

CALIFORNIA COASTAL COMMISSION

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Filed: 05/25/06
180th day: 11/21/06
270th day: 02/19/07
Staff: MW-SC
Staff report prepared: 12/28/06
Hearing date: 01/11/07

COASTAL DEVELOPMENT PERMIT APPLICATION

Application number3-06-024, Pacific Grove Recreation Trail Shoreline Structures Repairs

Applicant.....City of Pacific Grove, Public Works Department

Project locationVarious locations along Pacific Grove shoreline seaward of Ocean View Boulevard (first public road) and the Pacific Grove coastal recreation trail, between 4th Street and Beach Street, Pacific Grove, Monterey County (APNs 006-181-95, 006-181-96, 006-181-97, 006-181-99, 006-071-99, 006-061-99, 006-031-99, 006-021-99).

Project description.....Repair, replacement, construction and reconstruction of existing shoreline structures at 18 locations along the Pacific Grove coastal recreation trail, including repair of existing rip-rap revetments, replacing wood crib walls with vertical concrete seawalls, filling voids beneath rock and mortar walls, and backfilling sinkholes.

Local approval.....The City of Pacific Grove adopted a Mitigated Negative Declaration on November 2, 2005.

File documents.....Coastal Development Permit Application files 3-06-024, 3-03-092-W, 3-93-015, and 3-84-077; November 2, 2005 Mitigated Negative Declaration.

Staff recommendation ...Approval with Conditions

Summary: Staff recommends that the Commission **approve with conditions**, the proposed seawall repairs to protect the Pacific Grove Recreation Trail and trail amenities, Ocean View Boulevard, and the municipal wastewater and storm water infrastructure directly inland of the edge of the bluff.

The Pacific Grove Recreation Trail is an oceanfront system of lateral and vertical access paths, parks, benches, and other low-cost recreational amenities located along the northeastern shore of Pacific Grove. The recreation trail is an extremely popular visitor serving destination of local and statewide significance. The trail was formalized via Coastal Development Permit # 3-84-077 and represents an important segment in the Monterey Bay Sanctuary Scenic Trail that extends from Castroville to Pacific Grove.

There are eighteen (18) repair sites proposed along the approximately 1.5 mile stretch of blufftop



California Coastal Commission
January 11, 2007 Meeting in Long Beach

Staff: Michael Watson Approved by:

between 4th Street and Otter Point (Beach Street). Most of the shoreline armoring devices are existing structures dating back to the former Southern Pacific Railroad and were installed prior to the adoption of the Coastal Act. Others were permitted via coastal permits issued by Commission over the years. The existing structures have mainly been built on top of competent granitic bedrock and have lasted for much of 75 years, but are now in need of significant repairs to extend their useful lives. This stretch of shoreline faces north into the full brunt of the North Pacific winter time swells and as a result is subject to wave attack and erosion. The Applicant's consulting geotechnical engineer indicated that based on the current condition of the crib walls, rock and mortar walls, and rip-rap revetments, these shoreline protective devices could fail within a couple storm cycles (i.e., in less than 3 years). The presence of large voids beneath the crib walls, slumping of rip-rap revetments, and undermining of existing rock and mortar walls were observed all along the project site and represent a significant near-term risk to the Pacific Grove Recreation Trail, Ocean View Boulevard, and the municipal wastewater and storm water infrastructure directly inland of the edge of the bluff.

To address these threats, the City proposes relatively minor fixes to existing walls, such as plugging voids with concrete, and creating vertical buttresses beneath the toe of existing undermined masonry walls. In addition, aging wooden crib walls will be replaced with vertical concrete walls colored and textured to match native bluff materials, in order to blend into the surrounding area and minimize visual impacts. The project also includes repairs to three existing rip rap revetments east of Lover's Point, that involve the retrieval and replacement of displaced stones, as well as the placement of approximately 2400 tons of new rock.

Despite the coastal access and recreation benefits associated with the protection of trail facilities, and the environmental benefits provided by the retrieval of fugitive rock, the project will extend the life span of shoreline structures and their associated negative environmental impacts. These include continued coverage of shoreline areas that would otherwise support coastal recreation and/or natural habitats; depletion of sand supplies; loss of beach and intertidal habitats over time due to the hardening of the shoreline and sea level rise; and viewshed degradation. Although Section 30235 of the Coastal Act allows shoreline armoring where necessary to protect existing structures, as is the case here, such armoring must avoid, minimize, and mitigate impacts to coastal resources and access and recreation opportunities consistent with the Chapter Three policies of the Coastal Act.

Accordingly, the City evaluated project alternatives including no project, improved drainage and vegetation management, replacement of revetments with vertical seawalls, and abandonment or relocation of the threatened structures. These alternatives were rejected by the City due to cost, feasibility, increased impacts, and/or inadequate protection. While the Commission staff concurs with the City's conclusion that the proposed actions provide an appropriate method to address near term threats to City infrastructure and important coastal access and recreation facilities, further consideration of long-term alternatives that may minimize the impacts of retaining existing structures in-place remains warranted. In addition, supplemental analyses of the long-term impacts on sand supplies, beach profiles, and access and recreation opportunities, as well as the ways in which such impacts can be avoided or mitigated, is also needed to achieve Coastal Act consistency.



Recommended conditions of approval therefore require preparation of a shoreline management plan for the Pacific Grove shoreline. This plan must take a comprehensive look at erosion along the shoreline, evaluate all feasible alternatives available to avoid further shoreline protective devices, analyze cumulative impacts of existing armoring on sand supply and beach area, and identify and evaluate various methods for mitigating such impacts. In addition, recommended conditions require a construction management plan that identifies best management practices to be used to prevent impacts to marine resources and public access during construction activities. Recommended conditions also seek to protect and maximize coastal access and recreation opportunities by requiring vertical accessways to the pocket cove beaches at the toe of the large revetments, and the removal of rock and debris from the sandy beach areas at Lover’s Point. Finally, the recommended conditions require that all areas disturbed during construction to be restored/landscaped with plants species native to Pacific Grove, and that the applicant obtain permission from the Monterey Bay National Marine Sanctuary and USACOE for all work proposed in and around the marine environment. Only with these conditions can the project be found consistent with the relevant Chapter Three policies of the Coastal Act.

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IV. Exhibits

- Exhibit A: Location Maps
- Exhibit B: Site Plans
- Exhibit C: Site Photographs
- Exhibit D: Staging and Detour Plans
- Exhibit E: Mitigation Monitoring Program
- Exhibit F: Correspondence

Click on the link at left to go to the exhibits.

I. Staff Recommendation on CDP Application

The staff recommends that the Commission, after public hearing, **approve** a coastal development permit for the proposed development subject to the standard and special conditions below.

Motion. I move that the Commission approve Coastal Development Permit Number 3-06-024 pursuant to the staff recommendation.

Staff Recommendation of Approval. Staff recommends a **YES** vote. Passage of this motion will result in approval of the coastal development permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.



Resolution to Approve a Coastal Development Permit. The Commission hereby approves the coastal development permit on the ground that the development as conditioned, will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the coastal development 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 amended development on the environment; or (2) there are no feasible mitigation measures or alternatives that would substantially lessen any significant adverse effects of the amended development on the environment.

II. Conditions of Approval

A. Standard Conditions

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

B. Special Conditions

1. **Final Plans.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit the following plans to the Executive Director for review and approval:
 - A. **Final Plans.** Final Engineered Plans that are in substantial conformance with the June 10, 2004 *Coastal Bluff Repair* plans prepared by Haro, Kasunich and Associates, Inc., and have been revised and supplemented to comply with the following requirements:



(a) **Seawall Footprint.** The footprint of all seawall foundations and buttresses shall be constructed as close to the toe of the bluff or existing seawall footprint as possible, except where engineering evidence justifies the need to locate limited portions of the foundation seaward of its current location (e.g., where necessary to tie foundation into competent bedrock).

(b) **Seawall Surfacing.** All vertical concrete seawalls shall be faced with a sculpted concrete surface that mimics the natural bluffs in the immediate vicinity in color, texture, and undulation. Final plans shall include a materials palette and/or brochures and photo examples describing the seawall facing techniques that will be applied to achieve this objective, and shall include color elevation drawings that accurately depict the anticipated appearance of the seawall.

(c) **Coastal Access.** Final plans shall identify a vertical access route from the recreation trail to the shoreline at sites 4 and 6 and include specific provisions for stacking rip rap, and filling voids with concrete, along the designated routes in a manner that will enhance the ability of the public to climb up and down the revetment. The alignment of these accessways shall be oriented to provide a direct path to the shoreline while minimizing the amount of new construction and/or construction materials (i.e., concrete, etc.).

B. Drainage Plans. Drainage plans shall show the location of all construction and post-construction drainage features associated with the project. These plans should be designed to prevent surface runoff from draining over the blufftop and shall include other water quality best management practices.

C. Landscape Plans. Final landscape plans that provide for revegetation of the slopes above the approved repairs with drought tolerant, native plant species of local stock, including dune buckwheat plants. No irrigation of the bluff slope will be allowed, except for surface drip irrigation in order to establish natural growth. The use of non-native species is prohibited, and the applicant shall be responsible for removal of any non-native plants that may become established within the designated planting areas.

D. Construction Management Plan. The Construction Management Plan shall identify and minimize the extent and impacts of upland and beach-based construction activities, among other ways by establishing the following construction requirements, specified via written notes on the Final Project Plans. Minor adjustments to the following construction requirements may be allowed by the Executive Director if such adjustments: (1) are deemed necessary due to extenuating circumstances; and (2) will not adversely impact coastal resources.

- All work shall take place during daylight hours and lighting of the beach area is prohibited unless, due to extenuating circumstances, the Executive Director authorizes non-daylight work and/or beach area lighting.



- The pouring of concrete in or adjacent to the marine environment shall employ one of the following methods to prevent uncured concrete from entering state waters:
 - a. Complete dewatering of the pour site, within a caisson or other barrier; the site is to remain dewatered until the concrete is sufficiently cured to prevent any significant increase in the pH of adjacent waters; or
 - b. The tremie method, which involves placement of the form in water, inserting a plastic pipe down to the bottom of the form and pumping concrete into the form so that the water is displaced towards the top of the form. If this method is selected, the displaced waters shall be pumped off and collected in a holding tank. The collected waters shall then be tested for pH, in accordance with Fish & Game regulations. If the pH is greater than 8.5, the water will be neutralized with sulfuric acid until the pH is between 8.5 and 6.5. This pH-balanced water can then be returned to the sea. However, any solids that settle out during the pH balancing process shall not be discharged to the marine environment.

In each case involving such concrete pours in or near state waters, a separate washout area shall be provided for the concrete trucks and/or tools and designated by the construction plan. The washout area shall be designed and located so that there will be no chance of concrete slurry or contaminated water runoff to state waters, nor into storm drains or gutters that empty into such bodies of water.

- Construction work or equipment operations shall not be conducted below the mean high water line unless tidal waters have receded from the authorized work areas.
- 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. 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. Fencing may be used on the beach for erosion and sediment controls (e.g., a silt fence at the base of the bluff) as necessary to contain rock and/or sediments at the project site.
- Construction (including but not limited to construction activities, and materials and/or equipment storage) is prohibited outside of defined construction, staging, and storage areas.
- No work shall occur on the recreation trail repairs during weekends or holidays unless, due to extenuating circumstances (such as tidal issues or other environmental concerns), and the Executive Director authorizes such work.



- All heavy equipment used for concrete pouring located on the coastal terrace shall be set at least 50 feet landward of the blufftop and shall use flexible hoses or articulated booms to deliver concrete to the project site. Other heavy equipment may be used periodically atop the coastal bluff, but shall be removed from the blufftop when not in use. All heavy equipment and project construction materials shall be stored in the designated construction staging areas.
- Equipment washing, refueling, and/or servicing shall not take place on the beach, or within 100 feet of the shoreline.
- Petroleum products and other hazardous materials will be kept a distance of at least 100 feet from the shoreline and shall be stored offsite.
- 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).
- The Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office at least 3 working days in advance of commencement of construction, and immediately upon completion of construction.
- All areas disturbed by construction activities shall be restored to their original pre-construction condition.

2. Construction Site Documents and Construction Coordinator. DURING ALL PROJECT CONSTRUCTION ACTIVITIES:

- A. Construction Site Documents.** Copies of each of the following shall be maintained in a conspicuous location at the construction job site at all times and all persons involved with the construction shall be briefed on the content and meaning of each prior to commencement of construction: (a) the signed coastal development permit; (b) the approved final plans; and (c) the approved construction management plan (see Special Condition 1D).
- B. Construction Coordinator.** The permittee shall designate a construction coordinator who shall be available to respond to questions that may arise regarding the construction, 24 hours a day for the duration of construction . The construction coordinator's contact information (i.e., address, phone numbers, etc.) shall be conspicuously posted at the job site and readily visible from public viewing areas. 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.



3. Shoreline Management Plan. WITHIN TWO (2) YEARS OF PROJECT APPROVAL, the Permittee shall develop and submit, for Executive Director review and approval, a comprehensive Shoreline Management Plan for the entire shoreline between 1st Street and the Beach Street access. The main purpose of the shoreline management plan shall be to evaluate all feasible alternatives to avoid additional shoreline armoring, and to provide a comprehensive plan for avoiding and mitigating the impacts of shoreline armoring. Towards this end, the plan shall identify where ongoing erosion is of concern, when and where non-structural actions (such as setbacks, relocation, landscape and drainage improvements) can be used to reduce risk from shoreline erosion, and where shoreline protective structures or repairs are anticipated to be necessary. The Shoreline Management Plan shall also include an analysis of the project-specific and cumulative impacts of existing and anticipated shoreline structures on sand supplies, beach profiles, and coastal access and recreation opportunities. This impact assessment shall be accompanied by the identification and evaluation of the full range of mitigation measures available to avoid and mitigate such impacts. This shall include an assessment of opportunities to mitigate the retention of sand supplies through the development and implementation of a sub-regional beach replenishment program, as well as an evaluation of options to provide additional recreational beach areas, among other ways, by replacing the existing rip-rap revetments with vertical concrete walls and improving beach access to pocket cove beaches.

Within one (1) year of project approval, the applicant shall submit a comprehensive scope of work for Executive Director review and approval that outlines the applicant's proposed methodology for completing the required plan. The scope of work shall detail the studies and techniques that shall be used by the permittee to:

- a) Identify areas that are threatened by erosion in both short (1-4 years) and medium to longer terms (5 to 20 years) and assess each shoreline location based on factors including, but not be limited to, geology, wave conditions, localized erosion trends, average annual erosion rates, and sea level rise;
- b) Identify factors contributing to erosion at each shoreline location, including areas where bluff top erosion could occur due to irrigation or drainage;
- c) Identify existing areas of armoring and areas where additional armoring is anticipated in the immediate vicinity;
- d) Identify locations for beach and bluff profiles to assess changes in the beach width and volume as a result of existing shoreline erosion;
- e) Identify environmentally sensitive habitat areas where encroachment of structures is to be avoided;
- f) Evaluate options for relocating or redesigning facilities or portions of facilities as alternatives to armoring;



- g) Analyze the cumulative impacts of existing and anticipated shoreline armoring on sand supplies and coastal access and recreation opportunities; and
- h) Identify, evaluate, and design mitigation measures to avoid and minimize such impacts, among other ways by implementing beach replenishment program(s), removing seawalls, and constructing / improving new beach access and recreation opportunities, such as an extension of the recreation trail between Lovers Point and Beach Street.

In addition to the information specified above, the final Shoreline Management Plan shall also include the following:

- Requirements for monitoring and maintenance of shoreline protection devices with provisions for the removal of ineffective or hazardous protective structures, as well as programs to address beach replenishment, sand supply, and loss of recreational beach area;
- Requirements for ongoing monitoring of those areas threatened by erosion in the short-term (less than 4 years from the time of monitoring) to provide an opportunity to address the identified erosion threat through the Plan; and,
- Provisions to avoid the need for and minimize impacts of emergency armoring, such as: procedures for field inspections before and after storm seasons; guidance for types of preferred temporary structures; and, procedures for coordination with all relevant regulatory agencies.

4. Confirmation of Construction in Conformance with Approved Plans. WITHIN 60 DAYS OF COMPLETING THE AUTHORIZED REPAIRS AT EACH SITE, the Permittee shall submit a copy of as-built plans for that site, with the signature of the contractor and geotechnical engineer, confirming that the repair was completed in accordance with the approved plans. The submittal of as-built plans shall be accompanied by photo documentation of the completed repairs.

5. Monitoring, Maintenance, and Reporting Requirements. WITHIN 3 MONTHS OF COMPLETION OF CONSTRUCTION, the applicant shall submit, for Executive Director review and approval, a long-term monitoring and maintenance plan. The Monitoring and Maintenance Plan shall be based on comparison with the as-built plans, and the applicant shall be responsible for carrying out the requirements of the plan, which shall include the following:

A. Annual Beach and Bluff Profiles. The Permittee shall conduct topographic surveys of the beach and bluff profiles at Lover's Point and sites 3, 4, and 6, twice annually (in March and August, to measure the winter and summer beach profile) for the first five years following construction, and then annually each summer. One profile should be located in front of the seawall, as well as one within 20 feet upcoast (north) and two downcoast (south) of the ends of the seawall. Reports shall be submitted to the Executive Director every year for the first five years, and then every five years, for the life of the structure, to identify changes to the beach width and volume following construction of the seawalls. Reports shall be submitted no later



than March 30th of the following year. Surveys shall be conducted within a two-week window of the previous year's survey, to make comparisons of beach width under the same wave climate and climatic conditions over time. Profiles shall be tied into survey monuments, constructed and surveyed in to establish fixed reference points from which any subsequent change can be recorded.

- B. Long-Term Monitoring of the Repaired Structures.** The permittee shall monitor the physical condition of the structures that are the subject of the authorized repairs on an annual basis, with reports submitted to the Executive Director every five years, for the life of the structure, to evaluate ongoing bluff erosion, and identify any needed maintenance.
 - C. Future Maintenance.** This permit allows future maintenance of the authorized repairs that involve recoloring of the seawall surface, minor refacing (e.g., patching, texturizing and repair of areas less than 100 square feet) or replanting of native vegetation, as long as it does not require heavy equipment on the beach or have the potential to impact sensitive coastal resources. Prior to undertaking such maintenance, the permittee shall submit a description of the proposed maintenance activities for the review and approval of the Executive Director. All other maintenance activities shall require a separate coastal development permit or waiver thereof.
 - D. Debris Removal.** The permittee shall immediately remove all rock or debris that may fall from the project site onto the beaches or into the ocean at Lover's Point and sites 4 and 6. Any rocks that move seaward of the reconstructed revetments shall be immediately retrieved and either: (1) restacked within the approved rock slope profile; or (2) removed off the beach to a suitable disposal location. Any rock or debris to be retrieved in this manner shall be recovered by excavation equipment positioned landward of the waterline (i.e., excavator equipment with mechanical extension arms).
- 6. Archaeological Resources.** Should archaeological resources be discovered at the project site during any phase of construction, the Permittee shall stop work until a mitigation plan, prepared by a qualified professional archaeologist and using accepted scientific techniques, is completed and implemented. Prior to implementation, the mitigation plan shall be submitted for review and approval by the State Historical Preservation Office and for review and approval by the Executive Director of the Coastal Commission. The plan shall provide for reasonable mitigation of the archaeological impacts resulting from the development of the site, and shall be fully implemented. A report verifying compliance with this condition shall be submitted to the Executive Director for review and approval, upon completion of the approved mitigation.
- 7. Beach Area Restoration.** WITHIN THREE DAYS OF COMPLETION OF REVETMENT REPAIR, the permittee shall restore all beach areas and beach access points at Lover's Point. All rock and debris shall be removed from the sandy beach area in both coves and either restacked within the approved rock revetments, or removed from the beach to a suitable disposal location. Any rock or debris to be retrieved in this manner shall be recovered by excavation equipment positioned landward of the waterline (i.e., excavator equipment with mechanical extension arms).



- 8. Incorporation of Mitigation Measures and Monitoring Program.** Mitigation Measures adopted by the City of Pacific Grove on November 2, 2005 and attached as Exhibit E are hereby incorporated as conditions of this permit. Any revision or amendment of these adopted conditions and mitigation measures or the project plans shall not be effective until reviewed by the Executive Director for determination of materiality, and if found material, approved by the Commission as an amendment to this coastal development permit
- 9. Other Agency Review and Approval.** PRIOR TO ISSUANCE OF PERMIT, the Permittee shall submit to the Executive Director evidence of project approval, or a statement that no review or approval is required from the following agencies:

 - A. CDFG Review.** The Permittee shall provide evidence that the California Department of Fish and Game (CDF&G) has reviewed the project for potential impacts to marine mammals, invertebrates, and seabirds in the area, or an indication that no review is required.
 - B. Conformance with Monterey Bay National Marine Sanctuary Requirements.** The Permittee shall submit to the Executive Director evidence that the Monterey Bay National Marine Sanctuary (MBNMS) has reviewed the project for potential impacts to resources or waters of the Monterey Bay National Marine Sanctuary and that the project conforms with any MBNMS requirements, or an indication that no such review is required.
 - C. Conformance with USACOE Requirements.** The Permittee shall submit to the Executive Director for review a copy of any USACOE permit issued for this project, letter of permission or evidence that no Corps permit is necessary.
- 10. Revisions and Amendments.** The Permittee shall undertake development in accordance with the approved final plans identified in Special Condition 1. Any proposed changes to the approved final plans (including any changes in coverage or design) shall be reported to the Executive Director for review. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that the change is immaterial or that no amendment is necessary.
- 11. 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 hazards from episodic and long-term bluff retreat and coastal erosion, tidal scour, wave and storm events, bluff and other geologic instability, 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.

III. Recommended Findings and Declarations

The Commission finds and declares as follows:

A. Project Description

1. Project Location

The City of Pacific Grove is located along the western tip of the Monterey peninsula in Monterey County. Pacific Grove is a very popular visitor serving destination. Proximity to Cannery Row, the Monterey Bay Aquarium, 17-mile drive, Lover's Point beach, the butterfly preserve, and the Asilomar State Park Conference Grounds among other places, make it an ideal destination for coastal access and recreation. Pacific Grove is located on the very northern tip of the Monterey Peninsula and is surrounded by other popular destinations, such as the cities of Monterey, Carmel, and Pebble Beach. The Monterey Bay Aquarium, located on the border of Monterey and Pacific Grove, attracts roughly 1.8 million visitors annually. The coastal trails and the designated recreation trail that run through the cities of Monterey and Pacific Grove attract an estimated 3 million users annually, who walk or ride along the scenic shoreline.

A key segment of this trail system is located on top of the coastal bluffs between the Monterey Bay Aquarium and Lover's Point, within the alignment of the former Southern Pacific Railroad right-of-way, in the City of Pacific Grove. Along this dramatic section of coastline, which is referenced by this report as the East of Lover's Point area, there is a 10-foot wide asphalt concrete (A.C.) Class 1 bike path, and an adjacent decomposed granite pedestrian trail that varies between 4' and 8' in width. These pathways, along with other public amenities such as benches, bicycle racks, and interpretive signing were installed pursuant to Coastal Development Permit No. 3-84-077. That permit also authorized repairs to existing shoreline structures, as well as the construction of new shoreline armoring, to protect these access and recreation features from coastal erosion.

The paved Class 1 coastal bike path that originates approximately 12 miles to the north, at the northern boundary of the former Fort Ord, terminates at Lover's point. Between Lover's Point and Sea Palm Avenue to the west, lateral shoreline pedestrian access is provided by a decomposed granite trail located on the bluff top adjacent to an existing rock and mortar seawall wall originally constructed in conjunction with the Southern Pacific Railroad. Bicycles share the road with vehicles along Ocean View Boulevard, and numerous informal access paths provide connections between Ocean View Boulevard and the lateral access path. The coastal terrace located between Ocean View Boulevard and the coastal bluff varies in width from a few feet to over 40 feet, and is dominated by exotic ice plant.



Beyond Sea Palm Avenue, the former railroad alignment diverts away from the shoreline and thus there are far fewer instances of shoreline armoring. Between Sea Palm Avenue and Otter Point (Beach Street), there is a fairly broad coastal terrace (i.e., 30 – 40 feet) that is known as Perkins Park and renowned for its lush carpet of flowering pink ice plant. Again, informal pathways lead down from Ocean View Boulevard to a lateral pedestrian access path (pedestrian only) along the bluff. The Park provides other recreational amenities such as public benches and overlooks that offer exceptional views of Monterey Bay, and improved vertical access to the shore. Public shoreline parking exists all along Ocean View Boulevard and at the location of the three vertical access points (i.e., Sea Palm Avenue, Balboa Avenue, and Otter Point).

2. Project Background and Description

The City of Pacific Grove proposes to repair, reconstruct, and/or replace existing shoreline armoring structures and retaining walls at eighteen locations between 4th Street and the parking area at Beach Street –a distance of approximately 1.5 miles. The structures include rip-rap revetments, rock and mortar walls, dry stacked walls, reinforced concrete walls, and wooden crib walls. Many of these structures were installed prior to 1972 in order to protect the pre-existing railroad tracks from coastal erosion and wave attack. Additional structures were permitted and installed in the mid to late 1970’s and early 1980’s in response to significant erosion events. As a result of their age and exposure to wind, rain, and shoreline processes, many of these structures are now in need of repair or replacement.

In July 2002, the City undertook a survey of the existing shoreline structures and identified problem areas where erosion threatened to undermine the structural stability of the protective devices and adjacent public access amenities. Short-term measures were implemented in early 2003, pursuant to Coastal Development Permit Waiver 3-03-092-W, to stem further damage to the coastal bluff and recreation facilities until the longer-term plan that is the subject of this permit was developed. Table 1, below, provides a summary of the currently proposed actions.

TABLE 1

Site	Location	Issue	Project Description
1	Located 100’ west of Lover’s Point.	Sinkhole beneath rock and mortar seawall.	Construct a 35’ long gravity seawall varying between 6 and 12 feet in height to replace existing rock and mortar seawall. Proposal includes filling of sinkhole and facing the seawall with artificial rock surface that mimics the appearance of the adjacent natural bedrock.
2	165-foot stretch of coastline located just east of Lover’s Point –broken	Undermining of bluff and wooden crib walls.	(2a) Remove three existing wooden crib walls and construct two vertical concrete wall segments (72’ and 23’



	into two segments (2a & 2b).		in length), colored and textured to mimic the natural bluff face. (2b)Construct two rock retaining walls totaling 71 feet in length and a wing wall on the east end. The repair will structurally tie the 2a and 2b wall segments together.
3	Located opposite of 15 th Street and the City's wastewater pump station.	Existing rip-rap revetment in poor condition.	Reconstruction of a failing 250' long rip-rap revetment. Excavation of a new keyway landward of MHTL, new rip-rap boulders placed at the toe of the revetment, and restacking existing stones at 1.5:1 slope to the top of the bluff.
4	Located opposite of 14 th Street and immediately adjacent to site 3.	Displaced armor stones.	Retrieval of fugitive rock from the inter-tidal zone and restacking within the footprint of the existing 220' long rip-rap revetment.
5	Located opposite of 9 th Street across from Berwick Park.	Existing crib wall undermined by wave run-up and erosion.	Cover rip-rap with artificial rock fascia that mimics the natural bedrock. Excavate keyway and install rock buttress that covers concrete plug underneath crib wall.
6	Located opposite of 7 th Street.	Approximately 50 stones have been displaced by wave action.	Retrieve fugitive rip-rap stones and reposition on existing 260' long revetment.
7	Located just south of 5 th Street.	Erosion of bluff on both sides of existing rip-rap revetment.	Replace existing rip-rap revetment with a 72' long, 13' high colored, sculpted, and textured vertical concrete gravity wall. Proposal includes wing walls on both ends to prevent flanking.
8	Located on the west side of Lover's Point, below the Lover's Point parking lot.	Void beneath rock and mortar seawall.	Plug void in a 110' long section of an existing rock and mortar seawall with concrete grout keyed into bedrock. Project requires excavation of beach sand, removal of existing rip-rap, and replacement of the rip-rap and sand after the plug is installed. The plug will be faced with an artificial rock surface that resembles the natural bedrock outcrops.



9	Located approximately 500' west of Lover's Point.	Sinkhole and void beneath existing rock and mortar seawall.	Plug void in a 15' long section of an existing rock and mortar seawall with concrete grout keyed into bedrock. Backfill sinkhole with compacted soils.
10	Located approximately 800' west of Lover's Point.	Void beneath rock and mortar wall.	Plug 300' long void in an existing rock and mortar seawall with concrete grout keyed into bedrock.
11	Located approximately 1,050 west of Lover's Point, just north of Clyde Street.	Void and sinkhole beneath 15' high rock and mortar seawall.	Plug void in a 5' long section of an existing rock and mortar seawall with concrete grout keyed into bedrock. Backfill sinkhole with compacted soils.
12	Located near Sea Palm Street just east of the parking area.	New Seawall.	Construct new 15' – 25' long, 16' high vertical concrete wall, with artificial rock fascia that resembles the existing exposed bedrock on the bluff. Wing walls will be constructed at both ends and back drains will be installed behind the wall.
13	Located adjacent to the beach opposite of Sea Palm Street.	Failed rock and mortar wall.	Remove concrete debris. Construct a 2' – 4' wide, 9' tall, and 21' long concrete gravity buttress that is keyed into bedrock.
14	Located adjacent to the beach access stairway at Sea Palm Street.	Large void beneath existing rock and mortar wall supporting beach access.	Construct concrete gravity buttress keyed into bedrock. Buttress will be extended to cover eroded area at the end of the wall and be surfaced to resemble the adjacent bedrock.
15	Located above the beach at Sea Palm Street.	Flanking and erosion of existing 12' high rock and mortar seawall.	Plug void under and behind wall with concrete grout keyed into bedrock.
16	Located adjacent to oceanfront parking lot just east of Beach Street.	Undermining of a 15' segment of rock and mortar seawall.	Plug void beneath the wall with concrete grout keyed into bedrock.
17	Located opposite of Beach Street.	Undermining of a 5' segment of rock and mortar seawall.	Plug void beneath wall with concrete grout keyed into bedrock. Backfill sinkhole with compacted soils.
18	Located 150' northwest of Beach Street.	Undermining of a 30' segment of rock and mortar seawall.	Plug void beneath the wall with concrete grout keyed into bedrock.



B. Coastal Development Permit Determination

1. Standard of Review

The City of Pacific Grove does not have a fully certified Local Coastal Program (LCP). The Coastal Commission certified the City's Land Use Plan (LUP) in 1991. However, the required Implementation Plan (IP) has not been submitted. Because the City does not have a certified LCP, the Coastal Commission retains permitting jurisdiction over new development within the coastal zone areas of the City and applies the Chapter 3 policies of the Coastal Act as the standard of review. The certified LUP serves as guidance.

2. Hazards

A. Applicable Hazards Policies

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

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

- (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.*

B. Analysis of Consistency with Coastal Act Hazard Policies

1. Allowing Shoreline Structures

Coastal Act Section 30235 acknowledges that seawalls, revetments, cliff retaining walls, groins 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 serve coastal-dependant uses, or to protect existing structures or public beaches in danger from erosion, provided they are designed to eliminate or mitigate adverse impacts on



shoreline sand supply. 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, adjacent properties, and overall shoreline dynamics. The Commission must always consider the specifics of each individual project, but under the standards established by Section 30235, prefers alternatives that avoid the needs for shoreline armoring.

(a) Existing Structure / Danger from Erosion

In general, the proposed repairs are intended to protect existing coastal access and recreation facilities from erosion. Eleven of the eighteen repair sites (Sites 1, 8 – 11, 13 – 18) consist of undermined rock and mortar walls previously constructed above a granitic bedrock platform. The undermined sections typically occur in areas of fractured bedrock with pockets of gravel and cobbles that are especially susceptible to erosion. Thus, although the project area is largely made up of competent bedrock material that erodes at a relatively slow rate, the areas containing fractured, gravelly, cobbles are more susceptible to erosion. Based on the current size of the voids beneath the rock and mortar walls at these locations, the consulting geotechnical engineer has indicated that proposed repairs are necessary to prevent a collapse of the existing rock and mortar walls and associated bluff failures that threaten public safety and could damage or eliminate portions of the existing blufftop trail. In addition, further erosion at sites 8 and 13 has the potential to damage or eliminate beach access parking areas.

East of Lover's Point

Repairs to existing shoreline structures are proposed at 6 locations between the Monterey Bay Aquarium and Lover's Point in order to maintain the structural integrity of shoreline armoring and retaining walls that protect coastal trails, municipal infrastructure (e.g., sanitary sewer and storm water pipes), and Ocean View Boulevard from coastal erosion. According to the consulting geotechnical engineer, Haro, Kasunich and Associates, these repairs are needed to address: 1) erosion of upper marine terrace deposits and undermining of existing crib walls that act to establish the bluff edge upon which the coastal trail is founded (e.g., at sites 2 and 5), 2) displacement and migration of armor stones contained in the rip-rap revetments (e.g., at sites 3, 4, 6 and 7), and 3) ongoing exposure to the predominant storm wave path.

Along this stretch of shoreline, waves refract around the granite headland at Lover's Point and bend toward the coast as they make their final approach to land. Some of the wave energy is dissipated as the swells pass over naturally occurring rock outcrops. The swells that reach the shoreline unimpeded are focused into the areas without these offshore rocky formations. The noticeable exception of rock outcrops at the project repair sites has led to areas of exacerbated erosion and/or migration of the protective armor stones that threatens the efficacy of these protective features and could lead to catastrophic failure. The consulting geotechnical engineer has indicated that based on the current size in the voids beneath the crib walls (sites 2 and 5) and the poor condition of the rip-rap revetments (sites 3, 6, and 7), these shoreline protective devices could fail within a couple storm cycles (i.e., in less than 3 years). The revetment at site 4 is in relatively good condition, however, several boulders have migrated from the structure into the inter-tidal zone and need to be repositioned back onto the revetment.



The consulting engineer's conclusion was corroborated by Commission staff field observations on September 29, 2005. Reconnaissance of the sites confirmed the presence of large voids beneath the crib walls that were contributing to sinkholes in the public recreation trail at project locations 2 and 5. Additionally, at sites 3, 4, 6, and 7 there were indications that the existing revetments had either slumped or had a significant number of its armor stones migrate into the inter-tidal zone. Site 7 also exhibited signs of accelerated erosion and flanking of the revetment. Thus, based on the conclusions of the consulting engineer and staff's own observations, there appears to be a significant near-term risk to the Pacific Grove Recreation Trail, Ocean View Boulevard, and the municipal wastewater and storm water infrastructure directly inland of the edge of the bluff east of Lover's Point. Therefore, this segment of the proposed repairs meets the first test of Section 30235 of the Coastal Act.

Lover's Point to Sea Palm Avenue

Repairs to an existing rock and mortar wall are proposed at five locations along this stretch of coastline. Additional repairs are proposed to an existing seawall / public vertical access stairway near Sea Palm Avenue. One entirely new seawall is proposed along the bluff just east of Sea Palm Avenue. These elements of the project are necessary to protect the existing structural elements of the seawall(s), vertical access stairs, public parking areas, and coastal trails that are threatened by erosion and wave overtopping. The areas threatened by such erosion supports lateral and vertical public access trails and associated amenities (e.g. benches and overlooks) as well as public parking areas. According to the consulting geotechnical engineer, Haro, Kasunich and Associates, these repairs are needed because: 1) erosion of fractured bedrock has undermined the base of existing rock walls that act to establish the bluff edge upon which the coastal trail is founded, 2) flanking of the existing stairway/seawall threatens the loss of public vertical access, 3) erosion has undermined an existing wall threatening public beach parking, and 4) the undermined structures threaten public safety.

As described above, sites 1 and 8 – 11 involve repairs to rock and mortar walls originally constructed to forestall coastal erosion and wave overtopping that threatened the former Southern Pacific rail line. These fairly large, gravity type vertical walls vary in height and acts as a retaining device for the relatively softer coastal marine terrace deposits that sit on top of a granite bedrock foundation. This area of shoreline faces almost directly north into the predominant direction of winter time swells and is therefore susceptible to wave attack. The Applicant's consulting engineer has indicated that given the amount of undermining at the proposed repair sites, these shoreline protective devices are at risk of catastrophic damage or failure from a single severe storm event. Similarly, at sites 13 – 15, existing rock and mortar retaining / seawalls and public access stairs have become undermined and are at risk of toppling onto the beach. The consulting engineer estimates that these walls could also be compromised by a single large wave run-up episode.

Based on staff's field observations, the conclusions of the consulting engineer appear to be accurate. Large voids have formed beneath and behind the existing rock and mortar walls. For example, at Site 8 erosion has undermined a 110' rock wall section, six feet in height, and eight feet deep. At site 10, a 300' section of rock wall has been undermined. Sinkholes have formed at sites 1, 9, and 11, creating hazards along the blufftop trail. A cavity 12' wide and up to 5' deep has formed beneath the vertical



access stairs at Sea Palm Avenue. Thus, based on the conclusions of the consulting engineer and staff's own observations, there appears to be a significant near-term risk to the shoreline structures, the vertical access stairways, public parking areas, and coastal trail system west of Lover's Point.

Site 12 is located directly east of the parking area near the Sea Palm Avenue beach access. The blufftop terrace in this location is narrow and lined with large groupings of succulent plant colonies that are very dense and very heavy. Erosion and wave run-up saturate the terrace deposits beneath these plant colonies, which together with the pull of wave return bring the plants down and cause the bluff to fail. In this particular case, slumping of the marine terrace has caused approximately 20 feet of coastal bluff to be lost, undermining the pedestrian path. The Applicant proposes to remove the existing plant and rock debris to expose the bedrock and construct a 25' long, 16' high vertical concrete wall with artificial fascia that resembles the native bedrock. The applicant contends that this new shoreline armoring is needed to maintain the existing narrow buffer between the bluff edge and Ocean View Boulevard, which provides lateral coastal access. The roadway is less than 10' from the edge of the bluff and thus, continued erosion of the coastal terrace could result in the loss of public access and potential impacts to the roadway and underground utilities. The consulting engineer estimates that without shoreline protection, the public access path would be lost within the next few storm cycles.

The consulting engineer's conclusion was corroborated by Commission staff field observations on September 29, 2005. Reconnaissance of the sites showed that a large segment of bluff had been lost to wave run-up, which undermined the pedestrian path and leaving exposed the upper terrace deposits between the bluff edge and Ocean View Boulevard. Thus, based on the conclusions of the consulting engineer and staff's own observations, there appears to be a significant near-term risk to the coastal trail, Ocean View Boulevard, and the municipal utilities beneath the roadway. Therefore, this segment of the proposed repairs meets the first test of Section 30235 of the Coastal Act.

Otter Point (Beach Street)

Sites 16 – 18 involve repairs to an existing rock and mortar wall adjacent to the public parking area at Otter Point, where erosion and undermining of bedrock materials has led to the creation of voids beneath the existing wall. The purpose of these repairs is to protect the existing structural elements of the wall and parking area, a stairway to the beach, and bluff top trails threatened by erosion. The consulting geotechnical engineer has concluded that, if left unchecked, the voids will continue to expand and ultimately lead to failure of the existing structure, loss of coastal access and recreation opportunities, and threats to public safety. Given the size of the voids beneath and behind this structure, the consulting engineer indicates that a single severe wave run-up episode could result in significant damage to, or failure of this seawall.

Commission staff confirmed the conclusions of the consulting engineer during field observations on September 29, 2006. Inspection of the site revealed that three large voids were in fact undermining the rock and mortar wall and contributing to a large sink hole at one location (site 17). Thus, based on the conclusions of the consulting engineer and staff's own observations, there appears to be a significant near-term risk to the coastal trail, public parking area, and vertical access stairs. Therefore, this segment of the proposed repairs meets the first test of Section 30235 of the Coastal Act.



(b) Feasible Alternatives.

The preceding discussion concludes that there are structural elements in immediate danger from erosion and slope failure. The next Section 30235 “test” that must be met before a shoreline protective device can be approved is that the proposed armoring is “required” to serve coastal-dependant uses or to protect existing threatened structures. In other words, shoreline armoring shall be permitted if it is the only feasible alternative capable of protecting the structure.¹ Other alternatives typically considered include: the “no project” alternative; drainage and vegetation measures on the blufftop itself; abandonment or relocation of the threatened structures; sand replenishment programs; other less damaging structural alternatives; and combinations of some or all of these options.

(i) No project alternative

Based on the geotechnical results provided by Haro, Kasunich and Associates, erosion from direct wave attack and wave run-up will continue unabated in the areas of the proposed armoring repairs leading to further undermining of the rock and mortar wall, displacement of rip-rap armoring stones, enlargement of existing sinkholes, and creation of new sinkholes. Wave run-up would exacerbate erosion during each winter season. Surface erosion associated with periods of high rainfall would cause additional enlargement of existing sinkholes. Erosional processes would continue until all earthen materials or bedrock are removed from beneath the shoreline structures and they collapse, taking with them portions of the upper bluff and public amenities constructed on top of them. Under this scenario, the extremely popular recreational trail would have to be closed to prevent injury to users and redirected. Similarly, vehicular traffic, public parking, and municipal infrastructure would need to be rerouted away from Ocean View Boulevard. As a consequence, the risk to Ocean View Boulevard, the wastewater facilities, as well as to the recreational path system, is sufficiently great to rule out this option.

(ii) Drainage and Landscaping

Non-structural alternatives to the proposed repairs include the use of landscaping and improved blufftop drainage controls to reduce erosion. In some areas, it appears that uncontrolled drainage and non-native landscaping features are exacerbating erosion problems, particularly at site 12 (west of Lover’s Point).² The upper bluff slopes are partially vegetated, but are primarily exposed marine terrace deposits. There is little doubt that drainage control and some planting would help reduce erosion at these locations.

While improved drainage controls and modifications to existing landscaping could slow coastal erosion occurring in the vicinity of the proposed repairs, they would not, by themselves, be sufficient to protect existing access facilities, municipal infrastructure, and roadway and parking areas from being undermined by coastal erosion. Given the extreme forces of winter storm events at these locations, plantings and bluff drainage controls will not be adequate to address the erosion problem. Nevertheless, the use of drainage controls and native landscaping appropriate to the site should be

¹ 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.

² During periods of high wave activity, wave run-up is overtopping the existing low-lying bluff and saturating the marine terrace beneath the dense colonies of Aloe causing the entire bluff area to collapse onto the shoreline below.



pursued in conjunction with the proposed repairs, in order to minimize the need for future repairs and supplemental armoring. Accordingly, this permit has been conditioned to require the development and implementation of such improvements via a Shoreline Management Plan (please see Special Condition 3).

(iii) Relocation of Threatened Structures

Another alternative to protect the recreation trail, roadway, and wastewater infrastructure without extending the life of the existing shoreline protection devices is to relocate the threatened structures outside of harm's way. As noted above, east of Lover's Point the roadway closely parallels the shoreline and recreational trail limiting the possibilities for relocation. West of Lover's Point there is greater opportunities for relocating threatened structures.

East of Lover's Point

In the vicinity of sites 2, 6, and 7 there is little separation between the recreation trail and Ocean View Boulevard. In addition to the questionable feasibility of this option from the City's financial standpoint, there does not appear to be adequate area to relocate the trail sufficiently inland without also reducing vehicle traffic on Ocean View to one way, or eliminating vehicle traffic all together. This would cause circulation problems, reduce existing coastal access and recreation opportunities afforded by vehicle travel along Ocean View Avenue, and potentially result in land locked parcels. Thus, unless and until the significant issues associated with pathway relocation can be addressed through a comprehensive plan for planned retreat, relocation does not appear to provide a feasible or superior alternative to the proposed repairs at sites 2, 6, and 7.

Relocation of the threatened portions of the recreation trail at sites 3 and 4 have similarly been ruled out. Although there is more space available for relocation of the threatened structures within the broad, moderately sloping embankment between Ocean View Boulevard and the recreation trail at these locations, the City's wastewater pump station is buried within the embankment and directly between the recreation trail and Ocean View Boulevard. Thus, in order to accommodate relocation of the threatened trail facilities in a manner that would avoid the need for the revetment repairs, the City's sewer pump station would need to be redesigned and/or relocated. Additionally, such relocation would necessitate the construction of a large retaining wall to address the vertical separation between Ocean View Boulevard and the recreational trail. Accordingly, the City has rejected this as a feasible option at this point in time due to costs and infrastructure constraints.

Site 5 is located directed seaward of Berwick Park. The park is a heavily used visitor serving destination and has several large heritage Monterey cypress trees along the seaward edge. Relocating the recreational trail to avoid threats of coastal erosion would require redirecting the trail through the park, and within the drip-line of the cypress tree canopy, which could threaten the health of these trees. Additionally, the trail realignment would take up valuable park space popular for weddings, picnics, yoga and Tai Chi classes, and other outdoor activities. For these reasons, the City has rejected the option of relocation as a feasible alternative to repairing the revetment at site 5.



West of Lover's Point

In the vicinity of site 8, the Lover's Point blufftop park fronts the shoreline. Park amenities include a large grassy area, lateral access trail along the shoreline, picnic tables, public benches, vertical access stairways, and parking for more than a dozen vehicles. Due to the proximity of Ocean View Boulevard and existing commercial and visitor-serving development directly adjacent to the roadway, the opportunities for relocation are limited. In order to occur, some portion of the roadway, utilities, and blufftop park would have to be eliminated. Relocation would be expensive and cannot be expected to protect the endangered structures for any significant length of time.

At site 1 the roadway abuts directly up against the lateral pedestrian path and there is essentially no buffer for relocation. Accordingly, relocation requires abandonment of all or part of the roadway and underground utilities. Once again this alternative would be expensive and not expected to protect the endangered structure for any length of time. Accordingly, relocation of the trail is not feasible unless and until a comprehensive plan for planned retreat of adjacent roadways and City infrastructures can be developed.

In the vicinity of sites 9, 10, and 11 the shoreline protective devices and pedestrian path diverge from Ocean View Boulevard, separated by a broad coastal terrace landscaped with exotic ice plant. Relocation is a feasible alternative to the proposed repairs at these sites. If left in disrepair, the undermined rock and mortar seawall will ultimately collapse exposing the upper bluff materials to direct wave attack and accelerated erosion. Although it may be awhile before the roadway and utilities become threatened, the reduction in the width of the coastal terrace will limit the opportunities for future public access and recreation improvements needed to fulfill the vision of the Monterey Bay Sanctuary Scenic Trail. As such, relocation is not considered to be a feasible alternative at this point in time.

At sites 12 – 15, the coastal terrace narrows along with the opportunities for relocation. At sites 12 and 13 the lateral pedestrian path is right up against the bluff edge and there is no buffer between the roadway and the path. Relocation would require abandonment of all or part of the roadway. At sites 14 and 15 both the beach access stairs and beach parking area would need to be abandoned if relocation were pursued. Similar to elsewhere west of Lover's Point, such relocation would be expensive and not necessarily result in any long term stability of the site.

Otter Point (Beach Street)

Opportunities for relocation of the coastal bluff trail in the vicinity of sites 16 – 18 are fairly limited. The coastal terrace is approximately 15' in width and the improved beach and overlook parking area is within 8 feet of the existing rock and mortar wall. Thus, relocation of the pathway will require the abandonment of the parking area and giving up valuable public property otherwise available for public access and recreation opportunities. For these reasons, the Applicant considers relocation to be infeasible.



In summary, there are not any feasible non-structural alternatives currently available to provide effective protection of existing public access facilities and City infrastructure. The project, therefore, meets the second test of Section 30235 of the Coastal Act.

(iv) Least Damaging Structural Alternatives

Because there are no feasible non-structural alternatives, shoreline protection is needed along the bluff and shoreline in order to protect the structural elements of the public recreational system, roadway, parking and public utilities provided in this area. The Applicant's engineering consultant analyzed different potential structural solutions including permanent engineered riprap revetments along the shoreline and bluff face retaining walls.

The Applicant contends that the proposed shoreline armoring repairs represent the least damaging alternative. A majority of the project repair sites (Sites 1, 8 – 11, 13 – 18) consist of undermined sections of old rock and mortar walls installed atop a granitic bedrock platform. This platform has proven to be a competent foundation for these walls as demonstrated by their efficacy and longevity; some of these walls are 100 years old. As opposed to new seawall construction, the proposed repairs are fairly simple: construct a buttress, plug or fill in the voids with concrete, and backfill sinkholes with earthen materials. In most cases, the proposed fix does not extend beyond the current extent of existing shoreline armoring, though in a few instances there is a need for wing walls to prevent flanking. The rock and mortar walls are vertical wall structures that have a minimal footprint and are much less visually obtrusive than other forms of shoreline armoring (e.g., rip-rap revetments). Often the footprint of these structures are located at or just above the mean high tide line and are sometimes covered with sand, cobbles, or other detritus. In all instances, the proposed maintenance and repair of the existing seawall foundation represents the minimal amount of development needed to ensure the old rock and mortar walls continue to function as designed for another 30 – 50 years. Based on a review of feasible alternatives, the proposed repairs at Sites 1, 8 – 11, and 13 – 18 represent the least damaging feasible alternative currently available to protect existing coastal access trails and City infrastructure.

East of Lover's Point

The Applicant's current proposal (project sites 3, 4, 6, and 7) involves repairs to existing rip-rap revetments. The structures at sites 3 and 4 were installed pre-Coastal Act to protect the City's wastewater pump station located directly across from 15th Street. The revetments at sites 6 and 7 were installed pursuant coastal permit 3-84-077 authorizing the construction of the Monterey Bay Sanctuary Scenic Trail and recreation improvements, along with the rip-rap needed to protect the trail from erosion. All four of these structures are now in disrepair and require immediate attention.

The Applicant's engineering consultant analyzed different potential structural solutions for these four locations including permanent engineered riprap revetments along the shoreline and bluff face retaining walls. The riprap structures currently onsite provide short-term protection, but require ongoing maintenance and hence disturbance to ensure they perform as designed. Rip-rap structures tend to extend far out from the base of the bluff, which severely impact lateral access and eliminate recreational



use of the narrow pocket cove beaches in the area. Such massive structures are visually intrusive and also likely affect coastal processes such as littoral drift, impacting downcoast sediment supply.

The preferred structural alternative at site 7 is the project as proposed, which includes replacing the existing rip-rap revetment with a colored and textured vertical concrete wall. The seawall will be roughly 70 feet in length and 13 feet in height, and designed to be vertical or near vertical to minimize landform alteration and encroachment onto the beach. The vertical wall will be backfilled with engineered fill to stabilize the bluff above it and recreate a maximum 4:1 slope, which will be revegetated to help reduce erosion.

By contrast, the revetments at sites 3, 4, and 6 are very large, each about 250 feet in length, over 20 feet in height, and areal coverage (i.e., footprint) of between 5,000 and 7,500 square feet. Retrieval of fugitive armor stones and replacement within the structure represents the most cost-effective alternative for maintaining the armoring at these locations in the short run. However due to the coastal resource and public access impacts of such structures described above, maintaining these revetments may not be the least damaging alternative over the long-term. Rather, replacement of these revetments with vertical walls colored and textured to match natural landforms would minimize visual impacts and remove obstructions to coastal access and recreation opportunities. The Applicant has indicated that, from an engineering perspective, vertical walls are a feasible long-term alternative to the rip-rap revetments. However, the City has rejected this alternative as being feasible at this point in time to cost and current funding constraints. Nevertheless, the Applicant has agreed to explore long-term funding opportunities to replace the revetments with vertical walls within an 8 – 12 year timeframe, and has directed its engineering consultants to provide further assistance in developing this alternative. Special Conditions attached to this permit provide a timeline for completing a Shoreline Management Plan that will further evaluate opportunities to replace the rip-rap with colored, sculpted, and textured vertical walls, and provide for the implementation of alternatives that prove to be less environmentally damaging than repairing and retaining existing armoring structures.

Along these lines, the undermined crib walls at site 2 are proposed to be replaced them with vertical concrete walls textured and colored to mimic the natural bluff conditions. Two vertical wall segments will be installed both approximately 70 feet in length and 13 feet in height. Similar to site 7, the walls are designed to be vertical or near vertical to minimize landform alteration and encroachment onto the beach. Voids beneath the crib walls will be backfilled to provide support for the recreation trail. This represents the least damaging structural alternative.

Similarly at site 5, the preferred structural alternative is the proposed project which includes installation of a concrete buttress within a void expanding under the existing crib wall. Additionally, a nine foot section of rip-rap adjacent to the crib wall has been undermined. The applicants propose to cover the rip-rap with an artificial rock fascia that is colored and textured to resemble the exposed bedrock on the bluff. The large sinkhole that has developed in the recreation trail will be backfilled with soil and resurfaced as before. The buttress will be near vertical and located well beneath the elevation of the recreation trail, and therefore not encroach onto the beach or be visible from publicly available areas.



West of Lover's Point

At site 12 the preferred alternative is the proposed project which includes installation of a 25 foot long, 16 foot high vertical concrete seawall with artificial rock fascia. The project also includes wing walls on both ends and backdrains installed behind the wall. As noted in the relocation finding above, the coastal terrace narrows at this location. The lateral pedestrian path is right up against the bluff edge and there is no buffer between the roadway and the path. Aside from abandoning all or part of the roadway and underground infrastructure, the only feasible alternative involves the construction of a vertical wall solution that is designed to minimize visual impacts and encroachment onto the beach and inter-tidal area. This is what the applicant has proposed, and it represents the least damaging structural alternative available to protect the coastal trail.

Conclusion

Compared to the other structural options, and as conditioned to address impacts of seawall construction on coastal resources and public access and recreational opportunities (see Public Access and Recreation findings below), the proposed seawall repairs are the least environmentally damaging structural alternative, consistent with Coastal Act Section 30233(a). In those few locations where there is evidence to suggest that there is a less damaging structural alternative (sites 3, 4, and 6), the Applicant has agreed to research funding opportunities and further its evaluation of such alternatives, and ultimately replace the existing armoring with an alternative that is more protective of coastal resources and public access. The conditions of this permit requiring the development of a Shoreline Management Plan memorialize this commitment, and will provide the information needed to ensure that future shoreline management activities are designed and implemented in a manner that minimizes and mitigates the environmental impacts of shoreline armoring in Pacific Grove. With these conditions, the project is consistent with Section 30235, provided that the design of the structure eliminates or mitigates adverse impacts on local shoreline sand supply.

2. Sand Supply Impacts

Coastal Act Section 30235 requires that, where permitted, shoreline structures must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply. The shoreline in and around the project site is atypical from much of the Monterey Bay shore in that the nearshore area is comprised of granitic rock outcrops with only a few small pocket cove areas of beach sand. The rocky inter-tidal gives way to granitic bedrock overlain by layers of clay and sandy terrace deposits. As expected, the bedrock in this area is very resistant to erosion. By contrast, the sandy terrace deposits are much more susceptible to wave attack and erosion.

Beach sand material generally 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, gullyng, et cetera. For most sandy beaches, sand is supplied from the littoral drift of materials from upcoast and downcoast sources miles away. In contrast, the north facing shoreline of Pacific Grove is bounded by granitic rock outcrops and headlands that effectively prevent the migration of beach sand up and down the coast. Accordingly, most of the sand in and around the project site is probably derived locally from



erosion of terrace deposits and granitic bedrock. Thus, the potential impact to sand supply associated with the proposed armoring repairs includes: (1) loss of sandy beach and/or sand generating materials (i.e., marine terrace deposits) under the footprint of the structure, (2) long term loss of beach when the back beach location is fixed on an eroding shoreline, and (3) loss of material that would have been supplied to the beach if the bluffs were allowed to erode naturally.

Each of these potential impacts of shoreline structures affect public access and recreation by removing sand from the system that might otherwise replenish sandy beaches, encroaching on beach areas otherwise available for public use, or by causing the loss of beach area in front of the structure through passive erosion. The impact of the proposed seawall repairs on public access and recreation is further discussed below.

Structural Footprint

All of the shoreline armoring options that the City has proposed (i.e., seawall, seawall buttressing, and rip-rap revetments) would not be placed directly on sandy beach but rather would be constructed on top of, or keyed into, existing bedrock at the subject sites. While there are access and recreational issues associated with the loss of usable beach space, especially in the locations of existing revetments, because the sand or cobbles would be scraped away and the structures placed onto bedrock, the sand supply impact in this case concerns the potential loss of granite rock. Granite bedrock is one probable source of sand for the Pacific Grove shoreline supply and as a result, each of the structural fixes potentially represents the loss of granite material that would otherwise contribute to the local sand supply. However, the vast majority of the proposed shoreline armoring repairs are repairs to existing vertical seawalls. The repairs generally involve plugging voids and backfilling sinkholes, and in no way require the removal of bedrock material or expansion of the structural footprint. Furthermore, in the locations where there is beach sand (e.g., near sites 4 and 6), retrieval of the fugitive rock from the beach and inter-tidal area will reduce the structural footprint of the revetments and enhance public access and recreational opportunities. Nevertheless, the project does involve some expansion of existing walls and the construction of one new wall. Accordingly, there will be some measurable sand supply impact for which there has not been any mitigation proposed.

Fixing the back Beach Location

As a general rule, shoreline protective devices lead to a decreased local sand supply due to the cessation of natural bluff erosion. Shoreline armoring fixes the back beach location by hardening the bluff face with some form of structure (e.g., seawall). As the beach profile erodes, and the ocean's edge migrates inland, the beach will effectively narrow thus reducing public recreational access opportunities. In practice, however, every sand system is different. In the case of Lover's Point beach, the only year-round broad sandy beach within the project area, fixing the back beach location, appears to have had a negligible effect on the overall width of the beach to date. Aerial photographs of the site taken between 1972 to the present seem to indicate that aside from seasonal variation, beach widths appear to be steady. The same may be true of the small pocket cove beaches to the east of Lover's Point, though due to changes occurring at the back of the beach (i.e., additional armoring) it is difficult to measure.



Forestalling Natural Bluff Erosion

Shoreline retreat and erosion is a natural process that can result from many different factors such as wind, wave and tidal erosion, sea cave formation and collapse, saturation due to high ground water, and bank sloughing. Erosion of the shoreline materials serves as inputs back into the system, where it may be deposited further downstream or downcoast. Since most coastal bluffs in California are made of sandy marine terrace deposits, or sandy alluvial and fluvial sediment, bluff retreat is one of several ways that beach quality sand is added to the shoreline. Thus the natural coastal processes that work to form and retain material on sandy beaches can be significantly altered by the construction of shoreline armoring structures because they remove sediment that would otherwise be supplied to the littoral system.

The subject site is located along the northeast facing shoreline of Pacific Grove, which is exposed to northerly winter wave energy. The shoreline is comprised of a series of granitic rock points and outcrops separated by small embayments and coves. Periods of high wave activity, littoral drift, and wind driven waves move sand, rock, and debris in and out of the more prominent embayments. Yet there are only three notable locations of beach sand along this 1.5 mile stretch of shoreline. The most significant of these is the year-round beach known as Lover's Point. Two additional pocket cove beach locations can be found east of Lover's Point, though these are subject to seasonal and tidal variation. Another small pocket of sand sometimes forms in the bend in the shoreline at Sea Palm Avenue. Again presence of beach sand is dependent on tide and time of year. Most, if not all of the remainder of the project area is dominated by narrow rocky, gravelly beaches that are either inaccessible or under water during much of the tidal cycle.

With the exception of one site, the proposed shoreline armoring involves repairs to existing seawalls and revetments. Most of these armoring devices were installed over 75 years ago in response to erosion and wave attack along the rails of the former Southern Pacific railroad. Several newer devices were installed at select locations during the construction and upgrade of the City's wastewater infrastructure and the Monterey Bay Sanctuary Scenic Trail amenities. Sand, rock and material from these areas has been forestalled from entering the system for many years. In most cases, the proposed shoreline armoring repairs will not involve any additional expansion of the armoring devices and, therefore by extension, not result in any additional sand supply impact. However, the proposed repairs will result in some expansion of the existing seawalls and the construction of one new seawall for which there has not been any mitigation proposed. Additionally, to the extent that the proposed armoring repairs will extend the useful life of the shoreline protection devices at the repair sites, the materials trapped behind these structures will continue to not be allowed to enter into the sand supply system.

Cumulative Impacts of Shoreline Armoring

Historically, responses to shoreline erosion and coastal bluff failure have been to install protective structures on a case-by-case basis. These are usually proposed when there is some evidence of erosion or failure, often after significant storm events. Protective structures include rock and mortar walls, rip-rap revetments, wooden crib walls, and stacked rock walls.



At least 10 permits have been granted by the Coastal Commission for shoreline protective structures along the Pacific Grove shoreline. Additional shoreline protection permits have been approved by the City of Pacific Grove prior to 1972 and adoption of the Coastal Act. There are structures at numerous locations along the shoreline from 1st Street to 17th Street. The entire point and beach area at Lover's Point Beach is armored with vertical concrete walls. One single long rock and mortar wall extends from just west of Lover's Point to Sea Palm Avenue, -a distance of about one-quarter mile. And there are additional walls, beach access stairs, and parking lot retaining devices from Sea Palm Avenue to Otter Point. Thus, while the permits are often considered on a case-by-case basis, the cumulative impact of approving these projects is that about 25 – 40% of the Pacific Grove shoreline within the project area limits is now armored.³

Sand Supply Impacts Conclusion

As detailed above, the proposed project mainly involves repairs to existing shoreline structures. These repairs will not occupy any additional beach space or harden areas of the bluff that are currently unarmored. Although such repairs do not, by themselves, have a direct impact on sand supplies, they will extend the effective lifespan of the repaired shoreline armoring structure, and thereby will have indirect, cumulative impacts on local sand supplies. In addition, the project includes some repairs that involve minor expansions of existing armoring, and in one case, a new shoreline armoring device. As a consequence, some amount of coastal bluff material that would otherwise nourish the sand supply system will be trapped behind the new armoring.

Based on the applicant's projected lifespan of 50 years, the proposed armoring will result in sand, rock, and material removed from the system for a period of 50 years - more if future repair and maintenance further extend the structures' lifespan. Additionally, fixing the location of the back beach in those areas can result in a narrowing or entire loss of the beach over time. Thus loss of sand supply to the beach, encroachment on the beach, and fixing of the back beach by use of these shoreline structures will reduce sediment supply to the beach and littoral system, potentially leading to a narrowing of the pocket beaches in and around the project area, and consequently loss of the public recreational opportunities provided by these sandy beach areas.

While sand supply patterns are not fully understood, it appears that the cumulative sand supply impact from many shoreline structures along this stretch of shoreline has been negligible to date. Even with substantial winter storm events, which can remove the majority of beach sand in a single event, the nice sandy beach areas that exist at Lover's Point and points east have been naturally and consistently replenished on a seasonal basis. Nevertheless, we do not know what the long-term impact of shoreline armoring will be on sand supply. As much as 40% of the shoreline has been armored in this location. The proposed project involves additional new armoring and repairs to existing armoring that will in essence extend the life of those structures for another 50 years. While it has been shown that shoreline protective devices are necessary to protect critical elements of the Pacific Grove recreation trail, roadway, and underground utilities, alternative approaches to armoring (such as relocation and beach

³ Pacific Grove shoreline length and armoring percentages are approximate, and are based on staff's observations and available data from the California Coastal Records Project.



nourishment) should be studied and implemented as part of a comprehensive shoreline management plan developed for the Pacific Grove shoreline to mitigate for cumulative impacts of shoreline protection devices. Therefore, the permit has been conditioned to require such a shoreline management plan for the entire Pacific Grove shoreline between 1st Street and Otter Point.

In order to evaluate the actual impacts of the approved seawall, and to collect data with which to develop the shoreline monitoring plan described above, the conditions also require the City to develop and implement a plan for monitoring, maintenance and reporting of the seawalls and adjacent beach and bluff profiles, in order to establish baseline conditions, and monitor change over time as a result of the project.

Thus only as conditioned to mitigate for impacts of the project, can the proposed armoring and repairs be found consistent with Section 30235 of the Coastal Act.

3. Long Term Structural Stability and Assumption of Risk

Geologic Stability

Pursuant to Coastal Act Section 30253, new development must assure stability and structural integrity, and not contribute to erosion or geologic instability, or require the construction of protective devices that would alter natural landforms along bluffs and cliffs. Thus, the project design must address the geologic and seismic hazards identified by the geotechnical reports, which include the following:

1. The site is likely to be shaken by earthquakes of approximate magnitude of 7.5 with an average recurrence interval of between 138 and 188 years along the North Coast segment of the San Andreas. Earthquakes of magnitude 6 or 7 are also likely along many of the faults within the Monterey Bay area.
2. Significant erosion has occurred at the site due to wave attack and from precipitation or irrigation of the bluff face, which have caused slumping and debris flow landslides.
3. Wave run-up analysis indicates that infrequent, large waves may still overtop the rock and mortar seawalls, but would occur infrequently, probably less than once per year on average.

Conclusions of the HKA 7/04 supplemental geotechnical report state that the coastal bluff repair project can be designed to address these hazards, providing that the recommendations made in the report are incorporated into the design and construction of the project. Accordingly, the project has been conditioned to require that geotechnical recommendations be incorporated, and the geotechnical engineer involved in, the final design and construction phases of the project. If any changes are required, any additional geotechnical recommendations or mitigation measures shall be submitted to the Executive Director for review and approval before their incorporation into the project.

Assumption of Risk

The experience of the Commission in evaluating the consistency of proposed developments with Coastal Act policies regarding development in areas subject to problems associated with geologic instability,



flood, wave, or erosion hazard, has been that development has continued to occur despite periodic episodes of heavy storm damage, landslides, or other such occurrences. Oceanfront development is susceptible to bluff retreat and erosion damage due to storm waves and storm surge conditions. 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 on the People of the State for damages, the Commission has regularly required that Applicants acknowledge site geologic risks and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed.

Although the Commission has sought to minimize the risks associated with the development proposed in this application, the risks cannot be eliminated entirely. Given that the Applicant has chosen to pursue the development despite these risks, the Applicant must assume these risks. Accordingly, this approval is conditioned for the Applicant to assume all risks for developing at this location (see Special Condition 10).

Monitoring, Maintenance, and Long-Term Stability

Since the proposed repairs, replacements, and new seawall will be keyed into the existing bedrock, it is not likely to sink or move down slope due to gravity or undermining of unconsolidated sediments beneath them. It is thus expected that the armoring devices will continue to provide shoreline protection throughout the life of the structures, estimated by the geotechnical report to be 20 - 50 years, as long as monitoring and maintenance activities are undertaken when necessary to ensure that the structural components of the rock and mortar seawalls, revetments, vertical concrete seawalls, wingwalls, and sinkholes are repaired if necessary due to overtopping, migration, or impact from large rocks or marine debris. Therefore, the applicant has been required to develop a plan for long-term monitoring and maintenance of the shoreline armoring devices to ensure that they remain in their original location, and continue to function effectively (see Condition 5).

Furthermore, backfilled slopes and upper bluff soils above the repair sites must be stabilized with vegetation appropriate to the site, and drainage shall continue to be controlled to ensure overall stability of the bluff edge. Long-rooted, non-invasive, native plant species suited for the site should be used for this purpose. In a bluff setting, these species can help to stabilize bluff soils, minimize irrigation of the bluff (again helping to stabilize the bluff), and can help to avoid bluff failure. They also create a more natural looking landform, which can help to offset the visual impacts of the artificial seawalls (see also Visual findings below).

In addition, in order to maximize structural stability the armoring devices, and associated bluff plantings, must be maintained in their approved state for the life of these structures. Therefore, special conditions require surveyed reference points to assist in evaluation of future proposals and monitoring at this site (see Special Condition 5), as well as drainage and landscape plans for the engineered slope/revegetated bluff area (see Special Condition 1). The Applicant shall be responsible for annual monitoring of the seawalls and engineered backfill, and must submit a monitoring report every five years that evaluates the condition and performance of the structures, and related drainage and vegetation



elements, and to submit the report with recommendations, if any, for necessary maintenance, repair, changes or modifications to the project (see Special Condition 5).

Conclusion

The project has been conditioned to require: submittal of final engineered plans that incorporate all geotechnical recommendations; geotechnical engineer involvement in the design and construction phases of the project; Executive Director review and approval of any additional geotechnical recommendations or mitigation measures before their incorporation into the project; long-term monitoring and maintenance to ensure the permitted structure remains effective and in its approved location; and, the assumption of all risk and responsibility for development at by the applicant. Only as conditioned is the proposed project consistent with Coastal Act Section 30253.

3. Public Access and Recreation

A. Applicable Public Access 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 on the beach. Coastal Act Sections 30210 through 30213 specifically protect public access and recreation. In particular:

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

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

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

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

B. Analysis of Public Access and Recreation

Beach Access and Low-Cost Recreational Opportunities



The Pacific Grove area provides numerous public access and recreational opportunities of regional and statewide significance. Proximity to Cannery Row, the Monterey Bay Aquarium, Lover's Point, Asilomar State Beach and Conference Grounds, gateway to 17-mile drive, and the butterfly preserve make it an ideal destination for coastal access and recreation. Located on the northwestern tip of the Monterey Peninsula, Pacific Grove is surrounded by other popular destinations in the cities of Monterey, Carmel, and Pebble Beach. The Monterey Bay Aquarium located in the city of Monterey, attracts roughly 1.8 million visitors annually. The designated recreation trail that runs through the cities of Monterey and Pacific Grove is used year round and represents a major recreational and economic resource to the community. It is estimated that the recreation trail attracts 3 million users annually, who walk or ride along the scenic shoreline. Because of its location, orientation, scenic character, and availability to the public, the Pacific Grove Recreation Trail is an exceptionally valuable and important public recreational site for low cost public access to the shoreline.

The proposed project includes repairs to existing shoreline armoring and, in a limited number of instances, new armoring to protect the City of Pacific Grove Recreation Trail, -a segment of the Monterey Bay Sanctuary Scenic Trail that runs from Castroville to Pacific Grove. Key features of the recreation trail (east of Lover's Point) include dedicated pedestrian and bike paths, connectivity with blufftop parks and beach access, benches, bike racks, and interpretive signing. Public access along the shoreline, as well as most of the low-cost coastal recreation amenities in this area, was formalized through the Coastal Commission's approval of the recreation trail (CDP#3-84-077; approved June 1984). The coastal permit also authorized repairs to existing shoreline structures as well as the construction of new shoreline armoring to protect these access and recreation features from coastal erosion. West of Lover's Point the recreation trail is more informal consisting only of a 4' wide decomposed granite path that meanders with the natural undulation of the shoreline. The blufftop terrace is relatively undeveloped -only a handful of public benches, dirt pathways, and exotic pink iceplant are present. Bicycles are re-routed onto the roadway, though there appears to be ample room along the coastal terrace for a dedicated path. Though not as heavily used as the trail east of Lover's Point, the recreational path west of Lover's Point is still very popular with residents and visitors alike.

Without the proposed repairs many areas along the recreation trail east of Lover's Point would be lost to coastal erosion in a short period of time. Undermining of the bluff would impair coastal lateral access and diminish the value of this unique and popular coastal recreational opportunity. Similarly, west of Lover's Point, the repairs are necessary to protect/preserve coastal lateral access especially in areas where the shoreline has eroded nearly the entire distance to the roadway (e.g., Sites 1, 13, and 14). Elsewhere, the proposed repairs will preserve future opportunities to expand public access and recreation along the coastal terrace in much the same way that has occurred east of Lover's Point. Thus, in many ways the proposed project is consistent with Coastal Act standards that require the provision of public access and protection of low-cost visitor serving opportunities.

Nonetheless, as discussed in the sand supply findings above, as much as 40% of the shoreline in this area has been armored. The proposed project will introduce new shoreline armoring and extend the life of existing armoring devices along this stretch of coast. The long-term impacts associated with these activities are not well understood, yet we know there is the potential for incremental impacts to sand



supply and beach recreation. Furthermore, the shoreline along the northern edge of Pacific Grove is a rocky shoreline, and thus sandy pocket beaches are rare and of limited extent. Accordingly, loss of beach area could potentially be a significant long-term impact of the project. Other potential direct and indirect public access impacts include loss of sand to the system overall, loss of low-cost recreation in an otherwise generally high-cost area, loss of beach ambience, and loss of aesthetics during construction. Therefore, if the proposed project is to be approved, then mitigation for this beach loss, and the related loss of low-cost public recreational opportunities and coastal access is necessary.

Due to continued sea level rise and potential impacts to sensitive marine habitats immediately offshore, as well as the unique mineralogical composition of sand and uncertainty about the effectiveness and availability of appropriate sand sources, beach re-nourishment is not considered to be a feasible alternative mitigation measure at this time. Since it may be impossible to replace lost beach area, one alternative that will have the immediate impact of enhancing and maximizing public access is to reclaim usable beach area that is currently covered by fugitive rock. The beach at Lover's Point has been degraded by migrating rock which has covered as much as 10% of the usable beach space. Retrieval of this rock will enhance the public's ability to use the entire sandy beach area, improve beach ambience and aesthetics, and further low-cost recreation opportunities. Special Condition 7 requires the applicant to retrieve this fugitive rock and either restack it on existing approved revetments or remove the rock from the beach to a suitable disposal location.

While this condition minimizes the coverage of beach areas that would otherwise be available for public access and recreation, it still does not compensate for the remaining coverage and associated loss of recreational beach area. Similarly, the proposed repairs at sites 4 and 6 involve retrieving fugitive armor stones that have migrated from large rip-rap structures onto small pocket cove beaches, and repositioning them back onto the revetments. This will remove rock and debris from the beach and inter-tidal area that previously were obstacles to public access and recreation. However, by repairing the existing revetment, the project is extending the length of time under which the remaining revetment will cover beach areas that could otherwise be used for public access and recreation. The conditions of this permit partially mitigate for these impacts by requiring the applicant to incorporate vertical access into the design of the rip-rap revetments at sites 4 and 6. Engineered stacking of the armor stones could essentially create steps that will facilitate access to the restored and enhanced pocket cove beaches that otherwise would be unused by the public. Special Condition 1c includes a requirement for stacking the rip-rap armor stones and grouting where necessary to create a vertical access route down to the pocket cove beaches at sites 4 and 6.

The Applicant has expressed concerns regarding public safety on the vertically stacked rock since it would be a mostly informal trail as opposed to engineered stairway; however, examples of vertical access trails built in to rip-rap revetments at other coastal location (e.g., Santa Cruz Lighthouse) show that various approaches (including, but not limited to use of grouting, and engineered rock stacking) can be taken to provide relatively safe public access routes.

Construction Activities



Some impacts to public access along the recreation trail will occur as a result of construction activities, but are expected to be of limited duration. To minimize such impacts, this permit requires that construction and demolition operations are limited to weekdays, between the hours of 7:30 am to 4:00 pm in order to avoid conflicts with continued public use of the recreation trail and beach on weekends and holidays. Special Condition 8 incorporates the performance standards adopted in the Mitigation Monitoring Program prepared for the project, which among other things, requires that the project site and construction staging and storage areas be marked off with protective fencing for safety.

C. Public Access Conclusion

As proposed and conditioned by this permit, the project provides mitigation to maximize recreational and public access opportunities consistent with Coastal Act Sections 30210, 30211, 30212, and 30213. Therefore, as conditioned to require public access enhancements along the beach at Lover's Point and new vertical access to the pocket cove beaches at sites 4 and 6, the proposed project will maximize public access consistent with the public access and recreation policies of the Coastal Act.

4. Marine Resources and Environmentally Sensitive Habitat

A. Issue

The project involves construction activities that may adversely impact environmentally sensitive habitat areas and other marine resources, as well as adversely affect water quality. Construction equipment and activities conducted on the beach may impact inter-tidal habitat due to disturbance of the sensitive marine environment, inadvertent discharge of construction materials, fuel or sediment. Similarly, construction equipment and activities conducted atop the eroding coastal bluff may impact upland plant and wildlife habitat.

B. Applicable Policies

Coastal Act Sections 30230 and 30231 require that:

***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.

Coastal Act Section 30240 and 30255 require that:

Section 30240(a). *Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

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.*

C. Analysis of Consistency with Applicable Policies

Coastal Act Section 30230 calls for the maintenance, enhancement and restoration (where feasible) of marine resources, with special emphasis on areas and species of special biological or economic significance. Coastal Act Section 30231 provides that the biological productivity of coastal waters, streams, wetlands, estuaries, and lakes must be maintained and, where feasible, restored. This is to be achieved by, among other means: minimizing adverse effects of wastewater discharges and entrainment; controlling runoff; preventing depletion of groundwater supplies and substantial interference with surface water flow; encouraging wastewater reclamation; maintaining natural buffer areas that protect riparian habitats; and minimizing alteration of natural streams. Coastal Act Section 30240 prohibits any significant disruption of habitat values, and limits development within ESHA to uses that are dependent on the resources. It also requires that development adjacent to ESHA be sited and designed to prevent significant degradation, and be compatible with the continuance of the habitat.

The biological setting and assessment of potential project impacts of the proposed seawall repairs are described in the biological report prepared by Denise Duffy & Associates, Inc., dated April 2005 (DDA 4/05). The DDA 4/05 biological report identifies two types of habitat: marine and terrestrial. The terrestrial component is characterized as either disturbed and/or developed area. No sensitive natural plant communities are present, though one plant species was observed that requires additional planning consideration, and several special-status wildlife species were observed within or immediately adjacent to the proposed development sites.

Exotic weedy species dominate the open upland areas and along the coastal bluff, as well as the bluff face and outer edges of the bluff. Characteristic plants include ice plant, panic veldt grasses, and dandelions. These areas of disturbed vegetation have adapted to frequent disturbance and the unique marine climate. The developed areas within the project site include paved roads, parking areas, recreation trail, pathway, rip-rap and other constructed elements. Within and along the margins of these developed areas are primarily ornamental landscaping consisting of shrubs, trees, and lawn. Ornamental vegetation can be found throughout the project area, but is most prevalent within sites associated with existing parks and the recreation trail. There is also marine habitat present on or adjacent to the



proposed repair sites. Marine habitat consists of sandy and rocky shoreline (including fugitive rock from existing armoring), tide pools, open water, and offshore rocks.

In one location near the proposed repairs at site 5, two seacliff buckwheat plants are present. The seacliff buckwheat plant is one of two host plant species on which the endangered Smith's blue butterfly (*Euphilotes enoptes smithii*) associates, throughout its entire life cycle, and so, as critical habitat for this rare and endangered species, is considered environmentally sensitive habitat. Impacts to individuals of this species are typically considered impacts to Smith's blue butterfly and therefore are regulated by USFWS under the Endangered Species Act. The DDA 4/05 report surmises the two individuals were likely planted as a component of past landscaping and indicates that they are isolated from any natural population of this species in the immediate vicinity of the project location. The nearest recorded population is Point Lobos, over 5 miles from the site. Nevertheless, the project has been conditioned to re-vegetate disturbed areas with native plants including dune buckwheat, in order to restore and protect potential Smith's blue butterfly habitat (see Special Condition 1d).

The pocket cove beach areas below the repair sites do not support any coastal marsh or wetland species, and does not have a sufficient backbeach area to allow for dune formations that would support sensitive dune plants or animals. However, two special status avian species have been observed in the vicinity of the project; the California brown pelican and double-crested cormorant. While the bluffs may provide resting and perching sites, because of the proximity to the recreation trail and human activity, they are not considered suitable nesting or foraging habitat. The southern Pacific sea otter (*Enhydra lutris*) may make use of the protected rocky nearshore area, though none are anticipated to be present in the more upland locations of the actual project sites.

No construction activities will occur below the mean high tide line. However, since construction activities will occur on the beach, it is possible that such activities, as well as those occurring atop the bluff, may have the potential to impact marine resources by inadvertently discharging sediment or construction materials into near-shore coastal waters, which are designated as an Area of Special Biological Significance and part of the Monterey Bay National Marine Sanctuary (MBNMS). Permit conditions thus require evidence of conformance with MBNMS requirements or evidence that no such compliance is required.

In addition, permit conditions require a construction management plan showing all BMPs to be used to prevent such impacts (see Special Condition 1). BMPs shall include, but not be limited to placing coir rolls and/or silt fabric around the project construction area to keep sediment and construction debris from entering the inter-tidal zone. In order to protect water quality of the MBNMS, the construction management plan shall also include measures to avoid accidental spills of petroleum products or hazardous substances. Heavy equipment used on the beach shall remain above mean high tide at all times. Heavy equipment used for concrete pouring will be located on the coastal terrace, and required to be set at least 50 feet landward of the blufftop. Other heavy equipment, which may be used atop the coastal bluff, will be required to be removed from the blufftop when not in use. All heavy equipment and project construction materials shall be stored in designated construction staging areas. All areas of beach disturbed by construction activities shall be restored to their original pre-construction condition



(See Special Condition 1). Permit conditions also require evidence of Central Coast Regional Water Quality Control Board review or evidence that no such review is required.

Finally, to prevent erosion that could adversely impacts marine resources, as well as to enhance native terrestrial habitats and coastal viewsheds, permit conditions require bluff areas disturbed during construction to be planted with native vegetation of local stock, including replacement dune buckwheat plants, according to a landscape plan that has been reviewed and approved by the Executive Director. Re-vegetation efforts may include erosion control fabric and straw mulch and seeding using native dune grass, wild rye and tufted hairgrass, and must provide for the removal of any non-native plant species that may become established within the designated planting areas.

D. Conclusion

As designed and conditioned to require a construction management plan, including implementation of BMPs to prevent the inadvertent discharge of debris into the intertidal zone, and to prevent accidental spills of petroleum products or hazardous substances, restoration of disturbed areas with native vegetation suitable to the site, and restoration of beach areas disturbed by construction, no significant disruption of marine resources will result. As such, with the inclusion of mitigation measures designed to prevent adverse impacts from construction activities, and to protect native marine and terrestrial habitats, the project conforms to the biological resource protection requirements of Coastal Act Sections 30230, 30231, and 30240.

5. Visual Resources

A. Issue

The coastal bluffs and Pacific Grove shoreline are located in a very scenic coastal area. It is estimated that millions of visitors use the scenic recreation trail and pathway annually. The proposed development has the potential to alter the scenic resources of this unique and beautiful stretch of coast.

B. Relevant Regulatory Policies

Coastal Act Section 30251 requires that:

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

Additionally, Coastal Act Section 30253(5) states that:



Section 30253(5). Where appropriate, protect special communities and neighborhoods, which, because of their unique characteristics, are popular visitor destination points for recreational uses.

C. Analysis of Visual Resources

The project is located along the very scenic Pacific Grove shoreline of Monterey Bay, and is so designated on the Pacific Grove LUP Visual Resources map. The Coastal Act requires that scenic and visual resources be protected by minimizing landform alteration, and by siting and designing development to be visually compatible with the character of the surrounding areas. In addition, the City's LUP requires that new development not interfere with public views of the ocean and bay (LUP Policy # 2.5.5.1), protect and preserve open space lands from the encroachment of sprawling urban development (LUP Policy 2.5.3), be visually compatible with the open space character of surrounding areas (LUP Policy # 2.5.4.2), use appropriate design and materials to achieve that effect (LUP Policy #2.5.4.2) and require Architectural Review Board approval for any project affecting landforms and landscaping (LUP Policy #2.5.5.4).

As described previously, the project repairs incorporate design measures to minimize landform alteration through the use of vertical reinforced concrete buttresses and vertical seawall designs. Rip-rap armor stones will be stacked as steep as possible (1.5:1) and conform to the existing bluff face as much as possible. Buttresses and vertical wall repairs will also use artificial stone fascia on the face of the seawall, using concrete that will be colored and textured to match the stratigraphy and visual character of the bluff face. The stone fascia covering will enable the repairs to be subordinate to and blend in to the surrounding bluff face, so that they are visually compatible with the character of the surrounding area. Since the actual visual compatibility will depend on the end results of the project and how well it is maintained, the permit has been conditioned to require final plans that include a materials palette and/or brochures and photo examples describing the seawall facing techniques that will be applied to achieve the objectives, and shall include color elevation drawings that accurately depict the anticipated appearance of the seawall. The project also includes use of native vegetation on the disturbed slopes above the repair sites, which will help these areas to further blend in with the appearance of the surrounding bluffs. And as these seawalls do not extend above the bluff top or out significantly from the bluff face, they will not block any public views.

Since the proposed project will not significantly alter scenic public views because it has been designed and conditioned to minimize visual impacts, and will preserve the scenic character of the Pacific Grove shoreline, the Commission finds that, as conditioned, the project is consistent with Section 30251 and 30253(5) of the Coastal Act.

6. 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 effects which the activity may have on the environment.

In the course of application review, several potential environmental impacts were identified and are discussed in the findings of this staff report, which is incorporated herein as set forth in full. These include, but are not limited to impacts to sand supply, coastal access, and recreational use of beach areas adjacent to the project site. Accordingly, the Commission finds that only as conditioned by this permit will the proposed project not have any significant adverse effects on the environment within the meaning of CEQA.

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. This staff report has discussed the relevant coastal resource issues with the proposal, and has recommended appropriate mitigations to address adverse impacts to said resources. Accordingly, the project is being approved subject to conditions which implement the mitigating actions required of the Applicant by the Commission (see Special Conditions). As such, the Commission finds that only as modified and conditioned by this permit will the proposed project not have any significant adverse effects on the environment within the meaning of CEQA.

