include the following:

1. **Construction Areas.** The Construction Plan shall identify the specific location of all construction areas, all staging areas, and all construction access corridors in site plan view. All such areas within which construction activities and/or staging are to take place shall be minimized to the maximum extent feasible in order to have the least impact on public access and the Pacific Ocean, including by using inland areas for staging and storing construction equipment and materials as feasible.

2. **Construction Methods.** The Construction Plan shall specify the construction methods to be used, including all methods to be used to keep the construction areas separated from the ocean and public recreational use areas (including using unobtrusive fencing (or equivalent measures) to delineate construction areas).

3. **Construction BMPs.** The Construction Plan shall include the following construction requirements specified by written notes on the Construction Plan and shall identify the type and location of all erosion control/water quality best management practices that will be implemented during construction to protect coastal water quality. Minor adjustments to the following construction requirements may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources. The Construction Plan shall include the following: (a) silt fences, straw wattles, or equivalent apparatus, shall be installed at the perimeter of the construction site to prevent construction-related runoff and/or sediment from discharging to the ocean; (b) equipment washing, refueling, and/or servicing shall take place at least 50 feet from the ocean. All construction equipment shall be inspected and maintained at an off-site location to prevent leaks and spills of hazardous materials at the project site; (c) the construction site shall maintain good construction housekeeping controls and procedures (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); (d) all erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each work day; (e) All work shall take place during daylight hours and lighting of the beach area is prohibited; (f) Construction (including but not limited to construction activities, and materials and/or equipment storage) is prohibited outside of the defined construction, staging, and storage areas; (g) The construction site shall maintain good construction site housekeeping controls and procedures (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 beach/bluff areas; etc.); All erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each workday. At a minimum, silt fences, or equivalent apparatus, shall be installed at the perimeter of the construction site to prevent construction-related runoff and/or sediment from entering into the Pacific Ocean.

   The Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office at least three working days in advance of commencement of construction

or maintenance activities, and immediately upon completion of construction or maintenance activities.

All requirements above and all requirements of the approved Construction Plan shall be enforceable components of this coastal development permit. The Permittee shall undertake development in accordance with the approved Construction Plan.

4. **Construction Site Documents.** The Construction Plan shall provide that copies of the signed coastal development permit and the approved Construction Plan be maintained in a conspicuous location at the construction job site at all times, and that such copies are available for public review on request. All persons involved with the construction shall be briefed on the content and meaning of the coastal development permit and the approved Construction Plan, and the public review requirements applicable to them, prior to commencement of construction.

5. **Construction Coordinator.** The Construction Plan shall provide that a construction coordinator be designated to be contacted during construction should questions arise regarding the construction (in case of both regular inquiries and emergencies), and that their contact information (i.e., address, phone numbers, etc.) including, at a minimum, a telephone number that will be made available 24 hours a day for the duration of construction, is conspicuously posted at the job site where such contact information is readily visible from public viewing areas, along with indication that the construction coordinator should be contacted in the case of questions regarding the construction (in case of both regular inquiries and emergencies). The construction coordinator shall record the name, phone number, and nature of all complaints received regarding the construction, and shall investigate complaints and take remedial action, if necessary, within 24 hours of receipt of the complaint or inquiry.

6. **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.

B. The Permittee shall undertake construction in accordance with the approved Construction Plan. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the approved plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

5. Assumption of Risk, Waiver of Liability and Indemnity Agreement.

The Permittee acknowledges and agrees, on behalf of itself and all successors and assigns: (i) that the site is subject to 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, earthquakes, landslides, and the interaction of same; (ii) to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; (iv) to indemnify and hold harmless the Commission, its officers,

agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; and (v) that any adverse effects to property caused by the permitted project shall be fully the responsibility of the property owner.

6. State Lands Commission Approval.

WITHIN 180 DAYS OF COMMISSION APPROVAL OF THIS CDP, or within such additional time as the Executive Director may grant for good cause, or no less than 30 days prior to construction, whichever is earlier, the Permittee shall submit to the Executive Director for review a copy of the State Lands Commission permit, letter of permission, authorization, or equivalent for the approved project, including the revetment expansion, or evidence that no State Lands Commission authorization is necessary for the approved project. Any changes to the approved project required by the State Lands Commission 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 an amendment is legally required.

7. Army Corps of Engineers.

WITHIN 180 DAYS OF COMMISSION APPROVAL OF THIS CDP, or within such additional time as the Executive Director may grant for good cause, or no less than 30 days prior to construction, whichever is earlier, the Permittee shall submit to the Executive Director for review a copy of the Army Corps of Engineers (ACOE) permit, letter of permission, authorization, or equivalent for the approved project, or evidence that no ACOE authorization is necessary for the approved project. Any changes to the approved project required by the ACOE 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 an amendment is legally required.

8. Ten-Year Development Authorization.

A. This CDP authorizes the revetment expansion for ten years from the date of this CDP approval (i.e., until July 13, 2022) or until the time when the currently existing structures warranting armoring are no longer present and/or no longer require armoring for such protection, whichever occurs first.

B. No later than nine years after the approval of this permit, the Permittee or successor in interest shall apply for and obtain an amendment to this permit that either requires the removal of the revetment or requires mitigation for the effects of the revetment on public access and recreation and other coastal resources for the expected life of the revetment beyond (but not including) the initial 10-year period of authorization.

C. If the Permittee intends to keep the revetment in place after that time, the Permittee must apply to the Coastal Commission (including through the Coastal Act's consolidated CDP provisions for any development located in the City's CDP jurisdiction) for a new CDP authorization to allow the revetment (including, as applicable, any potential modifications to it desired by the Permittee). The Permittee is required to include in the permit

application an evaluation of alternatives to the revetment and related elements that can eliminate and/or reduce impacts to public views, public access, shoreline processes, marine resources, and other coastal resources at the site. Alternatives shall include but not be limited to: removal and/or relocation of all or portions of the landfill and its related elements (i.e., road, drainage, etc.) and restoration of the site (including removal of the revetment); alternative measures capable of protecting the landfill and its related elements, and providing reasonable use of the property, without constructing shoreline armoring; and alternative armoring and other measures that can perform the same function as the revetment with less coastal resource impacts. The information concerning these alternatives must be sufficiently detailed to enable the Coastal Commission to coequally evaluate the feasibility of each alternative for addressing site issues under the Coastal Act and the LCP.

9. Archaeological Mitigation.

A. If an area of cultural deposits is discovered during the course of the project all construction shall cease and shall not recommence except as provided in subsection (B) hereof, and a qualified cultural resource specialist shall analyze the significance of the find.

B. A permittee seeking to recommence construction following discovery of the cultural deposits shall submit a supplementary archaeological plan for the review and approval of the Executive Director.

1. If the Executive Director approves the Archaeological Plan and determines that the Archaeological Plan's recommended changes to the proposed development or mitigation measures are *de minimis* in nature and scope, construction may recommence after this determination is made by the Executive Director.

2. If the Executive Director approves the Archaeological Plan but determines that the changes therein are not *de minimis*, construction may not recommence until after an amendment to this permit is approved by the Commission.

10. Future Maintenance Authorized. This coastal development permit authorizes future repair and maintenance of the revetment, drainage system, roads, gabion walls, and the public access elements of the approved project, subject to the following:

A. Maintenance. "Maintenance," as it is understood in this special condition, means development that would otherwise require a coastal development permit whose purpose is to maintain: (1) the revetment and gabion walls in their approved state; (2) the access roads in their approved state; (3) the drainage system in its approved state; (4) the required landscaping elements in their approved state, and; (5) public access trails and amenities in their approved state (see **Special Condition 1** for Revised Final Plans, **Special Condition 3** for Monitoring Plan, **Special Condition 12** for Public Access Management Plan). Maintenance does not include an enlargement or expansion of the approved revetment.

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

C. Maintenance Notification. At least two weeks prior to commencing any maintenance event, the Permittee shall notify, in writing, planning staff of the Coastal Commission's North Central Coast District Office. The notification shall include: a detailed description of the maintenance event proposed; any plans, engineering and/or geology reports describing the event; a construction plan that complies with all aspects of the approved construction plan requirements (regarding identification of a construction coordinator and his/her contact information i.e., address, phone numbers, etc.) as described previously; other agency authorizations; and any other supporting documentation (as necessary) describing the maintenance event. The maintenance event shall not commence until the Permittee has been informed by planning staff of the Coastal Commission's North Central Coast District Office that the maintenance event complies with this coastal development permit. If the Permittee has not been given a verbal response or sent a written response within 14 days of the notification being received in the North Central Coast District Office, the maintenance event shall be authorized as if planning staff affirmatively indicated that the event complies with this coastal development permit. The notification shall clearly indicate that the maintenance event is proposed pursuant to this coastal development permit, and that the lack of a response to the notification within 14 days constitutes approval of it as specified in the permit. In the event of an emergency requiring immediate maintenance, the notification of such emergency episode shall be made as soon as possible, and shall (in addition to the foregoing information) clearly describe the nature of the emergency.

D. Maintenance Coordination. Maintenance events shall, to the degree feasible, be coordinated with other maintenance events proposed in the immediate vicinity with the goal being to limit coastal resource impacts, including the length of time that construction occurs in and around public access areas and shoreline access points. As such, the Permittee shall make reasonable efforts to coordinate the Permittee's maintenance events with other adjacent events, including adjusting maintenance event scheduling as directed by planning staff of the Coastal Commission's North Central Coast District Office.

F. Restoration. The Permittee shall restore all access points impacted by construction activities to their pre-construction condition or better. Any beach sand impacted shall be filtered as necessary to remove all construction debris from the beach within three days of completion of construction.

G. Noncompliance Provision. If the Permittee is not in compliance with the terms and conditions of any Coastal Commission coastal development permits or other coastal authorizations that apply to the subject property at the time that a maintenance event is proposed, then the maintenance event that might otherwise be allowed by the terms of this future maintenance condition shall not be allowed by this condition until the Permittee is in full compliance with those terms and conditions.

H. Emergency. In addition to the emergency provisions set forth in subsection (c) above, nothing in this condition shall serve to waive any Permittee rights that may exist in cases of emergency pursuant to Coastal Act Section 30611, Coastal Act Section 30624, and Subchapter 4 of Chapter 5 of Title 14, Division 5.5, of the California Code of Regulations (Permits for Approval of Emergency Work).

I. **Duration and Scope of Covered Maintenance.** Future maintenance under this coastal development permit is allowed subject to the above terms until July 13, 2022. The Permittee shall maintain the approved shoreline protection structure in its approved state. No expansion or enlargement of the approved shoreline protection structure is permitted. Changes in the design and/or location of the upland structures may require a coastal development permit amendment. The Permittee shall apply for a coastal development permit amendment for all development activities that would expand or enlarge the approved structures as soon as possible but no later than 60 days after discovery of the need for such proposed activity.

11. Future Development of the Site. Any future redevelopment of the site shall not rely on the permitted revetment to establish geologic stability or protection from hazards. Redevelopment on the site shall be sited and designed to be safe without reliance on shoreline or bluff protective devices. As used in this condition, "redevelopment" is defined to include: (1) additions, or; (2) expansions, or; (3) demolition, renovation or replacement that would result in alteration to 50 percent or more of an existing structure, including but not limited to, alteration of 50 percent or more of a shoreline protective device, or; (4) demolition, renovation or replacement of less than 50 percent of an existing structure where the proposed remodel or addition would result in a combined alteration of 50 percent or more of the structure from its condition as of July 13 2012.

12. Public Access Management Plan.

A. **WITHIN 180 DAYS OF COMMISSION APPROVAL OF THIS CDP or within such additional time as the Executive Director may grant for good cause,** the Permittee shall submit two copies of a public access management plan (Public Access Management Plan) to the Executive Director for review and approval. The Public Access Management Plan shall clearly describe the manner in which general public access associated with the site is to be provided and managed, with the objective of maximizing public access and access utility to the public access areas of the site (including all paths and view points) and all related areas and public access amenities described in this special condition, as well as to enhance public veiws. The Public Access Management Plan shall be substantially in conformance with the approved revised final plans (referenced in **Special Condition** 1 above), and shall at a minimum include the following:

1. **Clear Depiction of Public Access Areas and Amenities.** All public access areas and amenities, including all of the areas and amenities described above, shall be clearly identified as such in the Public Access Management Plan (including with hatching and closed polygons so that it is clear what areas are available for public access use).

2. **Access Paths and View Points.** Public access paths shall be provided in such a way as to ensure connectivity, maximize utility, and provide access along the entirety of the site. Such paths shall include multiple view points offset from the paths and equipped with appropriate amenities (benches, interpretive panels, trash and recycling receptacles, etc) sited and designed to provide areas for shoreline viewing and quite contemplation. All access paths and view points, including the lateral access along the top of the revetment

via the maintenance road, shall remain unobstructed and available for general public access use at all times.

3. **Amenities.** Public access amenities (such as benches, table and chairs, bicycle racks, trash and recycling receptacles, etc.) shall be provided, including at a minimum, benches in the public view overlook adjacent to the parking lot and in other appropriate locations (e.g., other view points).

4. **Fencing.** The chain link fencing located between the parking lot and the access road shall be removed and replaced with unobtrusive new fencing (or equivalent) that has an open design to minimize the obstruction of views and blend with the surrounding environment, including through use of natural-looking materials and surfaces. To the extent feasible, all chain link fencing located throughout the landfill site and at the southern, seaward end of the access road, except for the fencing located between the landfill site and the transfer station, shall be removed entirely. All fencing shall be limited to the degree feasible, and remaining fencing modified to be consistent throughout the site and subject to a common design theme consistent with the shoreline aesthetic.

5. **Public Access Signs/Materials.** The Public Access Management Plan shall identify all signs and any other project elements that will be used to facilitate, manage, and provide public access to the approved project, including identification of all public education/interpretation features that will be provided on the site (educational displays, interpretive signage, etc.). Sign details showing the location, materials, design, and text of all public access signs shall be provided. The signs shall be designed so as to provide clear information without impacting public views and site character. At a minimum, public access directional signs shall be placed at the intersection of Westline Drive and Palmetto Avenue, at the intersection of Westline Drive and the driveway entrance to the transfer station, in the parking lot and on the entrance gate to the access road/pedestrian paths. At a minimum, two interpretive panels relevant to the site shall be provided at locations that maximize their utility. Public access signage shall include the California Coastal Trail and California Coastal Commission emblems.

6. **No Public Access Disruption.** Development and uses within the public access areas that disrupt and/or degrade public access shall be prohibited, unless such development and/or uses are necessary to ensure stability of the landfill site and are allowed pursuant to coastal development permit authorization. The public use areas shall be maintained consistent with the approved Public Access Management Plan and in a manner that maximizes public use and enjoyment.

7. **Public Access Use Hours.** All public access areas and amenities shall be available to the general public free of charge during at least daylight hours (i.e., one hour before sunrise to one hour after sunset).

8. **Public Access Areas and Amenities Maintained.** The public access components of the project shall be maintained in their approved state in perpetuity.

B. The Permittee shall undertake development in accordance with the approved Public Access Management Plan, which shall govern all general public access to the site pursuant to this coastal development permit. Any proposed changes to the approved Public Access Management Plan shall be reported to the Executive Director. No changes to the approved Public Access Management Plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

13. Permit Expiration and Condition Compliance

Because some of the proposed development has already commenced, this coastal development permit shall be deemed issued upon the Commission's approval and will not expire, although it is limited in duration to ten years maximum (see **Special Condition 8**). Failure to comply with the special conditions of this permit may result in the institution of an action to enforce those conditions under the provisions of Chapter 9 of the Coastal Act.

14. Liability for Costs and Attorneys Fees

The permittee shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys fees – including (1) those charged by the Office of the Attorney General, and (2) any court costs and attorneys fees that the Coastal Commission may be required by a court to pay – 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 assigns challenging the approval or issuance of this permit, the interpretation and/or enforcement of permit conditions, or any other matter related to this permit. 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.

V. FINDINGS AND DECLARATIONS

The Commission finds and declares as follows:

A. PROJECT LOCATION

Daly City has 2.6 miles of coastline, mostly consisting of tall, steep vertical bluffs and consequently the coastal shoreline is challenging to access. The project site, known as Mussel Rock for its distinctive offshore sea stack, is part of a large coastal terrace located on the west slope of the coastal range adjacent to the Pacific Ocean in Daly City. It is located in a geologically dynamic and unstable area that is crossed by two fault lines, the San Andreas and Mussel Rock faults, and that has historically seen significant landform movement. The San Andreas Fault traverses the site in a northwesterly direction and exits into the ocean approximately 1,800 feet north of the Mussel Rock site. The site also lies within an existing major active landslide area that extends approximately 2,500 feet north of the site and 2,800 feet inland to the east. The old Coast Highway historically traversed the site and slide area, but was

abandoned[1] by the State due to excessive slide movement[2] and consequent high maintenance costs. Site elevations range from sea level to approximately 650 feet above sea level at the northeastern corner of the site, and the site generally slopes downward to the west (toward the ocean) at slopes ranging from 1:1 to about 5:1.[3] Stability of the Mussel Rock site is affected by a number of complex soil and geologic conditions, which have included active primary and secondary slides, wave attack and beach erosion.

The stability of the site is also affected by its historical use as a sanitary landfill site. Mussel Rock is a closed and unlined Class III (municipal waste) landfill site that occupies approximately 29 acres (out of a total of 149 acres) of the site. The old landfill is made up of upper and lower disposal areas that have been soil capped, and it lies between steep, unstable slopes leading down towards the ocean, and the steeper unstable slopes rising up to Highway 1 and the dense residential areas of Daly City located above. Residential development borders the site to the east and the south, portions of which have also been directly affected by the unstable ground, including slide activity, which has resulted in the removal of 21 homes along Westline Drive above the southern boundary of the site. There is also a transfer station (on approximately 2 acres) located at the southern end of the site, which was required in order to close the Mussel Rock landfill.[4]

The closed and capped landfill is adjacent to the ocean, built in a pit located at the toe of the main slide and is subject to severe hazards, including shoreline erosion, instability posed by stormwater and groundwater passing through the site, and the risk posed by the San Andreas and Mussel Rock Faults that traverse the site. Although there are no creeks crossing through the site there are a number of drains and transient seepage points monitored as part of the site's Industrial Storm Water General Permit, issued by the RWQCB.

The site is owned by the City of Daly City and managed by the City's Department of Public Works (DPW). It is currently known as Mussel Rock Park, and it is designated by the City's Local Coastal Program (LCP) for open space and public access along the shoreline. Access to the site is available from a public parking lot located at the south end of the site at the end of Westline Drive next to the transfer station through a pedestrian gate in the fence. Lateral access along and through the site is possible as the public is allowed general access to it, including to traverse site roads as well as to reach the beach by using the compacted (but unpaved) maintenance road that traverses the landfill site and runs along the top of the entire length of the revetment fronting the site (see also below).[5] Although the road ends at the north end of the project site, there is an informal pedestrian access via a "goat trail" down to the beach (equipped with a rope that the public has used historically as a "railing" and to provide balance).

Finally, an approximately 35-foot high riprap revetment extends 2,600 feet along the shoreline

[1] Between Thornton Beach, to the north, and Mussel Rock.
[2] Between 1938 and 1957, the highway is reported to have moved 47 feet vertically.
[3] Horizontal to vertical.
[4] Pursuant to Central Coast Regional Water Quality Control Board (RWCQB) Order 77-6 requiring the City of Daly City and Daly City Scavenger Company to cease and desist from discharging wastes in violation of requirements prescribed by the RWQCB. The transfer station and associated closure related development and activities were permitted by the Coastal Commission through CDP P-77-185 (see also description of that CDP below).
[5] This service road is also used by the DPW to maintain and manage the site as per the RWQCB's order.

frontage of the site, starting from the Mussel Rock landmark up towards the north and the informal beach access point. The revetment was originally constructed in 1969. Over time portions of the wall have significantly settled due to wave action and land movement, and as a result the site is regularly monitored and has been maintained periodically (both with and without permits – see also below) by the City. The base of the revetment is usually covered by ocean waters, and thus the exposed beach area is extremely limited to nonexistent fronting the revetment, except during lower tides, and except for the smaller beach area just past the armoring at the access point at the upcoast end of the revetment and the site where there is no armoring.

See **Exhibit 1** for the project site location map, **Exhibit 2** for site plans and **Exhibit 3** for site photographs.

B. PROJECT BACKGROUND

Mussel Rock Landfill opened in 1957 as a Class III landfill for solid municipal waste disposal. The landfill served the Cities of Daly City and Pacifica and operated for twenty years until it was closed by order of the RWQCB (and subject to Coastal Commission CDP approval – see below) in 1978. The landfill site continues to be under the regulatory oversight of the RWQCB, which requires the City to maintain the soil cap and landfill containment, as well as to manage groundwater and other water flows through the entire area in order to minimize and control runoff from the site entering the ocean. The landfill material is located approximately 50 to 60 feet from the shoreline and is capped with 3 to 4 feet of soil.[6]

The revetment fronting the site was originally built over forty years ago, prior to the coastal permitting requirements of Proposition 20 (the Coastal Initiative) and the 1976 Coastal Act. The revetment was constructed as part of the RWQCB's requirements (through its 1968 Waste Discharge Requirements for the site and its 1969 Cease and Desist Order) because garbage was being washed into the ocean due to erosion and site instability. Mitigation measures imposed at that time included regrading the slopes and constructing the revetment along the toe of the slope. Today, the existing revetment is 2,600 feet long. The base of the revetment is located on State Lands, and the State Lands Commission (SLC) has issued the City a lease.[7]

Although the revetment has helped to address the problem of potential waste discharge into the ocean, there continues to remain a real potential for a major discharge of garbage and other wastes into the ocean, including as a result of slides, earthquakes, severe winter storms, or combinations of these and other hazards. As described above, the site is inherently unstable and located at the shoreline interface, which makes landfill management challenging. In 1977, the RWQCB originally proposed three main alternatives to deal with this problem: i) to permanently stabilize the site against slides with the construction of a sufficient toe berm to prevent sliding; ii) to remove all garbage from the site; or iii) to stop further landfill operations and embark on a long-term surveillance and maintenance program for the entire area. The first two alternatives were roughly estimated to cost between ten and eight million dollars, respectively, and were dismissed at the time because they were considered beyond the community's resources. The third alternative offered less protection, but was considered the only feasible solution at the time. This

[6] According to the RWQCB Order 00-27.
[7] Renewed in 2012 for 49 years.

was accepted by the RWQCB and made a part of its order to cease landfill operations.[8]

SITE DEVELOPMENT HISTORY AND CDP VIOLATIONS

As discussed above, the landfill was established in 1957, and the revetment was constructed in 1969 following an incident where landfill materials entered the ocean. Both existed prior to coastal permitting requirements. In 1978, the Coastal Commission issued a CDP (P-77-182) to authorize capping and related landfill closure activities as well as the construction of a new transfer station to meet RWQCB requirements for the closure of the site. This approval also included development of Mussel Rock Park at the site, proposed by the City to provide open space and public access through trails and other park amenities (e.g., benches, picnic tables, playground area, etc.). The City ultimately built the waste transfer station, but the City never completed the development of the park. According to the City, the park was not completed due to lack of funding, and because the instability of the site makes it extremely difficult to maintain any sort of infrastructure. The fact that the park facility was never developed is a violation of the terms and conditions of CDP P-77-182. However, the City does indicate that the site is open to the general public and has a parking area, and that it is well used, with recent surveys showing about 100 visitors per day. Activities include walking, informal sandy beach access, dog walking, fishing and hang gliding.

Since the issuance of CDP P-77-182, the City has continued to maintain the landfill site in order to comply with RWQCB requirements to manage drainage and reduce risk of landslides and daylighting wastes. This work has included grading to maintain access roads and surface drainage pipes, relocation of access roads, construction and expansion of gabion walls, and installation of fencing to manage public access at the site. This development is located within the City's permit jurisdiction. However, the City has not issued any CDPs for the work, and thus it has been completed in violation of coastal permitting requirements.

In addition, in 2002, CDP 2-01-011 was issued by the Commission for the repair and expansion of a 50-foot section of the revetment and the reconstruction of a 144-foot section of the gabion wall.[9] After development was completed pursuant to this CDP, additional repairs to the revetment occurred, but these additional repairs were not covered by this CDP or any other, in violation of coastal permitting requirements. In addition, the City originally failed to submit the required annual monitoring reports under this CDP.[10] Thus, there are a series of violations associated with development at the site without CDPs (e.g., revetment work and overall site work) and associated with non-compliance with approved CDPs, including perhaps most critically with respect to the lack of the development of the park pursuant to CDP P-77-182. The City intends this CDP application to both authorize past work after-the-fact and new proposed revetment work now and going forward. The City further intends this CDP application to account for its past commitments to park development. In short, the intent is that this CDP application provide a clean CDP slate moving forward.

[8] Adopted January 18, 1977.

[9] The gabion walls are short walls that are located on the inland edge of the maintenance road atop the revetment.

[10] Violation case (V-2-08-012). Since 2008, the Applicant has submitted the required annual monitoring reports and the violation has not been pursued.

C. PROJECT DESCRIPTION

The proposed project includes: (1) repair and expansion of the existing revetment: (2) repair and expansion of the existing access road; (3) after-the-fact authorization for previous expansion of the existing revetment, and; (4) after-the-fact authorization for various development on the landfill site. The proposed revetment work includes adding approximately 2,450 tons of up to 4-ton rock to increase the width of the base of the revetment from approximately 40 feet to 55 feet along an approximately 450-foot section of the revetment. This expansion would reduce the slope of the revetment from the existing 1.3:1 (horizontal: vertical) slope to a flatter slope of approximately 1.75:1, to match the slope of the rest of the revetment extending to the north. The proposed work includes the replacement of geotextile material and re-stacking and compacting rock within the eroded area of the revetment (about 450 linear feet of the revetment) up to a height of approximately 40 feet. The rock would be placed using a crane situated on the maintenance road just inland of (and atop) the revetment, and no equipment would be located on the beach or within the tidal zone. The City indicates that the repaired and augmented revetment would have a projected design life of 10 years.

The proposed project also includes repair and expansion of the existing access road running along the top edge of the revetment, including increasing the road width by 4 feet (from approximately 10 feet to approximately 14 feet), and covering the road bed with approximately 9-inches of road base materials (about 80 cubic yards).

Finally, the proposed project also includes a request for after-the-fact authorization for previous repair and expansion of the revetment that occurred in 2004, 2005, and 2008. These events added approximately 5,500 tons of riprap along two sections of the revetment totaling about 500 feet. The proposed project also includes after-the-fact authorization for development at the upland portion of the landfill site, including installation of chain link fencing and gabion walls and relocation of a portion of the existing access road.

See **Exhibit 2** for proposed project plans.

D. COASTAL DEVELOPMENT PERMIT DETERMINATION

The proposed project involves development in an area of the Commission's retained coastal development permit jurisdiction, and development in an area of coastal development permit jurisdiction delegated to the City of Daly City by the Commission through the City's certified Local Coastal Program (LCP). To avoid having to obtain two CDPs for a single project, Coastal Act Section 30601.3 allows the Commission to process a consolidated coastal development permit application when agreed to by the local government, the applicant, and the Executive Director for projects that would otherwise require coastal development permits from both the Commission and from a local government with a certified LCP.

In this case, all parties have agreed that a consolidated permit is appropriate, including because opportunities for public participation will not be impaired. Pursuant to Coastal Act Section 30601.3, the standard of review is Chapter 3 of the Coastal Act, with the City's LCP providing non-binding guidance. Coastal Act policies are cited in the analysis that follows, as well as certain LCP policies for guidance as relevant.

E. GEOLOGIC CONDITIONS AND HAZARDS

I. APPLICABLE POLICIES

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

> ***30235.*** *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.*

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

> ***Section 30253.*** *New development shall do all of the following:*
>
> *(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

Coastal Act Section 30235 acknowledges that seawalls, revetments, retaining walls, groins, seacave plugs and other such structural or "hard" methods designed to forestall erosion also alter natural landforms and natural shoreline processes. Accordingly, Section 30235 limits the construction of shoreline protective works to those required to protect existing structures or public beaches in danger from erosion. The Coastal Act provides these limitations because shoreline structures can have a variety of negative impacts on coastal resources including adverse affects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, including ultimately resulting in the loss of beach.

Under Coastal Act Section 30235, shoreline protective structures shall only be approved if: (1) there is an existing structure; (2) the existing structure is in danger from erosion; (3) shoreline altering construction is required to protect the existing threatened structure; and (4) the required protection is designed to eliminate or mitigate the adverse impacts on shoreline sand supply. The first three questions relate to whether the proposed armoring is necessary. The fourth question applies to mitigating some of the impacts from armoring.

II. ANALYSIS

A. EXISTING STRUCTURE TO BE PROTECTED

Coastal zone development approved and constructed prior to the Coastal Act went into effect was not subject to Section 30253 requirements. Although some local hazard policies may have been in effect prior to the Coastal Act, these pre-Coastal Act structures have not necessarily been built in such a way as to avoid the future need for shoreline protection (in contrast to those evaluated pursuant to Section 30253 and similar LCP policies since).

In this case, the existing revetment was built in approximately 1969, to prevent landfill material from entering the ocean. It is clearly present in photographs taken from offshore in 1972 (see **Exhibit 3**). Thus, the revetment predates the coastal permitting requirements of both 1972's Proposition 20 (the Coastal Initiative)[11] and the 1976 Coastal Act. Moreover, the revetment protects the existing landfill site, which was established in 1957, and contains approximately one million cubic yards of waste. The landfill was closed and capped pursuant to CDP P-77-182, which included installation of access roads, a drainage system, a series of gabion basket walls to help stabilize the slopes, and several ocean outfalls. Therefore, the revetment protects these existing structures that make up the landfill site, and the landfill site, as a whole, including its infrastructure, is an existing structure for the purposes of Section 30235

B. DANGER FROM EROSION

The Coastal Act allows shoreline armoring to protect existing structures in danger from erosion, but it does not define the term "in danger." There is a certain amount of risk involved in maintaining development along a California coastline that is actively eroding and can be directly subject to violent storms, large waves, flooding, earthquakes, and other geologic hazards. These risks can be exacerbated by such factors as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. As a result, some would say that all development along the immediate California coastline is in a certain amount of "danger." It is a matter of the degree of threat that distinguishes between danger that represents an ordinary and acceptable risk, and danger that requires shoreline armoring per 30235. Lacking Coastal Act definition, the Commission's long practice has been to evaluate the immediacy of any threat in order to make a determination as to whether an existing structure is "in danger." While each case is evaluated based upon its own particular set of facts, the Commission has generally interpreted "in danger" to mean that an existing structure would be considered unsafe within the next two or three storm season cycles (generally, the next few years) if nothing were to be done (i.e., in the no project alternative).

In this case, the landfill's maintenance road is located directly adjacent to the existing revetment, the ocean outfalls are located within the revetment, and both the road and the revetment are failing. In fact, the revetment slope has dropped out in several locations, and the road is undermined and significantly fissured at multiple sections. These failures put at risk the revetment and the existing landfill infrastructure, including the road, as well as short gabion basket walls along the inland edge of the road that help to stabilize the site, as well as various drainage features, and the area of buried garbage (located approximately 50 feet from the blufftop edge) (see **Exhibit 2** for Site Plans).

As indicated above, the site is unstable, affected by landslide, subsidence, erosion, and ocean forces in such a way as to make site management a fairly regular requirement. As the site shifts and settles, its overall stability is weakened, and the potential for both landfill infrastructure to be damaged (i.e., roads, drainage apparatus, etc.) and for materials to find their way into the ocean (including damaged infrastructure but also buried garbage and other wastes) is increased.

The City indicates that the repair and augmentation of the revetment at this location is necessary to protect the landfill site from such site destabilization and the environmental degradation that

[11] Proposition 20's coastal permitting requirements began in 1973.

could follow if the site is not contained. The City estimates that one storm event could lead to the type destabilization that could result in the landfill or components of it making its way into the ocean. Commission staff have visited the site and observed site conditions, including the revetment and road failures indicative of settlement at the shoreline edge, and the Commission's senior coastal engineer concurs with the City that the project is necessary to protect the landfill site. Thus, the existing landfill, and in particular certain elements of it in the most immediate shoreline area (i.e., road, drainage infrastructure, etc.) is "in danger from erosion" as that term is understood in a Coastal Act context, and thus the project meets the second test of Section 30235 of the Coastal Act.

C. Feasible Protection Alternatives to a Shoreline Structure

The third Section 30235 test that must be met is that the proposed armoring must be "required" to protect the existing threatened structure. In other words, shoreline armoring shall only be permitted if it is the only feasible alternative capable of protecting the existing endangered structure.[12] When read in tandem with other applicable Coastal Act policies cited in these findings, this Coastal Act 30235 evaluation is often conceptualized as a search for the least environmentally damaging feasible alternative that can serve to protect existing endangered structures. Other alternatives typically considered include: the "no project" alternative; abandonment of threatened structures; relocation of threatened structures; sand replenishment programs; drainage and vegetation measures on the blufftop; and combinations of each.

In this case, the "no project" and abandonment alternatives are not viable because the existing landfill site is immediately threatened and in danger from erosion as detailed above. These alternatives would result in destabilization of the landfill site, including the complete collapse of the revetment, failure of the ocean outfalls and the adjacent access road, and the deposition of infrastructure and capped landfill materials into the ocean.

Relocation of threatened structures (e.g., to another more stable location inland) is another alternative typically considered. Relocation is a reasonable and feasible alternative to consider in some cases, particularly where the relocation envisioned is relatively minor in relation to the structure and the site. The idea of potentially relocating the Mussel Rock landfill was previously considered by the State Water Board in 1977 as one of three possible options to manage the landfill site. However, the relocation of the landfill was deemed infeasible at that time due to cost (estimated then as costing approximately $8 million). More recently in 1999, the City further explored the possibility of moving the landfill from this site, and received an estimate of approximately $90 million (or corrected to 2012 dollars, approximately $125 million today). Relocation poses other challenges as well, including, according to the City's Senior Engineer, potential destabilization that could lead to damage and impacts to the adjacent properties on the inland hillside above the site, including the residential neighborhood located along Westside Drive above the project site. In addition, the relocation of the landfill material in this case would be a significant physical undertaking. The landfill contains approximately one million cubic yards of fill, and trucking the fill to a new site would cause significant public access and other impacts, including by requiring park facilities here to be closed, and the impacts of extensive

[12] 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.

truck trips on local roads. Therefore, in this case, based on the site constraints, the existing development present on site, and the high costs, relocation is not a feasible alternative for protecting the existing threatened structure at this time.

Related to the removal and relocation alternative, another alternative often considered is planned or managed retreat. This option has been long debated and discussed more generally as well as in terms of specific individual sites. This concept proposes that instead of allowing continued armoring, the shoreline should be allowed to retreat naturally. In this way, as the shoreline naturally erodes and sea level rises, new beaches can form and natural landforms are respected. Beach formation in this respect is partly assisted by the sand-generating material in the bluffs as they erode, but more importantly there is space for the natural equilibrium between the shoreline and the ocean to establish itself and for beaches to form naturally. Over the longer run, a more comprehensive strategy to address shoreline erosion and the impacts of armoring may be developed (e.g. planned or managed retreat, relocation of structures inland, abandonment of structures, etc.). However, there is not currently a managed retreat program for this area, and the costs and challenges associated with removal at this time (which would be required) means that such an option is not currently feasible.[13]

Drainage and landscaping measures are an option that can oftentimes be used to help extend the useful life of setbacks. In this case, the nature of the site's stability issues makes such an option infeasible for offering the kind of protection that is necessary here.

Thus, "soft" approaches to protecting engendered elements are not feasible, and a hard solution is warranted. Here, a revetment is in place, and it is the City's proposal to repair and augment it. Another alternative to a revetment is a vertical seawall or some variation thereof (e.g., gravity concrete seawalls, soil nail walls, etc.). These kinds of structures tend to have a more limited footprint, and can have certain types of reduced impacts as a result. However, in this case due to the unstable nature of the project site, including with regard to seismic activity, landslides and subsidence, a structure like this appears infeasible at this location.

The proposed project alternative would expand the revetment seaward by about 15 feet. This is generally not a preferred alternative when armoring is riprap proposed, including because it tends to result in further encroachment onto sandy beach areas. In this case, taking into account the expanded footprint of the revetment, there is essentially no beach area available as the toe of the revetment extends into the water at almost all times. Although reducing such footprint area would help free up some beach area, a more vertical alternative would not be feasible in this case, as described above. A revetment can better address the unstable nature of the site because it is more flexible than is a concrete wall type of structure, and it can bend and flex with the landform in this case. Thus, although it results in beach/ocean coverage, a revetment makes the best sense for the circumstances at the Mussell Rock site at the current time.

Given all the above, the proposed project is the least environmentally damaging alternative "required" to protect the existing endangered landfill and it thus meets the requirements of the

[13] Of course, if, in the future, the State or even local governments embrace planned retreat as a strategy, the removal of a hard armoring structure at the project location would be a small part of that program inasmuch as many miles of hard armoring would need to be removed and other shore-fronting development retired to allow for the strategy to work comprehensively.

third test of Section 30235.

D. SAND SUPPLY IMPACTS

The fourth test of Section 30235 (previously cited) that must be met in order to allow Commission approval is that shoreline structures must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply.

Shoreline Processes

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, becoming beach material when the bluffs or dunes lose material due to wave attack, landslides, surface erosion, gullying, et cetera. Coastal dunes are almost entirely beach sand, and wind and wave action often provide an ongoing mix and exchange of material between beaches and dunes. Many coastal bluffs are marine terraces – ancient beaches that formed when land and sea levels differed from current conditions. Since the marine terraces were once beaches, much of the material in the terraces is often beach-quality sand or cobble, and is a valuable contribution to the littoral system when it is added to the beach. While beaches can become marine terraces over geologic time, the normal exchange of material between beaches and bluffs is for bluff erosion to provide beach material. Bluff retreat and erosion is a natural process 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. When the back-beach or bluff is protected by a shoreline protective device, the natural exchange of material either between the beach and dune or from the bluff to the beach will be interrupted and, if the shoreline is eroding, there will be a measurable loss of material to the beach. Since sand and larger grain material are the most important components of most beaches, only the sand portion of the bluff or dune material is quantified as sandy beach material.

These natural shoreline processes affecting the formation and retention of sandy beaches can be significantly altered by the construction of shoreline armoring structures because bluff retreat is one of several ways that beach quality sand is added to the shoreline, and is also one of the critical factors associated with beach creation/retention. Bluff retreat and erosion are natural processes that result from the many different factors described above. Shoreline armoring directly impedes these natural processes.

Some of the effects of engineered armoring structures on the beach (such as scour, end effects and modification to the beach profile) are temporary or are difficult to distinguish from all the other actions that modify the shoreline. Others are more qualitative (e.g., impacts to the character of the shoreline and visual quality). Some of the effects that a shoreline structure may have on natural shoreline processes can be quantified, however, 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 back-beach or bluff were to erode naturally.[14]

Encroachment on the Beach

[14] The sand supply impact refers to the way in which the project impacts creation and maintenance of beach sand. Although this ultimately translates into beach impacts, the discussion here is focused on the first part of the equation and the way in which the proposed project would impact sand supply processes.

Shoreline protective devices are all physical structures that occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used as beach. This generally results in a loss of public access as well as a loss of sand and/or 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 beach area is limited, and oftentimes underwater. Nonetheless, for purposes of impact assessment, it is considered beach that would otherwise be available for public access and recreation. The proposed revetment expansion portion of the project would lead to approximately 2,500 square feet of additional coverage. The loss of a square foot of beach area can be roughly converted to the volume of sand that would be required to nourish an equivalent area of beach. There is a rough rule of thumb that it takes between 0.5 to 1.5 cubic yards of sand to establish 1 square foot of dry beach through nourishment.[15] The Commission is not aware and has not established an actual conversion factor for this specific site, but generally uses a conversion factor of 1 to err on the conservative side.[16] The Commission senior coastal engineer has reviewed this case and determined that a conversion factor of 1 is appropriate.

Thus, using the conversion factor, the sand volume equivalent for the direct loss of beach due to encroachment by the proposed project would be approximately 2,500 cubic yards of beach-quality sand.[17]

Fixing the Back Beach

Experts generally agree that where the shoreline is eroding and armoring is installed, the armoring will eventually define the boundary between the sea and upland areas. On an eroding shoreline, a beach will exist between the shoreline/waterline and the bluff as long as sand is available to form a beach. 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 hard protective structure such as a revetment or a seawall. While the shoreline on either side of the armor continues to retreat, shoreline in front of the armor eventually stops at the armoring. This effect is also known as passive erosion. The beach area will narrow, being squeezed between the moving shoreline and the fixed backshore. Eventually, there will be no available dry beach area and the shoreline will be fixed at the base of the structure. In the case of an eroding shoreline, this represents the loss of a beach as a direct result of the armor.

In addition, sea level has been rising slightly for many years. There is also a growing body of evidence that there has been an increase in global temperature and that acceleration in the rate of

[15] This conversion value is based on the regional beach and nearshore profiles, and overall characteristics. When there is not regional data to better quantify this value, it is often assumed to be between 0.5 and 1.5, the basis being that to build a beach seaward one foot, there must be enough sand to provide a one-foot wedge of sand through the entire region of onshore-offshore transport.

[16] As has been the case for most armoring projects in this area (e.g., CDPs 3-09-042 (O'Neill). 3-07-019 (Pleasure Point), etc.).

[17] Per the Commission's long established methodology, this is calculated as a one-time encroachment impact as opposed to a yearly impact.

sea level rise can be expected to accompany this increase in temperature (some shoreline experts have indicated that sea level could rise 4.5 to 6 feet by the year 2100).[18] Mean sea 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.

In this case, a revetment has been in place along the project site since approximately 1969, and as seen in historic photographs, was in place in 1972, prior to coastal permitting requirements. The revetment thus already fixed the back beach, and no new back beach fixing would accrue to the proposed project. Therefore, the proposed project will not fix any additional shoreline and no new impacts to sand supply would be caused in terms of fixing the back beach.

Retention of Potential Beach Material

If natural erosion were allowed to have taken place at this site prior to the construction of the seawall over 40 years ago, then bluff material (including sand and clay deposits, etc.) would have been added to the beach at this location over time, as well as to the larger littoral cell sand supply system fronting the bluffs. However, because the revetment has been in place since prior to coastal permitting requirements, the proposed project will not result in any new retention of material.[19]

10-Year Authorization Period

When reviewing shoreline protection projects, the Commission typically considers the changing and somewhat uncertain nature of the context affecting coastal development decisions regarding armoring, including climate change and sea level rise, in evaluating a project (including its potential duration, mitigation, etc.). Typically, a limited term authorization is applied in that context, including to better respond to such potential changes and uncertainties, and including to allow for an appropriate reassessment of continued armoring and its effects at that time in light of what may be differing circumstances than are present today, including with respect to its physical condition after years of hard service. In addition, with respect to climatic change and sea level rise specifically, the understanding of these issues should improve in the future, given better understanding of the atmospheric and oceanic linkages and more time to observe the oceanic and glacial responses to increased temperatures, including trends in sea level rise. Such improved understanding will almost certainly affect CDP armoring decisions, including at this location. Of course it is possible that physical circumstances as well as local and/or statewide policies and priorities regarding shoreline armoring are significantly unchanged from today, but

[18] The California Climate Action Team has evaluated possible sea level rise for the California coast and, based on several of the Intergovernmental Panel on Climate Change (IPCC) scenarios, projected sea level rise up to 1.4 meters (4.5 feet) by 2100. These projections are in line with 2007 projections by Stefan Rahmstorf ("A Semi-Empirical Approach to Projecting Future Sea-Level Rise", *Science*; Vol 315, 368 – 370. Research by Pfeffer et al. ("Kinematic Constraints on Glacier Contributions to 21st-Century Sea-Level Rise", *Science*, Vol, 321, 1340 – 1343) projects up to 2 meters of sea level rise by 2100.

[19] In addition, because the site is a closed landfill and the material currently found here and being held back by the revetment is primarily composed of fill and refuse, the material is not the same as native bluff materials in that respect.

it is perhaps more likely that the baseline context for considering armoring will be different – much as the Commission's direction on armoring has changed over the past, as more information and better understanding has been gained regarding such projects, including their effect on the California coastline.

In this case, the structure being protected is the landfill and its related infrastructure. Until the landfill can be removed and relocated, it will continue to require protection. The Applicant states that the proposed design life of the repaired and expanded revetment is only estimated to be 10 years due to the unstable geology and heavy wave attack. Therefore, to address the issues described above, and to reflect the design life of the proposed revetment, the Commission implements a 10-year authorization period through conditions (see **Special Condition 8**). In addition, and as discussed previously above, an appropriate longer term public policy goal is to remove the landfill from this unstable shoreline area and remediate the site (including for enhanced access, views, and marine resource protection). Although infeasible at the current time, any application to continue to protect the site will need to provide an analysis of alternatives that could be applied in this context, including removal/remediation, alternatives to armoring, substitute and/or reduced armoring, and other complementary measures to reduce or eliminate coastal resource impacts (see **Special Condition 8C**).

Finally, **Special Condition 8** also recognizes that the revetment is being approved under Section 30235 to protect the existing endangered landfill and its related infrastructure from erosion. Coastal Act consistency is only maintained in this scenario when such existing endangered landfill and its related infrastructure is present and in danger. If, for whatever reason, the now existing landfill and its related infrastructure warranting armoring is no longer present and/or no longer requires armoring for such protection before the ten years is up, then the approval will no longer be valid. In other words, this approval is for a 10-year period or the time when the existing landfill and its related infrastructure is no longer present and/or no longer requires armoring, whichever comes first. Any such future replacement or redevelopment must be considered independent of the armoring allowed here that is specific to the current situation and current existing structure (**Special Condition 11**).

Beach and Sand Supply Impacts Conclusion

The proposed project would result in quantifiable beach and sand supply impacts due to the expanded footprint that translates into a one time impact of approximately 2,500 cubic yards when converted for volume, as detailed above. It has proven difficult over the years to identify appropriate mitigation for such impacts in armoring cases. Partly this is because creating an offsetting beach area is not an easy task, and finding appropriate properties that could be set aside to become beach area over time (through natural processes, including erosion) is difficult both due to a lack of such readily available properties and the cost of such coastal real estate more broadly.

Other types of mitigation typically required by the Commission for such direct impacts have been beach nourishment, beach access improvements, and/or in-lieu fees. With regards to beach nourishment, a formal sand replenishment strategy can introduce an equivalent amount of sandy material back into the system over time to mitigate the loss of sand that would be caused by a protective device over its lifetime. Obviously, such an introduction of sand, if properly planned, can feed into the littoral cell sand system to mitigate the impact of the project. If these impacts

were to be mitigated through a beach nourishment effort, the impacts would be comparable to the deposition of approximately 2,500 cubic yards of beach quality sand at the start of the project (or roughly 250 large truck loads). However, mitigation of such adverse impacts is most effective if it is part of a larger project that can take advantage of economies of scale. Absent a larger comprehensive program that provides a means to coordinate and maximize the benefits of several mitigation efforts in the area now and in the future (e.g., akin to SANDAG efforts in southern California), the success of piecemeal mitigation efforts, such as an Applicant-only project to drop equivalent amounts of sand over time at this location would be limited.As an alternative mitigation mechanism, the Commission oftentimes uses a mitigation payment when in-kind mitigation of impacts is not available.[20] In situations where ongoing sand replenishment or other appropriate mitigation programs are not yet in place, the mitigation payment is deposited into an account until such time as an appropriate program is developed and/or to initiate other similar projects independently, and thus the funds can then be used to offset the designated impacts. When mitigation funds are pooled in this way for multiple projects in a certain area, the cumulative impacts can also be better addressed inasmuch as the pooled resources can sometimes provide for a greater mitigation impact than a series of smaller mitigations based on individual impacts and fees. In this case, based on an estimated range of costs for beach quality sand ranging from $10 to $40 per cubic yard delivered (or possibly more), an in-lieu fee to address this sand supply impact (which is a total of approximately 2,500 cubic yards over the 10-year authorization period) would range from about $25,000 to $100,000.

With respect to using access improvements to offset impacts, such mitigation is typically applied by the Commission to public agencies that are in the beach and public recreational access facility management business when they have applied for armoring projects.[21] It is more difficult to put the burden for a public project on a private applicant and thus such mitigation is atypical.[22] In this case, the Applicant is a public agency who manages the Mussel Rock site for general public access, and it makes the most sense, particularly given the relatively low level of impact (as compared to other typical armoring projects) to consider a mitigation program based on recreational enhancements. There are a number of opportunities to enhance the public recreational access features at the project site. These options are identified below in the Public Access and Recreation Findings. Therefore, the Commission finds that in-kind public access mitigation measures are feasible and are the preferable approach to mitigation of the public access impacts of the proposed project, and, as conditioned, the project meets all Section 30235 tests for allowing armoring.

E. 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. For the proposed project, the main Section 30253 concern is assuring long-term stability.

[20] See, for example, CDP A-3-SCO-06-006 (Willmott), CDP A-3-SLO-01-040 (Brett), CDP 3-98-102 (Panattoni) and CDP 3-97-065 (Motroni-Bardwell).

[21] For example, as recently required with respect to public access improvements along the shoreline south of 400 Esplanade at the RV park in Pacifica of San Mateo County as part of the Commission's approval of a seawall fronting the apartment complex at 380 Esplanade (CDP 2-08-020)

[22] Although the Commission has applied such a requirement for this type of impact before (see, for example, CDP 3-02-107, Podesto).

This is particularly critical given the dynamic shoreline environment within which the proposed project is located. 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 revetment were damaged in the future (e.g. as a result of landslides, wave action, storms, earthquakes etc.) it could lead to serious environmental degradation, including a degraded public access condition. In addition, such damages could adversely affect nearby beaches by resulting in debris on the beaches and/or creating a hazard to the public using the lateral access or the beach. Therefore, in order to find the proposed project consistent with Coastal Act Section 30253, the proposed project must be maintained in its approved state (see **Special Condition 10**).

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 subject armoring. Such monitoring will ensure that the Applicant and the Commission are aware of any damage to or weathering of the armoring and can determine whether repairs or other actions are necessary to maintain the seawall structure in its approved state before such repairs or actions are undertaken (see **Special Condition 3**).

To ensure that the proposed project is properly maintained to ensure its long-term structural stability, **Special Condition 3** requires monitoring and reporting programs. Such programs shall provide for evaluation of the condition and performance of the proposed project and overall bluff stability, and shall provide for necessary maintenance, repair, changes or modifications. **Special Condition 10** allows the Applicant to maintain the project in its approved state, subject to the terms and conditions identified by the special conditions, for the ten-year authorization period. Such future monitoring and maintenance activities must be understood in relation to clear as-built plans. Therefore, **Special Condition 2** of this approval requires the submittal of as-built plans to define the footprint and profile of the permitted development.

In terms of recognizing and assuming the hazard risks for shoreline development, the Commission's experience in evaluating proposed developments in areas subject to hazards has been that development has continued to occur despite periodic episodes of heavy storm damage and other such occurrences. Development in such dynamic environments is susceptible to damage due to 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 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, applicants are regularly required to acknowledge site hazards and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed.

In addition, the construction of shoreline protection structures involving the use of heavy construction equipment and the placement of large boulders is inherently hazardous. Accordingly, this approval is conditioned for the Applicant to assume all risks for developing at this location (see **Special Condition 5**).

F. GEOLOGIC CONDITIONS AND HAZARDS CONCLUSION

In this case and for this site and this fact set, the proposed project, as conditioned, can be found consistent with Coastal Act Sections 30235 and 30253. That said, even with the 10-year horizon applied to this project, it is clear that the proposed project firmly commits this site to being armored for the foreseeable future. Such an outcome does not mean that parallel and more global

efforts to better address the shoreline in light of erosion and sea level rise are not relevant or should not be pursued. On the contrary, it is clear that the State must come to grips with issues related to shoreline armoring as it relates to urban and largely armored areas and rising sea levels.

The individual and cumulative effect of such armoring is that, over time, beaches in these areas will be lost. Mitigations can be imposed on armoring projects to reduce such impacts, but mitigation for the long-term impacts to the public, both as a result of individual armoring projects and the overall cumulative effect of armoring projects together with all the existing armoring along the coastline, has proven more difficult. With sea level continuing to rise and the shoreline continuing to erode, it is expected that the beaches fronting these areas, like all California beaches on which armoring is located and on which the back-beach has thus been effectively "fixed" in location, will eventually disappear over time. However, absent a more comprehensive strategy, including relevant updates to the City of Daly City's LCP, resolving the larger planning and cumulative impact questions related to shoreline erosion and armoring is not readily addressed through an individual project now. That said, this site in particular lends itself appropriately to reevaluation of alternatives, such as the relocation of the landfill and site remediation, in order to provide the best possible Coastal Act outcome for the management and mitigation of this site in the future, particularly given the long term effects of sea level rise and the ever present threat of landslides and/or earthquakes that could occur here at any time. Therefore, **Special Condition 8** requires the City to explore various retreat alternatives, and to include the analysis of such alternatives in its CDP application to address the revetment after the 10-year authorization period has ended.

Section 30253 requires that new development mimimize risks to life and property and assure stability and structural integrity, and neither create nor contribute to further erosion or geologic instability. **Special Condition 1** requires the project plans to be reviewed and certified by a licensed engineer and to be built according to approved final plans. In accordance with **Special Condition 1**, the project has been designed and certified by the City of Daly City's Public Works Department and licensed engineers. The 450-foot section of revetment to be repaired has been designed consistent with adjacent revetment for a design still water level of 3.0 feet and a peak wave height of 12 feet, following the National Oceanographic and Atmospheric Administration wave model for this area. The proposed design life of the rock revetment repair is 10 years.

To ensure that the proposed project is properly maintained to ensure its long-term structural stability, **Special Condition 3** requires monitoring and reporting programs. Such programs shall provide for evaluation of the condition and performance of the proposed project, and shall provide for necessary maintenance, repair, changes or modifications. In addition, Pursuant to **Special Condition 10**, the City is responsible for removing or replacing any rock or material that becomes dislodged from the revetment as soon as possible, consistent with Coastal Act permit requirements.

Coastal Act section 30620(c)(1) authorizes the Commission to require applicants to reimburse the Commission for expenses incurred in processing CDP applications.[23] Thus, the Commission

[23] See also California Code of Regulations Section 13055(e).

is authorized to require reimbursement for expenses incurred in defending its action on the pending CDP application. Therefore, consistent with Section 30620(c), the Commission imposes **Special Condition 14**, requiring reimbursement of any costs and attorneys fees the Commission incurs "in connection with the defense of any action brought by a party other than the Applicant/Permittee … challenging the approval or issuance of this permit."

The Commission finds that the project is conditioned to minimize risks to life and property, assure stability and structural integrity of the revetment and seawall, neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area and is therefore consistent with Section 30253.

F. PUBLIC ACCESS AND RECREATION

I. APPLICABLE POLICIES

Coastal Act Section 30604(c) requires that every coastal development permit issued for any development between the nearest public road and the sea "shall include a specific finding that the development is in conformity with the public access and public recreation policies of [Coastal Act] Chapter 3." The proposed project is located seaward of the first through public road. Coastal Act Sections 30210 through 30214 and 30220 through 30224 specifically protect public access and recreation. In particular:

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

Coastal Act Section 30240(b) also protects parks and recreation areas, such as the existing public access area and the adjacent beach. Section 30240(b) states:

> ***30240(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.*

These overlapping policies clearly protect Mussel Rock Park, the beach and shoreline (and access to and along it) and offshore waters for public access and recreation purposes, particularly free and low cost access.

II. ANALYSIS

Along Daly City's 2.6 miles of coastline, there are only three main shoreline public access locations (Mussel Rock Park, Avalon Canyon and Thornton Beach State Park) and each of these has significant constraints due to the rugged coastline in this area. Mussel Rock Park is the most widely used public coastal access in Daly City with opportunities for dog walking, hiking and recreational fishing (including from the revetment itself). The public can access the sandy beach from this site, but only by clambering down the existing approximately 35-foot high revetment. Avalon Canyon also has pedestrian public access to the beach, but it is also difficult, and the beach can only be reached by an approximately one-mile long access road from Avalon Drive continuing along switchbacks to an existing outfall just above the beach. Finally, Thornton Beach State Park historically provided relatively easy coastal access in Daly City. However, landslides in 1983 and 1990 destroyed the beach access road, parking lot, and staircase serving the beach. Currently State Parks has indicated that this beach as unavailable to the public, although it is possible to access the beach via horseback access. Therefore, the public access area at Mussel Rock is significant in Daly City, including because it offers blufftop shoreline access in a fairly urbanized area, where few shoreline access areas exist.

As discussed in the finding above, shoreline structures can have a variety of negative impacts on coastal resources including adverse effects on beaches and sand supply, which ultimately result in the loss of the beach with associated impacts to public recreational access. The proposed project would directly impact public beach area through the expansion of the revetment onto approximately 2,500 square-feet of beach area that would otherwise be available for public use when not underwater. The impacts of expanding the revetment in this area are both direct and indirect, leading to negative public access impacts (e.g., loss of beach area, loss of public access in a highly populated area with limited shoreline access, loss of beach ambience, and loss of aesthetics during construction, etc.). Therefore, if the proposed project is to be approved, mitigation for this loss of beach area and recreational value is necessary. Such mitigation needs to be related and proportional to the public access impacts.

Fortunately, there is an opportunity to mitigate for this impact through enhanced public access at the site itself. As discussed above, the site is a valuable public access and recreation resource because it offers one of the few shoreline access areas in this highly populated area. However, the site is currently not identified with any signs, and has several features that make the site uninviting to the general public, potentially discouraging public access, including dilapidated chain link fencing throughout the site. Partly this is because the park originally associated with the landfill closure CDP from 1978 was never built. Therefore, **Special Condition 12** requires the Applicant to develop and implement a public access management plan that provides for trail enhancement, adequate signage for the park, the addition public access amenities (such as benches and interpretive signs), removal of chain link fencing throughout the site, wherever

feasible, and replacement fencing (where fencing is necessary) that is unobtrusive and better integrated with site aesthetics. These improvements will enhance public access opportunities and public awareness of this valuable public access area, and will eliminate several features which currently discourage public access. In this case, the Commission finds that in-kind public access mitigation measures are feasible and are the preferable approach to mitigation of the public access impacts of the proposed project resulting from the additional area of revetment coverage.

In addition, the project includes a request for after-the-fact authorization for installation of new chain link fencing at the site entrance, and a proposal to replace an existing chain link fence at the southern, seaward end of the access road/pedestrian path, as part of the revetment expansion project. The City has indicated that the fencing at the site entrance is to keep vehicles off of the landfill site, and that the fencing at the southern, seaward end of the access road is to prevent people from accessing the revetment at this location due to safety concerns. However, as discussed above, the existing fencing on the site detracts from the visual resources of the shoreline at this location, making the site uninviting and discouraging public access. Therefore, **Special Condition 12(A)(4)** requires the proposed chain link fencing at the site entrance to be replaced with more aesthetically pleasing fencing with an open design to protect views. In addition, **Special Condition 1** would require the revised project plans to eliminate the plan for new fencing at the southern end of the access road (see also fencing requirements in Visual Resources section).

Further public access impacts from the proposed project include construction activities, including for ongoing repair and maintenance activities, and future migration of rocks seaward of the slope. Therefore, **Special Condition 3** provides for monitoring and reporting of the condition of the revetment, including a description of any migration or movement of rock that has occurred on the site and recommendations for repair and maintenance to the revetment. In addition, **Special Condition 10** requires the City to remove or replace any debris, rock or material that becomes dislodged during construction or after completion of the approved shoreline protection as soon as possible (subject to the Executive Director's determination as to whether a separate coastal development permit or permit amendment is required for these activities). **Special Condition 4** also limits the operation of construction vehicles on the beach. **Special Condition 4** requires the applicant to submit a Construction Staging Area Plan to insure that construction activity and storage of materials will not occur outside defined areas. These conditions ensure that the beach are fronting the site will remain free from debris and that any rock dislodged from the revetment will be retrieved and that lateral access along the beach will not be impeded by same.

In conclusion, and because the approval includes a 10-year horizon which allows for an appropriate reassessment of continued armoring (see **Special Condition 8**), the special conditions of approval can appropriately offset the public recreational access impacts associated with the proposed project. As conditioned, the project is consistent with the Coastal Act access and recreation policies sited above.

G. VISUAL RESOURCES

I. APPLICABLE POLICIES

Coastal Act Section 30251 states:

> ***Section 30251.*** *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.*

Coastal Act Section 30240(b), previously cited, also protects the aesthetics of beach recreation areas such as those located directly adjacent to and at the project site. Section 30240(b) states:

> ***Section 30240(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.*

II. ANALYSIS

The project site offers and is a part of a panoramic view of the shoreline that is impressive. However, once on the site, the amount of grading and development associated with landfill and landfill capping/closure operations that has occurred here is evident. The view becomes negatively impacted and partly obstructed on the approach to the site entrance because of the 6-foot high chain link fence that runs from east to west across the entire site and down to the revetment at the shoreline (**Exhibit 3**). Access to the site is through the pedestrian gate and upon walking down towards the seawall the surrounding landscape has obviously been disturbed by the grading activities that have occurred.

Gabion walls run inland and parallel to the revetment along the shoreline and are distinctly visible when walking along the site maintenance road that serves as a primary public accessway. Numerous drainage outlets and outfalls are visible running down towards the revetment. The revetment itself consists of various sizes of rock riprap as well as concrete and chunks of brickwork as well as noticeable areas of debris and even pieces of rebar amongst the riprap.

The revetment itself is extensive and imposes a large visual presence on the shoreline. The revetment runs along the coastline from Mussel Rock northwards for 2,600 feet. It is composed of rock riprap that remains partially exposed below the access road. There is limited beach access here so even at times of lower tides, rock riprap essentially covers the sandy beach area. There are also a number of drainage outlets that are openly visible across the site and several outfalls leading to the seawall.

The proposed project would further degrade the visual resources at the site. The proposed chain link fencing would obstruct views to the north from the site entrance, the gabion walls would not blend with the surrounding natural environment, and the access road widening and revetment expansion would further degrade the visual resources of the area directly adjacent to the shoreline. However, although the project would cause adverse impacts to visual resources, these impacts can be minimized. First, **Special Condition 12** requires chain link fencing to be

removed, and only allows replacement fencing when it is absolutely necessary, and when it is sited and designed to enhance site aesthetics as described above. Pursuant to this special condition, chain link fencing that is in place to prevent unauthorized vehicular access to the site is permitted to be replaced with fencing that is more aesthetically pleasing and has less significant visual impacts. Such fencing may be metal, wood, or other natural-looking material, and must not significantly obstruct views to and along the shoreline. In addition, fencing at the southern, seaward end of the access road and dilapidated chain link and other fencing impacting views and public access throughout the site must be removed. This removal would further avoid, minimize and mitigate for the project's visual impacts.

In addition, **Special Condition 1** requires the revised plans to provide for better screening of drain pipes, gabion walls and other development as much as possible, particularly through landscaping. All new plants shall be native plant species that are tolerant of salt air and salt spray; and all new plants shall be maintained in good growing conditions. Regular monitoring and provisions for remedial action (such as replanting as necessary) shall be provided for to ensure landscaping success.

As conditioned, the project will minimize visual impacts to this public access area and will not significantly alter scenic public views. Thus, the project is consistent with Sections 30251 and 30240(b) of the Coastal Act.

H. MARINE RESOURCES

I. APPLICABLE POLICIES

The Coastal Act protects the marine resources and habitat offshore of this site. Coastal Act Sections 30230 and 30231 provide:

> ***Section 30230.*** *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*
>
> ***Section 30231.*** *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30231 of the Coastal Act requires that any adverse effects of runoff be minimized to protect the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes.

II. ANALYSIS

The Coastal Act includes strong protections for marine environments and water quality. In accordance with conditions, construction for the proposed road and revetment repair and expansion will occur from the existing access road, avoiding the need for equipment in the water, and minimizing impacts on marine resources and water quality. However, construction activity at the water's edge always has the potential to cause adverse impacts. Therefore, the proposed project plans include construction methods typically required by the Commission to protect water quality and marine resources during armoring construction, including maintaining good construction site housekeeping controls and procedures, the use of appropriate erosion and sediment controls, a prohibition on equipment washing, refueling, or servicing on the beach, etc. (see **Special Condition 4**). To further protect marine resources and offshore habitat, **Special Condition 4** also requires construction documents to be kept at the site for inspection, and also requires a construction coordinator to be available to respond to any inquiries that arise during construction. As conditioned, the project is consistent with Coastal Act Sections 30230 and 30231 regarding protection of marine resources and offshore habitat.

I. ARCHAEOLOGICAL RESOURCES

I. APPLICABLE POLICIES

Coastal Act Section 30244 requires that reasonable mitigation measures be employed where development would adversely impact archaeological or paleontological resources.

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

II. ANALYSIS

Previous archeological finds have been discovered at the project site as there was once a seasonal Ohlone village at Mussel Rock. During the excavation and grading of the area in 1978 related to the construction of the waste transfer station (CDP P-77-182), archaeologists uncovered the largest amount of Ohlone artifacts, dating back to 1500 AD, of any of the registered sites in San Mateo County.[24]

It seems likely that any other artifacts may have already been disturbed over time as a result of the historic landfill operation and ongoing grading and development of the site since then. However, since construction activities may unearth previously undisturbed materials, the project has been conditioned to prepare and implement an archaeological mitigation plan if archaeological resources are encountered (**Special Condition 9**).

As conditioned to require suspension of work and development of a mitigation plan if archaeological materials are found, the proposed development is consistent with Section 30244 of the Coastal Act and LCP.

J. OTHER AGENCY APPROVALS

[24] San Mateo County Site SMa-72, is the only site in Daly City where the artifacts of the Ohlone tribe were uncovered.

California State Lands Commission
Daly City owns the upland site and leases the sovereign lands seaward of it from the State Lands Commission (SLC). The portion of the revetment that is seaward of the mean high tide line is located on state tidelands. As such, the proposed revetment expansion project must be authorized by the SLC. The revetment area is leased by the SLC to the City for the use and maintenance of the 2,600 foot riprap seawall and appurtenant drains. The previous 10-year lease ran from 2002 to 2012, and was recently renewed for an additional 49 years[25] to allow the City to maintain the revetment. The permit is conditioned to require written evidence either of SLC approval of the expansion project or evidence that such approval is not required (see **Special Condition 6)**.

Army Corps of Engineers
Portions of the project are located within the jurisdiction of the Army Corps of Engineers. Accordingly, this approval is conditioned to ensure that the project (as conditioned and approved by this CDP) has received all necessary authorizations (or evidence that none are necessary) from the U.S. Army Corps of Engineers (see **Special Condition 7**).

K. VIOLATION

Development, including, but not limited to, revetment repair and expansion, relocation of the access road and grading, has taken place without benefit of a coastal development permit. Therefore, because this is an after-the-fact permit approval, the "prior to issuance" special conditions are required to be satisfied within specific time periods, starting from the date of the Commission's action. Further, although development has taken place prior to submission of this permit application, consideration of the application by the Commission has been based solely upon the policies of the City of Daly City LCP and Chapter 3 of the Coastal Act. Commission review and action on this permit does not constitute a waiver of any legal action with regard to the alleged violations, nor does it constitute an implication of the legality of any development undertaken on the subject site without a coastal permit, or that all aspects of the violation have been fully resolved. See **Special Condition 13**.

L. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of 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 which the activity may have on the environment.

The City, acting as lead agency, found that the project was categorically exempt from CEQA requirements (CEQA Sections 15301(d)(e) and 15302). The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. The Commission has reviewed the relevant coastal resource issues with the proposed project, and has identified appropriate and necessary modifications to address adverse impacts to such coastal resources. All public

[25] Fully Executed General Lease - Public Agency Use Lease No. PRC 8437.9, beginning January 26, 2012 and ending January 25, 2061.

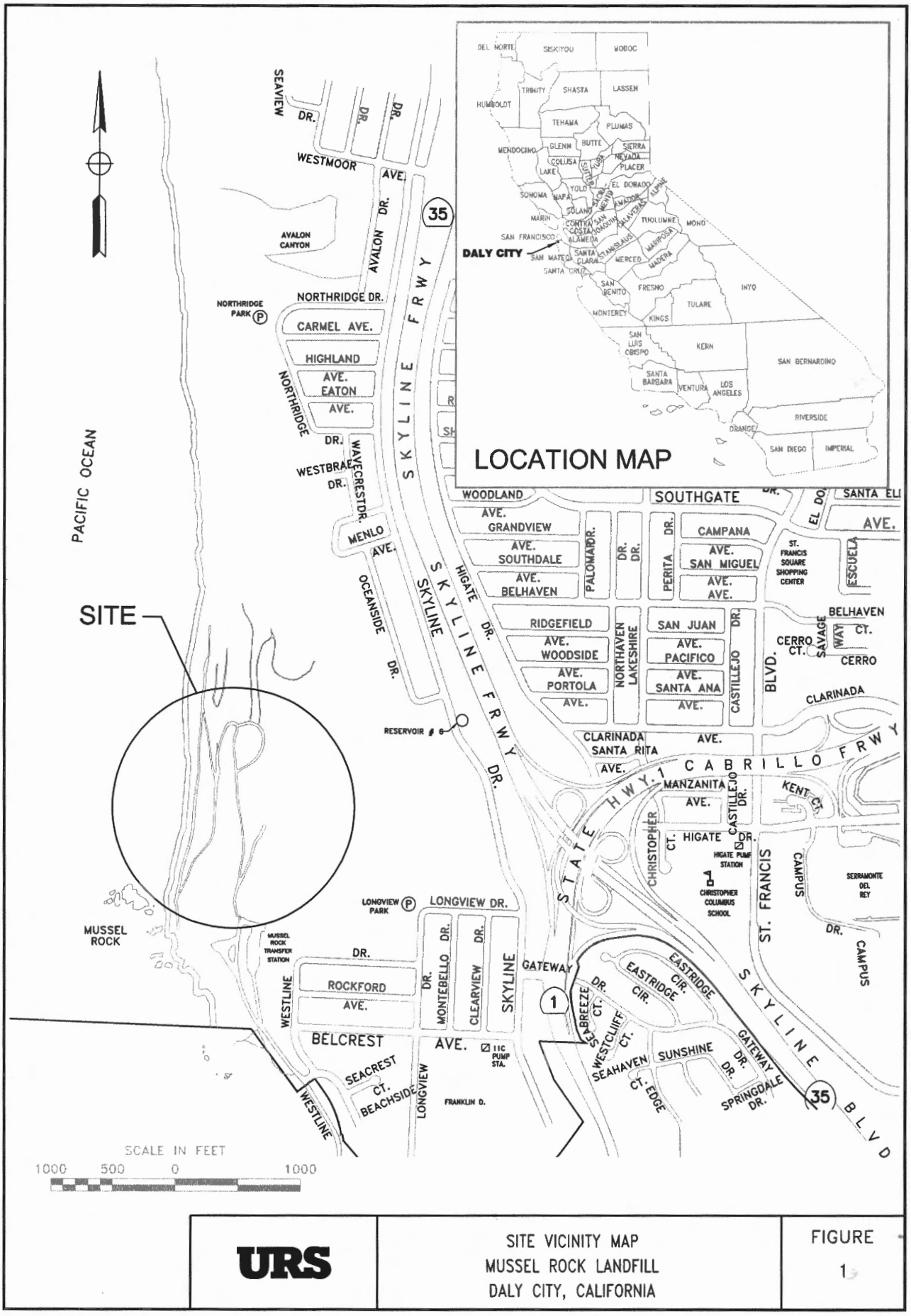
comments received to date have been addressed in the findings above. All above findings are incorporated herein in their entirety by reference.

The Commission finds that only as modified and conditioned by this permit will the proposed project avoid significant adverse effects on the environment within the meaning of CEQA. As such, there are no additional feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse environmental effects that approval of the proposed project, as modified, would have on the environment within the meaning of CEQA. If so modified, the proposed project will not result in any significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A).

Appendix A

SUBSTANTIVE FILE DOCUMENTS

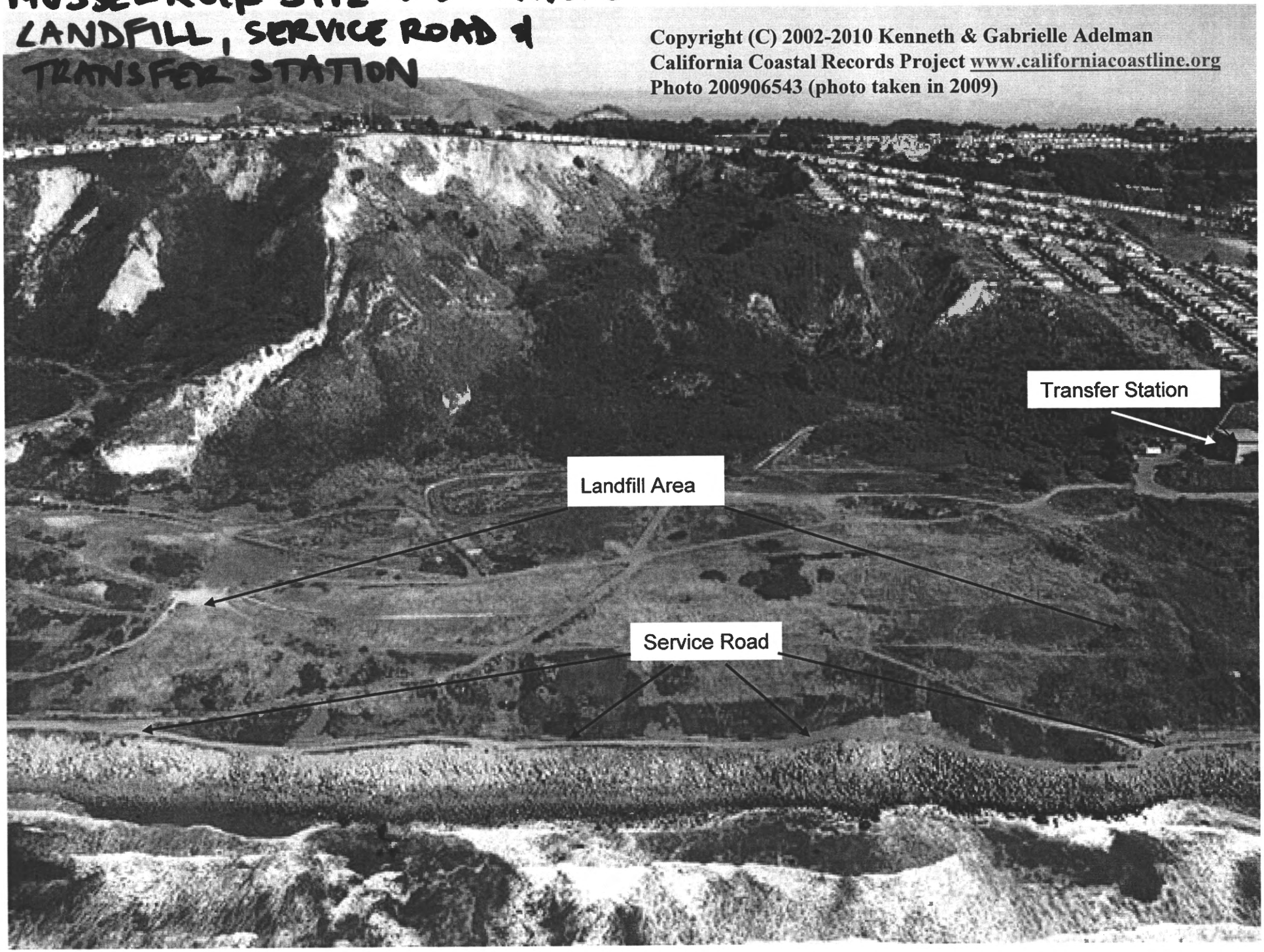
1. Coastal Development Permit Application File Number 2-11-024
2. Proposal, Special Provisions and Contract Documents for Mussel Rock Landfill Site Maintenance 2011, City of Daly City May 25 2011.
3. Coastal Development Permit File Number P-77-185.
4. Coastal Development Permit File Number 2-02-011.
5. California Regional Water Quality Control Board San Francisco Bay Region Order Number 77-6 and Order Number 00-27 Site Clean Up Requirements for City of Daly City, Mussel Rock Park Landfill, San Mateo County
6. City of Daly City Local Coastal Program

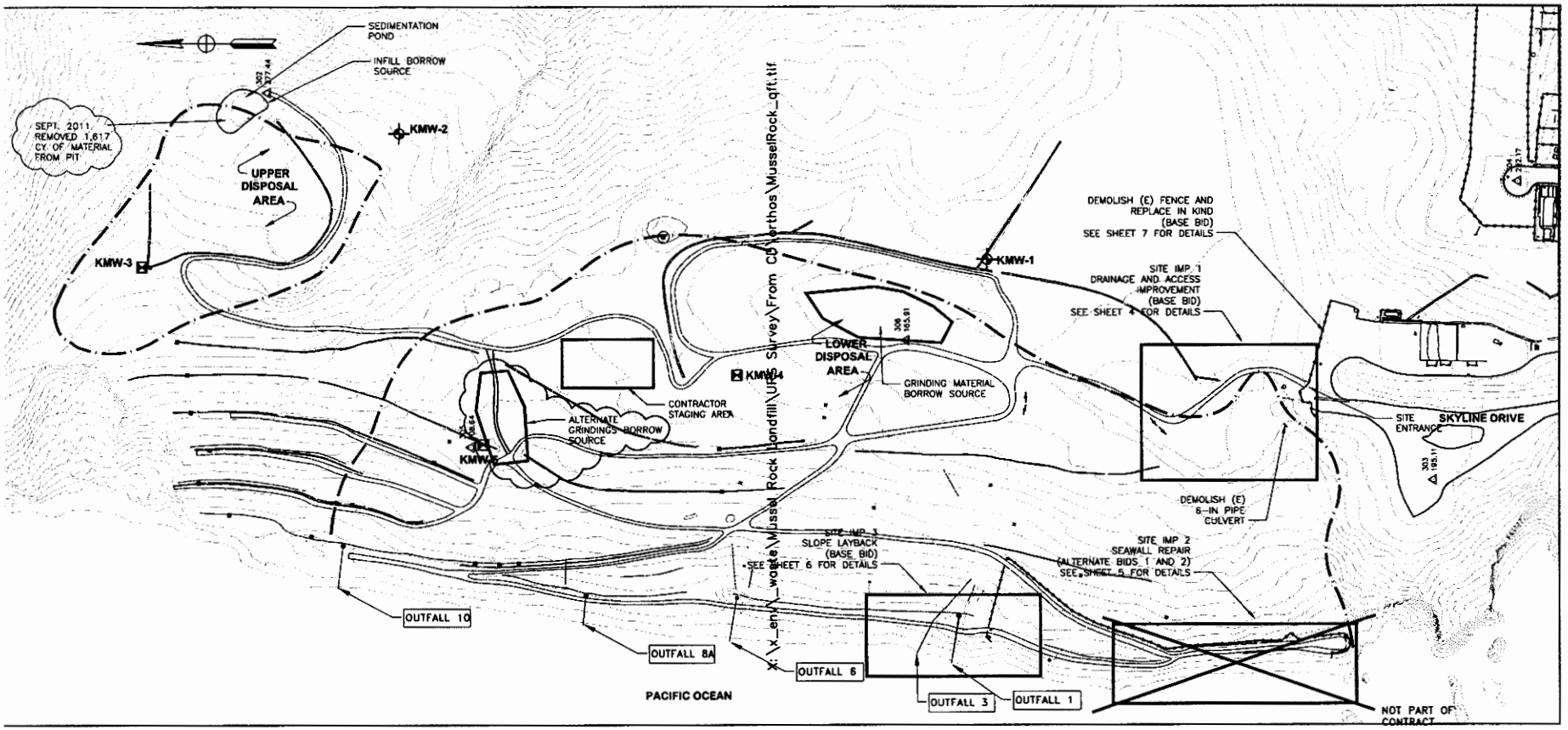


URS	SITE VICINITY MAP MUSSEL ROCK LANDFILL DALY CITY, CALIFORNIA	FIGURE 1

Oct 31, 2008 - 9:55am
X:\x_env_waste\Mussel Rock Landfill\Coastal Commission Report\Figures\FIGURE 1.dwg

MUSSEL ROCK SITE : LOCATIONS
LANDFILL, SERVICE ROAD &
TRANSFER STATION





NOTES:

1. THIS MAP WAS PREPARED IN 2010 USING PHOTOGRAMMETRIC METHODS BY TETRA TECH GEOMATIC TECHNOLOGIES IN LAFAYETTE, CALIFORNIA FOR URS CORPORATION. IN AREAS OF DENSE VEGETATION, ACCURACY OF CONTOURS MAY DEVIATE FROM ACCEPTED ACCURACY STANDARDS. THE GRID IS BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE III, NAD 1983. ELEVATIONS ARE BASED ON NAVD 88. CONTROL SURVEY PERFORMED BY URS CORPORATION, PLEASANT HILL, CA.
2. WELLS SURVEYED BY KISTER, SAVIO AND REI INC. ON MARCH 30, 2001.
3. DRAIN PIPE NETWORK SHOWN IS BASED ON THE ORIGINAL BASEMAP REFERENCE PROVIDED BY CITY OF DALY CITY. ONLY THOSE CATCH BASINS THAT COULD BE VERIFIED USING THE DEC 2010 AERIAL IMAGE WERE UPDATED.

100' 0 100' 200'
SCALE: 1"= 100'

REV	DESCRIPTION OF REVISION	BY	DATE
4	ISSUED FOR CONSTRUCTION	SS	05/19/11

CITY OF DALY CITY
DEPARTMENT OF PUBLIC WORKS
DALY CITY, CA

URS
1333 BROADWAY, SUITE 800
OAKLAND, CA 94612
PHONE: (510) 893-3600
FAX: (510) 874-3268

DESIGNED SS
DRAWN CJM
CHECKED SAG
PEER REVIEWER MEV
PROJECT MANAGER MEV
DATE 05/19/11

MUSSEL ROCK LANDFILL
SITE MAINTENANCE 2011
SITE PLAN, ACCESS AND LAYOUT

APPROVED:
ACTING CITY ENGINEER

REVISION 4
PROJECT 26817975
DRAWING
SHEET 3 OF 7

Jun 22, 2012 - 10:05am
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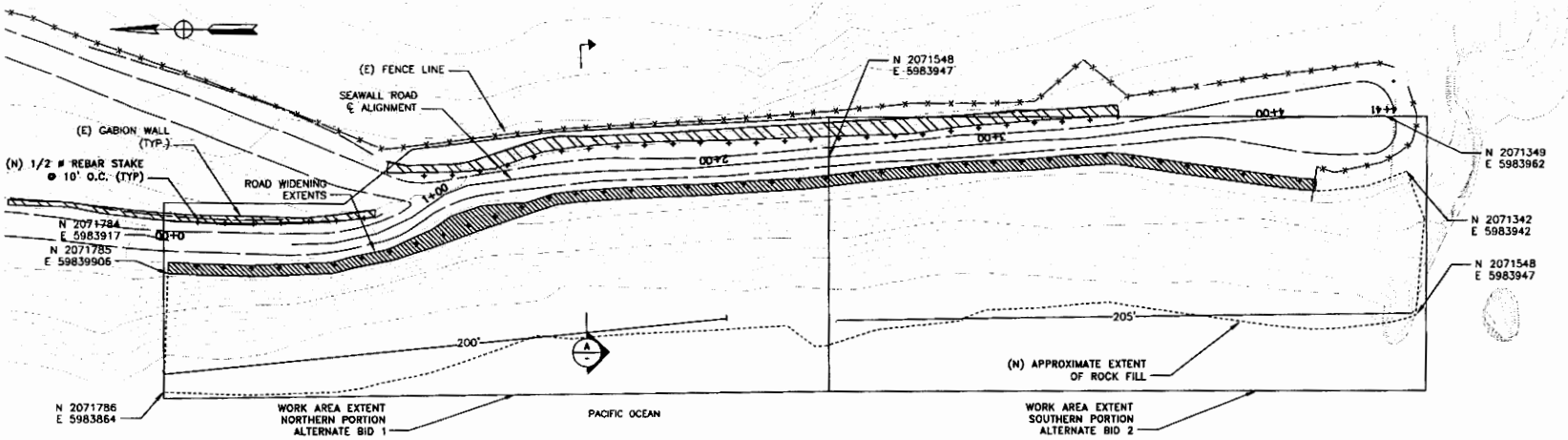
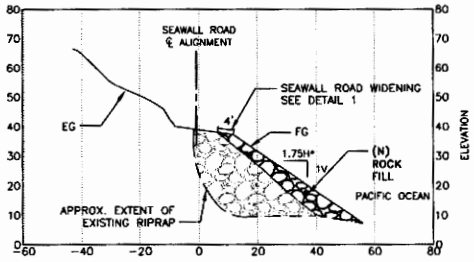
Exhibit 2
2-11-024
1 of 3



SEAWALL REPAIR PLAN

SCALE: 1"=20'

* THIS PART OF WORK WAS REMOVED FROM PROJECT

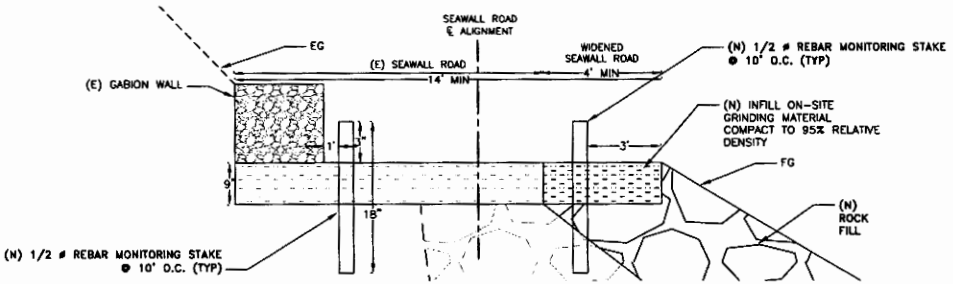


SEAWALL REPAIR CROSS-SECTION (A)

SCALE: 1" = 20'

NOTE:

* THE PROPOSED GRADE (BELOW) IS ESTIMATED BASED ON THE TOPOGRAPHIC CONTOURS.
NORTHERN PORTION = 1.75H : 1V
SOUTHERN PORTION = 1.5H : 1V



SEAWALL ROAD WIDENING DETAIL (1)

SCALE: N.T.S

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

REV	DESCRIPTION OF REVISION	BY	DATE
4			
3			
2			
1			
0	ISSUED FOR CONSTRUCTION	SS	05/19/11

CITY OF DALY CITY
DEPARTMENT OF PUBLIC WORKS
DALY CITY, CA

URS
1333 BROADWAY, SUITE 800
OAKLAND, CA 94612
PHONE: (510) 893-3600
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DESIGNED	SS
DRAWN	CJM
CHECKED	SAG
QUALITY REVIEWED	MEV
PROJECT MANAGER	MEV
DATE	05/19/11

MUSSEL ROCK LANDFILL
SITE MAINTENANCE 2011
SITE IMPROVEMENT #3 SEAWALL REPAIR
ALTERNATE BIDS 1 AND 2

APPROVED:
ACTING CITY ENGINEER

REVISION 0
PROJECT 26817975
DRAWING
SHEET 5 OF 7

Jun 22, 2012 - 10:10am
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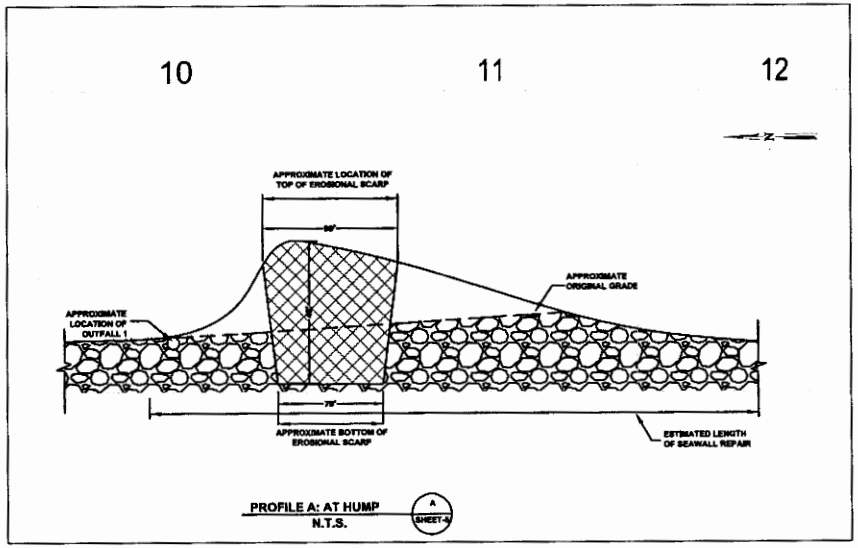
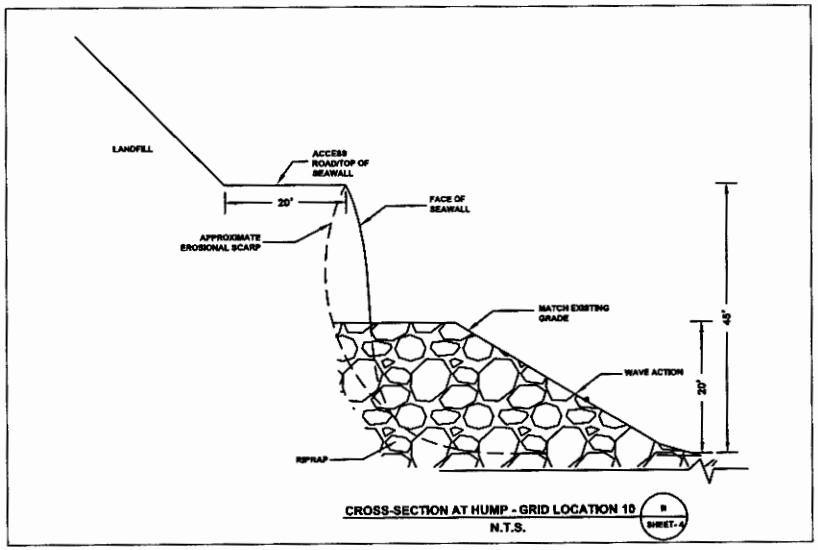
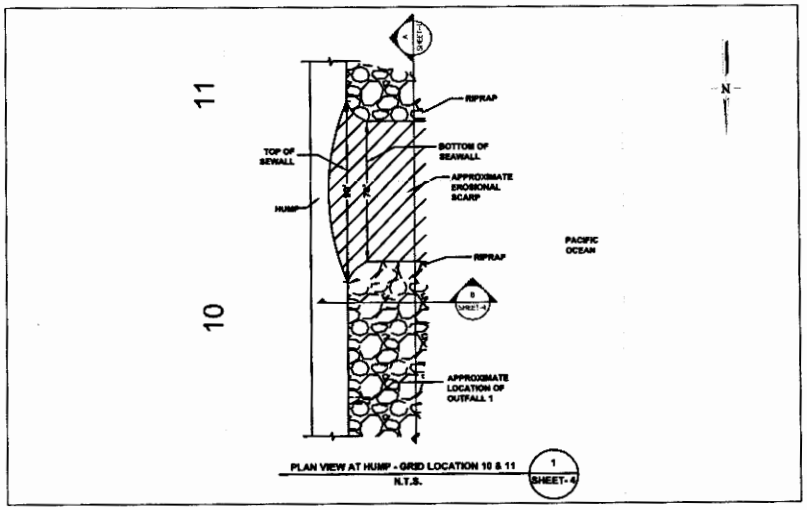
Exhibit 2
2-11-024
2 of 3



PROFILE A: AT HUMP
N.T.S.



CROSS-SECTION AT HUMP - GRID LOCATION 10
N.T.S.



PLAN VIEW AT HUMP - GRID LOCATION 10 & 11
N.T.S.

NOTES:

1. HEIGHT OF ELEVATED SEAWALL IS APROXIMATE.

PLANS APPROVED FOR CONSTRUCTION:

MICHAEL E. VELZY RCE #58234
PROJECT ENGINEER

DATE

REV	DESCRIPTION OF REVISION	BY	DATE

CITY OF DALY CITY
DEPARTMENT OF PUBLIC WORKS
DALY CITY, CA

URS

1333 BROADWAY, SUITE 800
OAKLAND, CA 94612
PHONE: (510) 893-3600
FAX: (510) 874-3268

DESIGNED	ADK
DRAWN	ADK
CHECKED	
QUALITY REVIEWED	MEV
PROJECT MANAGER	MEV
DATE	12/26/07

SEAWALL REPAIR DETAILS

MUSSEL ROCK LANDFILL
SITE MAINTENANCE 2008

REVISION
PROJECT 28616256
DRAWING
SHEET 4 OF 5

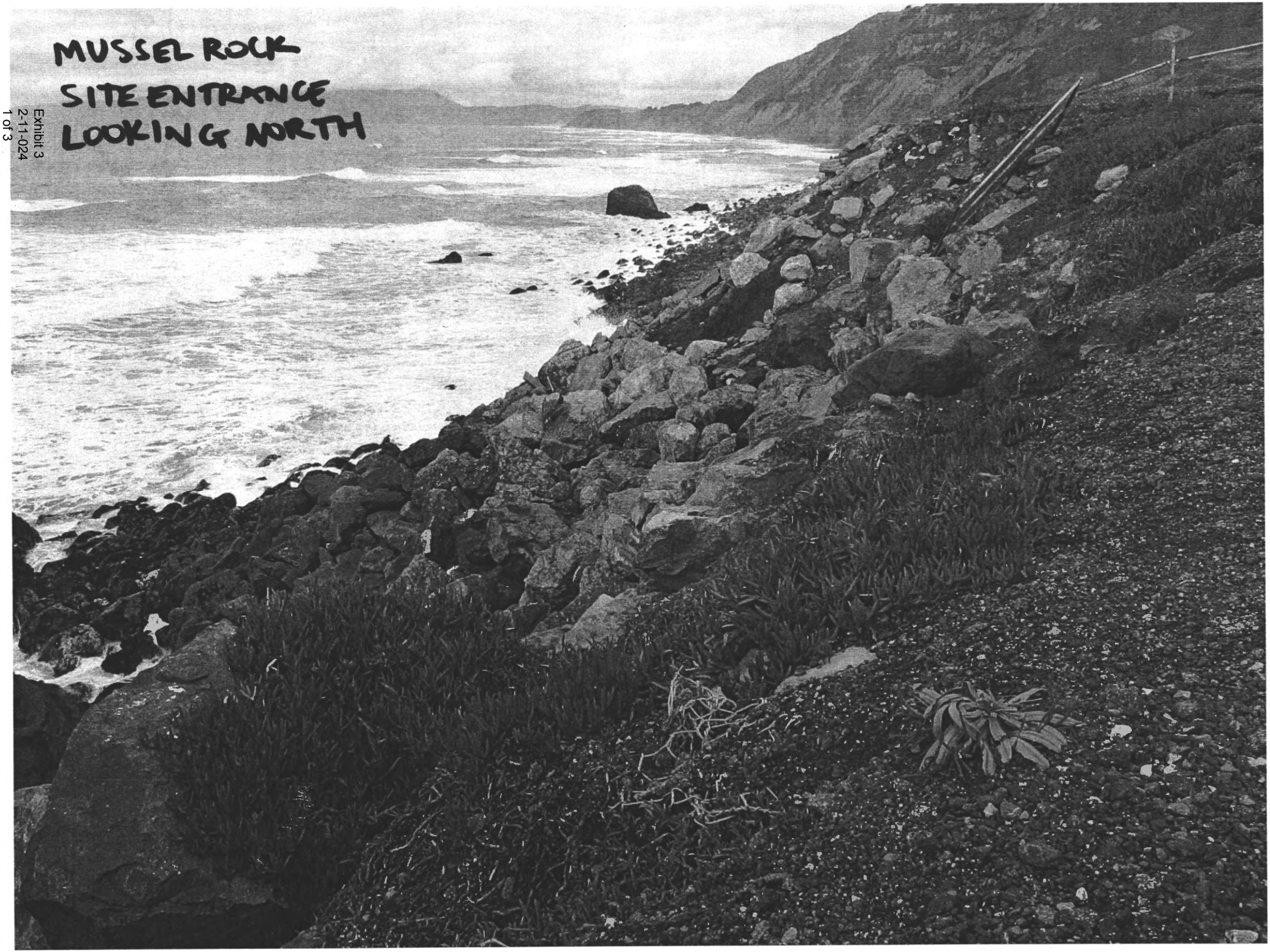


Exhibit 3
2-11-024
1 of 3

Exhibit 3
2-11-024
2 of 3

NORTHERN VIEW:

MUSSEL ROCK GABION WALLS & ACCESS ROAD ATOP REVETMENT